

# Arizona Administrative REGISTER

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~ Administrative Register Contents ~

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Information .....	3562
Rulemaking Guide .....	3563
<b><u>RULES AND RULEMAKING</u></b>	
<b>Proposed Rulemaking, Notices of</b>	
4 A.A.C. 1 Board of Accountancy .....	3565
12 A.A.C. 1 Radiation Regulatory Agency .....	3567
<b><u>OTHER AGENCY NOTICES</u></b>	
<b>Docket Opening, Notices of Rulemaking</b>	
4 A.A.C. 1 Board of Accountancy .....	3588
9 A.A.C. 8 Department of Health Services - Food, Recreational and Institutional Sanitation .....	3589
9 A.A.C. 9 Department of Health Services .....	3590
12 A.A.C. 1 Radiation Regulatory Agency .....	3591
<b><u>GOVERNOR'S OFFICE</u></b>	
<b>Governor's Executive Orders</b>	
E.O. 2016-03: Internal Review of Administrative Rules; Moratorium to Promote Job Creation and Customer-Service-Oriented Agencies .....	3592
<b><u>ARIZONA COUNTY NOTICES</u></b>	
Maricopa County .....	3594
Maricopa County .....	3620
Maricopa County .....	3644
<b><u>INDEXES</u></b>	
Register Index Ledger .....	3667
Rulemaking Activity, Cumulative Index for 2016 .....	3668
Other Notices and Public Records, Cumulative Index for 2016 .....	3675
<b><u>CALENDAR/DEADLINES</u></b>	
Rules Effective Dates Calendar .....	3678
Register Publishing Deadlines .....	3680
<b><u>GOVERNOR'S REGULATORY REVIEW COUNCIL</u></b>	
Governor's Regulatory Review Council Deadlines .....	3681

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# From the Publisher

## ABOUT THIS PUBLICATION

The paper copy of the *Administrative Register* (A.A.R.) is the official publication for rules and rulemaking activity in the state of Arizona.

Rulemaking is defined in Arizona Revised Statutes known as the Arizona Administrative Procedure Act (APA), A.R.S. Title 41, Chapter 6, Articles 1 through 10.

The Office of the Secretary of State does not interpret or enforce rules published in the *Arizona Administrative Register* or *Code*. Questions should be directed to the state agency responsible for the promulgation of the rule as provided in its published filing.

The *Register* is cited by volume and page number. Volumes are published by calendar year with issues published weekly. Page numbering continues in each weekly issue.

In addition, the *Register* contains the full text of the Governor's Executive Orders and Proclamations of general applicability, summaries of Attorney General opinions, notices of rules terminated by the agency, and the Governor's appointments of state officials and members of state boards and commissions.

## ABOUT RULES

Rules can be: made (all new text); amended (rules on file, changing text); repealed (removing text); or renumbered (moving rules to a different Section number). Rules activity published in the *Register* includes: proposed, final, emergency, expedited, and exempt rules as defined in the APA.

Rulemakings initiated under the APA as effective on and after January 1, 1995, include the full text of the rule in the *Register*. New rules in this publication (whether proposed or made) are denoted with underlining; repealed text is stricken.

## WHERE IS A "CLEAN" COPY OF THE FINAL OR EXEMPT RULE PUBLISHED IN THE REGISTER?

The *Arizona Administrative Code* (A.A.C.) contains the codified text of rules. The A.A.C. contains rules promulgated and filed by state agencies that have been approved by the Attorney General or the Governor's Regulatory Review Council. The *Code* also contains rules exempt from the rulemaking process.

The printed *Code* is the official publication of a rule in the A.A.C. is prima facie evidence of the making, amendment, or repeal of that rule as provided by A.R.S. § 41-1012. Paper copies of rules are available by full Chapter or by subscription. The *Code* is posted online for free.

## LEGAL CITATIONS AND FILING NUMBERS

On the cover: Each agency is assigned a Chapter in the *Arizona Administrative Code* under a specific Title. Titles represent broad subject areas. The Title number is listed first; with the acronym A.A.C., which stands for the *Arizona Administrative Code*; following the Chapter number and Agency name, then program name. For example, the Secretary of State has rules on rulemaking in Title 1, Chapter 1 of the *Arizona Administrative Code*. The citation for this chapter is 1 A.A.C. 1, Secretary of State, Rules and Rulemaking

Every document filed in the office is assigned a file number. This number, enclosed in brackets, is located at the top right of the published documents in the *Register*. The original filed document is available for 10 cents a copy.

# Arizona Administrative REGISTER

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### **SUBSCRIPTIONS** **ADMINISTRATIVE REGISTER**

The printed version of the *Administrative Register* is the official publication of Arizona state agency rules.

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This publication is available online for free at [www.azsos.gov](http://www.azsos.gov).

**ADMINISTRATIVE CODE**  
A price list for the *Arizona Administrative Code* is available online. You may also request a paper price list by mail. To purchase a paper Chapter, contact us at (602) 364-3223.

**PUBLICATION DEADLINES**  
Publication dates are published in the back of the *Register*. These dates include file submittal dates with a three-week turnaround from filing to published document.

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# Participate in the Process

## Look for the Agency Notice

Review (inspect) notices published in the *Arizona Administrative Register*. Many agencies maintain stakeholder lists and would be glad to inform you when they proposed changes to rules. Check an agency's website and its newsletters for news about notices and meetings.

Feel like a change should be made to a rule and an agency has not proposed changes? You can petition an agency to make, amend, or repeal a rule. The agency must respond to the petition. (See A.R.S. § 41-1033)

## Attend a public hearing/meeting

Attend a public meeting that is being conducted by the agency on a Notice of Proposed Rulemaking. Public meetings may be listed in the Preamble of a Notice of Proposed Rulemaking or they may be published separately in the *Register*. Be prepared to speak, attend the meeting, and make an oral comment.

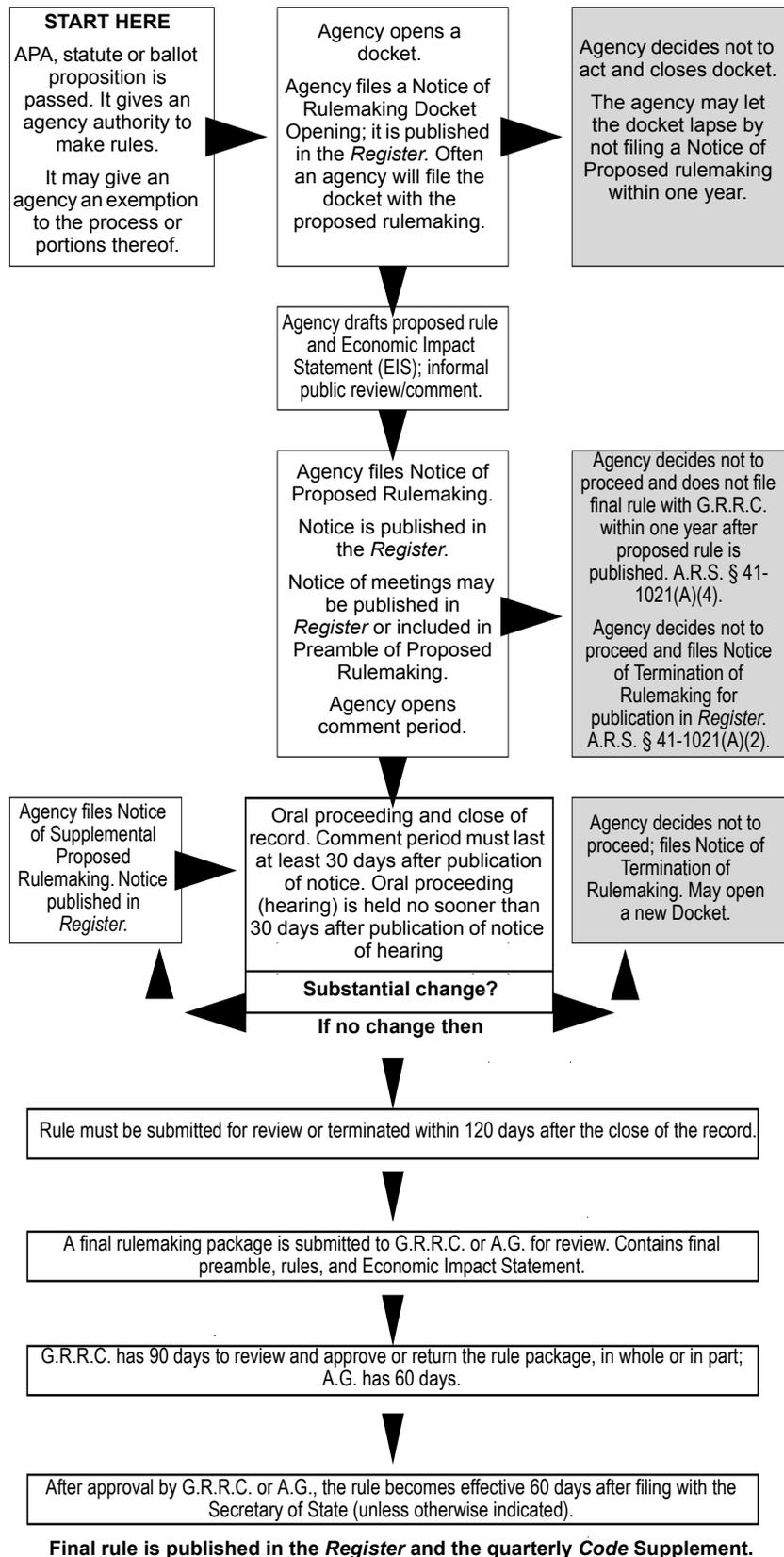
An agency may not have a public meeting scheduled on the Notice of Proposed Rulemaking. If not, you may request that the agency schedule a proceeding. This request must be put in writing within 30 days after the published Notice of Proposed Rulemaking.

## Write the agency

Put your comments in writing to the agency. In order for the agency to consider your comments, the agency must receive them by the close of record. The comment must be received within the 30-day comment timeframe following the *Register* publication of the Notice of Proposed Rulemaking.

You can also submit to the Governor's Regulatory Review Council written comments that are relevant to the Council's power to review a given rule (A.R.S. § 41-1052). The Council reviews the rule at the end of the rulemaking process and before the rules are filed with the Secretary of State.

# Arizona Regular Rulemaking Process



## Definitions

**Arizona Administrative Code (A.A.C.):** Official rules codified and published by the Secretary of State's Office. Available online at [www.azsos.gov](http://www.azsos.gov).

**Arizona Administrative Register (A.A.R.):** The official publication that includes filed documents pertaining to Arizona rulemaking. Available online at [www.azsos.gov](http://www.azsos.gov).

**Administrative Procedure Act (APA):** A.R.S. Title 41, Chapter 6, Articles 1 through 10. Available online at [www.azleg.gov](http://www.azleg.gov).

**Arizona Revised Statutes (A.R.S.):** The statutes are made by the Arizona State Legislature during a legislative session. They are compiled by Legislative Council, with the official publication codified by Thomson West. Citations to statutes include Titles which represent broad subject areas. The Title number is followed by the Section number. For example, A.R.S. § 41-1001 is the definitions Section of Title 41 of the Arizona Administrative Procedures Act. The "§" symbol simply means "section." Available online at [www.azleg.gov](http://www.azleg.gov).

**Chapter:** A division in the codification of the *Code* designating a state agency or, for a large agency, a major program.

**Close of Record:** The close of the public record for a proposed rulemaking is the date an agency chooses as the last date it will accept public comments, either written or oral.

**Code of Federal Regulations (CFR):** The *Code of Federal Regulations* is a codification of the general and permanent rules published in the *Federal Register* by the executive departments and agencies of the federal government.

**Docket:** A public file for each rulemaking containing materials related to the proceedings of that rulemaking. The docket file is established and maintained by an agency from the time it begins to consider making a rule until the rulemaking is finished. The agency provides public notice of the docket by filing a Notice of Rulemaking Docket Opening with the Office for publication in the *Register*.

**Economic, Small Business, and Consumer Impact Statement (EIS):** The EIS identifies the impact of the rule on private and public employment, on small businesses, and on consumers. It includes an analysis of the probable costs and benefits of the rule. An agency includes a brief summary of the EIS in its preamble. The EIS is not published in the *Register* but is available from the agency promulgating the rule. The EIS is also filed with the rulemaking package.

**Governor's Regulatory Review (G.R.R.C.):** Reviews and approves rules to ensure that they are necessary and to avoid unnecessary duplication and adverse impact on the public. G.R.R.C. also assesses whether the rules are clear, concise, understandable, legal, consistent with legislative intent, and whether the benefits of a rule outweigh the cost.

**Incorporated by Reference:** An agency may incorporate by reference standards or other publications. These standards are available from the state agency with references on where to order the standard or review it online.

**Federal Register (FR):** The *Federal Register* is a legal newspaper published every business day by the National Archives and Records Administration (NARA). It contains federal agency regulations; proposed rules and notices; and executive orders, proclamations, and other presidential documents.

**Session Laws or "Laws":** When an agency references a law that has not yet been codified into the Arizona Revised Statutes, use the word "Laws" is followed by the year the law was passed by the Legislature, followed by the Chapter number using the abbreviation "Ch.," and the specific Section number using the Section symbol (§). For example, Laws 1995, Ch. 6, § 2. Session laws are available at [www.azleg.gov](http://www.azleg.gov).

**United States Code (U.S.C.):** The Code is a consolidation and codification by subject matter of the general and permanent laws of the United States. The Code does not include regulations issued by executive branch agencies, decisions of the federal courts, treaties, or laws enacted by state or local governments.

## Acronyms

A.A.C. – *Arizona Administrative Code*

A.A.R. – *Arizona Administrative Register*

APA – *Administrative Procedure Act*

A.R.S. – *Arizona Revised Statutes*

CFR – *Code of Federal Regulations*

EIS – *Economic, Small Business, and Consumer Impact Statement*

FR – *Federal Register*

G.R.R.C. – *Governor's Regulatory Review Council*

U.S.C. – *United States Code*

## About Preambles

The Preamble is the part of a rulemaking package that contains information about the rulemaking and provides agency justification and regulatory intent.

It includes reference to the specific statutes authorizing the agency to make the rule, an explanation of the rule, reasons for proposing the rule, and the preliminary Economic Impact Statement.

The information in the Preamble differs between rulemaking notices used and the stage of the rulemaking.




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## NOTICES OF PROPOSED RULEMAKING

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This section of the *Arizona Administrative Register* contains Notices of Proposed Rulemakings.

A proposed rulemaking is filed by an agency upon completion and submittal of a Notice of Rulemaking Docket Opening. Often these two documents are filed at the same time and published in the same *Register* issue.

When an agency files a Notice of Proposed Rulemaking under the Administrative Procedure Act (APA), the notice is published in the *Register* within three weeks of filing. See the publication schedule in the back of each issue of the *Register* for more information.

Under the APA, an agency must allow at least 30 days to elapse after the publication of the Notice of Proposed Rulemaking in the *Register* before beginning any proceedings for making, amending, or repealing any rule. (A.R.S. §§ 41-1013 and 41-1022)

The Office of the Secretary of State is the filing office and publisher of these rules. Questions about the interpretation of the proposed rules should be addressed to the agency that promulgated the rules. Refer to item #4 below to contact the person charged with the rulemaking and item #10 for the close of record and information related to public hearings and oral comments.

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### NOTICE OF PROPOSED RULEMAKING

#### TITLE 4. PROFESSIONS AND OCCUPATIONS CHAPTER 1. BOARD OF ACCOUNTANCY

[R16-257]

#### PREAMBLE

- | <u>1. Article, Part, or Section Affected (as applicable)</u>   | <u>Rulemaking Action</u> |
|--|--------------------------|
| R4-1-455.03  | Amend                    |
| <b><u>2. Citations to the agency's statutory rulemaking authority to include the authorizing statute (general) and the implementing statute (specific):</u></b>  |                          |
| Authorizing statute: A.R.S. § 32-703(B)(7)   |                          |
| Implementing statute: None   |                          |
| <b><u>3. Citations to all related notices published in the <i>Register</i> as specified in R1-1-409(A) that pertain to the record of the proposed rule:</u></b>  |                          |
| Notice of Rulemaking Docket Opening: 22 A.A.R. 3588, December 23, 2016 ( <i>in this issue</i> ).   |                          |
| <b><u>4. The agency's contact person who can answer questions about the rulemaking:</u></b>  |                          |
| Name: Monica L. Petersen, Executive Director   |                          |
| Address: Board of Accountancy<br>100 N. 15th Ave., Suite 165<br>Phoenix, AZ 85007  |                          |
| Telephone: (602) 364-0870  |                          |
| Fax: (602) 364-0903  |                          |
| E-mail: mpetersen@azaccountancy.gov  |                          |
| Web site: www.azaccountancy.gov  |                          |
| <b><u>5. An agency's justification and reason why a rule should be made, amended, repealed, or renumbered, to include an explanation about the rulemaking:</u></b>   |                          |
| The rule is being amended because it is overbroad and inconsistent with A.R.S. § 32-747.01, and to ensure that the rules reflect the Board's current operational practices, as the Board no longer enforces this rule. The current rule is overbroad and inconsistent with the Board's statutory framework because it requires certified public accountants ("CPAs") who provide any type of public accounting to do so only through a firm registered with the Board, whereas A.R.S. § 32-747.01 only requires those CPAs who perform one specific type of public accounting – attest services – to do so only through a registered firm. |                          |
| <b><u>6. A reference to any study relevant to the rule that the agency reviewed and proposes either to rely on or not to rely on in its evaluation of or justification for the rule, where the public may obtain or review each study, all data underlying each study, and any analysis of each study and other supporting material:</u></b>   |                          |
| Not applicable   |                          |
| <b><u>7. A showing of good cause why the rulemaking is necessary to promote a statewide interest if the rulemaking will diminish a previous grant of authority of a political subdivision of this state:</u></b>   |                          |
| Not applicable   |                          |



**8. The preliminary summary of the economic, small business, and consumer impact:**

Amending the rule will not have a fiscal impact, as under the Board’s long-time statutory and regulatory framework, CPAs who have registered firms as sole proprietors are not required pursuant to A.R.S. § 32-729(4) to pay a firm registration fee. Amending the rule will result in a positive impact to small business. CPAs who are sole proprietors of accounting firms who do not do attest services as defined in A.R.S. § 32-701(3) will no longer be required to register their firms with the Board and will no longer be required to file biennial firm renewal paperwork. They will also no longer be subject to peer review requirements pursuant to R4-1-454. [Operationally, since the Board has already ceased enforcement of the rule pending its amendment and has notified sole proprietors that they may cancel their firm registrations if they do not provide attest services, this positive impact has already commenced.] The Board does not foresee a consumer impact, as amending this rule is unlikely to change the rates CPAs charge for their services. In terms of public protection, the Board will continue to regulate the sole proprietor CPAs through their individual certificates but will lose some regulatory oversight with respect to peer review requirements for non-attest services like compilation services.

**9. The agency's contact person who can answer questions about the economic, small business, and consumer impact statement:**

Name: Monica L. Petersen, Executive Director  
Address: Board of Accountancy  
100 N. 15th Ave., Suite 165  
Phoenix, AZ 85007  
Telephone: (602) 364-0870  
Fax: (602) 364-0903  
E-mail: mpetersen@azaccountancy.gov  
Web site: www.azaccountancy.gov

**10. The time, place, and nature of the proceedings to make, amend, repeal, or renumber the rule, or if no proceeding is scheduled, where, when, and how persons may request an oral proceeding on the proposed rule:**

An oral proceeding regarding the proposed rule will be held as follows:

Date: Monday, January 23, 2017  
Time: 9:00 a.m.  
Location: Board of Accountancy  
100 N. 15th Ave., Suite 165  
Phoenix, AZ 85007

The rulemaking record will close on Monday, January 23, 2017 at 5:00 p.m.

**11. All agencies shall list other matters prescribed by statute applicable to the specific agency or to any specific rule or class of rules. Additionally, an agency subject to Council review under A.R.S. §§ 41-1052 and 41-1055 shall respond to the following questions:**

**a. Whether the rule requires a permit, whether a general permit is used and if not, the reasons why a general permit is not used:**

The rule does not require a permit.

**b. Whether a federal law is applicable to the subject of the rule, whether the rule is more stringent than federal law and if so, citation to the statutory authority to exceed the requirements of federal law:**

There is no federal law regarding CPAs and firm registration.

**c. Whether a person submitted an analysis to the agency that compares the rule's impact of the competitiveness of business in this state to the impact on business in other states:**

No analysis was submitted.

**12. A list of any incorporated by reference material as specified in A.R.S. § 41-1028 and its location in the rules:**  
None

**13. The full text of the rules follows:**

**TITLE 4. PROFESSIONS AND OCCUPATIONS**

**CHAPTER 1. BOARD OF ACCOUNTANCY**

**ARTICLE 4. REGULATION**

Section  
R4-1-455.03. Professional Conduct: Other Responsibilities and Practices



**ARTICLE 4. REGULATION**

**R4-1-455.03. Professional Conduct: Other Responsibilities And Practices**

- A. Discreditable acts: A certified public accountant, public accountant, or firm shall not commit an act that reflects adversely on the certified public accountant’s, public accountant’s, or firm’s fitness to engage in the practice of public accounting, including:
  - 1. Violating a provision of R4-1-455, R4-1-455.01, R4-1-455.02, R4-1-455.03 or R4-1-455.04;
  - 2. Violating a fiduciary duty or trust relationship with respect to any person; or
  - 3. Violating a provision of A.R.S. Title 32, Chapter 6, Article 3, or this Chapter.
- B. Advertising practices: A certified public accountant, public accountant, or firm has violated A.R.S. § 32-741(A)(4) and engaged in dishonest or fraudulent conduct in the practice of public accounting in connection with the communication or advertising of public accounting services through any media, if the certified public accountant, public accountant, or firm willfully engages in any of the following:
  - 1. Employs a device, scheme, or artifice to defraud;
  - 2. Makes an untrue statement of material fact or fails to state a material fact necessary to make the statement not misleading;
  - 3. Engages in any advertising that would operate as a fraud or deceit;
  - 4. Violates A.R.S. § 44-1522 and a court finds the violation willful;
  - 5. Engages in fraudulent or misleading practices in the advertising of public accounting services that leads to a conviction pursuant to A.R.S. § 44-1481; or
  - 6. Engages in fraudulent practices in the advertising of public accounting services that leads to a conviction for a violation or any other state or federal law.
- C. Solicitation Practices: A certified public accountant, public accountant, or firm has violated A.R.S. § 32-741(A)(4) and engaged in dishonest or fraudulent conduct in the practice of public accounting in connection with the direct or indirect personal solicitation of public accounting services if the certified public accountant, public accountant, or firm willfully engages in any of the following:
  - 1. Violates a provision of R4-1-455.03(B); or
  - 2. Engages in direct or indirect personal solicitation through the use of coercion, duress, undue influence, compulsion, or intimidation practices.
- D. Form of practice and name:
  - 1. ~~A certified public accountant or public accountant may practice public accounting, whether as an owner or employee, only in a firm as defined in A.R.S. § 32-701(14).~~
  - 2. A certified public accountant or public accountant shall not use a professional or firm name or designation that is misleading about the legal form of the firm, or about the persons who are partners, officers, members, managers, or shareholders of the firm, or about any other matter. A firm name or designation shall not include words such as “& Company,” “& Associates” or “& Consultants” unless the terms refer to additional full-time CPAs that are not otherwise mentioned in the firm name.
- E. Acting through others: A certified public accountant or public accountant shall not knowingly permit others to carry out on behalf of the certified public accountant or public accountant, either with or without compensation, acts which, if carried out by the certified public accountant or public accountant, would violate a provision of R4-1-455, R4-1-455.01, R4-1-455.02, R4-1-455.03 or R4-1-455.04.
- F. Communications: When requested, a certified public accountant or public accountant shall respond to communications from the Board within 30 days after the communication is mailed by registered or certified mail.

**NOTICE OF PROPOSED RULEMAKING**

**TITLE 12. NATURAL RESOURCES**

**CHAPTER 1. RADIATION REGULATORY AGENCY**

**PREAMBLE**

[R16-258]

<b><u>1. Article, Part, or Section Affected (as applicable)</u></b>	<b><u>Rulemaking Action</u></b>
R12-1-102	Amend
R12-1-201	Amend
R12-1-202	Amend
R12-1-203	Amend
R12-1-204	Amend
R12-1-206	Amend
R12-1-207	Amend
R12-1-208	Amend



R12-1-209	Amend
Appendix A	Amend
R12-1-802	Amend
R12-1-804	Amend
R12-1-805	Amend
R12-1-807	Amend
R12-1-808	Amend
R12-1-809	Amend
R12-1-1102	Amend
R12-1-1104	Amend
R12-1-1106	Amend
R12-1-1108	Amend
R12-1-1110	Amend
R12-1-1112	Amend
R12-1-1116	Amend
R12-1-1118	Amend
R12-1-1120	Amend
R12-1-1122	Repeal
R12-1-1126	Amend
R12-1-1128	Amend
R12-1-1130	Amend
R12-1-1132	Amend
R12-1-1134	Amend
R12-1-1136	Repeal
R12-1-1140	Amend
R12-1-1142	Amend
R12-1-1146	Amend
Appendix A	Amend

**2. Citations to the agency’s statutory rulemaking authority to include the authorizing statute (general) and the implementing statute (specific):**

Authorizing statute: A.R.S. § 30-654(B)(5)

Implementing statutes: A.R.S. §§ 30-651, 30-654, 30-657, 30-671, 30-672, 30-673, 30-681, 30-687, 30-688, and 30-689.

**3. Citations to all related notices published in the Register as specified in R1-1-409(A) that pertain to the record of the proposed rule:**

Notice of Rulemaking Docket Opening: 22 A.A.R. 3591, December 23, 2016 (*in this issue*).

**4. The agency’s contact person who can answer questions about the rulemaking:**

Name: Colby A. McCormick  
Address: Arizona Radiation Regulatory Agency  
4814 S. 40th St.  
Phoenix, AZ 85040  
Telephone: (602) 826-3229  
Fax: (602) 437-0705  
E-mail: cmccormick@azrra.gov  
Website: arra.az.gov

**5. An agency’s justification and reason why a rule should be made, amended, repealed or renumbered, to include an explanation about the rulemaking:**

This rulemaking package amends rules to reduce regulatory burden on registrants of x-ray equipment while maintaining a safety oriented compliance program. In addition, it amends rules specific to x-ray devices that included impractical safety requirements that do not apply to these types of units and are more appropriate for radioactive material already addressed in other Articles of this Chapter. It further identifies and amends registrations requirements listed in the rules to more closely match existing Agency forms and processes while modernizing some information-gathering to modernize Agency communications with registrants as well as addresses items present in the most recent Sunset Audit conducted on the Agency related to x-ray registration requirements.

**6. A reference to any study relevant to the rule that the agency reviewed and proposes either to rely on or not to rely on in its evaluation of or justification for the rule, where the public may obtain or review each study, all data underlying each study, and any analysis of each study and other supporting material:**

None



**7. A showing of good cause why the rulemaking is necessary to promote a statewide interest if the rulemaking will diminish a previous grant of authority of a political subdivision of this state:**

Not applicable

**8. The preliminary summary of the economic, small business, and consumer impact: summary of the economic, small business, and consumer impact:**

Currently, all registrants pay an annual fee which covers the administrative cost and inspection fees for each facility number. No new FTEs were needed for this rulemaking package so additional notice was not sent to the Joint Legislative Budget Committee (JLBC).

**9. The agency's contact person who can answer questions about the economic, small business and consumer impact statement:**

Name: Colby A. McCormick  
 Address: Arizona Radiation Regulatory Agency  
 4814 S. 40th St.  
 Phoenix, AZ 85040  
 Telephone: (602) 826-3229  
 Fax: (602) 437-0705  
 E-mail: cmccormick@azrra.gov  
 Website: arra.az.gov

**10. The time, place, and nature of the proceedings to make, amend, repeal, or renumber the rule, or if no proceeding is scheduled, where, when, and how persons may request an oral proceeding on the proposed rule:**

An oral proceeding at the Agency will be scheduled for 9:00 a.m., January 31, 2017, at 4814 South 40th Street, Phoenix, Arizona. A person may also submit written comments concerning the proposed rules by submitting them no later than 9:00 a.m., to the following person:

Name: Brian D. Goretzki, Interim Director  
 Location: Arizona Radiation Regulatory Agency  
 Address: 4814 S. 40th St.  
 Phoenix, AZ 85040  
 Telephone: (602) 255-4840  
 Fax: (602) 437-0705

**11. All agencies shall list other matters prescribed by statute applicable to the specific agency or to any specific rule or class of rules. Additionally, an agency subject to Council review under A.R.S. §§ 41-1052 and 41-1055 shall respond to the following questions:**

**a. Whether the rule requires a permit, whether a general permit is used and if not, the reasons why a general permit is not used:**

The Agency believes that it is exempt from A.R.S. §§ 41-1037 due to paragraph (A)(2) as the issuance of an alternative type of permit is authorized under the statutory requirement of A.R.S. §§ 30-672 to protect the public health and safety.

**b. Whether a federal law is applicable to the subject of the rule, whether the rule is more stringent than federal law and if so, citation to the statutory authority to exceed the requirements of federal law:**

The rule amendments are compatible with existing federal regulations and are not more stringent in sections that have a federal equivalent. Currently the regulation of radiation producing equipment is conducted at the state level and federal regulations in Title 21 of the Code of Federal Regulations only govern the manufacture of radiation producing electronic devices with the exception of mammography screening facilities. Facilities that screen for mammography are dually regulated as a Mammography Quality Standards Act and Program (MQSA) facility for federal insurance reimbursement as well as under the rules of the Agency. The federal rules governing MQSA are located in 21 CFR 900.12 and are incorporated in the rules of the Agency.

**c. Whether a person submitted an analysis to the agency that compares the rule's impact of the competitiveness of business in this state to the impact on business in other states:**

No analysis has been submitted as the regulated community must be in compliance with either federal regulation if accepting Medicare insurance, or able to demonstrate a safety culture for OSHA of which radiation protection programs comprise a portion of.

**12. A list of any incorporated by reference material as specified in A.R.S. § 41-1028 and its location in the rules:**

<u>Rule</u>	<u>Incorporated Material</u>
R12-1-102	21 CFR 1040.10
R12-1-206(C)	21 CFR 1020.30(d)

**13. The full text of the rules follows:**



TITLE 12. NATURAL RESOURCES
CHAPTER 1. RADIATION REGULATORY AGENCY

ARTICLE 1. GENERAL PROVISIONS

- Section
R12-1-102. Definitions

ARTICLE 2. REGISTRATION, INSTALLATION, AND SERVICE OF IONIZING RADIATION-PRODUCING MACHINES; AND CERTIFICATION OF MAMMOGRAPHY FACILITIES

- Section
R12-1-201. Exemptions
R12-1-202. Application for Registration of Facilities with Ionizing Radiation Producing Machines
R12-1-203. Application for Registration of Servicing and Installation
R12-1-204. Issuance of Notice of Registration
R12-1-206. Assembly, Installation, Removal from Service, and Transfer
R12-1-207. Reciprocal Recognition of Out-of-state Radiation Machines
R12-1-208. Certification of Mammography Facilities
R12-1-209. Notifications and Registration Amendments
Appendix A. Application Information

ARTICLE 8. RADIATION SAFETY REQUIREMENTS FOR ANALYTICAL X-RAY OPERATIONS

- Section
R12-1-802. Definitions
R12-1-804. Open-beam X-ray Systems
R12-1-805. Administrative Responsibilities
R12-1-807. Surveys
R12-1-808. Posting
R12-1-809. Training

ARTICLE 11. INDUSTRIAL USES OF X-RAYS, NOT INCLUDING ANALYTICAL X-RAY SYSTEMS

- Section
R12-1-1102. Definitions
R12-1-1104. Registration Requirements
R12-1-1106. Equipment Performance
R12-1-1108. Radiation Survey Instruments
R12-1-1110. Quarterly Inventory
R12-1-1112. Utilization Logs
R12-1-1116. Surveillance
R12-1-1118. Industrial Radiographic Operations
R12-1-1120. Radiation Safety Officer (RSO)
R12-1-1122. Form of Records Repealed
R12-1-1126. Posting
R12-1-1128. Operating and Emergency Procedures
R12-1-1130. Personnel Monitoring
R12-1-1132. Supervision of a Radiographer's Assistant
R12-1-1134. Radiation Surveys
R12-1-1136. Permanent Radiographic Installations Repealed
R12-1-1140. Enclosed Radiography
R12-1-1142. Baggage and Package Inspection Systems
R12-1-1146. Training
Appendix A. Standards for Organizations that Provide Radiography Certification

ARTICLE 1. GENERAL PROVISIONS

R12-1-102. Definitions

Terms defined in A.R.S. § 30-651, 32-501, 32-516(F), and 32-3231 have the same meanings when used in this Chapter, unless the context otherwise requires. Additional subject-specific definitions are used in other Articles.

- "A1" No change
"A2" No change



- “Absorbed dose” No change
- “Accelerator” No change
- “Accelerator produced material” No change
- “Accessible emission limit (AEL)” means the maximum accessible emission level of laser or collateral radiation permitted within a particular class.
- “Accessible radiation” means laser or collateral radiation to which human access is possible.
- “Act” No change
- “Activity” No change
- “Adult” No change
- “Agency,” or “ARRA” No change
- “Agreement State” No change
- “Airborne radioactive material” No change
- “Airborne radioactivity area” No change
- “ALARA” No change
- “Analytical x-ray equipment” No change
- “Analytical x-ray system” No change
- “Angular subtense” means the apparent visual angle, a, as calculated from the source size and distance from the eye.
- “Annual” No change
- “Aperture” means an opening in the protective housing or other enclosure of a laser product, through which laser or collateral radiation is emitted, allowing human access to the radiation.
- “Aperture stop” means an opening serving to limit the size and to define the shape of the area over which radiation is measured.
- “Authorized medical physicist” No change
- “Authorized nuclear pharmacist” No change
- “Authorized user” No change
- “Background radiation” No change
- “Becquerel” No change
- “Bioassay” No change
- “Brachytherapy” No change
- “Byproduct material” No change
- “Calendar quarter” No change
- “Calibration” No change
- “CDRH” means the Center for Devices and Radiological Health.
- “Certifiable cabinet x-ray system” No change
- “Certified cabinet x-ray system” No change
- “Certified laser product” means that the product is certified by a manufacturer in accordance with the requirements of 21 CFR 1040.10, revised April 1, 2016, incorporated by reference and available under R12-1-101. This incorporated material contains no future editions or amendments.
- “CFR” No change
- “Chelating agent” No change
- “Civil penalty” No change
- “Classes of lasers” means the following categories of lasers, Class 1, Class 2, Class 2a, Class 3, Class 3a, Class 3b, and Class 4 as defined in 21 CFR 1040.10, revised April 1, 2016, incorporated by reference and available under R12-1-101. This incorporated material contains no future editions or amendments.
- “Collective dose” No change
- “Committed dose equivalent” No change
- “Committed effective dose equivalent” No change
- “Consortium” No change
- “Curie” No change



- “Current license or registration” No change
- “Deep-dose equivalent” No change
- “Depleted uranium” No change
- “Discrete source” No change
- “Dose” No change
- “Dose equivalent” No change
- “Dose limits” No change
- “Dosimeter” No change
- “Effective dose equivalent” No change
- “Effluent release” No change
- “Embryo/fetus” No change
- “Enclosed beam x-ray system” No change
- “Enclosed radiography” No change
- “Entrance or access point” No change
- “Exhibit” No change
- “Explosive material” No change
- “Exposure” No change
- “Exposure rate” No change
- “External dose” No change
- “Extremity” No change
- “Fail-safe characteristics” No change
- “Field radiography” No change
- “Field station” No change
- “Former U.S. Atomic Energy Commission (AEC) or U.S. Nuclear Regulatory Commission (NRC) licensed facilities” No change
- “Generally applicable environmental radiation standards” No change
- “Gray” No change
- “Hazardous waste” No change
- “Healing arts” No change
- “Health care institution” No change
- “High radiation area” No change
- “Human use” No change
- “Impound” No change
- “Individual” No change
- “Individual monitoring” No change
- “Individual monitoring device” No change
- “Individual monitoring equipment” No change
- “Industrial radiography” No change
- “Injection tool” No change
- “Inspection” No change
- “Interlock” No change
- “Internal dose” No change
- “Irradiate” No change
- “Laser” No change
- “Lens dose equivalent” No change
- “License” No change
- “Licensed material” No change
- “Licensed practitioner” No change



- “Licensee” No change
- “Licensing State” No change
- “Limits” No change
- “Local components” No change
- “Logging supervisor” No change
- “Logging tool” No change
- “Lost or missing licensed or registered source of radiation” No change
- “Low-level waste” No change
- “Major processor” No change
- “Medical dose” No change
- “Member of the public” No change
- “MeV” No change
- “Mineral logging” No change
- “Minor” No change
- “Monitoring” No change
- “Multiplier” No change
- “NARM” No change
- “Nonexempt nonionizing source” means any system or device that contains a nonionizing source listed in R12-1-1302(F).
- “Normal operating procedures” No change
- “Natural radioactivity” No change
- “NRC” No change
- “Nuclear waste” No change
- “Occupational dose” No change
- “Open beam system” means an analytical x-ray system in which an individual could place some body part in the primary beam path during normal operation.
- “Package” No change
- “Particle accelerator” No change
- “Permanent radiographic installation” No change
- “Personnel dosimeter” No change
- “Personnel monitoring equipment” No change
- “Personal supervision” No change
- “PET” No change
- “Pharmacist” No change
- “Physician” No change
- “Positron Emission Tomography (PET)” No change
- “Positron Emission Tomography (PET) radionuclide production facility” No change
- “Primary beam” No change
- “Public dose” No change
- “Pyrophoric liquid” No change
- “Pyrophoric solid” No change
- “Qualified expert” No change
- “Quality Factor” No change
- “Quarter” No change
- “Rad” No change
- “Radiation” No change
- “Radiation area” No change
- “Radiation dose” No change



- “Radiation machine” No change
- “Radiation Safety Officer” (RSO) No change
- “Radioactive marker” No change
- “Radioactive material” No change
- “Radioactivity” No change
- “Radiographer” No change
- “Radiographer's assistant” No change
- “Registrant” No change
- “Registration” No change
- “Regulations of the U.S. Department of Transportation” No change
- “Rem” No change
- “Research and Development” No change
- “Restricted area” No change
- “Roentgen” No change
- “Safety system” No change
- “Sealed source” No change
- “Sealed Source and Device Registry” No change
- “Shallow dose equivalent” No change
- “Shielded position” No change
- “Sievert” No change
- “Site boundary” No change
- “Source changer” No change
- “Source holder” No change
- “Source material” No change
- “Source material milling” No change
- “Source of radiation” or “source” No change
- “Special form radioactive material” No change
- “Special nuclear material in quantities not sufficient to form a critical mass” No change
- “Storage area” No change
- “Storage container” No change
- “Subsurface tracer study” No change
- “Survey” No change
- “TEDE” No change
- “Teletherapy” No change
- “Temporary job site” No change
- “Test” No change
- “These rules” No change
- “Total Effective Dose Equivalent” (TEDE) No change
- “Total Organ Dose Equivalent” No change
- “Unrefined and unprocessed ore” No change
- “Unrestricted area” No change
- “U.S. Department of Energy” No change
- “Very high radiation area” No change
- “Waste” No change
- “Waste handling licensees” No change
- “Week” No change
- “Well-bore” No change



- “Well-logging” No change
- “Whole body” No change
- “Wireline” No change
- “Wireline service operation” No change
- “Worker” No change
- “WL” No change
- “WLM” No change
- “Workload” No change
- “Year” No change

## ARTICLE 2. REGISTRATION, INSTALLATION, AND SERVICE OF IONIZING RADIATION-PRODUCING MACHINES; AND CERTIFICATION OF MAMMOGRAPHY FACILITIES

### R12-1-201. Exemptions

- A. Electronic equipment that produces X-radiation incidental to its operation for other purposes is exempt from the registration and notification requirements of this Article, provided that an exposure rate, from any accessible surface, averaged over an area of 10 centimeters squared (1.55 inches squared) does not exceed 5 coulomb per kilogram (C/kg) (0.5 milliroentgen) per hour at 5 centimeters (2.0 inches).
- B. The production, testing, or factory servicing of the electronic equipment in subsection (A) is not exempt from the requirements of this Article.
- C. Radiation machines in storage or in transit to or from storage are exempt from the requirements of this Article. Providers of radiation machines for mobile services are not exempt from registration.
- D. Radiation machines rendered incapable of producing radiation are exempt from the requirements of this Article.
- E. Financial institutions that take possession of ionizing radiation machines as a result of foreclosure, bankruptcy, or other default of payment if they document that the unit is not in operation and possession is for the sole purpose of selling, leasing, or transferring the equipment to an entity that can be registered.

### R12-1-202. Application for Registration of Facilities with ~~of~~ Ionizing Radiation Producing Machines

- A. A person shall not use ~~a~~ an ionizing radiation machine except as authorized in this Article.
- B. A person possessing a nonexempt radiation machine shall apply for registration of the facility and all existing radiation-producing machines ~~the machine~~ with the Agency within 30 days after its installation and before initial use. The person applying for registration of a radiation-producing machine shall use the application forms provided by the Agency. The applicant shall provide the information identified in Appendix A of this Article.
- C. In addition to the application form or forms, the applicant shall remit the appropriate registration or licensing fee in R12-1-1306 and provide other information required by R12-1-208.
- D. Each applicant that applies for registration of a stationary x-ray system, with the exception of applicants from bone densitometry, cabinet radiography, podiatry, dental, bone mineral analyzer and mammography facilities, shall provide a scale drawing of the room in which the x-ray system is located, or provide measurements from the radiation source to the surrounding barrier surfaces. Surveys conducted by qualified experts may be substituted for shielding diagrams. The drawing shall denote the type of materials and the thickness (or lead equivalence) of each barrier of the room (walls, ceilings, floors, doors, windows). The drawing shall also denote the type and frequency of occupancy in adjacent areas, including those above and below the x-ray room of concern (e.g., hallways, offices, parking lots, and lavatories). Estimates of workload shall also be provided with the drawing.
- E. An applicant proposing to use a particle accelerator for medical purposes shall not use the particle accelerator until the Agency inspection required in R12-1-914 has been completed.
- F. An applicant proposing to use an x-ray unit for therapy under the rules of Article 6 shall not use the therapy unit until the Agency approves the registration application.

### R12-1-203. Application for Registration of Servicing and Installation

- A. Each person who is engaged in the business of installing or offering to install radiation machines shall apply for registration. For purposes of this Chapter, install includes selling and servicing, or offering to sell or service, x-ray machines in Arizona.
- B. The applicant shall complete the application for registration on forms ~~that request information required by A.R.S. § 30-672.01,~~ provided by the Agency.

### R12-1-204. Issuance of Notice of Registration

- ~~A.~~ Upon determining that the application meets the requirements of the Act and this Article, the Agency shall issue a Notice of Registration.
- ~~B.~~ All radiation machines located at the same facility may be registered using one Notice of Registration.



**R12-1-206. Assembly, Installation, Removal from Service, and Transfer**

- A. A person who assembles, or installs ~~ionizing~~ radiation machines in this state shall notify the Agency in writing within ~~15-30~~ days of:
  1. The name and address of the person possessing the machine that was assembled or installed;
  2. The manufacturer, and model name or model number, ~~and serial number~~ of each radiation machine ~~with the tube housing model number and serial number, maximum kVp, and maximum mA~~, assembled or installed; and
  3. The date each machine was assembled or installed, or the first clinical procedure is performed.
- B. Any person who possesses a radiation machine registered by the Agency shall notify the Agency within ~~45-30~~ days of the machine being taken out of service. The written notification shall contain the name and address of the person receiving the machine, if it is sold, leased, or transferred to another person; the manufacturer and model name, ~~and serial number~~ of the machine; and the date the machine was taken out of service.
- C. In the case of diagnostic x-ray systems that contain certified components, an assembler shall, within ~~45-30~~ days following completion of the assembly, submit to the Agency a copy of the assembler's report (FDA Report No. 2579) prepared in compliance with requirements in 21 CFR 1020.30(d), revised April 1, ~~2016~~ 2008, incorporated by reference, and available under R12-1-101. This incorporated material contains no future editions or amendments. The report shall suffice in lieu of any other report by the assembler, if it contains the information required in subsection (A).
- D. A person shall not make, sell, lease, transfer, lend, assemble, service, or install radiation machines or the supplies used in connection with radiation machines unless the supplies and equipment when properly placed in operation and used, meet the requirements of these rules.

**R12-1-207. Reciprocal Recognition of Out-of-state Radiation Machines**

- A. If any radiation machine is to be brought into the state for temporary use and is already registered in a state in the U.S., the person proposing to bring the radiation machine into the state shall provide written notice to the Agency at least ~~three-five~~ working days before the radiation machine is to be used in the state. The notice shall include the type of radiation machine; the nature, duration, and scope of use; and the exact location where the radiation machine is to be used. If, for a specific case, the ~~three-five~~ working-day period would impose an undue hardship, the person may upon application to the Agency, obtain permission to proceed sooner.
- B. In addition, the owner of the radiation machine and the person possessing the machine while in the state shall:
  1. Comply with all applicable rules of the Agency;
  2. Upon request, supply the Agency with a copy of the machine's registration and other information regarding the safe operation of the machine while it is in the state; and
  3. Upon request, supply the Agency with the work authorization from the Agency, machine registration, operating and emergency procedures, utilization log, survey instrument and associated calibration record, and training records for all users.
- C. A radiation machine shall not be operated within the state on a temporary basis in excess of 180 calendar days per year.

**R12-1-208. Certification of Mammography Facilities**

An applicant seeking certification of a facility according to A.R.S. § 30-672(J) shall:

1. Provide evidence with the application that a quality assurance program has been established and is in use under R12-1-614(B)(1) and (2),
2. Provide evidence at the time of inspection with the application that physicians reading mammographic images have the training and experience required in A.R.S. § 32-2842, and
3. Provide evidence at the time of inspection with the application that physicians reading mammographic images have met the minimum criteria established by their respective licensing boards, as required in A.R.S. § 32-2842~~(C)~~.

**R12-1-209. Notifications and Registration Amendments**

- A. A registrant shall notify the Agency within 30 days of any change to the information contained in the notice of registration or change to the information contained on a certificate issued according to R12-1-208.
- B. A person who possesses a radiation machine registered by the Agency shall notify the Agency within ~~45-30~~ days if the machine is discarded or transferred to another person. In the notice, the person shall provide the name and address of the person who receives the machine, if it is sold, leased, or transferred to another person; the manufacturer, model, and serial number of the machine; and the date the machine was taken out of service.

**Appendix A. Application Information**

An application shall contain the following information as required in R12-1-202(B), before a registration will be issued. The Agency shall provide an application form to an applicant ~~with a guide, if available~~, or shall assist the applicant to ensure that only correct information is provided on the application.

Legal Name and mailing address of applicant (Doing Use location  
Business As (dba) name is optional)



Person responsible for radiation safety program	Telephone number
Type of facility	Facility subtype
Legal structure and ownership ( <u>sole proprietor ownership requires additional verification information per A.R.S. § 41-1080</u> )	Signature of certifying agent
Radiation machine information <u>including manufacturer and model name or model number</u>	Equipment <u>location</u> identifiers
Shielding information, <u>if applicable</u>	Scale drawing, if applicable
Equipment operator instructions and restrictions	Physicist name and training, if applicable
<u>Classification of professional in charge</u> <u>Training information for authorized users on therapy registrations, if applicable</u>	
Record of calibration for therapy units	Type of request: amendment, new, or renewal
Protection survey results, if applicable	
Type of industrial radiography program, if applicable	
Radiation Safety Officer name, if applicable	Contact person
Other registration requirements listed in Articles 2, 6, 8, 9, and 11	Appropriate fee listed in Article 13 schedule

**ARTICLE 8. RADIATION SAFETY REQUIREMENTS FOR ANALYTICAL X-RAY OPERATIONS**

**R12-1-802. Definitions**

- “Analytical x-ray equipment” means devices or machines used for x-ray diffraction or x-ray induced fluorescence analysis.
- “Analytical x-ray system” means a group of components utilizing x-rays to determine the elemental composition or to examine the microstructure of materials.
- “Enclosed beam x-ray system” means an analytical x-ray system constructed in such a way that access to the interior of the enclosure housing the x-ray source is precluded during operation except through bypassing of interlocks or other safety devices to perform maintenance or servicing.
- “Fail-safe characteristic” means a design feature which causes beam port shutters to close, or otherwise prevents emergence of the primary beam, upon the failure of a safety or warning device.
- “Handheld analytical x-ray unit” means x-ray equipment that is designed to be hand-held during operation when the safety apparatus is in working order that closes the shutters or terminates the beam when not held in proximity to test material.
- “Local component” means part of an analytical x-ray system and includes each area that is struck by x-rays, such as radiation source housings, port and shutter assemblies, collimators, sample holders, cameras, goniometers, detectors and shielding, but does not include power supplies, transformers, amplifiers, readout devices, and control panels.
- “Normal operating procedures” means instructions or procedures including, but not limited to, sample insertion and manipulation, equipment alignment, routine maintenance by the registrant, and data recording procedures which are related to radiation safety.
- “Open beam x-ray system” means an analytical x-ray system which permits an individual to place some body part in the primary beam path during normal operation.
- “Primary beam” means radiation which passes through an aperture of the source housing on a direct path from the x-ray tube.

**R12-1-804. Open-beam X-ray Systems**

- A. A registrant shall label open beam x-ray systems with a readily discernible sign or signs bearing the radiation symbol and the words:
  1. “CAUTION -- HIGH INTENSITY X-RAY BEAM,” or a similar warning, on the x-ray source housing; and



- 2. "CAUTION RADIATION -- THIS EQUIPMENT PRODUCES RADIATION WHEN ENERGIZED" or a similar warning, near any switch that energizes an x-ray tube if the radiation source is an x-ray tube.
- B.** A registrant shall ensure that an open beam x-ray system has all of the following warning devices:
  - 1. X-ray tube status (On-Off) indicator in systems where the primary beam is controlled in this fashion;
  - 2. Shutter status (Open-Closed) indicators near each port on the radiation housing for systems which control the primary beam; and
  - 3. A clearly visible warning light labeled with the words "X-RAY ON," or a similar warning located near any switch that energizes an x-ray tube, illuminated only when the tube is energized; and
  - 4. The warning devices in subsections (B)(1) through (3) shall be labeled so that their purpose is easily identified.
- C.** A registrant shall ensure that any apparatus utilized in beam alignment procedures is designed in such a way that excessive radiation will not strike the operator. Particular attention shall be given to viewing devices, in order to ascertain that lenses and other transparent components attenuate the beam to an acceptable level.
- D.** A registrant shall provide an interlock device which prevents entry of any portion of an individual's body into the primary beam or causes the primary beam to be shut off upon entry into its path on all open-beam x-ray systems. A registrant may apply to the Agency for an exemption from the requirements of a safety device. An application for exemption shall include:
  - 1. A description of the various safety devices that have been evaluated;
  - 2. The reason each device cannot be used; and
  - 3. A description of the alternative methods that will be used to minimize accidental exposure, including procedures to assure that operators and others in the area will be informed of the absence of safety devices.
- E.** A registrant shall use only systems constructed so that:
  - 1. Each x-ray tube housing is equipped with an interlock that automatically shuts off the tube if the tube is removed from the radiation source housing or the housing is disassembled; and
  - 2. With all shutters closed, radiation measured at a distance of 5 centimeters from the surface of the system is not capable of producing a dose that exceeds 25  $\mu$ Sv (2.5 mRem) in one hour for the specified tube rating of the x-ray tube.
- F.** A registrant shall supply each x-ray generating system with a protective cabinet that limits leakage radiation measured at a distance of 5 cm (2 in) from the cabinet surface, so that the system is not capable of producing a dose equivalent that exceeds 25  $\mu$ Sv (2.5 mrem) in one hour.
- G.** A registrant shall ensure that the local components of an analytical x-ray system are located and arranged and have sufficient shielding or access control for the specified tube rating to prevent the radiation level in any area adjacent to the local component group from exceeding the dose limits in R12-1-416.
- H.** A registrant shall perform a radiation survey of the local component group of each analytical x-ray system to demonstrate compliance with subsection (G) upon:
  - 1. Installation,
  - 2. Change in configuration, or
  - 3. Maintenance that affects the radiation level in any area adjacent to the local component group.
- I.** A registrant shall maintain a record of each survey for three years or until the analytical x-ray system is no longer used, whichever period is shorter.
- J.** Handheld analytical x-ray units are exempt from the requirements of sections D, F, and H.

**R12-1-805. Administrative Responsibilities**

- A.** A registrant shall designate a radiation safety officer who shall:
  - 1. Establish and maintain operational procedures so that the radiation exposure of each worker is kept ALARA;
  - 2. Instruct all personnel who work with or near radiation producing machines in safety practices;
  - 3. Maintain a system of personnel monitoring if required;
  - 4. Establish radiation control areas, including placement of appropriate radiation warning signs or devices;
  - 5. Provide a radiation safety inspection of radiation producing machines on a routine basis;
  - 6. Review modifications to x-ray systems, including x-ray tube housing, cameras, diffractometers, shielding, and safety interlocks;
  - 7. Investigate and report proper authorities any case of excessive exposure to personnel and take remedial action; and,
  - 8. Be familiar with all applicable rules for control of ionizing radiation.
- B.** An individual shall not be permitted to operate or maintain an open beam analytical x-ray system unless the individual has received instruction in and demonstrated competence in all of the following:
  - 1. Identification of radiation hazards associated with the use of the equipment;
  - 2. Significance of all radiation warning and safety devices, interlocks incorporated into the equipment, or the reasons that devices or interlocks have not been installed on certain pieces of equipment and the extra precautions required in lieu of these precautions;
  - 3. Proper operating procedures for the equipment;
  - 4. Recognition of symptoms of acute localized radiation exposure; and
  - 5. Proper procedure for reporting an actual or suspected exposure.



- C. A registrant shall maintain records of instruction and competence for Agency inspection for three years from the date of course completion or demonstration.

**R12-1-807. Surveys**

- A. To ensure that personnel exposure does not result in a dose to an individual that exceeds the dose limits specified in Article 4, a registrant shall perform a radiation survey upon:
1. Installation of the equipment and at least once each year after installation;
  2. Change in the initial arrangement, number, or type of local components in the system;
  3. Maintenance that involves disassembly or removal of a local component in the system;
  4. Maintenance that involves alignment, if alignment requires the generation of the primary x-ray beam while any local component of the system is disassembled or removed;
  5. A visual inspection of the local components in the system that reveals an abnormal condition; or
  6. Determination that personnel are being exposed to radiation in excess of established levels recorded in monitoring records for personnel during previous monitoring periods or the occupational dose limits specified in Article 4.
- B. The radiation surveys in subsection (A) are not required if the registrant demonstrates that the local components of an analytical x-ray system are located and arranged, and have sufficient shielding or access control, to limit personnel exposure to a level that is ALARA and below the occupational dose limits in Article 4. The Agency registrant shall determine ALARA radiation levels based on the specified x-ray tube rating.

**R12-1-808. Posting**

A registrant shall conspicuously post each area or room that contains analytical x-ray equipment with a sign or signs that bear the radiation symbol and the words “CAUTION – X-RAY EQUIPMENT” or words with a similar meaning except for closed beam certified cabinets and handheld analytical x-ray units.

**R12-1-809. Training**

A registrant shall not allow an individual to operate or maintain analytical x-ray equipment unless the individual has received training and demonstrated competence in:

1. Identifying radiation hazards associated with use of the equipment;
2. Recognizing and using radiation warning and safety devices, including interlocks that are incorporated into the equipment, and understanding why these devices are sometimes not installed;
3. Taking precautions associated with use of the equipment;
4. Recognizing symptoms of an acute localized exposure; and
5. Following proper procedure for reporting a suspected personnel exposure.

**ARTICLE 11. INDUSTRIAL USES OF X-RAYS, NOT INCLUDING ANALYTICAL X-RAY SYSTEMS****R12-1-1102. Definitions**

“Access point” means any door or cover that is designed to be removed or opened for maintenance or service purposes, opened using tools, and used to provide access to the interior of a cabinet x-ray unit.

“Annual refresher safety training” means a review provided by the registrant for its employees on radiation safety aspects of industrial radiography. The review shall include, as applicable, the results of internal inspections, new procedures or equipment, new or revised statutes or rules, accidents, or errors that have occurred, and provide opportunities for employees to ask safety questions.

“Aperture” means any opening in the outside surface of a cabinet x-ray unit, other than a port, which remains open during generation of x-radiation.

“Door” means any barrier that is designed to be movable or opened for routine operation purposes, rather than opened using tools, and used to provide access to the interior of the cabinet x-ray unit.

“Ground fault” means an accidental electrical grounding of an electrical conductor.

“Hands-on experience” means the accumulation of knowledge or skill in any area relevant to radiography.

“Open beam industrial radiography” means activities that entail the use of powerful x-ray radiation sources, often in open industrial premises or outdoors for non-destructive testing which includes inspecting materials for hidden flaws by using x-ray devices to penetrate various materials.

“Port” means any opening in the outside surface of a cabinet x-ray unit that is designed to remain open, during generation of x-rays, for conveying material that is being irradiated into and out of the cabinet, or for partial insertion of an object for irradiation if the dimensions of the object do not permit complete insertion into the cabinet x-ray unit.

“Practical examination” means a demonstration, through practical application of safety rules and principles of industrial radiography, which includes use of all radiography equipment and tests knowledge of radiography procedures.



“Radiographic operations” means all activities associated with use of a radiographic x-ray system. This includes performing surveys to confirm the adequacy of boundaries, setting up equipment, and conducting any activity inside restricted area boundaries.

“Security screening” means the use by law enforcement or their representatives of a portable or robotic attachment of an open-beam x-ray unit designed to image the contents of packs, bags, packages, and other items that may conceal suspicious or hazardous material.

**R12-1-1104. Registration Requirements**

- A. The Agency shall review an application for registration of a radiation machine for use in industrial radiography or security screening and approve the registration if an applicant meets all of the following requirements:
  - 1. The applicant satisfies the general requirements in Article 2 and any special requirements contained in this Article that apply to the use of the device.
  - 2. The applicant submits a program for training radiographer’s assistants that complies with R12-1-1146 for activities that qualify as open beam industrial radiography requiring a certified industrial radiographer, and
  - 3. The applicant submits procedures for verifying and documenting the certification status of each radiographer and for ensuring that the certification remains valid for activities that qualify as open beam industrial radiography requiring a certified industrial radiographer.
- B. An applicant shall ~~submit~~ maintain written operating and emergency procedures, as prescribed in R12-1-1128.
- C. An applicant shall ~~submit~~ maintain a description of a program for review of job performance of each radiographer and radiographer’s assistant at intervals that do not exceed six months, as prescribed in R12-1-1146(E).
- D. An applicant shall ~~submit~~ maintain a description of the applicant’s overall organizational structure as it applies to radiation safety responsibilities in industrial radiography, including specified delegation of authority and responsibility.
- E. An applicant shall ~~submit~~ maintain and list the qualifications of each individual designated as an RSO under R12-1-1120 and indicate which designee is responsible for ensuring that the registrant’s radiation safety program is implemented.
- F. If an applicant intends to perform “in-house” calibrations of survey instruments, the applicant shall describe each calibration method to be used, the relevant experience of each person who will perform a calibration, and procedures to ensure that all calibrations are performed according to the procedures prescribed in R12-1-1108 and the registrant shall maintain records documenting the requirements in this section for three years from the date the requirement is met and make the records available for Agency inspection.
- G. An applicant shall identify and describe the location of all field stations and permanent radiographic installations and the registrant shall maintain records documenting the requirements in this subsection for three years from the date the requirement is met and make the records available for Agency inspection.
- H. An applicant shall identify each location where records required by this Chapter will be maintained if the records are to be maintained at an address other than the physical address listed on the registration application.

**R12-1-1106. Equipment Performance**

A registrant shall ensure that each x-ray machine has a lock or other security system designed to prevent unauthorized use or accidental production of radiation and is secured against unauthorized use at all times, except when under the direct surveillance of a radiographer or radiographer’s assistant or other authorized user as determined by the registrant and who has all applicable training records on file with the registrant for Agency review during inspections.

**R12-1-1108. Radiation Survey Instruments**

- A. A registrant shall maintain at least two calibrated and operable radiation survey instruments at each location where sources of radiation are present to make radiation surveys required by this Article and Article 4 of this Chapter. Instrumentation required by this Section shall be capable of measuring a range from 0.02 millisieverts (2 millirems) per hour through 0.01 sievert (1 rem) per hour.
- B. A registrant shall ensure that each radiation survey instrument required under subsection (A) is calibrated:
  - 1. At intervals that do not exceed ~~six months~~ annually, and after instrument servicing, except for battery changes;
  - 2. For linear scale instruments, at two points located approximately one-third and two-thirds of full-scale on each scale; for logarithmic scale instruments, at mid-range of each decade, and at two points of at least one decade; and for digital instruments, at 3 points between 0.02 and 10 millisieverts (2 and 1000 millirems) per hour; and
  - 3. So that an accuracy within plus or minus 20% of the calibration source can be demonstrated at each point checked.
- C. A registrant shall make a record each time a radiation survey instrument is calibrated, and maintain each record for three years after it is made.

**R12-1-1110. Quarterly Inventory**

- A. A registrant shall conduct a quarterly physical inventory to account for all x-ray machines received and possessed under the registration.
- B. A registrant shall maintain a record of the quarterly inventory required under subsection (A) for three years after it is made.



- C. The record required by subsection (B) shall include the date of the inventory, name of the individual who conducted the inventory, location of each x-ray machine, and manufacturer, and model, ~~and serial number~~ of each x-ray machine.

**R12-1-1112. Utilization Logs**

- A. A registrant shall maintain for each x-ray machine a utilization log that provides all of the following information:
1. A description, including the make, and model, ~~and serial number~~ of each x-ray machine;
  2. The identity and signature of the operator radiographer using the machine; and
  3. The plant or site where the machine is used and dates of use, including each date when the machine is removed from or returned to storage.
- B. A registrant shall retain a log required by subsection (A) for three years after the log is made. Incident logs by law enforcement, security, or their representatives will be considered to meet the intent of this rule if presented at the time of inspection.

**R12-1-1116. Surveillance**

During each open-beam radiographic operation a radiographer, or the radiographer's assistant as permitted by R12-1-1118, shall maintain continuous direct visual surveillance of the operation to protect against unauthorized entry into a high radiation area, except at permanent radiographic installations where all entrances are locked and the registrant is in compliance with R12-1-1136.

**R12-1-1118. Industrial Radiographic Operations**

- A. If industrial radiography is performed at a location other than a permanent radiographic installation, a registrant shall ensure that the radiographer is accompanied by at least one other radiographer or radiographer's assistant, qualified under R12-1-1146 or operators as designated by the registrant for security screening operations. The additional radiographer or radiographer's assistant shall observe the operations and be capable of providing immediate assistance to prevent unauthorized entry. The registrant shall not allow industrial radiography if only one qualified individual is present.
- B. A registrant shall ensure that each industrial radiographic operation is conducted at a location of use authorized on the registration or maintain records of all temporary sites as a portion of the utilization log for transportable, mobile, and portable devices of a permanent radiographic installation, unless another permanent location is specifically authorized by the Agency.
- C. Portable security screening operations shall ensure that each area is protected from public access during the operation in accordance with the operating procedures written and maintained at the local law enforcement or security office designated on the registration.

**R12-1-1120. Radiation Safety Officer (RSO)**

- A. A registrant shall have a radiation safety officer (RSO) who is responsible for implementing procedures and regulatory requirements in the daily operation of the radiation safety program.
- B. A registrant shall ensure that the RSO for operations that include open-beam radiography has satisfied the following minimum requirements:
1. The training and testing requirements in R12-1-1146;
  2. Two thousand hours of hands-on experience as a qualified radiographer for an industrial radiographic operation; and
  3. Formal training in the establishment and maintenance of a radiation safety program.
- C. A registrant may use an individual in the position of RSO for operations that include open-beam radiography who does not have the training and experience required in subsection (B), if the registrant provides the Agency with a description of the individual's training and experience in the field of ionizing radiation and training with respect to the establishment and maintenance of a radiation safety protection program.
- D. The specific duties and authorities of the RSO include, but are not limited to:
1. Establishing and overseeing operating, emergency, and ALARA procedures as required in Article 4 of this Chapter, and reviewing the procedures every year to ensure that they conform to current Agency rules and registration conditions;
  2. Overseeing and approving all phases of the training program for radiographic personnel, ensuring that appropriate and effective radiation protection practices are taught;
  3. Overseeing radiation surveys and associated documentation to ensure that the surveys are performed in accordance with the rules and taking corrective measures if levels of radiation exceed established action limits;
  4. Overseeing the personnel monitoring program to ensure that monitoring devices are calibrated and used properly by occupationally exposed personnel and ensuring that records are kept of the monitoring results and timely notifications are made as required in R12-1-444; and
  5. Overseeing operations to ensure that they are conducted safely and instituting corrective actions, which may include ceasing operations if necessary.



**R12-1-1122. Form of Records Repealed**

~~A registrant shall maintain records in accordance with R12-1-405.~~

**R12-1-1126. Posting**

A registrant shall post any area in which open-beam industrial radiography is being performed as required by R12-1-429. Exceptions listed in R12-1-430 do not apply to industrial radiographic operations.

**R12-1-1128. Operating and Emergency Procedures**

- A. A registrant shall have operating and emergency procedures that include, at minimum, instructions in the following, as applicable:
  - 1. Use of radiation machines, so that persons are not exposed to radiation that exceeds the limits in Article 4 of this Chapter;
  - 2. Methods and occasions for conducting radiation surveys;
  - 3. Methods for controlling access to security screening and open beam radiographic areas;
  - 4. Methods and occasions for locking and securing a radiation machine;
  - 5. Personnel monitoring and associated equipment;
  - 6. Inspection, maintenance, and operability checks of a radiation machine and survey instruments;
  - 7. Actions to be taken immediately by radiography personnel if a pocket dosimeter is found to be off-scale or an alarm rate meter sounds an alarm;
  - 8. Procedures for identifying and reporting defects and noncompliance, as required by R12-1-448;
  - 9. The procedure for notifying the RSO and the Agency in the event of an accident;
  - 10. Minimizing exposure of persons in the event of an accident, and
  - 11. Maintenance of records.
- B. The registrant shall maintain copies of current operating and emergency procedures until the Agency terminates the registration. Superseded procedures shall be maintained for three years after a change is made. Additionally, records shall be maintained in accordance with R12-1-1138.

**R12-1-1130. Personnel Monitoring**

- A. An individual shall not act as a radiographer or a radiographer's assistant for open-beam operations unless, at all times during radiographic operations, the individual wears, on the trunk of the body, a direct reading dosimeter, an operating alarm rate meter, and either a film badge, a TLD, or an optically stimulated luminescence (OSL) dosimeter. At permanent radiography installations where other required alarm or warning devices are in routine use, an alarm rate meter is not required.
  - 1. A registrant shall provide pocket dosimeters for open-beam operations that have a range from zero to 2 millisieverts (200 millirems) and ensure that the dosimeters are recharged at the start of each shift. Electronic personnel dosimeters are permitted in place of ion-chamber pocket dosimeters.
  - 2. The registrant shall assign a film badge, TLD, or OSL dosimeter to one individual each operator and auxiliary personnel that cannot be removed from the area for open beam or security screening operations, who shall wear the assigned equipment.
  - 3. The registrant shall replace film badges at least monthly and replace TLDs or OSL dosimeters at least quarterly.
  - 4. After replacement, the registrant shall ensure that each film badge or TLD is processed as soon as possible.
- B. A radiographer or radiographer's assistant for open-beam operations shall record exposures noted from direct reading dosimeters, such as pocket dosimeters or electronic personnel dosimeters, at the beginning and end of each shift.
- C. A registrant shall check each pocket dosimeter or electronic personnel dosimeter at least yearly for correct response to radiation, and discontinue use of a dosimeter if it is not accurate within plus or minus 20% of the true radiation exposure.
- D. If an individual's pocket dosimeter has an off-scale reading, or the electronic personnel dosimeter reads greater than 2 millisieverts (200 millirems), and radiation exposure cannot be ruled out as the cause, a registrant shall send the individual's film badge, TLD, or OSL dosimeter for processing within 24 hours. The registrant shall not allow the individual to work with a radiation machine until the individual's radiation exposure is determined. Using the information from the badge or dosimeter, the RSO or the RSO's designee shall calculate the affected individual's cumulative radiation exposure, as prescribed in Article 4 of this Chapter and include the results in records maintained in accordance with subsection (G).
- E. If an individual's monitoring device is lost or damaged, the individual shall cease work immediately until the registrant provides a replacement film badge, TLD, or OSL dosimeter and the RSO or the RSO's designee calculates the exposure for the time period from issuance to discovery of a lost or damaged film badge, TLD, or OSL dosimeter. The registrant shall include the calculated exposure and the time period for which the film badge, TLD, or OSL dosimeter was lost or damaged in the records maintained in accordance with subsection (G).
- F. For each alarm rate meter a registrant shall ensure that:
  - 1. At the start of a shift each individual with an alarm rate meter checks that the alarm functions (sounds) before using the device;



2. Each device is set to give an alarm signal at a preset dose rate of 5 mSv/hr (500 mrem/hr) with an accuracy of plus or minus 20% of the true radiation dose rate;
  3. A special means is necessary to change the preset alarm function on the device; and
  4. Each device is calibrated at periods that do not to exceed 12 months for correct response to radiation
- G.** Each registrant shall maintain the following personnel monitoring records:
1. Each dosimeter reading and the yearly operability check required by subsections (B) and (C) for three years after each record is made;
  2. A record of each alarm rate meter calibration for three years after the record is made;
  3. Any report received from the film badge, TLD, or OSL processor. The registrant shall maintain these records until the Agency terminates the registration; and
  4. Any estimation of an exposure evidenced by an off-scale personnel direct-reading dosimeter or a lost or damaged film badge, TLD, or OSL dosimeter. The records shall be maintained until the Agency terminates the registration.

#### **R12-1-1132. Supervision of a Radiographer's Assistant**

If a radiographer's assistant uses a radiation machine or conducts a radiation survey ~~required by R12-1-1134(B)~~, the registrant shall ensure that the assistant is under the personal supervision of a radiographer. For purposes of this Section "personal supervision" means:

1. The radiographer is physically present at the site where the radiation machine is being used;
2. The radiographer is available to give immediate assistance if required; and
3. The radiographer is able to observe directly the assistant's performance.

#### **R12-1-1134. Radiation Surveys**

- A.** A registrant shall conduct surveys with a calibrated and operable radiation survey instrument that meets the requirements of R12-1-1108 ~~for all open-beam operations.~~
- B.** ~~A registrant shall conduct a survey of a radiographic machine any time the machine is placed in storage to ensure that the machine will not expose personnel to radiation.~~
- C.** ~~A registrant shall maintain a record of each exposure survey conducted before a machine is placed in storage under subsection (B), if that survey is the last one performed during the workday. Each record shall be maintained for three years after it is made.~~

#### **R12-1-1136. Permanent Radiographic Installations Repealed**

- A.** ~~If a registrant maintains a permanent radiographic installation that does not fall within the definition of "enclosed radiography" in R12-1-102, the registrant shall ensure that each entrance used for personnel access to the high radiation area has either:~~
1. ~~An entrance control device of the type described in R12-1-420(A)(1), which reduces the radiation level upon entry into the area, or~~
  2. ~~Both conspicuous visible and audible alarm signals to warn of the presence of radiation. The registrant shall ensure that the visible signal is actuated by radiation if the x ray tube is energized and the audible signal is actuated if a person attempts to enter the installation while the x ray tube is energized.~~
- B.** ~~A registrant shall test the alarm system for proper operation with a radiation source each day before the installation is used for radiographic operations. The test shall include a check of both the visible and audible signals. The registrant shall test each device referenced in subsection (A)(1) monthly. If an entrance control device or alarm signal is operating improperly, the registrant shall immediately label the device or signal as "defective" and repair the device or signal within seven calendar days. The registrant may continue to use the facility during this seven-day period, if the registrant implements continuous surveillance requirements of R12-1-1116 and uses an alarm rate meter.~~
- C.** ~~A registrant shall maintain each record of alarm system and entrance control device tests for three years after the record is made.~~

#### **R12-1-1140. Enclosed Radiography**

- A.** The Agency has determined that any certified or certifiable cabinet x-ray system, as defined in Article 1, is exempt from the requirements of Article 11, provided that both of the following conditions are met:
1. The registrant makes, or causes to be made, an evaluation of each certified and certifiable cabinet x-ray system, at intervals that do not exceed 12 months, to determine whether the system conforms to the standards for certified and certifiable cabinet x-ray systems defined in Article 1. Records of each evaluation shall be maintained for three years from the date the record is created; and
  2. The registrant performs a physical radiation survey with a survey instrument calibrated within the preceding 12 months and designed for the energy range and levels of radiation that will be assessed.
- B.** A registrant with a cabinet x-ray system that is not exempt under subsection (A) shall comply with the recordkeeping requirements of this Article and the following special requirements. The registrant shall:
1. Ensure that radiation levels measured at 5 centimeters (2 inches) from any accessible exterior surface of the enclosure do not exceed 50 microsievert (0.5 milliroentgen) in one hour for any combination of technical factors (i.e., mA, kVp);



- 2. Ensure that access to the interior of the enclosure is possible only through interlocked doors or panels that prevent production of radiation unless all interlocked doors or panels are securely closed. The registrant shall ensure that opening a door or panel results in immediate termination of radiation production and subsequent reactivation of the x-ray tube is only possible at the control panel;
  - 3. Provide visible warning signals, activated only during production of radiation, at the control panel and at each access point to the interior of the enclosure;
  - 4. Before using an x-ray system make, or cause to be made, an initial evaluation of the x-ray system to determine compliance with this Article, and subsequently evaluate the x-ray system at intervals that do not exceed three months. The registrant shall maintain a record of each evaluation for two years, and
  - 5. Using instrumentation that complies with R12-1-1108, perform a physical radiation survey to satisfy the requirements of subsection (B)(4).
- C. A registrant with a shielded room x-ray systems shall comply with the recordkeeping requirements of this Article and the following special requirements. The registrant shall:
- 1. Shield each x-ray room so that every location on the exterior meets the requirements for an “unrestricted area” as specified in R12-1-416;
  - 2. Provide access to the interior of a shielded x-ray room only through doors or panels that are interlocked. The registrant shall ensure that radiation production is possible only when all interlocked doors and panels are securely closed, opening of any interlocked door or panel results in immediate termination of radiation production; and subsequent reactivation of the x-ray tube is only possible at the control panel;
  - 3. Provide each access point with two interlocks, each on a separate circuit, so that failure of one interlock will not affect the performance of the other interlock;
  - 4. Provide visible warning signals, activated only during production of radiation at the control panel and each access point to the shielded room;
  - 5. Make, or cause to be made, an initial evaluation of each shielded room x-ray system to determine compliance with this Article, and subsequently evaluate the x-ray system at intervals that do not exceed three months. The registrant shall maintain a record of each evaluation for two years;
  - 6. Perform radiation surveys to determine exposure with an instrument that meets the requirements of R12-1-1108;
  - 7. Inspect electrical interlocks and warning devices for correct operation before ~~each use~~ each day, and maintain a record of each inspection for two years;
  - 8. Not permit an individual to operate an x-ray machine for shielded room radiography unless the individual has received a copy of, and instruction in, the operating procedures and demonstrated competence in the safe use of the equipment;
  - 9. Ensure that an individual does not occupy the interior of any shielded room x-ray system during production of radiation;
  - 10. Provide personnel monitoring devices that meet the requirements of R12-1-1130(A)(2) to each shielded room x-ray machine operator, and require that each operator use the devices;
  - 11. Maintain records of:
    - a. Quarterly inventories for mobile systems, as prescribed in R12-1-1110; and
    - b. Utilization logs for all systems, as prescribed in R12-1-1112; and
  - 12. Maintain records for three years from the date of the quarterly inventory or utilization log.
- D. A registrant shall connect an enclosed radiography machine to the electrical system in a manner that will prevent a ground fault from generating x-radiation.

**R12-1-1142. Baggage and Package Inspection Systems**

- A. For x-ray systems designed to screen carry-on baggage or packages ~~at airlines, railroads, bus terminals, package inspection facilities, near pedestrian traffic or with public access, or similar facilities,~~ a registrant shall ensure the x-ray system has an operator present at the control area in a position that permits surveillance of the ports and doors during generation of x-radiation to prevent exposure to passengers and other members of the public.
- B. For an exposure or preset succession of exposures of one-half second or greater duration, a registrant shall use a system that enables the operator to terminate the exposure or preset succession of exposures at any time.
- C. For an exposure or preset succession of exposures of less than one-half second duration, a registrant shall use a system that allows the operator to complete the exposure in progress, but prevent additional exposures.
- D. A registrant shall operate a baggage or package inspection system according to the manufacturer’s instructions.
- E. A registrant shall not disconnect or otherwise tamper with the safety systems of a baggage or package inspection system, except for maintenance purposes.
- F. In addition to the requirements in this Section, a registrant using a baggage or package inspection system shall meet the requirements in R12-1-1140(A), (B), and (D).

**R12-1-1146. Training**

- A. A registrant shall not allow an individual to act as an open-beam industrial radiographer until the individual has received training in the subjects in subsection (G), has participated in a minimum of two months of on-the-job training, and is



certified through a radiographer certification program by ~~a~~an independent certifying organization in accordance with the criteria specified in Appendix A.

1. A registrant shall provide the Agency with proof of an ~~individual's~~ individual's certification upon request.
  2. A registrant shall maintain proof of an individual's certification at the job site where the individual is performing open-beam field radiography.
  3. A registrant that employs a certified radiographer in Arizona shall ensure that:
    - a. The radiographer has obtained initial certification or recertification within the last five years; and
    - b. An uncertified radiographer works only as a radiographer's assistant until certified.
  4. A radiographer shall recertify every five years by:
    - a. Taking an approved radiography certification examination in accordance with this subsection; or
    - b. Providing written evidence that the radiographer is active in the practice of industrial radiography and has participated in continuing education during the previous five-year period.
  5. If an individual cannot provide the written evidence required in subsection (4)(b), the individual shall retake the certification examination.
  6. A radiographer shall provide the registrant with proof of certification in the form of a card issued by the certifying organization that contains:
    - a. A picture of the certified radiographer,
    - b. The radiographer's certification number,
    - c. The date the certification expires, and
    - d. The radiographer's signature.
- B.** A registrant shall not allow an individual to act as an open-beam industrial radiographer until the individual:
1. Receives copies of and instruction in the requirements of this Article, applicable Sections of Articles 4 and 10 and R12-1-107, the Agency registration or registrations under which the individual will perform industrial radiography, and the registrant's operating and emergency procedures;
  2. Demonstrates an understanding of the registrant's registration conditions if any and operating and emergency procedures by successful completion of a written or oral examination that covers the relevant material;
  3. Receives training in:
    - a. Use of the registrant's radiation machine,
    - b. Daily inspection of the radiation machine, and
    - c. Use of radiation survey instruments; and
  4. Demonstrates an understanding of the use of the radiation machines and survey instruments described in subsection (B)(3) by successful completion of a practical examination covering this material.
- C.** A registrant shall not allow an individual to act as a radiographer's assistant for open-beam industrial operations until the individual:
1. Receives copies of and instruction in the requirements of this Article, applicable Sections of Articles 4 and 10 and R12-1-107, the Agency registration conditions if any ~~or registrations~~ under which the radiographer will perform open-beam industrial radiography, and the registrant's operating and emergency procedures;
  2. Develops competence to use, under the personal supervision of the radiographer, the registrant's radiation machine and radiation survey instruments; and
  3. Demonstrates understanding of the instructions provided under subsection (C)(1) by successfully completing a written test on the subjects covered and demonstrates competence using the hardware described in subsection (C)(2) by successfully completing a practical examination.
- D.** A registrant shall provide refresher safety training for each radiographer and radiographer's assistant at intervals that do not exceed 12 months.
- E.** Except where an individual serves both as a radiographer and an RSO, the RSO or the RSO's designee shall design and implement an inspection program to examine the job performance of each radiographer and radiographer's assistant and ensure that the Agency's rules and registration requirements, and the registrant's operating and emergency procedures, are followed. The inspection program shall:
1. Include observation of the performance of each radiographer and radiographer's assistant during an actual industrial radiographic operation, at intervals that do not exceed six months; and
  2. Provide that, if a radiographer or a radiographer's assistant has not participated in an industrial radiographic operation for more than six months since the last inspection, each radiographer shall demonstrate knowledge of the training requirements in subsection (B)(3) and each radiographer's assistant shall demonstrate knowledge of the training requirements of subsection (C)(2) by a practical examination before these workers can participate in a radiographic operation.
- F.** A registrant shall maintain records of the training required in this Section, including certification documents, written and practical examinations, refresher safety training documents, and inspection documents, in accordance with subsection (I).
- G.** A registrant shall include the following subjects in the training required under subsection (A):
1. Fundamentals of radiation safety, including:



- a. Characteristics of x-ray radiation;
- b. Units of radiation dose and quantity of radioactivity;
- c. Hazards of exposure to radiation;
- d. Levels of radiation from x-ray machines; and
- e. Methods of controlling radiation dose (time, distance, and shielding);
- 2. Radiation detection instruments, including:
  - a. Use, operation, calibration, and limitations of radiation survey instruments;
  - b. Survey techniques; and
  - c. Use of personnel monitoring equipment;
- 3. Equipment topics, including:
  - a. Operation and control of radiation machines; and
  - b. Inspection and maintenance of each radiation machine and survey instrument;
- 4. The requirements of pertinent Agency rules; and
- 5. Case histories of accidents in radiography.
- H.** A registrant shall maintain records of radiographer certification in accordance with subsection (I)(1) and provide proof of certification as required in subsection (A)(1).
- I.** A registrant shall maintain the following records for three years after each record is made:
  - 1. Records of training for each radiographer and each radiographer’s assistant. For radiographers, the records shall include radiographer certification documents and verification of certification status. All records shall include copies of written tests, dates of oral and practical examinations, and names of individuals who conducted and took the oral and practical examinations; and
  - 2. Records of annual refresher safety training and semi-annual inspections of job performance for each radiographer and each radiographer’s assistant. The records for the annual refresher safety training shall list topics discussed during training, the date of training, and names of each instructor and attendee. For inspections of job performance, the records shall include a list of items checked during the inspection and any non-compliance observed by the RSO.

**Appendix A. Standards for Organizations that Provide Radiography Certification**

Note: For purposes of this Article an “independent certifying organization” means an organization that meets all of the criteria in this Appendix.

**I. Requirements for an Organization that Provides Radiographer Certification**

To qualify to provide radiography certification, an organization shall:

- A.** Be a society or association, with members who participate in, or have an interest in, the field of industrial radiography;
- B.** Not restrict membership because of race, color, religion, sex, age, national origin, or disability;
- C.** Have a certification program that is open to nonmembers, as well as members;
- D.** Be an incorporated, nationally recognized organization that is involved in setting national standards of practice within its fields of expertise;
- E.** Have a staff comparable to other nationally recognized organizations, a viable system for financing its operations, and a policy-and decision-making review board;
- F.** Have a set of written, organizational by-laws and policies that address conflicts of interest and provide a system for monitoring and enforcing the by-laws and policies;
- G.** Have a committee, with members who can carry out their responsibilities impartially, review and approve the certification guidelines and procedures, and advise the organization’s staff in implementing the certification program;
- H.** Have a committee, with members who can carry out their responsibilities impartially, review complaints against certified individuals, and determine sanctions;
- I.** Have written procedures that describe all aspects of the organization’s certification program;
- J.** Maintain records of the current status of each individual’s certification and administration of the certification program;
- K.** Have procedures to ensure that certified individuals are provided due process with respect to administration of the certification program, including a process for becoming certified and a process for imposing sanctions against certified individuals;
- L.** Have procedures for proctoring examinations and qualifying proctors. The organization, through these procedures, shall ensure that an individual who proctors an examination is not employed by the same company or corporation (or a wholly-owned subsidiary of the company or corporation) that employs an examinee;
- M.** Exchange information about certified individuals with the Agency, other independent certifying organizations, the NRC, or Agreement States and allow periodic review of its certification program and related records; and
- N.** Provide a description to the Agency of its procedures for choosing examination sites and providing a favorable examination environment.

**II. Requirements for a Certification Program**

An independent certifying organization shall ensure that its certification program:



- A. Requires an applicant for certification to:
  - 1. Obtain training in the subjects listed in R12-1-1146(G), and
  - 2. Satisfactorily complete a written examination that covers these subjects;
- B. Require an applicant for certification to provide documentation demonstrating that the applicant has:
  - 1. Received training in the subjects listed in R12-1-1146(G);
  - 2. Satisfactorily completed the on-the-job training required in R12-1-1146(A); and
  - 3. Received verification from a registrant that the applicant has demonstrated the capability of independently working as a radiographer;
- C. Provides procedures that protect examination questions from disclosure;
- D. Provides procedures for denying certification to an applicant and revoking, suspending, and reinstating a certificate;
- E. Provides a certification period that is not less than three years or more than five years, procedures for renewing certifications and, if the procedures allow renewals without examination, a system for assessing evidence of recent full-time employment and annual refresher training; and
- F. Provides a timely response to inquiries, by telephone or letter, from members of the public, about an individual's certification status.

### III. Requirements for a Written Examination

An independent certifying organization shall ensure that its examination:

- A. Is designed to test an individual's knowledge and understanding of the subjects listed in R12-1-1146(G) ~~or equivalent NRC or Agreement State requirements~~;
- B. Is written in a multiple-choice format; and
- C. Has psychometrically valid questions drawn from a question bank and based on the material in R12-1-1146(G).

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## NOTICES OF RULEMAKING DOCKET OPENING

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This section of the *Arizona Administrative Register* contains Notices of Rulemaking Docket Opening.

A docket opening is the first part of the administrative rulemaking process. It is an “announcement” that the agency intends to work on its rules.

When an agency opens a rulemaking docket to consider rulemaking, the Administrative Procedure Act (APA) requires the publication of the Notice of Rulemaking Docket Opening.

Under the APA effective January 1, 1995, agencies must submit a Notice of Rulemaking Docket Opening before beginning the formal rulemaking process. Many times an agency may file the Notice of Rulemaking Docket Opening with the Notice of Proposed Rulemaking.

The Office of the Secretary of State is the filing office and publisher of these notices. Questions about the interpretation of this information should be directed to the agency contact person listed in item #4 of this notice.

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### NOTICE OF RULEMAKING DOCKET OPENING BOARD OF ACCOUNTANCY

[R16-259]

- 1. Title and its heading:** 4, Professions and Occupations  
**Chapter and its heading:** 1, Board of Accountancy  
**Article and its heading:** 4, Regulation  
**Section numbers:** R4-1-455.03 (*Additional sections may be added, deleted, or modified as necessary*)
- 2. The subject matter of the proposed rule:**  
Amends R4-1-455.03(D)(1), which permits a certified public accountant or public accountant who practices public accounting to do so only in a firm, because it is overbroad and inconsistent with A.R.S. § 32-747.01.  
An exemption from E.O. 2016-03 was provided by Brian Townsend, Policy Advisor in the Governor’s Office, in an e-mail dated November 1, 2016.
- 3. A citation to all published notices relating to the proceeding:**  
Notice of Proposed Rulemaking: 22 A.A.R. 3565, December 23, 2016 (*in this issue*).
- 4. The name and address of agency personnel with whom persons may communicate regarding the rule:**  
Name: Monica L. Petersen, Executive Director  
Address: Board of Accountancy  
100 N. 15th Ave., Suite 165  
Phoenix, AZ 85007  
Telephone: (602) 364-0870  
Fax: (602) 364-0903  
E-mail: mpetersen@azaccountancy.gov  
Web site: www.azaccountancy.gov
- 5. The time during which the agency will accept written comments and the time and place where oral comments may be made:**  
To be announced in the Notice of Proposed Rulemaking
- 6. A timetable for agency decisions or other action on the proceeding, if known:**  
To be announced in the Notice of Proposed Rulemaking



**NOTICE OF RULEMAKING DOCKET OPENING**  
**DEPARTMENT OF HEALTH SERVICES**  
**FOOD, RECREATIONAL, AND INSTITUTIONAL SANITATION**

[R16-260]

- 1. Title and its heading:** 9, Health Services

**Chapter and its heading:** 8, Department of Health Services - Food, Recreational, and Institutional Sanitation

**Article and its heading:** 1, Food and Drink

**Section numbers:** R9-8-102 (*The Department may add, delete, or modify other Sections, as necessary.*)
- 2. The subject matter of the proposed rules:**  
A.A.C. R9-8-102, Applicability, includes a list of facilities and food sources that are exempt from complying with the requirements for food establishments in 9 A.A.C. 8, Article 1. During the last legislation session, two laws were passed providing an exception from the food establishment permitting rules. Laws 2016, Ch. 54 eliminated the requirement that food or drink served at a noncommercial event, such as a potluck, had to take place at a workplace for the food and drink to be exempt from food establishment permit requirements. Laws 2016, Ch. 243 provides an exemption from the food establishment permit requirements for fruits and vegetables grown in a public school garden. The Department plans to amend the rules to comply with statutory changes including the changes made by Laws 2016, Ch. 54 and Laws 2016, Ch. 243. The progress of the rulemaking may be followed on the Department's webpage at: <http://azdhs.gov/director/administrative-counsel-rules/rules>. The proposed changes will conform to rulemaking format and style requirements of the Governor's Regulatory Review Council and the Office of the Secretary of State. The Department may add, delete, or modify other Sections, as necessary.
- 3. A citation to all published notices relating to the proceeding:**  
None
- 4. The name and address of agency personnel with whom persons may communicate regarding the rules:**

Name: Blanca Caballero, Food Safety and Environmental Services Manager

Address: Arizona Department of Health Services  
Division of Public Health – Preparedness Services  
Bureau of Epidemiology and Disease Control  
150 N. 18th Ave., Suite 140  
Phoenix, AZ 85007

Telephone: (602) 364-3851

Fax: (602) 364-3146

E-mail: Blanca.Caballero@azdhs.gov

or

Name: Robert Lane, Manager

Address: Arizona Department of Health Services  
Office of Administrative Counsel and Rules  
1740 W. Adams St., Suite 203  
Phoenix, AZ 85007

Telephone: (602) 542-1020

Fax: (602) 364-1150

E-mail: Robert.Lane@azdhs.gov
- 5. The time during which the agency will accept written comments and the time and place where oral comments may be made:**  
Written comments will be accepted at the addresses listed in item #4 until the close of record, which has not yet been determined. No oral proceedings have been scheduled at this time.
- 6. A timetable for agency decisions or other action on the proceeding, if known:**  
To be announced in the Notice of Proposed Rulemaking



NOTICE OF RULEMAKING DOCKET OPENING

DEPARTMENT OF HEALTH SERVICES

[R16-261]

- 1. **Title and its heading:** 9, Health Services
- Chapter and its heading:** 9, Department of Health Services
- Article and its heading:** To be determined
- Section numbers:** To be determined

2. **The subject matter of the proposed rules:**  
 Laws 2016, Ch. 292 § 3, adds A.R.S. §§ 36-851.01, 36-851.02, and 36-851.03. A.R.S. § 36-851.01 requires that a person acting as a procurement organization in Arizona be licensed by the Department, except as provided in A.R.S. § 36-851.01(F). A.R.S. § 36-851.02 specifies requirements for accredited procurement organizations, and A.R.S. § 36-851.03 specifies requirements for procurement organizations that are not accredited. Laws 2016, Ch. 292, § 4, requires the Department to “adopt rules relating to the licensure of procurement organizations and enforcement of those provisions.” The Department intends to adopt rules to comply with the requirements in Laws 2016, Ch. 292. The progress of the rulemaking may be followed on the Department’s webpage at: <http://azdhs.gov/director/administrative-counsel-rules/rules/>. The proposed changes will conform to rulemaking format and style requirements of the Governor’s Regulatory Review Council and the Office of the Secretary of State.

3. **A citation to all published notices relating to the proceeding:**  
 None

4. **The name and address of agency personnel with whom persons may communicate regarding the rules:**

Name: Thomas Salow, Deputy Assistant Director  
 Address: Arizona Department of Health Services  
 Division of Public Health - Licensing Services  
 150 N. 18th Ave., Suite 540  
 Phoenix, AZ 85007  
 Telephone: (602) 364-1935  
 Fax: (602) 364-4808  
 E-mail: Thomas.Salow@azdhs.gov  
 or  
 Name: Robert Lane, Manager  
 Address: Arizona Department of Health Services  
 Office of Administrative Counsel and Rules  
 1740 W. Adams St., Suite 203  
 Phoenix, AZ 85007  
 Telephone: (602) 542-1020  
 Fax: (602) 364-1150  
 E-mail: Robert.Lane@azdhs.gov

5. **The time during which the agency will accept written comments and the time and place where oral comments may be made:**

Written comments will be accepted at the addresses listed in item #4 until the close of record, which has not yet been determined. No oral proceedings have been scheduled at this time.

6. **A timetable for agency decisions or other action on the proceeding, if known:**

To be announced in the Notice of Proposed Rulemaking



**NOTICE OF RULEMAKING DOCKET OPENING**  
**RADIATION REGULATORY AGENCY**

[R16-262]

- 1. Title and its heading:** 12, Natural Resources
- Chapter and its heading:** 1, Radiation Regulatory Agency
- Article and its heading:** 1, General Provisions  
 2, Registration, Installation, and Service of Ionizing Radiation-Producing Machines; and Certification of Mammography Facilities  
 8, Radiation Safety Requirements for Analytical X-Ray Operations  
 11, Industrial Uses of X-Rays, Not Including Analytical X-Ray Systems
- Section numbers:** R12-1-102, R12-1-201, R12-1-202, R12-1-203, R12-1-204, R12-1-206, R12-1-207, R12-1-208, R12-1-209, Appendix A, R12-1-802, R12-1-804, R12-1-805, R12-1-807, R12-1-808, R12-1-809, R12-1-1102, R12-1-1104, R12-1-1106, R12-1-1108, R12-1-1110, R12-1-1112, R12-1-1116, R12-1-1118, R12-1-1120, R12-1-1122, R12-1-1126, R12-1-1128, R12-1-1130, R12-1-1132, R12-1-1134, R12-1-1136, R12-1-1140, R12-1-1142, R12-1-1146, Appendix A  
*(Sections may be added, deleted, or modified as necessary.)*
- 2. Subject matter of the proposed rules:**  
 The area of change included in this rulemaking contains requirement updates to account for new technology, terminology, and public safety concerns in emergent techniques. It also includes radiation posting requirement updates and clarification of existing rules governing the use of ionizing and nonionizing use of radiation from electronic equipment.
- Agency docket number:**  
 #RMP0079
- 3. A citation to all published notices relating to the proceedings:**  
 Notice of Proposed Rulemaking: 22 A.A.R. 3567, December 23, 2016 *(in this issue)*.
- 4. Name and address of Agency personnel with whom persons may communicate regarding the rules:**  
 Name: Colby A. McCormick  
 Address: Radiation Regulatory Agency  
 4814 S. 40th St.  
 Phoenix, AZ 85040  
 Telephone: (602) 826-3229  
 Fax: (602) 437-0705  
 E-mail: cmccormick@azrra.gov
- 5. The time during which the agency will accept written comments and the time and place where oral comment may be made:**  
 Written comment and oral comments will be accepted 8:00 a.m. to 5:00 p.m., Monday through Friday at the Arizona Radiation Regulatory Agency, 4814 S. 40th St., Phoenix, AZ 85040.
- 6. A timetable for agency decision or other action in the proceeding:**  
 A timetable is not available at this time.



GOVERNOR EXECUTIVE ORDERS

The Administrative Procedure Act (APA) requires the full-text publication of Governor Executive Orders.

With the exception of egregious errors, content (including spelling, grammar, and punctuation) of these orders has been reproduced as submitted.

In addition, the Register shall include each statement filed by the Governor in granting a commutation, pardon or reprieve, or stay or suspension of execution where a sentence of death is imposed.

EXECUTIVE ORDER 2016-03

Internal Review of Administrative Rules; Moratorium to Promote Job Creation and Customer-Service-Oriented Agencies

Editor's Note: This Executive Order is being reproduced in each issue of the Administrative Register until its expiration on December 31, 2016, as a notice to the public regarding state agencies' rulemaking activities.

[M16-29]

WHEREAS, Arizona is poised to lead the nation in job growth;

WHEREAS, burdensome regulations inhibit job growth and economic development;

WHEREAS, small businesses and startups are especially hurt by regulations;

WHEREAS, each agency of the State of Arizona should promote customer-service-oriented principles for the people that it serves;

WHEREAS, each State agency should undertake a critical and comprehensive review of its administrative rules and take action to reduce the regulatory burden, administrative delay, and legal uncertainty associated with government regulation;

WHEREAS, overly burdensome, antiquated, contradictory, redundant, and nonessential regulations should be repealed;

WHEREAS, Article 5, Section 4 of the Arizona Constitution and Title 41, Chapter 1, Article 1 of the Arizona Revised Statutes vests the executive power of the State of Arizona in the Governor;

NOW, THEREFORE, I, Douglas A. Ducey, by virtue of the authority vested in me by the Constitution and laws of the State of Arizona hereby declare the following:

- 1. A State agency subject to this Order, shall not conduct any rulemaking except as permitted by this Order.
2. A State agency subject to this Order, shall not conduct any rulemaking, whether informal or formal, without the prior written approval of the Office of the Governor. In seeking approval, a State agency shall address one or more of the following as justification for the rulemaking:
a. To fulfill an objective related to job creation, economic development, or economic expansion in this State.
b. To reduce or ameliorate a regulatory burden while achieving the same regulatory objective.
c. To prevent a significant threat to the public health, peace, or safety.
d. To avoid violating a court order or federal law that would result in sanctions by a court or the federal government against an agency for failure to conduct the rulemaking action.
e. To comply with a federal statutory or regulatory requirement if such compliance is related to a condition for the receipt of federal funds or participation in any federal program.
f. To comply with a state statutory requirement.
g. To fulfill an obligation related to fees or any other action necessary to implement the State budget that is certified by the Governor's Office of Strategic Planning and Budgeting.
h. To promulgate a rule or other item that is exempt from Title 41, Chapter 6, Arizona Revised Statutes, pursuant to section 41-1005, Arizona Revised Statutes.
i. To address matters pertaining to the control, mitigation, or eradication of waste, fraud, or abuse within an agency or wasteful, fraudulent, or abusive activities perpetrated against an agency.
j. To eliminates rules that are antiquated, redundant or otherwise no longer necessary for the operation of state government.
3. For the purposes of this Order, the term "State agencies," includes without limitation, all executive departments, agencies, offices, and all state boards and commissions, except for: (a) any State agency that is headed by a single elected State official, (b) the Corporation Commission and (c) any board or commission established by ballot measure during or after the November 1998 general election. Those State agencies, boards and commissions excluded



from this Order are strongly encouraged to voluntarily comply with this Order in the context of their own rulemaking processes.

4. This Order does not confer any legal rights upon any persons and shall not be used as a basis for legal challenges to rules, approvals, permits, licenses or other actions or to any inaction of a State agency. For the purposes of this Order, “person,” “rule,” and “rulemaking” have the same meanings prescribed in Arizona Revised Statutes Section 41-1001.
5. This Executive Order expires on December 31, 2016.

**IN WITNESS WHEREOF**, I have hereunto set my hand and caused to be affixed the Great Seal of the State of Arizona.

**Douglas A. Ducey**  
**GOVERNOR**

**DONE** at the Capitol in Phoenix on this Eighth day of February in the Year Two Thousand and Fifteen and of the Independence of the United States of America the Two Hundred and Thirty-Fourth.

**ATTEST:**

**Michele Reagan**  
**Secretary of State**



**COUNTY NOTICES ACCORDING TO A.R.S. § 49-112**

This section of the *Arizona Administrative Register* contains County Notices (according to A.R.S. § 49-112). Each county writes rules and regulations in its own unique style. Although these notices are published in the *Register*, they do not conform to the standards specified in

the *Arizona Rulemaking Manual*. With the exception of minor formatting changes, County Notices (including subsection labeling, spelling, grammar, and punctuation) are reproduced as submitted.

**NOTICE OF FINAL RULEMAKING  
MARICOPA COUNTY AIR POLLUTION CONTROL REGULATIONS  
REGULATION III – CONTROL OF AIR CONTAMINANTS  
RULE 336: SURFACE COATING OPERATIONS**

[M16-286]

**PREAMBLE**

- |   |  |
|---|--|
| <p><b>1. <u>Rule affected</u></b><br/>Rule 336: Surface Coating Operations</p> <p><b>2. <u>Statutory authority for the rulemaking:</u></b><br/>Authorizing statutes: A.R.S. §§ 49-474, 49-479, and 49-480<br/>Implementing statute: A.R.S. § 49-112</p> <p><b>3. <u>The effective date of the rule:</u></b><br/>Date of adoption: November 2, 2016</p> <p><b>4. <u>List of public notices addressing this rulemaking:</u></b><br/>Notice of Briefing to Maricopa County Manager: May 2015<br/>Notice of Stakeholder Workshops: June 29, 2015, September 3, 2015, December 17, 2015, and February 18, 2016<br/>Notice of Maricopa County Board of Health Meeting: April 25, 2016<br/>Notice of Proposed Rulemaking: 22 A.A.R. 1159, May 13, 2016</p> <p><b>5. <u>The name and address of department personnel with whom persons may communicate regarding the rulemaking:</u></b><br/>Name: Kathleen Sommer or Hether Krause<br/>Address: Planning and Analysis Division<br/>Maricopa County Air Quality Department<br/>1001 N. Central Ave., Suite 595<br/>Phoenix, AZ 85004<br/>Telephone: (602) 506-6010<br/>Fax: (602) 506-6179<br/>E-mail: aqplanning@mail.maricopa.gov</p> | <p><b><u>Rulemaking action</u></b><br/>Amend</p> |
|---|--|

**6. An explanation of the rule, including the department’s reasons for initiating the rulemaking:**

**Summary:**

Maricopa County Air Quality Department (department) amended Rule 336 (Surface Coating Operations) that regulates volatile organic compound (VOC) emissions from surface coating facilities that are not regulated by another source-specific Maricopa County rule. The Clean Air Act (CAA) requires that the U.S. Environmental Protection Agency (EPA) and the states control VOC emissions because VOCs react in the presence of sunlight to form ground-level ozone, a major component of “smog” which is hazardous to human health and the environment. Ozone is largely created by a photochemical reaction between nitrogen oxides (NO<sub>x</sub>) and VOCs in the presence of sunlight. NO<sub>x</sub> and VOCs called ozone precursors create ground-level ozone in urban areas because ozone precursors are emitted from vehicle exhausts, fuel combustion, and VOC coatings used for various surface coating operations such as those regulated in Rule 336. This is the first revision of Rule 336 since April, 7 1999.

The Phoenix area, determined by violations of the National Ambient Air Quality Standards (NAAQS), has been reclassified from “marginal” to “moderate” nonattainment for the 2008 eight-hour ozone NAAQS. The department updated Rule 336 to address the CAA requirements of the State Implementation Plan (SIP) in response to this higher nonattainment classification. The CAA section 172(c)(1) requires nonattainment areas, such as Phoenix, to use “reasonably available control measures” (RACT) including “reasonably available control technology” (RACT) to control VOC emissions. Section 182(b)(2)(A) of the Act provides that the EPA define RACT for VOCs in EPA Control Technique Guidelines (CTGs). The CTGs provide State and local air pollution control authorities information that assists in determining VOC-RACT for air quality rules. Rule 336 has been updated to these CTG-RACT requirements.

The EPA defines RACT as “the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility.” To attain the required RACT, Maricopa County revised Rule 336 to incorporate five (5) CTGs issued by the EPA in 2006 through 2008. The CTGs address the following topics:

- Metal Furniture Coatings
- Large Appliance Coatings
- Miscellaneous Metal and Plastic Parts



- Paper, Film, and Foil Coatings
- Industrial Cleaning Solvents

Rule 336 incorporated the RACT recommendations from these five CTGs. Rule 336 included CTG recommendations for additional types of VOC coating limits, transfer efficiency for spray equipment to be comparable to the transfer efficiency found in a High Pressure, Low-Volume (HVLV) spray guns, and additional work practices to reduce VOC emissions.

In addition, Rule 336 corrected typographical or other clerical errors; made minor grammatical changes to improve readability or clarity; modified the format, numbering, order, capitalization, punctuation, or syntax of certain text to increase standardization within and among rules; or made various other minor changes of a purely editorial nature. As these changes do not alter the sense, meaning, or effect of the rules, they are not described in detail here, but can be readily discerned in the “underline/ strikeout” version of the rules contained in Item 17 of this notice.

**Background:**

The department held four workshops for this rulemaking. Each of the four workshops contributed to this proposed draft Rule 336; the progression of which is described as follows:

Workshop#1: Monday June 29, 2015

This workshop introduced the proposal to revise Rule 336 and to include sections in the revised rule that address three additional VOC categories:

- Pleasure Craft Manufacturing and Repair
- Adhesives and Adhesive Primers
- Polyester Resin Operations

These VOC source categories have been controlled to date, with the general terms of Rule 330 (Volatile Organic Compounds) which has not been updated since 1996. Rule 330 (Volatile Organic compounds) is a generic VOC Rule which regulates a variety of source-specific facilities in addition to these source categories.

Workshop #2: Thursday September 3, 2015

Stakeholders (surface coating manufacturers and supplier representatives) expressed concern about combining the variety of VOC regulations into one rule. This workshop focused on whether it was feasible to put all four of the VOC source categories into one rule. Stakeholders unanimously recommended dividing the VOC regulated sources into separate rules.

Workshop #3: Thursday December 17, 2015

Three separate rules were proposed at this workshop in response to stakeholder requests:

- Rule 336: Miscellaneous Surface Coating Operations (included Pleasure Craft Surface Coating Operations)
- New Rule 357: Miscellaneous Industrial Adhesives
- New Rule 356: Polyester Resin Operations.

Pleasure Craft Surface Coating Operations were included in the revision of the existing Rule 336; this left the introduction of two new VOC source specific rules - Rule 356 and Rule 357.

Workshop #4: Thursday February 18, 2016

Revised Rule 336 was presented. Pleasure Craft Manufacturing and Repair coatings were added as a section in the proposed amended Rule 336 and the two remaining “new” VOC rules were put on-hold. The department determined that negative declarations will be submitted for the two CTG source categories, adhesives and adhesive primers and polyester resin operations.

**Issues Raised and Discussed During this Rulemaking Process:**

Label Containers that Contain VOC: Work Practices, Section 304 requires “Containers in which VOC-containing materials are stored must have a legible label identifying the container’s contents”. In a previous posted draft of Rule 336, specific text for labels was required to comply with this section. The Resource Conservation and Recovery Act (RCRA) requires specific text to comply with labeling for hazardous wastes. The goal of the Rule 336 labeling requirement is to identify containers that contain VOC. The specific RCRA labeling text will satisfy this goal, so owners or operators do not have to prepare two different labels for VOC containing containers.

Quality Class Q Protective Coating: A stakeholder commented that the Quality Class Q protective coating used on equipment or components within a containment facility of a nuclear power plant was not current. This requirement referenced in Sections 103.5(d) and defined in Section 200.74 only specifies that this category of coating is required for this purpose and does not require which method is most current for compliance.

Changes Proposed in the Surface Coating Limits for Rule 336: Rule 336 increased the variety of VOC coating categories listed in the rule as was recommended in the CTG for surface coating operations. Rule 336 also added the specific definitions for these new coating categories. Even with the addition of a greater variety of coating categories, the VOC thresholds for the coatings found in Rule 336 remained the same and were not lowered.

Limit Usage of Noncompliant VOC Surface Coatings: Several Stakeholders asked to clarify Exemption Section 103.5(b) which addresses use of VOC coatings that exceed the VOC coating thresholds required in the Rule 336 Tables. Clarifying text was added to this exemption that states: “Low usage of VOC coatings which exceed VOC thresholds for coating categories listed in Tables 336-1 through 336-7 of this rule”. The noncompliant coatings are permitted for use if the annual aggregate usage does not exceed 55 gallons per year (208 liters/yr.) at a facility. The operator shall update usage records of these coatings at the end of each month, pursuant to Section 501.2 of this rule.

Small Surface Coating Source (SSCS) Exemption: Stakeholders requested that the SSCS exemption be retained. The SSCS exemption has been retained in Section 103.5(c) and is defined in Section 200.77. SSCS was modified to exclude the daily limit requirement and retained the option that a facility that exceeds a 2 ton VOC/year emission limit for processes regulated by this rule may retain the exemption, if the owner or operator agrees in writing to enforceable permit conditions that establishes these or stricter limits.

Clarification of Limits for Touch-Up and Repair Operations: Stakeholders asked for clarification: Touch-up and Repair coatings are exempt (Section 103.3) and Touch-up and Repair coating VOC thresholds are found in Rule 336: Table-1 and Table -4. These are not conflicting



requirements because it depends on the substrate if touch up or repair coatings are exempt or have VOC threshold limits. “Touch-up and repair coatings” for Plastic Parts Coatings are exempt from the VOC limits. This exemption is described on page 31 of the CTG (Miscellaneous Metal and Plastic Parts Coatings: September 2008). The “Touch-up and Repair” coating thresholds listed in Table 336-1 are coating limits for Metal Parts and Product Coatings and are partially exempt. “Metal part touch-up and repair coatings” are only exempt from the application methods (Rule 336: Section 302) but are subject to the remaining provisions of this rule. The “Touch-up and Repair” coating thresholds listed in Table 336-4 are coating limits for Business Machine Coatings and are not exempt.

**Demonstration of an HVLP Spray Gun Equivalent or Alternative Application Methods:** In workshop discussions Stakeholders asked to clarify compliance determination for the “alternative application method” spray guns. This provision saves Stakeholders time, because it eliminates the requirements of getting approvals from the Control Officer for use of new spray-gun technologies. Section 302.1(e) states that an EPA recommendation is sufficient for the approval process of the proposed application method:

Section 302.1(e): An Alternative Application Method: Any method approved by the Administrator of the EPA as HVLP-equivalent.

This requirement was changed since the last posting of the Notice of Proposed Rulemaking for Rule 336 on May 13, 2016.

**Three Pleasure Craft Surface Coating Limits:** Stakeholders commented that three pleasure craft VOC surface coating limits: Extreme High Gloss Coatings; Finish Primer/Surfacer; and Other Substrate Anti-foulant Coating should be higher than the limits proposed in the CTG (Miscellaneous Metal and Plastic Parts Coatings, September, 2008). Stakeholders have challenged these CTG recommended limits to EPA in 2010. The EPA responded in a June 1, 2010 decision that clarified these suggested pleasure craft VOC surface coating thresholds were RACT recommendations provided in the CTG and should be “used by the states to determine what constitutes RACT for VOC operations in their particular ozone nonattainment areas.” The department reviewed both the Stakeholder recommendation and the EPA’s decision and included in Rule 336, Table 336-7 the following VOC limits:

Extreme High Gloss Topcoat	600 g VOC/l;
Finish Primer Surfacer;	600 g VOC/l;
Other Substrate Anti-Foulant Coating	400 g VOC/l.

The department reviewed Stakeholder recommendations and determined these limits constitute RACT for VOC operations in the Phoenix ozone nonattainment area.

**Industrial Cleaning Solvent CTG – VOC Limit for Solvent Cleaners is 0.21 lbs. per gallon:** Stakeholders requested clarification of why solvent cleaner VOC limits are not listed in Section 303.2 (c) where VOC solvent cleaners are referenced. The VOC threshold limit for solvent cleaners was deleted and replaced with the requirement in Section 305.6: “VOC solvents can be used for cleaning coating application equipment only if spray devices are not used and the same principal solvent is used for cleaning as is used in the coating”.

Rule 336 does not provide a VOC solvent cleaning limit because surface coating cleaners have their own properties with traditionally low VOCs. The cleaning chemicals used in surface coating cleaning operations contain little VOC and therefore generate negligible emissions, as described on page 8 of the CTG for Miscellaneous Metal and Plastic Parts Coatings (September 2008).

**Recordkeeping Requirements for an Aerosol Spray Can Exemption:** Stakeholder requested adding Section 501.2(e) to clarify recordkeeping requirements for aerosol spray cans coatings. These requirements include maintaining purchase records for aerosol spray-cans, including VOC content of can contents.

**Exemption of Aerosol Spray Can Coating Application and Total Facility VOC Threshold Limits:** Stakeholders asked for clarification of how the exemption of the aerosol spray can applications of VOC materials contribute to the overall facility VOC usage. Section 103.5(a) (Aerosol Spray Can Coating Exemption) applies to any use of non-refillable containers that are less than 22 fluid ounces (0.66 liter) capacity and the VOC usage of this exemption contributes to the 2 tons/yr facility threshold of this rule as these aerosol spray can applications are insignificant activities. Rule 200 (of these rules) states: Emissions at or below 2 tons/yr qualifies as an insignificant activity (Rule 200, Section 200.63). Aerosol spray cans do not qualify as a “trivial activity” as aerosol spray can coating is “conducted as part of a source’s primary business activity” qualifying it as an insignificant activity (Rule 200, Section 200.127). Permits address multiple insignificant activities and their cumulated contribution to a facility’s overall coating limits.

**VOC Coating Category - “Other Metal Parts and Products”:** Stakeholders expressed concern about two VOC coating thresholds recommended in the CTG for Miscellaneous Metal and Plastic Parts Coatings; “One-Component” and “Multi-component” coatings. These two VOC coatings were listed in three of the Tables in Rule 336: Table 336-1 (Metal Part and Products), Table 336-3 (Plastic Parts and Products), and Table 336-4 (Metal Furniture and Large Appliance Coatings). Stakeholders stated that the “One-Component” and “Multi-component” coatings are general use coatings that are currently regulated in the “Other Metal Parts and Products Coating” category. During workshop discussions, Stakeholders recommended retaining this general coating category rather than replacing it with two new coating categories. Stakeholders recommended keeping the current general coating - “Other Metal Parts and Products Coating”; this coating category is a VOC coating category for miscellaneous non-source specific surface coatings that is used in as much as 40% of the coatings at Stakeholder operations and includes these two “new” recommended coatings.

Based on this information the department has omitted the “One-Component” and “Multi-component” coating” category in two of the three Rule 336 tables. The two CTG proposed coatings are redundant with “Other Metal Parts and Products Coating” and will be regulated within this existing coating category. “Other Metal Parts and Products Coatings” represent miscellaneous coatings that do not belong to a source specific coating category. The “Other Metal Parts and Products Coating” category has been retained in Tables 336 -1 and 336-3 and the CTG suggested coating categories removed. These two CTG suggested coating categories were retained and still apply in Rule 336, Table 336-4 (Metal Furniture and Large appliance Coatings). The definitions of the two CTG suggested coating categories are: “One-Component” is ready to apply straight from the container and “Multi-component” is a coating that needs a catalyst or hardener.

**O & M Plan and the Spray Gun Cleaning Machine:** Stakeholders asked if an O&M plan is required for a spray gun cleaning machine; it is not required and this requirement has been deleted from an earlier version of the proposed rule (previously Section 303.1(g)).

**Allow Use of Usage Records for Compliant Recordkeeping:** Stakeholders requested that usage records of VOC materials be a compliant source for recordkeeping requirements. Rule 336, Section 501.1(b) was changed to Section 501.1(c) and allows either usage records or the



traditional purchase records. This change in recordkeeping requirements provides less stringent recordkeeping by omitting the requirement for daily recordkeeping for all owners or operators, who use VOC coatings and VOC solvent cleaners, not just for “consistently low users” and allows for usage records to comprise compliant recordkeeping in addition to purchase records.

**Increase Overall Emission Control System (ECS) Efficiency from 85% to 90%:** The CTG Miscellaneous Metal and Plastic Parts Coatings (September 2008) recommends the increase the overall ECS control efficiency to capture at least 90% from the current 85% (Rule 336 Section 305.1(a)).

**Deletion of the Military Exemption:** Rule 336 contained a military exemption in Section 305.4(f); this exemption was placed in the rule for one particular source when the rule was drafted in 1999. The CTGs do not recommend a military exemption. The department researched these types of coatings and found that since 1999 there are new, compliant, low VOC coatings that may function well as a substitute coating. If a source uses a non-compliant coating, the burden of proof is on the source to demonstrate that there are no other compliant coatings that can be used to achieve the desirable effect of the non-compliant coating.

**Description of Amendments:** Amendments in Rule 336 are as follows:

- Deleted definitions that are already defined in Rule 100
- Deleted definitions that are not found in the text of the rule
- Added definitions of different types of coatings listed in the CTGs and terms listed in the rule
- Moved the exemptions from Section 300 to Section 100
- Incorporated the overall ECS control efficiency recommended in the CTG of 90%
- Defined compliance for alternative application methods
- Deleted the vapor pressure requirement for VOC-containing cleaning materials
- Added new work practices that are listed in the CTG
- Clarified existing work practices in Section 300, such as labeling and transferring in and out of containers
- Updated the Operations & Maintenance (O and M) language in Section 305
- Updated the compliance schedule in Section 400
- Streamlined the recordkeeping provisions in Section 500
- Updated the test methods listed in Section 500
- Corrected typographical or other clerical errors.

**Deleted definitions that are already defined in Rule 100:** Several definitions were deleted in Rule 336, because they are contained in Rule 100; these include definitions for organic compounds (Section 229), VOC- borne coatings (Section 252), and VOC borne diluents.

**Deleted definitions that are not found in the text of the rule:** Definition for Heat Sensitive Material (Section 220); Polyester and Polyester Resin (Section 234) and Polyester Composite (Section 235) are also deleted, because they no longer appear in proposed Rule 336.

**Added definitions of different types of coatings listed in the CTGs and terms used in the rule:** There are a total of 54 new definitions in Rule 336, Section 200. Most of these definitions reflect the addition of new specialty coating limits in the four CTGs such as: Adhesion Primer (Section 200.2); Antifoulant Coating (Section 200.6); Business Machine (Section 200.8) Camouflage Coating (Section 200.9); Can Coating (Section 200.10) Etching filler (Section 200.24); Extreme High-Gloss Coating (Section 200.27); Finish Primer/Surfacer (Section 200.33); Heat Resistant Coating (Section 200.39); High Performance Architectural Coating (Section 200.40); High Build Primer/Surfacer (Section 200.41); High gloss Coating (Section 200.42); High Temperature Coating (Section 200.43); Mold -Seal Coating (Section 200.56); Multi-colored Coating (Section 200.57); Multi-component Coating (Section 200.58); Non-Precursor Organic Compounds (Section 200.59); One-component Coating (Section 200.60); Optical Coating (Section 200.61); Pan Backing Coating (Section 200.64); Pleasure Craft Coating (Section 200.68); Prefabricated Architectural Component Coating (Section 200.69); Pretreatment Coating (Section 200.71); Pretreatment Wash Primer (Section 200.72); Shock-Free Coating (Section 200.77); Solar-Absorbent Coating (Section 200.80); Stencil Coating (Section 200.81); Texture Coating (Section 200.82); Vacuum Metalizing Coating (Section 200.90).

Other new definitions found in the rule include: Aerosol Can Spray Coating (Section 200.3); Alternative Application Methods (Section 200.5); Coating Application Equipment (Section 200.13); Dip Coating (Section 200.16); Drum coating (Section 200.17); Electric Dissipating coating (Section 200.18); Electric Insulating Varnish (Section 200.19) Electromagnetic Interference (EMI)/Radio Frequency Interference (RFI) Shielding (Section 200.20); Exempt Organic compounds (Section 200.25); Filler (Section 200.31); Flow Coat (Section 200.35); Fog Coat (Section 200.36); Gloss Reducer Section 200.37); Hand application Methods (Section 200.38); High-Volume, Low Pressure (HVL) Spray-Gun (Section 200.44); In-Use or Handled (Section 200.48); Large Appliance (Section 200.49); Marine Vessel (Section 200.51); Military Specification Coating (Section 200.54); Non-Precursor Organic Compounds (Section 200.58); Pleasure Craft (Section 200.65); Pressure Sensitive Tape or Label (Section 200.68); Transfer Efficiency (Section 200.86); VOC Regulatory (Section 200.91)

**Moved the exemptions from Section 300 to Section 100:** The exemptions in Rule 336, Section 300 were moved to Section 100. Other amendments moved to Section 100 (Section 103.3(b)(j) and 103.5) are the inclusion of a partial exemptions for stencil coatings. The stencil coating operations meet the definition of a surface coating operation and are not considered a graphic arts operation. North American Industry Classification System (NAICS) instead of Standard Industrial Classification (SIC) are in Section 103.2(b).

**Amended the VOC emission limitations to be consistent with the CTGs:** Deleted Table 1 and replaced it with Tables 336-1 through 336-7.

**Incorporated the overall ECS control efficiency recommended in the CTG of 90%:** New text was added in Section 302.5 requiring an ECS, if an owner or operator is using non-compliant coatings. Changed the control efficiency from 85% to 90% in Section 305.1(b).

**Clarified Alternative Application Method Compliance:** Any method approved by the Administrator as HVL-equivalent is compliant as an application method.

**Deleted the VOC Vapor pressure requirement for VOC-solvent cleaners:** Rule 336 permitted the use of VOC-solvent cleaners with less than 35 mm Hg vapor pressure. A South Coast Air Quality Management District Study (April 10, 2002) confirms that vapor pressure does not influence VOC mass emissions and does not result in further reduction of VOC emissions. This is an obsolete requirement and was deleted as it falsely misleads that low vapor pressure solvents are a form of emissions control.



Added new work practices that are listed in the CTGs: Section 304 added new text on cleaning up spills, added new text on conveyance of VOC-containing material, and added new text requiring labeling VOC-containing containers. Sections 304.2 and Section 304.3 were clarified. Section 304.5 clarified the labeling of containers.

Updated the O & M Plan language in Section 305: Section 305.2 added new text regarding O & M Plans.

Updated the compliance schedule in Section 400:

- Sections 401 and 401.2 deleted outdated compliance dates.
- Sections 401.1 and 401.2 added text that requires the use of the new VOC emission limits for coatings six months after the date of adoption of the rule and added text that requires the use of the new type of spray gun for coating no later than six months after the date of adoption of the rule.
- Section 402.1 added text that requires dates for compliance with the installation of the ECS and with the O&M Plan requirements no later than 3 months after the rule is adopted.

Streamlined the recordkeeping provisions in Section 500:

- Section 501 added text to expand the type of documents that will comply with recordkeeping requirements and allow submittal of records in electronic or paper format.
- Sections 501 required less stringent recordkeeping for all users, not just low VOC coatings users. The requirement for daily records was eliminated for all users.

Updated the test methods listed in Section 500: Sections 503 updated the dates and sections of the California rules herein listed.

**7. Demonstration of compliance with A.R.S. § 49-112:**

Under A.R.S. § 49-479(C), a county may not adopt a rule or ordinance that is more stringent than the rules adopted by the Director of the Arizona Department of Environmental Quality (ADEQ) for similar sources unless it demonstrates compliance with the applicable requirements of A.R.S. §49-112.

§ 49-112 County regulation; standards

§ 49-112(A)

When authorized by law, a county may adopt a rule, ordinance or other regulation that is more stringent than or in addition to a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if all of the following conditions are met:

1. The rule, ordinance or other regulation is necessary to address a peculiar local condition.
2. There is credible evidence that the rule, ordinance or other regulation is either:
  - (a) Necessary to prevent a significant threat to public health or the environment that results from a peculiar local condition and is technically and economically feasible.
  - (b) Required under a federal statute or regulation, or authorized pursuant to an intergovernmental agreement with the federal government to enforce federal statutes or regulations if the county rule, ordinance or other regulation is equivalent to federal statutes or regulation.
3. Any fee or tax adopted under the rule, ordinance or other regulation will not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

§ 49-112(B)

When authorized by law, a county may adopt rules, ordinances or other regulations in lieu of a state program that are as stringent as a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if the county demonstrates that the cost of obtaining permits or other approvals from the county will approximately equal or be less than the fee or cost of obtaining similar permits or approvals under this title or any rule adopted pursuant to this title. If the state has not adopted a fee or tax for similar permits or approvals, the county may adopt a fee when authorized by law in the rule, ordinance or other regulation that does not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

The department complies with A.R.S. § 49-112(A) in that Maricopa County fails to meet the National Ambient Air Quality Standards for both ozone and particulates. The County failed to meet 2008 8-hour ozone standard by the marginal area attainment date of July 20, 2015. The EPA issued a final rule, effective June 3, 2016, reclassifying the Maricopa County area to “moderate” (published at 86 FR 26697, May 4, 2016). Further, a portion of the County was classified as a serious ozone nonattainment area under the previous 1-hour ozone standard requiring the county to continue to maintain the measures and requirements that allowed the county to attain that standard. Revisions to Rule 336 addressed the requirements of the State Implementation Plan (SIP) for “moderate” nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS). The amendments in Rule 3336 included Reasonably Available Control Technology (RACT).

The department complies with A.R.S. § 49-112(B) in that the amendments to Rule 336 are not more stringent than or in addition to a provision of Title 49 or rule adopted by the director or any Board or commission authorized to adopt rules pursuant to Title 49, address the peculiar local conditions in Maricopa County, are authorized under A.R.S. Title 49, Chapter 3, Article 3, and are not in lieu of a state program.

**8. Documents or studies referenced and/or reviewed for this rulemaking:**

South Coast Air Quality Management District (SCAQMD) -Technology Assessment to Determine the Relationship of Solvent Vapor Pressure and VOC Mass Emissions: Philip O’Bell, Chung Liu, Henry Hogo; April 10, 2002

U. S. Environmental Protection Agency, “Control Techniques Guidelines for Large Appliance Coatings,” September, 2007,

[www.epa.gov/ttn/oarpg/t1/ctg/20070928\\_large\\_app\\_ctg.pdf](http://www.epa.gov/ttn/oarpg/t1/ctg/20070928_large_app_ctg.pdf).

U. S. Environmental Protection Agency, “Control Techniques Guidelines for Metal Furniture Coating,” July, 2007,

[www.epa.gov/ttn/oarpg/t1/ctg/ctg\\_furniture\\_ctg062807.pdf](http://www.epa.gov/ttn/oarpg/t1/ctg/ctg_furniture_ctg062807.pdf).

U. S. Environmental Protection Agency, “Control Techniques Guidelines for Miscellaneous Metal and Plastic Parts Coatings,”

September,2008, [www.epa.gov/ttn/oarpg/t1/ctg/miscmetal\\_ctg093008.pdf](http://www.epa.gov/ttn/oarpg/t1/ctg/miscmetal_ctg093008.pdf).



U. S. Environmental Protection Agency, "Control Techniques Guidelines for Industrial Cleaning Solvents," September, 2006, [www.epa.gov/ttn/oarpg/t1/ctg/indus\\_clean\\_solv\\_09\\_29\\_06.pdf](http://www.epa.gov/ttn/oarpg/t1/ctg/indus_clean_solv_09_29_06.pdf).

U. S. Environmental Protection Agency, "Control Techniques Guidelines for Paper, Film and Foil Coatings," September, 2006, [www.epa.gov/ttn/oarpg/t1/ctg/20070928\\_paper\\_film\\_ctg.pdf](http://www.epa.gov/ttn/oarpg/t1/ctg/20070928_paper_film_ctg.pdf).

Notice of Final Rulemaking, Title 18, Chapter 2, Arizona Administrative Register, Volume 14, Issue 9, July 18, 2008 PP. 2834-2842.

US EPA Internal letter, June 1, 2010: To: Chief, Air Branch Regions I- X: From: Stephen D. Page, Director Office of Air Quality Planning and Standards: Control Technique Guidelines for Miscellaneous Metal and Plastic Part Coatings – Industry Request for Reconsideration

**9. A showing of good cause why the rule is necessary to promote a statewide interest if the rule will diminish a previous grant of authority of a political subdivision:**

Not applicable.

**10. Summary of the economic, small business, and consumer impact:**

The following discussion addresses each of the elements required for an economic, small business and consumer impact statement under A.R.S. § 41-1055.

**A. An identification of the rulemaking.**

This rulemaking revised Rule 336 (Surface Coating Operations).

**B. An identification of the persons who will be directly affected by, bear the costs of or directly benefit from the rulemaking.**

The persons who will be directly affected by and bear the costs of this rulemaking will be facilities in Maricopa County that use VOC coatings listed in Tables 336-1 through 336-7 of the rule that are not more specifically regulated by another source-specific rule within Maricopa County Rules 300 to 359 of Regulation III. Partial exemptions apply to certain coatings, application methods, and for low usage conditions. The department has issued permits to more than 160 facilities that are subject to Rule 336.

**C. Cost benefit analysis:**

**(i) Costs and benefits to the implementing agency and other agencies directly affected by the implementation and enforcement of the rulemaking.**

Because this rulemaking does not impose any new compliance burdens on permitted regulated entities or introduce additional regulatory requirements, the department deemed that none of the revisions have potentially significant economic impacts on permitted sources. It is expected that the department will benefit from the increased clarity of the rule with decreased time to inspect a facility or prepare a permit. In addition, the rulemaking will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

The benefits of the rule revision are anticipated to be a result of the following changes:

- Updated the definitions;
- Amended the VOC emission limits for surface coatings consistent with the CTGs;
- Extended Rule 336 to include the pleasure craft industry;
- Deleted an exemption for the military;
- Incorporated the overall Emission Control System (ECS) control efficiency listed in the CTGs of 90%;
- Incorporated the transfer efficiency listed in the CTGs, which is the same as the transfer efficiency of a HVLP spray gun;
- Deleted the sprayless equipment exemption for vapor pressure limits;
- Added new work practices that are listed in the CTG and clarified existing work practices;
- Updated the Operations & Maintenance (O and M) language;
- Updated the compliance schedule;
- Streamlined the recordkeeping provisions;
- Updated the test methods;
- Corrected typographical or other clerical errors.

The sources subject to revised Rule 336 already have permits in which these requirements are addressed. Therefore, this revised rule does not impose new requirements on the permitted facilities, and no costs would be incurred for compliance with the rule revisions.

**(ii) Costs and benefits to a political subdivision of this state directly affected by the implementation and enforcement of the rulemaking**

The rule revisions will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

**(iii) Costs and benefits to businesses directly affected by the rulemaking, including any anticipated effect on the revenues or payroll expenditures of employers who are subject to the rulemaking.**

The department anticipates that increased clarity and compliance options provided by the Rule 336 revisions will provide a benefit to the regulated and permitted sources; it will take less time for sources subject to the rule to understand and comply with the rule, which leads to increased compliance, which leads to decreased costs of compliance to the regulated community. The department does not anticipate these rule revisions to have a significant impact on a person's income, revenue, or employment in this state related to this activity. The rule revision will not impose increased monetary or regulatory costs on individuals so regulated.

**D. A general description of the probable impact on private and public employment in businesses, agencies and political subdivisions of this state directly affected by the rulemaking.**

The rule revisions will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

**E. A statement of the probable impact of the rulemaking on small businesses.**



This rulemaking does not impose any new compliance burdens on regulated entities that are permitted or introduce additional regulatory requirements and will not impose increased monetary or regulatory costs on any permitted business, persons, or individuals so regulated. As such, there are no costs to pass through to consumer, which means there are no impacts on consumers.

**An identification of the small businesses subject to the rulemaking.**

Small businesses subject to this rulemaking are those facilities in Maricopa County that use VOC coatings listed in Tables 336-1 through 336-7 of the rule that are not more specifically regulated by another source specific rule within Maricopa County Rules 300 to 359 of Regulation III. Of the approximately 150 commercial permitted sources covered by the rule, about 90 are small businesses.

**The administrative and other costs required for compliance with the rulemaking.**

This rulemaking updated and clarified existing rule provisions and definitions to be consistent with federal performance standards; and reduced confusion and improved understanding and readability. The department considered the implications of the amendments to the regulated entities and the implementing agency and deemed that none of the rule revisions have potentially significant economic impacts.

**F. A statement of the probable effect on county revenues.**

The rule revisions will not impose increased monetary or regulatory costs on other county revenues, political subdivisions of this state, persons, or individuals so regulated. Without costs to pass through to customers, there is no projected change in consumer purchase patterns and, thus, no impact on county revenues from sales taxes.

**G. A description of the methods that the agency may use to reduce the impact on small businesses.**

**(i) Establishing less costly compliance requirements in the rulemaking for small businesses.**

By correcting and clarifying rule provisions and definitions and streamlining recordkeeping provisions, this rulemaking lessens or eases the regulatory burden for small businesses.

**(ii) Establishing less costly schedules or less stringent deadlines for compliance in the rulemaking.**

This rulemaking corrected or clarified rule provisions and definitions to reduce confusion and improve understanding and readability.

**(iii) Exempting small businesses from any or all requirements of the rulemaking.**

This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability.

**(iv) A description of any less intrusive or less costly alternative methods of achieving the purpose of the rulemaking.**

This rulemaking corrected or clarified rule provisions and definitions to reduce confusion and improve understanding and readability.

**H. A description of any data on which the rule is based:**

Not Applicable

**I. If for any reason adequate data are not reasonably available, the agency shall explain the limitations of the data and the methods that were employed in the attempt to obtain the data and shall characterize the probable impacts in qualitative terms:**

Not applicable

**11. Name and address of department personnel with whom persons may communicate regarding the accuracy of the economic, small business, and consumer impact statement:**

Name: Kathleen Sommer or Hether Krause  
 Address: Planning and Analysis Division  
 Maricopa County Air Quality Department  
 1001 N. Central Ave., Suite 595  
 Phoenix, AZ 85004  
 Telephone: (602) 506-6010  
 Fax: (602) 506-6179  
 E-mail: aqplanning@mail.maricopa.gov

**12. Description of the changes between the proposed rule, including supplemental notices and final rule:**

Since the Notice of Proposed Rulemaking was published on May 13, 2016 (22 A.A.R 1159), the department made the following additional amendments:

- Section 103.6 (Partial Exemptions): Moved this section to new Section 302.2 (b) (Application Methods for Surface Coatings)
- Section 244 (Definition of “High-Volume, Low Pressure (HVLP) Spray Gun”): Deleted “and at the air horns” to accurately describe the pressure measurement. Additional options for compliance determination of an HVLP spray gun were added to the definition.
- Section 274 (Definition of “Refrigerated Glass Door Coating”): Added the definition of “Refrigerated Glass Door Coating”. The coating category is included in Table 336-5 (Coating Limits for Metal Furniture and Large Appliance). The definition and the coating limits in Table 336-5 are from South Coast Air Quality Management District Rule 1145 (Plastic, Rubber, Leather, and Glass Coatings) amended December 4, 2009.
- Section 275 (Definition of “Restricted Spray Gun”): Deleted the definition of “Restricted Spray Gun”
- Section 281 (Definition of “Strippable Booth Coating”): Retained the definition of “Strippable Booth Coating” and included the coating category in Tables 336-1 through 336-7; the VOC limit was not changed
- Table 336-1 (Coating Limits for Metal Parts and Products): Added multi-component and one-component VOC limits to match the CTG-Miscellaneous Metal and Plastic Parts Coatings
- Table 336-2 (Coating Limits for Can and Coil Coating): Moved fabric coating to Table 336-6 (Coating Limits for Paper, Film, and Foil Surface Coating) and deleted film coating because it was already in Table 336-6
- Table 336-3 (Coating Limits for Plastic Parts and Products): Added categories for flexible and non-flexible plastic parts and products



- Table 336-5 (Coating Limits for Metal Furniture and Large Appliances): Removed large appliances category because it is covered under multi-component and one-component categories
- Table 336-6 (Coating Limits for Paper, Fabric, Film, and Vinyl): Added vinyl
- Table 336-7 (Coating Limits for Pleasure Craft): Did not include the new coating category “antifouling sealer/tie coat”, as this relates to the CTG for Shipbuilding and Ship Repair Operations (Surface Coating). The department has determined that there are no emitting facilities in Maricopa County for this CTG source category.
- Table 336-7 (Coating Limits for Pleasure Craft): Removed the transition schedule for the coating limits
- Section 305.1 (Emission Control System (ECS) Requirements-ECS Control Efficiencies): Clarified the requirements for overall ECS efficiency, capture and control efficiency, and the alternative for very dilute input
- Section 501.2(b) (Recordkeeping and Reporting-Current Lists): Re-inserted SDS or MSDS and included in the introductory statement to Section 501.2(b) the sentence “The documentation must provide accurate VOC content values or be based on enforceable test methods as approved by the Administrator to determine the VOC content.”
- Section 501.2(c)(2) (Recordkeeping and Reporting-Current Lists): Deleted recordkeeping requirements for “low VOC coatings” and “low VOC cleaning solvents”
- Section 501.2(e) (Recordkeeping and Reporting-Current Lists): Added usage records as acceptable compliance documents for recordkeeping documentation for aerosol can spray coating
- Section 503 (Compliance Determination and Test Methods): Included text that allows for the use of alternative test methods to determine compliance with the rule and that allows test methods as approved by the Administrator to be used and clarified the provision regarding when more than one test method is permitted for a compliance determination

**13. Summary of the comments made regarding the rule and the department response to them:**

Since the Notice of Proposed Rulemaking was published on May 13, 2016 (22 A.A.R. 1159), the department received comments from the Salt River Project Agricultural Improvement and Power District (SRP) and PING, Inc. The comments and the department’s responses are provided below.

Comment #1: Section 304.5 (Work Practices-Handling, Disposal and Storage of VOC-Containing Material) PING, Inc. commented that in the current draft of Rule 336, Section 304.2 states, in part, “The containers shall be clearly marked “Disposal of VOC Material” and remain covered with a leak tight cover, when not in use”. Marking of waste containers is both a best practice as well as a regulatory requirement. From a regulatory perspective, waste streams are typically regulated under the Resource Conservation and Recovery Act (RCRA). The workforce is trained to appropriately handle waste materials. Workers would look for the “Hazardous Waste” label to identify the appropriate container to place VOC-containing wastes. The current language in the draft rule requires the “containers shall be clearly marked “Disposal of VOC Material”. For those workplaces that are regulated by RCRA, the marking requirement noted in the rule adds complexity, as now containers will need to be double-labeled. It would appear that the intent of the marking requirement is to make sure that the contents of the container are clearly identified. PING, Inc. proposes the language in the rule be modified to state “The containers shall be clearly marked “Disposal of VOC Material” or as required by other applicable law and remain covered with a leak tight cover, when not in use”.

Response #1: Section 304.5 (Work Practices-Handling, Disposal and Storage of VOC-Containing Material)

The language commented on by PING, Inc. was removed from Rule 336 prior to the publication of the Notice of Proposed Rulemaking. In the Notice of Proposed Rulemaking that was published on May 13, 2016 (22 A.A.R. 1159), the department proposed Section 304.5 to read “Containers in which VOC-containing materials are stored must have a legible label identifying the container’s contents”. The department retained this requirement. The specific RCRA labeling requirement complies with this requirement; double labeling will not be necessary.

Comment #2: Section 501.2(b) (Recordkeeping and Reporting-Current Lists)

SRP commented that: In the proposed revisions to Rule 336, MCAQD is proposing to remove the use of manufacturer’s safety data sheets (SDS or MSDS) as a coating’s written record of VOC content. The use of an SDS or MSDS is the most common source of VOC content information and removal of this source would cause an undue burden on a facility. SRP believes that MCAQD may have inadvertently partially deleted this section. SRP suggests that MCAQD retain the ability to use SDS or MSDS as an information source for the VOC content recordkeeping requirements.

Response #2: Section 501.2(b) (Recordkeeping and Reporting-Current Lists)

In response to SRP’s comment and the EPA’s comment, the department re-inserted Safety Data Sheets (SDS) or Material Safety Data Sheets (MSDS) and included in the introductory statement to Section 501.2(b) the sentence “The documentation must provide accurate VOC content values or be based on enforceable test methods as approved by the Administrator to determine the VOC content.” The EPA commented in June 2016 on all of the rules that the department is revising in regards to addressing the requirements of the State Implementation Plan (SIP) for “moderate” nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS). In such comments, the EPA asked the department “to ensure the documents listed (to verify compliance) give accurate values and use enforceable test methods. For example, EPA generally has not approved the use of SDS/MSDS to determine compliance in SIP rules unless the SDS/MSDS specifies that the compound of interest was determined by an approved EPA method.”

Comment #3: Section 501.2(e) (Recordkeeping and Reporting-Current Lists)

SRP commented that: In the proposed revisions to Rule 336, Section 501.2(e), the recordkeeping requirements for aerosol spray cans are limited to purchase records. SRP suggests that MCAQD provide flexibility in the recordkeeping requirements and allow either purchase or usage records to be used. This would be consistent with other surface coating recordkeeping requirements contained in Section 501.2(c).

Response #3: Section 501.2(e) (Recordkeeping and Reporting-Current Lists)

The department added usage records as acceptable compliance documents for recordkeeping documentation for aerosol spray can coating.

**14. Any other matters prescribed by the statute that are applicable to the specific department or to any specific rule or class of rules:**

Not applicable.

**15. Incorporations by reference and their location in the rules:**



The department incorporated by reference sections of the Code of Federal Regulations in the following sections of the rule: Section 503.2 (Compliance Determination and Test Methods-Test Methods Incorporated By Reference)

**16. Was this rule previously an emergency rule?**

No

**17. The full text of the rule follows:**

**MARICOPA COUNTY  
AIR POLLUTION CONTROL REGULATIONS  
REGULATION III – CONTROL OF AIR CONTAMINANTS  
RULE 336  
SURFACE COATING OPERATIONS  
INDEX**

**SECTION 100 – GENERAL**

- 101 PURPOSE
- 102 APPLICABILITY
- 103 PARTIAL EXEMPTIONS
- 104 TOTAL CATEGORICAL EXEMPTIONS

**SECTION 200 – DEFINITIONS**

- ~~201~~ 201 ADHESIVE
- ~~202~~ 202 ADHESION PRIMER
- ~~202~~ 202 AEROSOL CAN
- ~~203~~ 203 AEROSOL CAN SPRAY COATING
- ~~203~~ 204 AIR-DRIED COATING
- ~~203~~ 205 ALTERNATIVE APPLICATION METHODS
- ~~204~~ 206 ANTIFOULANT COATING
- ~~204~~ 207 BAKED COATING
- ~~204~~ 208 BUSINESS MACHINE
- ~~205~~ 209 CAMOUFLAGE COATING
- ~~205~~ 210 CAN COATING
- ~~206~~ 211 CAN PRINTING INK
- ~~207~~ 212 CLEAR COAT
- ~~208~~ 213 COATING APPLICATION EQUIPMENT
- ~~208~~ 214 COIL COATING
- ~~209~~ 215 DAY
- ~~210~~ 216 DIP COATING
- ~~210~~ 217 DRUM COATING
- ~~210~~ 218 ELECTRIC DISSIPATING COATING
- ~~210~~ 219 ELECTRIC INSULATING VARNISH
- ~~210~~ 220 ELECTROMAGNETIC INTERFERENCE (EMI)/RADIO-FREQUENCY INTERFERENCE (RFI) SHIELDING
- ~~211~~ 221 ELECTROSTATIC SPRAY/SYSTEM
- ~~211~~ 222 EMISSION CONTROL SYSTEM (ECS)
- ~~212~~ 223 END SEALING COMPOUND
- ~~212~~ 224 ETCHING FILLER
- ~~212~~ 213 EXEMPT EVAPORATING COMPONENTS (EXEMPT COMPOUNDS)
- ~~213~~ 225 EXEMPT COMPOUNDS
- ~~214~~ 226 EXTERIOR CAN BASECOAT
- ~~214~~ 227 EXTREME HIGH-GLOSS COATING
- ~~215~~ 228 EXTREME-PERFORMANCE COATING
- ~~216~~ 229 FABRIC
- ~~217~~ 230 FABRIC COATING
- ~~218~~ 231 FILLER
- ~~218~~ 232 FILM COATING
- ~~218~~ 233 FINISH PRIMER/ SURFACER
- ~~219~~ 234 FLEXIBLE PLASTIC PART OR PRODUCT
- ~~219~~ 235 FLOW COAT
- ~~219~~ 236 FOG COAT
- ~~219~~ 237 GLOSS REDUCER
- ~~219~~ 238 HAND APPLICATION METHODS
- ~~219~~ 239 HEAT-RESISTANT COATING
- ~~219~~ 240 HIGH-PERFORMANCE ARCHITECTURAL COATING
- ~~219~~ 241 HIGH BUILD PRIMER/SURFACER
- ~~219~~ 242 HIGH GLOSS COATING
- ~~219~~ 243 HIGH TEMPERATURE COATING



220 HEAT SENSITIVE MATERIAL

244 HIGH-VOLUME, LOW PRESSURE (HVLP) SPRAY GUN

221 245 HIGHWAY VEHICLE

222 246 INTERIOR BASECOAT

223 247 INTERIOR BODY SPRAY

248 IN USE OR HANDLED

224 249 LARGE APPLIANCE

225 250 LOW PRESSURE SPRAY GUN

251 MARINE VESSEL

226 252 METAL FURNITURE

253 METALLIC COATING

254 MILITARY SPECIFICATION COATING

227 MINUS EXEMPT COMPOUNDS or MINUS EXEMPT EVAPORATING COMPONENTS

228 255 MOBILE EQUIPMENT

256 MOLD-SEAL COATING

257 MULTI-COLORED COATING

258 MULTI-COMPONENT COATING

229 ORGANIC COMPOUND

259 ONE-COMPONENT COATING

260 OPTICAL COATING

230 261 OTHER METAL PARTS AND PRODUCTS

231 262 OVERVARNISH

263 PAN BACKING COATING

232 264 PAPER COATING

233 265 PLASTIC

266 PLEASURE CRAFT

267 PLEASURE CRAFT COATING

234 POLYESTER AND POLYESTER RESIN

235 POLYESTER COMPOSITE

268 PREFABRICATED ARCHITECTURAL COMPONENT COATING

269 PRESSURE SENSITIVE TAPE OR LABEL

270 PRETREATMENT COATING

271 PRETREATMENT WASH PRIMER

236 272 PRIMER

237 273 QUALITY CLASS Q

238 REFINISHING

274 REFRIGERATED GLASS DOOR COATING

239 275 REPAIR COATING

240 RESTRICTED SPRAY GUN

276 SHOCK-FREE COATING

241 277 SILICONE RELEASE COATING

242 278 SMALL SURFACE COATING SOURCE (SSCS)

279 SOLAR-ABSORBENT COATING

280 STENCIL COATING

243 281 STRIPPABLE BOOTH COATING

244 282 SURFACE COATING

245 283 SURFACE COATING OPERATION

284 TEXTURE COATING

246 285 THREE-PIECE CAN SIDE-SEAM COAT COATING

247 286 TOPCOAT

248 TOTAL VOC VAPOR PRESSURE (VOC COMPOSITE PARTIAL PRESSURE)

249 287 TOUCH-UP COATING

288 TRANSFER EFFICIENCY

250 289 TWO-PIECE CAN EXTERIOR END COAT COATING

290 VACUUM METALIZING COATING

251 291 VINYL COATING (COATING ON VINYL)

252 VOC BORNE COATING

253 VOC BORNE DILUENT

292 VOC ACTUAL

254 293 VOC CONTENT

294 VOC REGULATORY

**SECTION 300 – STANDARDS**



- 301 SURFACE COATINGS
- 302 APPLICATION METHODS FOR SURFACE COATINGS
- 303 CLEANUP OF APPLICATION EQUIPMENT
- 304 HANDLING AND DISPOSAL OF VOC WORK PRACTICES – HANDLING, DISPOSAL AND STORAGE OF VOC-CONTAINING MATERIAL
- ~~305~~ EXEMPTIONS
- 306 ~~305~~ REQUIREMENTS FOR AIR POLLUTION CONTROL EQUIPMENT AND EMISSION CONTROL SYSTEM (ECS) MONITORING EQUIPMENT REQUIREMENTS
- SECTION 400 – ADMINISTRATIVE REQUIREMENTS**
- 401 COMPLIANCE SCHEDULE VOC LIMITS
- 402 COMPLIANCE SCHEDULE O&M PLAN
- SECTION 500 – MONITORING AND RECORDS**
- 501 RECORDKEEPING AND REPORTING
- 502 ECS RECORDING REQUIREMENTS
- 503 COMPLIANCE DETERMINATION AND TEST METHODS
- 504 FORMULA FOR TOTAL VOC VAPOR PRESSURE

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 Revised 04/07/99  
 Revised 09/25/13

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**MARICOPA COUNTY**  
**AIR POLLUTION CONTROL REGULATIONS**  
**REGULATION III – CONTROL OF AIR CONTAMINANTS**  
**RULE 336**  
**SURFACE COATING OPERATIONS**

**SECTION 100 – GENERAL**

- 101 PURPOSE:** To limit the emission of volatile organic compounds (VOCs) from surface coating operations.
- 102 APPLICABILITY:** This rule applies to VOC coating operations coatings listed in Tables 336-1 through 336-7 of this rule Table 4 of this rule that are not more specifically regulated by another source specific rule within Maricopa County Rules 300 to 359 of Regulation III, Examples of coating operations not regulated by this rule appear subsection 305-1 as listed in Section 104 of this rule. Additionally:
  - 102.1** Surface-coating activities regulated under this rule include, but are not limited to, the application of coating, coating preparation/mixing at the facility applying the coating, and the cleanup of coating application equipment.
  - 102.2** Subsections 305.2 Section 103 through 305.7 set sets forth partial or conditional exemptions for certain materials or uses employed by a surface coating operation subject to this rule.
  - 102.3** This rule is not applicable to coatings having a VOC content, minus exempt compounds, of less than 0.15 lb VOC/gal (18g/L) nor to solvents having a VOC content of material less than 0.15 lb VOC/gal.
  - 102.4** NSPS & NESHAP: In addition to this rule, facilities may be subject to New Source Performance Standards (NSPS) in Rule 360 and/or to National Emission Standards for Hazardous Air Pollutants (NESHAP) in Rule 370 of these Rules and Regulations rules.
- 103 PARTIAL EXEMPTIONS:**
  - 103.1 Qualified Materials Exemption:**
    - a. Leak-Preventing Materials:** Sealants, caulking, and similar materials used on the following substrates for the primary purpose of leak prevention are exempt from this rule:
      - (1)** Non-metallic substrates; and
      - (2)** Substrates made post manufacture, such as, but not limited to, old joints and seals on pipe and valve assemblies.
    - b. Certain Joint Fillers:** Caulking and beaded sealants used to fill gaps or to fill joints between surfaces are exempt from this rule, except those used in manufacturing other metal parts and products or in the manufacturing of cans.
  - 103.2 Extreme Performance Coatings Exemption:** Extreme performance coatings are exempt from the VOC limits in Tables 336-1 through 336-7 of this rule but not from any other sections of this rule when used under the following conditions:
    - a.** On internal combustion engine components that are normally above 250°F (121°C) during use; or
    - b.** At temperatures above 250°F (121°C) on items that are both included under the North American Industry Classifications System (NAICS) codes 334210, 334220, 334290, 334416, 334417, 334418, 334419, 334310 or 336419 and are electronic products in space vehicles and/or are communications equipment.
  - 103.3 Plastic Parts Coating Exemption:** The following types of plastic parts coatings are exempt from the VOC limits in Tables 336-1 through 336-7 of this rule but are subject to the remaining provisions of this rule.
    - a.** Touch-up and repair coatings.
    - b.** Stencil coatings applied on clear or transparent substrates.
    - c.** Clear or translucent coatings.
    - d.** Coatings applied at a paint manufacturing facility while conducting performance tests on the coatings.



- e. Non-compliant coatings: After a sufficient demonstration by the owner or operator that no compliant substitute coating exists, an owner or operator is permitted to use no more than 50 gal/yr. of an individual non-compliant coating, not exceeding 200 gal/yr total usage of all such coatings provided such coatings are approved for use in a Maricopa County Air Pollution Permit.
- f. Reflective coatings applied to highway cones.
- g. Mask coatings that are less than 0.5 millimeter thick (dried) and the area coated is less than 25 square inches.
- h. Electromagnetic Interference (EMI)/ Radio-Frequency Interference (RFI) shielding coatings.
- i. Heparin-benzalkonium chloride (HBAC)-containing coatings applied to medical devices, provided that the total usage of all such coatings does not exceed 100 gal/yr per facility.
- j. Business machine plastic part coatings:
  - (1) Texture coatings.
  - (2) Vacuum metalizing coatings.
  - (3) Gloss reducers.
  - (4) Adhesion primers.
  - (5) Electrostatic preparation coatings.
  - (6) Resist coatings.
  - (7) Stencil coatings.

**103.4** Application Methods Exemption: The following coatings are exempt from application methods in Section 302 of this rule but are subject to the remaining provisions of this rule:

- a. Metal part texture coatings.
- b. Metal part touch-up and repair coatings.
- c. Plastic part coating for airbrush operations using less than 5 gal/yr of coating.
- d. Extreme high gloss coatings for pleasure craft surface coating operations.

**103.5** Application Methods and VOC-Limit Exemption: The following surface coating operations are exempt from Sections 301, 302, and 305 of this rule but shall comply with Section 303, 304, and 500 of this rule.

- a. Aerosol can spray coating.
- b. Low Usage of VOC Coatings Which Exceed VOC Thresholds for Coating Categories Listed in Tables 336-1 Through 336-7 of this Rule: Non-compliant coatings are permitted for use if the annual aggregate usage does not exceed 55 gallons per year (208 liters/yr.) at a facility. The owner or operator shall update usage records of these coatings at the end of each month, pursuant to Section 501.2 of this rule.
- c. A Small Surface-Coating Source: A facility that has less than a 2 ton/year VOC emission limit in a Maricopa County Air Pollution Permit for surface coating operations regulated by this rule.
- d. A Quality Class Q protective coating that is used on equipment, structures, and/or components within a containment facility of a nuclear power plant.
- e. A tactical military-equipment coating that is approved in a Maricopa County Air Pollution Permit subsequent to a sufficient demonstration by the user that no compliant substitute exists.
- f. **Large Appliance Coating:**
  - (1) Stencil coatings.
  - (2) Safety-indicating coatings.
  - (3) Solid-film lubricants.
  - (4) Electric-insulating and thermal-conducting coatings.
  - (5) Coating application utilizing aerosol can spray coating.
- g. **Metal Parts Coating:**
  - (1) Stencil coatings.
  - (2) Safety-indicating coatings.
  - (3) Solid-film lubricants.
  - (4) Electric-insulating and thermal-conducting coatings.
  - (5) Magnetic data storage disk coatings.
  - (6) Plastic extruded onto metal parts to form a coating.

**104** TOTAL CATEGORICAL EXEMPTIONS: This rule does not apply to the following operations:

- 104.1** Aerospace coating operations (Rule 348).
- 104.2** Architectural coatings including buildings and erected structures (Rule 335).
- 104.3** Solvent cleaning or stripping a surface for coating or other purpose (Rule 331).
- 104.4** Marine vessel exterior refinishing (EPA 453/B-97-001).
- 104.5** Printing and graphic arts coating (Rule 337).
- 104.6** Semiconductor manufacturing (Rule 338).
- 104.7** Coating or refinishing a highway vehicle or mobile equipment (Rule 345).
- 104.8** Coating wood furniture and fixtures (Rule 342).
- 104.9** Coating wood millwork (Rule 346).



**SECTION 200 – DEFINITIONS:** For the purpose of this rule, the following definitions shall apply, in addition to those definitions found in Rule 100 (General Provisions and Definitions) of these rules. In the event of any inconsistency between any of the Maricopa County air pollution control rules, the definitions in this rule take precedence.

- ~~201~~ 201 **ADHESIVE:** A material used for the primary purpose of bonding two or more surfaces together.
- 202 **ADHESION PRIMER:** A coating that is applied to a plastic polymer part to promote the adhesion of a subsequent coating.
- ~~202~~ **AEROSOL CAN:** ~~A non-refillable hand-held container from which a product is dispensed by means of pressurized propellant packaged within the container.~~
- 203 **AEROSOL CAN SPRAY COATING:** A coating sold in a hand-held, pressurized, non-refillable container, of less than 22 fluid ounces (0.66 liter) capacity, and that is expelled from the container in a finely divided form when a valve on the container is depressed.
- ~~203~~ 204 **AIR-DRIED COATING:** A coating which is dried by the use of air or forced warm air at temperatures up to and including 200°F (93.3°C).
- 205 **ALTERNATIVE APPLICATION METHODS:** Any method approved by the Administrator as HVLP-equivalent.
- 206 **ANTIFOULANT COATING:** A coating applied to the underwater portion of a pleasure craft to prevent or reduce the attachment of biological organisms, and registered with the United States Environmental Protection Agency (EPA) as a pesticide under the Federal Insecticide, Fungicide, and Rodenticide Act (7 United States Code Section 136).
- ~~204~~ 207 **BAKED COATING:** A coating that is dried or cured in an oven in which the oven temperature exceeds 200°F (93.3°C).
- 208 **BUSINESS MACHINE:** A device that uses electronic or mechanical methods to process information, perform calculations, print or copy information, or convert sound into electrical impulses for transmission, such as:
- 208.1 Products classified as typewriters under SIC Code 3572;
- 208.2 Products classified as electronic computing devices under SIC Code 3573;
- 208.3 Products classified as calculating and accounting machines under SIC Code 3574;
- 208.4 Products classified as telephone and telegraph equipment under SIC Code 3661;
- 208.5 Products classified as office machines, not elsewhere classified, under SIC Code 3579; and (6) photocopy machines, a subcategory of products classified as photographic equipment under SIC Code 3861.
- 209 **CAMOUFLAGE COATING:** A coating used, principally by the military, to conceal equipment from detection.
- ~~205~~ 210 **CAN COATING:** ~~Any~~ A coating either used in the production of metal cans applied to the surface(s) of formed cans or applied at a can making facility to the surface(s) of flat metal sheets or strips that are formed there into cans.
- ~~206~~ 211 **CAN PRINTING INK:** A fluid or viscous formulation used in can printing that imparts design, pattern, and/or alphanumeric symbols to a can.
- ~~207~~ 212 **CLEAR COAT:** ~~Any~~ A coating which that lacks color or opacity or is transparent.
- 213 **COATING APPLICATION EQUIPMENT:** Any equipment including, but not limited to, spray guns, wands, rollers, brushes or any other means used to apply or cover a surface with a coating for either aesthetic, protection or other purpose.
- ~~208~~ 214 **COIL COATING:** ~~Any~~ A coating applied to the surface(s) of flat metal sheets or strips that are is formed into rolls or coils not used to make cans.
- ~~209~~ 215 **DAY:** A period of 24 consecutive hours beginning at midnight.
- 216 **DIP COATING:** A method of applying a coating to a substrate by submersion into and removal from a coating bath.
- 217 **DRUM COATING:** Coating of a cylindrical metal shipping container larger than 12 gallons capacity but no larger than 110 gallons capacity.
- 218 **ELECTRIC DISSIPATING COATING:** A coating that rapidly dissipates a high-voltage electric charge.
- 219 **ELECTRIC INSULATING VARNISH:** A non-convertible-type coating applied to electric motors, components of electric motors, or power transformers, to provide electrical, mechanical, and environmental protection or resistance.
- 220 **ELECTROMAGNETIC INTERFERENCE (EMI)/ RADIO-FREQUENCY INTERFERENCE (RFI) SHIELDING:** A coating used on electrical or electronic equipment to provide shielding against electromagnetic interference, radio frequency interference, or static discharge.
- ~~210~~ 221 **ELECTROSTATIC SPRAY/SYSTEM:** A method of applying atomized paint by electrically charging the coating and the object being coated with opposing charges. A higher proportion of the coating reaches and coats the object than would occur in the absence of a charge.
- ~~211~~ 222 **EMISSION CONTROL SYSTEM (ECS):** A system, approved in writing by the Control Officer, to reduce emissions of volatile organic compounds. Such a system consists of an emissions collection system and an emissions processing subsystem, ~~designed and operated in accordance with good engineering practice to reduce emissions of volatile organic compounds.~~
- ~~212~~ 223 **END SEALING COMPOUND:** A compound which is coated onto can ends and functions as a gasket when the end is attached to the can.
- 224 **ETCHING FILLER:** A coating that contains less than 23 percent solids by weight and at least ½ percent acid by weight, and is used instead of applying a pretreatment coating followed by a primer.
- ~~213~~ **EXEMPT EVAPORATING COMPONENTS (EXEMPT COMPOUNDS):** ~~The non-VOC, evaporating portion of a coating formulation; this necessarily includes all non-precursor organic compounds, as well as water and other inorganic liquids and gases.~~
- 225 **EXEMPT COMPOUNDS:** The federally listed non-precursor organic compounds, which have been determined to have negligible photochemical reactivity as listed in 40 CFR 51.100(s)(1) and in Appendix G of these rules.
- ~~214~~ 226 **EXTERIOR CAN BASECOAT:** ~~Any~~ A coating applied to the exterior of a can to provide protection for the metal or to provide background for any lithographic or printing operation.
- 227 **EXTREME HIGH-GLOSS COATING:** A coating when tested by the ASTM D-523 adopted in 1980 shows reflectance of 75 or more on a 60° meter.
- ~~215~~ 228 **EXTREME-PERFORMANCE COATING:** A coating used on a surface where the coated surface in its intended use is at temperatures consistently in excess of 250°F (121°C). ~~Extreme performance coatings include but are not limited to, coatings applied to locomotives, railroads cars, farm machinery, plastic, rubber, leather, or glass.~~



- 246 229 **FABRIC:** A textile material. Non-manufactured items from nature are not fabric except for natural threads, fibers, filaments, and similar that have been manufactured into textile fabric.
- 247 230 **FABRIC COATING:** ~~Any~~ A decorative or protective coating or reinforcing material applied either onto or impregnated into textile fabric.
- 231 **FILLER:** A relatively non-adhesive substance added to an adhesive to improve its working properties, permanence, strength, or other qualities.
- 248 232 **FILM COATING:** ~~Any~~ A coating applied in a web coating process on film substrate other than paper or fabric, including, but not limited to, typewriter ribbons, photographic film, magnetic tape, and metal foil gift wrap.
- 233 **FINISH PRIMER/SURFACER:** A coating applied with a wet film thickness of less than 10 mils prior to the application of a topcoat for purposes of providing corrosion resistance, adhesion of subsequent coatings, a moisture barrier, or promotion of a uniform surface necessary for filling in surface imperfections. A finish primer/surfacer shall have a wet film thickness of less than 10 mils as determined by ASTM Method D 1212-85. A one-component finish primer is any finish primer where the coating resin cures without the need for an added catalyst or converter. A two-component finish primer is any finish primer where the coating resin cures only when a catalyst or converter is added.
- 249 234 **FLEXIBLE PLASTIC PART OR PRODUCT:** A plastic part or product designed to withstand significant deformation without damaging it for its intended use. Not included are flexible plastic parts that are found on a can, coil, metal furniture, or large appliance, or that are already a part of an aerospace component, highway vehicle, mobile equipment, architectural building or structure, or a previously coated marine-vessel .
- 235 **FLOW COAT:** A non-atomized technique of applying coatings to a substrate with a fluid nozzle in a fan pattern with no air supplied to the nozzle.
- 236 **FOG COAT:** A coating that is applied to a plastic part for the purpose of color matching without masking a molded-in texture. A fog coat shall not be applied at a thickness of more than 0.5 mils of coating solids.
- 237 **GLOSS REDUCER:** A coating that is applied to a plastic part solely to reduce the shine of the part and is applied at a thickness of less than or equal to 0.5 mils of coating solids.
- 238 **HAND APPLICATION METHODS:** Application of coatings by non-mechanical, hand-held equipment including, but not limited to, paint brushes, hand rollers, caulking guns, trowels, spatulas, syringe daubers, rags, and sponges.
- 239 **HEAT-RESISTANT COATING:** A coating that must withstand a temperature of at least 400°F (204°C) during normal use.
- 240 **HIGH PERFORMANCE ARCHITECTURAL COATING:** A coating used to protect architectural subsections and that meets the requirements of the Architectural Aluminum Manufacturer Association's publication number AAMA 2604-05 (Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels) or 2605-05 (Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels).
- 241 **HIGH BUILD PRIMER/SURFACER:** A coating applied with a wet film thickness of 10 mils or more prior to the application of a topcoat for purposes of providing corrosion resistance, adhesion of subsequent coatings, or a moisture barrier, or promoting a uniform surface necessary for filling in surface imperfections. A high-build primer/surfacer shall have a wet-film thickness of 10 mils or more as determined by ASTM Method D1212-85.
- 242 **HIGH GLOSS COATING:** A coating that achieves at least 85 percent reflectance on a 60° meter when tested by ASTM D 523-89.
- 243 **HIGH TEMPERATURE COATING:** A coating that is certified to withstand a temperature of 1000°F (537°C) for 24 hours.
- ~~220~~ **HEAT SENSITIVE MATERIAL:** ~~Materials which cannot consistently be exposed to temperatures greater than 203°F (95°C) without materially affecting desired function, performance, or other characteristics~~
- 244 **HIGH-VOLUME, LOW PRESSURE (HVLP) SPRAY GUN:** Spray equipment that is used to apply coating by means of a spray gun that operates at 10 psig of atomizing air pressure or less at the center of the air cap. A permanently affixed manufacturer's gun identification or manufacturer's gun literature shall identify and be proof of an HVLP gun.
- 221 245 **HIGHWAY VEHICLE:** ~~Any~~ A vehicle that is physically capable of being driven upon a highway including, but not limited to, cars, pickups, vans, trucks, truck-tractors, motor-homes, motorcycles, and utility vehicles.
- 222 246 **INTERIOR BASECOAT:** ~~Any~~ A coating applied to the interior of a can to provide a protective lining between the intended contents and the metal shell of the can.
- 223 247 **INTERIOR BODY SPRAY:** ~~Any~~ A coating sprayed onto the interior of a can to provide a protective film between the intended contents and the metal shell of the can.
- 248 **IN USE OR HANDLED:** Actively engaging the materials with activities such as mixing, depositing, brushing, rolling, padding, wiping or removing or transferring material into or out of the container.
- 224 249 **LARGE APPLIANCE:** A door, case, lid, panel, or interior support part of residential and commercial washers, dryers, ranges, refrigerators, freezers, water heaters, dishwashers, trash compactors, air conditioners, evaporative coolers, and other similar products.
- 225 250 **LOW PRESSURE SPRAY GUN:** An air-atomized spray gun, ~~that~~ which by design, functions best at ~~the~~ air cap pressures below 10 psig (516 mm Hg) (0.7 bar), measured according to Section ~~503.1d~~ 503.1(d) of this rule, and for which the manufacturer makes no public claims ~~to the public~~ that the gun can be used effectively above 12 psig (619 mm Hg) (0.8 bar).
- 251 **MARINE VESSEL:** A tugboat, tanker, freighter, passenger ship, barge, or other boat, ship or watercraft used for commercial purposes. This definition excludes those boats used primarily for recreational purposes.
- 226 252 **METAL FURNITURE:** ~~Any furniture~~ Furniture made of metal or any metal part which will be assembled with other parts made of metal or other material(s) to form a furniture piece.
- 253 **METALLIC COATING:** A coating that contains more than 5 grams of metal particles per liter of coating as applied.
- 254 **MILITARY SPECIFICATION COATING:** A coating that has a formulation that has been approved by a United States Military Agency for use on military equipment.
- ~~227~~ **MINUS EXEMPT COMPOUNDS or MINUS EXEMPT EVAPORATING COMPONENTS :** ~~See VOC Content Minus Exempt Compounds.~~



- ~~228~~ **255** **MOBILE EQUIPMENT:** ~~Any equipment~~ Equipment that is physically capable of being driven or drawn ~~upon~~ on a highway including, but not limited to, ~~the following types of equipment:~~ construction vehicles (such as mobile cranes, bulldozers, concrete mixers); farming equipment (wheel tractor, plow, pesticide sprayer); hauling equipment (truck trailers, utility bodies, camper shells); and miscellaneous equipment (street cleaners, mopeds, golf carts).
- 256** **MOLD-SEAL COATING:** The initial coating applied to a new mold or a repaired mold to provide a smooth surface which, when coated with a mold release coating, prevents products from sticking to the mold.
- 257** **MULTI-COLORED COATING:** A coating that is packaged in a single container, applied in a single coat and exhibits more than one color when applied.
- 258** **MULTI-COMPONENT COATING:** A coating requiring the addition of a separate reactive resin, commonly known as a catalyst or hardener, prior to application to form an acceptable dry film.
- ~~229~~ **ORGANIC COMPOUND:** ~~Any compound of carbon excluding carbon monoxide, carbon dioxide, carbonic acid, carbonates, and metallic carbides.~~
- 259** **ONE-COMPONENT COATING:** A coating that is ready for application as it comes out of its container to form an acceptable dry film. A thinner necessary to reduce the viscosity is not considered a component.
- 260** **OPTICAL COATING:** A coating applied to an optical lens.
- ~~230~~ **261** **OTHER METAL PARTS AND PRODUCTS:** Any metal part or product, excluding the following items that are made of metal: can, coil, furniture, large appliance, aerospace component, metal foil, metal textile fabric, semiconductor metal, highway vehicle, mobile equipment, an architectural building or structure, a previously coated marine-vessel.
- ~~231~~ **262** **OVERVARNISH:** ~~Any~~ A coating applied to a can to reduce the coefficient of friction, to provide gloss, or to protect the finish against abrasion and/or corrosion.
- 263** **PAN BACKING COATING:** A coating applied to the surface of pots, pans, or other cooking implements that are exposed directly to a flame or other heating element.
- ~~232~~ **264** **PAPER COATING:** ~~Any~~ A coating applied on or impregnated into paper, including, but not limited to, adhesive tapes ~~and labels~~, book covers, post cards, office copier paper, and drafting paper ~~and pressure sensitive tapes~~.
- ~~233~~ **265** **PLASTIC:** Substrates ~~containing~~ made from one or more resins and may be solid, porous, flexible, or rigid. Plastics include fiber reinforced plastic composites. Any solid, synthetic: resin, polymer, or elastomer, except rubber. For the purposes of this rule, plastic film is considered film; fabric and paper made of polymeric plastic fibers are considered fabric and paper, respectively.
- 266** **PLEASURE CRAFT:** Vessels which are manufactured or operated primarily for recreational purposes, or leased, rented, or chartered to a person or business for recreational purposes.
- 267** **PLEASURE CRAFT COATING:** A marine coating that is applied to or intended by the manufacturer to be applied to pleasure craft.
- ~~234~~ **POLYESTER AND POLYESTER RESIN:** ~~A complex, polymeric ester containing difunctional acids.~~
- ~~235~~ **POLYESTER COMPOSITE:** ~~Cured material made of polyester resin with reinforcing material imbedded in it, such as glass fibers.~~
- 268** **PREFABRICATED ARCHITECTURAL COMPONENT COATING:** A coating applied to metal parts and products which are to be used as an architectural structure.
- 269** **PRESSURE SENSITIVE TAPE OR LABEL:** A flexible strip of paper, backing material, or other material that is coated on one side with a permanently tacky adhesive which will adhere to a variety of surfaces with light pressure.
- 270** **PRETREATMENT COATING:** A coating containing no more than 12 percent solids by weight, and at least ½ percent acid, by weight, is used to provide surface etching, and is applied directly to metal surfaces to provide corrosion resistance, adhesion and ease of stripping.
- 271** **PRETREATMENT WASH PRIMER:** A coating that contains no more than 12 percent solids, by weight, and at least ½ percent acids, by weight, is used to provide surface etching, and is applied directly to fiberglass and metal surfaces to provide corrosion resistance and adhesion of subsequent coatings.
- ~~236~~ **272** **PRIMER:** A coating applied directly to substrate for any one or combination of the following purposes: corrosion prevention, protection from the environment, functional fluid resistance, or adhesion of subsequent coatings.
- ~~237~~ **273** **QUALITY CLASS Q:** ~~Any~~ A system, structure, coating or other component ~~which that~~, if defective or inoperable, could cause or increase the severity of a nuclear incident, thereby imposing undue risk to the health and safety of the public.
- ~~238~~ **REFINISHING:** ~~Recoating a used object's surface which arrives at the refinisher with a coating or with a previous coating worn away by use.~~
- 274** **REFRIGERATED GLASS DOOR COATING:** A two-component coating or ink used for the manufacturing of refrigerated glass doors that forms a decorative or protective film and provides a substrate for bonding materials such as seals, spacers, and sealants.
- ~~239~~ **275** **REPAIR COATING:** ~~A coating or coating operation~~ used to recoat the portion of a completed finish that suffered post-production damage at the facility where the finish was applied.
- 240** **RESTRICTED SPRAY GUN:** ~~Any air atomizing spray gun that is not a low pressure spray gun, and any other coating gun that is not on the list in Section 303.1.~~
- 276** **SHOCK-FREE COATING:** A coating applied to electrical components to protect the user from electric shock. The coating has characteristics of being of low capacitance and high resistance, and having resistance to breaking down under high voltage.
- ~~241~~ **277** **SILICONE RELEASE COATING:** ~~Any~~ A resin coating, the major cured portion of which is silicone resin, having as its primary function the release of food products from metal surfaces such as baking pans.
- ~~242~~ **278** **SMALL SURFACE-COATING SOURCE (SSCS):** A facility from which the total VOC emissions for all surface coating operations that are subject to this rule without, or prior to, any emission control, is less than ~~45 pounds (6.8 kg) per day and less than 2 tons/yr (1814 kg) per year~~; as demonstrated by both adequate records of coating and diluent use (pursuant according to Section 501.2 501.2 of this rule) and a separate tally of the number of days each month ~~that~~ such coating operations occur.
- 279** **SOLAR-ABSORBENT COATING:** A coating with the prime purpose of absorption of solar radiation.
- 280** **STENCIL COATING:** An ink or a coating that is rolled or brushed onto a template or stamp in order to add identifying letters, symbols and/or numbers.



- 243 **281** **STRIPPABLE BOOTH COATING:** A temporary coating that is applied to spray booth surfaces to receive the overspray and protect the surfaces, and which is designed to readily be pulled off the substrate in strips or sheets, and disposed of.
- 244 **282** **SURFACE COATING:** ~~Any A~~ liquid, fluid, or mastic composition ~~which that~~ is converted to a solid (or semi-solid) protective, decorative, or adherent film or deposit after application as a thin layer. Surface coating is generally distinct and different from impregnation and from applying adhesive for bonding purposes.
- 245 **283** **SURFACE COATING OPERATION:** Preparation, handling, mixing, and application of surface coating, and cleanup of application equipment and enclosures at a facility where surface coating is applied.
- 284** **TEXTURE COATING:** A coating that is applied which, in its finished form, consists of discrete raised spots of the coating.
- 246 **285** **THREE-PIECE CAN SIDE-SEAM COAT COATING:** ~~Any A~~ coating sprayed onto the interior and/or exterior of a can body seam on a three-piece can to protect the exposed metal.
- 247 **286** **TOPCOAT:** The final, permanent, ~~coating formulation~~ coating formulation that ~~completed~~ completes the finish on a surface.
- 248** **TOTAL VOC VAPOR PRESSURE (VOC COMPOSITE PARTIAL PRESSURE):** ~~The sum of the partial pressures of the compounds defined as VOCs, calculated according to the formula in Section 504 of this rule.~~
- 249 **287** **TOUCH-UP COATING:** A coating used to cover minor coating imperfections after the main coating operation. This includes touch-up coating that accompanies the purchase of an object already coated with that coating.
- 288** **TRANSFER EFFICIENCY:** The ratio of the weight of coating solids adhering to the part being coated to the weight of coating solids used in the application process expressed as a percentage.
- 250 **289** **TWO-PIECE CAN EXTERIOR END COAT COATING:** ~~Any A~~ coating applied to the exterior end of a can to provide protection to the metal.
- 290** **VACUUM METALIZING COATING:** The undercoat applied to the substrate on which metal is deposited or the overcoat applied directly to the metal film. Vacuum metalizing is the process of evaporating metals inside a vacuum chamber and then bonding the metals to the desired substrate to achieve a uniform metalized layer.
- 251 **291** **VINYL COATING (COATING ON VINYL):** ~~Any A~~ decorative or protective coating or reinforcing coating applied over vinyl-coated textile fabric or vinyl sheets.
- 252 **VOC BORNE COATING:** ~~A coating that contains more VOC than water, by weight.~~
- 253 **VOC BORNE DILUENT:** ~~A solvent or other diluent that contains more VOC than water, by weight~~
- 254.2 **292** **VOC ACTUAL:** VOC CONTENT OF MATERIAL (MATERIAL VOC CONTENT) Actual includes the VOC Content minus all The weight of volatile organic compounds minus the weight of water and minus the weight of exempt organic compounds divided by the total volume of the materials. Units of VOC Actual are in pounds of VOC per gallon (or grams per liter) of material and shall be calculated using the following equation:

$$\text{VOC Actual Content of Material Cleaners or Reducers} = \frac{W_s - W_w - W_{es}}{V_m}$$

Using consistently either English or metric measures in the calculations, where:

$W_s$  = weight of all volatile material in pounds (or grams) including VOC, water, non-precursor organic compounds (Section 261) and dissolved vapors

$W_w$  = weight of water in pounds (or grams)

$W_{es}$  = weight of all non-precursor organic compounds in pounds (or grams)

$V_m$  = volume of total material in gallons (or liters)

- 254 **293** **VOC CONTENT:** ~~In this rule, VOC content is determined by one of the following two formulas: To determine compliance with Table 1 or the 2.0 lb VOC/gal threshold in Section 302, use the following formula in subsection 255.1; For other purposes, use the formula in subsection 255.2: The organic chemicals in a material that have a vapor pressure at ordinary room temperature. This vapor pressure results from a low boiling point, which causes large numbers of molecules to evaporate or sublime from the liquid or solid form of the compound and enter the surrounding air. The term VOC content is a general term used throughout the rule and includes VOC, VOC Actual and VOC Regulatory.~~

- 254.1 **294** **VOC REGULATORY:** VOC Content Minus Exempt Compounds (is the same as VOC CONTENT MINUS EXEMPT EVAPORATING COMPONENTS) The VOC content The weight of volatile organic compounds minus the weight of water and minus the weight of exempt compounds divided by the volume of material minus the volume of water and minus the volume of exempt compounds. Units of VOC Regulatory are in pounds of VOC per gallon (or grams per liter) of material and shall be calculated using the following equation:

$$\text{VOC Content Minus Exempt Compounds VOC Regulatory} = \frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

Using consistently either English or metric measures in the calculations, where:

$W_s$  = weight of all volatile material in pounds (or grams), including VOC, water, non-precursor organic compounds and dissolved vapors



$W_w$  = weight of water in pounds (or grams)

$W_{es}$  = weight of all non-precursor organic compounds in pounds (or grams)

$V_m$  = volume of total material in gallons (or liters)

$V_w$  = volume of water in gallons (or liters)

$V_{es}$  = volume of all non-precursor organic compounds in gallons (or liters)

**SECTION 300 – STANDARDS**

**301 SURFACE COATINGS:** ~~A person~~ An owner or operator shall comply with one of the following for all applications of surface coatings:

**301.1** Meet the limits in ~~Table 1~~ Tables 336-1 through 336-7 of this rule. Coating limits are calculated as VOC Regulatory (as applied). Compliance will be determined based on the VOC content limit, as expressed in metric units. English units are provided for information only; or

**301.2** Operate an Emission Control System (ECS) in accordance with ~~subsection 306.1~~ Section 305 of this rule when applying a coating that exceeds the VOC limits in ~~Table 1~~ Tables 336-1 through 336-7 of this rule; ~~or All VOC coatings used that exceed the VOC limits in Tables 336-1 through 336-7 of this rule shall be clearly labeled such that coating-operators are informed that an ECS must be used during application of surface coatings; or~~

**301.3** Qualify for an exemption under ~~Section 305~~ Sections 103 or 104 of this rule.

TABLE 1

SURFACE COATING EMISSION LIMITS		
TYPE OF SURFACE COATING  Column I	LIMITS AS APPLIED: VOC content minus exempt compounds (see subsection 255.1)	
	Column II	
	lbs/gal	g/liter
Can Coating		
Sheet Basecoat (Exterior and Interior) and Overvarnish	2.8	340
Two Piece Can Exterior (Basecoat and Overvarnish)	2.8	340
Two and Three Piece Can Interior Body Spray	4.2	510
Two Piece Can Exterior End (Spray or Roll Coat)	4.2	510
Three Piece Can Side Seam Spray	5.5	660
End Sealing Compound	3.7	440
Can Printing Ink	2.5	300
Coil Coating (any coat)	2.6	310
Metal Furniture Coating	3.0	360
Large Appliance Coating	2.8	340
<b>OTHER METAL PARTS AND PRODUCTS COATING (As defined in Section 231)</b>		
The following includes Non-adhesive Coating, Adhesive, Adhesive Primer, Caulking, and Beaded Sealants:		
Air Dried Coating	3.5	420
Baked Coating [above 200°F (93°C)]	3.0	360
Silicone Release Coating: Baked or Air Dried	3.5	420
Fabric Coating	2.9	350
Film Coating	2.9	350
<b>COATING PLASTIC PARTS AND PRODUCTS THAT ARE NOT DEFINED AS FLEXIBLE</b>		
	3.5	420
<b>COATING FLEXIBLE PLASTIC PARTS AND PRODUCTS</b>		
Primer	4.1	490
Color Topcoat	3.8	450
Basecoat/Clear Coat (Combined System) – Limit for either coat	4.5	540
Paper Coating, including Adhesives	2.9	350
Vinyl Coating (Coating on Vinyl)	3.8	450
STRIPPABLE BOOTH COATINGS	2.0	240

Table 336-1: Coating Limits for Metal Parts and Products

Coating Category	Air Dried		Baked	
	g VOC/l	lb VOC/gal	g VOC/l	lb VOC/gal



Coating Category	Air Dried		Baked	
	g VOC/l	lb VOC/gal	g VOC/l	lb VOC/gal
Camouflage	420	3.5	420	3.5
Drum Coating, New, Exterior	340	2.8	340	2.8
Drum Coating, New, Interior	420	3.5	420	3.5
Drum Coating, Reconditioned, Exterior	420	3.5	420	3.5
Drum Coating, Reconditioned, Interior	500	4.2	500	4.2
Electric-Insulating Varnish	420	3.5	420	3.5
Etching Filler	420	3.5	420	3.5
Extreme High-Gloss	420	3.5	360	3.0
Extreme Performance	420	3.5	360	3.0
Heat-Resistant	420	3.5	360	3.0
High Performance Architectural	740	6.2	740	6.2
High Temperature	420	3.5	420	3.5
Metallic	420	3.5	420	3.5
Military Specification	340	2.8	280	2.3
Mold-Seal Coating	420	3.5	420	3.5
Multi-Component	340	2.8	280	2.3
One-Component	340	2.8	280	2.3
Other Metal Parts and Products: Includes Non-Adhesive Coating, Adhesive, Adhesive Primer, Beaded Sealant, and Caulking	420	3.5	360	3.0
Pan Backing	420	3.5	420	3.5
Prefabricated Architectural Multi- Component	420	3.5	280	2.3
Prefabricated Architectural One- Component	420	3.5	280	2.3
Pretreatment Coating	420	3.5	420	3.5
Repair	420	3.5	360	3.0
Silicone Release	420	3.5	420	3.5
Solar-Absorbent	420	3.5	360	3.0
Strippable Booth Coating	240	2.0	-	-
Touch-up	420	3.5	360	3.0
Vacuum Metalizing	420	3.5	420	3.5

Table 336-2: Coating Limits for Cans and Coils

Coating Category	g VOC/l	lb VOC/gal
Strippable Booth Coating (applies to both can and coil coating categories)	240	2.0
<b>Can Coating</b>		
Can Printing Ink	300	2.5
End Sealing Compound	440	3.7
Sheet Basecoat (Exterior and Interior) and Overvarnish	340	2.8
Three-Piece Can Side-Seam Spray	660	5.5
Two and Three-Piece Can Interior Body Spray	510	4.2
Two-Piece Can Exterior (Basecoat and Overvarnish)	340	2.8
Two-Piece Can Exterior End (Spray or Roll Coat)	510	4.2
<b>Coil Coating</b>	310	2.6

Table 336-3: Coating Limits for Plastic Parts and Products

Coating Category	g VOC/l	lb VOC/gal
Electric Dissipating Coatings and Shock-Free Coatings	800	6.7
Extreme Performance	420	3.5
	(2-pack coatings)	(2-pack coatings)
<b>Flexible Plastic Parts and Products</b>		
Basecoat	540	4.5
Clearcoat	540	4.5
Color Topcoat	450	3.8
Primer	490	4.1
Metallic	420	3.5
Military Specification	340 (1 pack)	2.8 (1 pack)
	420 (2 pack)	3.5 (2 pack)
Mold-Seal Coating	760	6.3
Multi-Colored Coating	680	5.7



Coating Category	g VOC/l	lb VOC/gal
Multi-Component	420	3.5
One-Component	280	2.3
Optical Coatings	800	6.7
Plastic Parts and Products That Are Not Defined As Flexible	420	3.5
Strippable Booth Coating	240	2.0
Vacuum Metalizing	800	6.7

**Table 336-4: Coating Limits for Business Machines**

Coating Category	g VOC/l	lb VOC/gal
Fog Coat	260	2.2
Primer	350	2.9
Repair	350	2.9
Strippable Booth Coating	240	2.0
Texture Coating	350	2.9
Topcoat	350	2.9
Touch-up	350	2.9

**Table 336-5: Coating Limits for Metal Furniture and Large Appliances**

Coating Category	Air Dried		Baked	
	g VOC/l	lb VOC/gal	g VOC/l	lb VOC/gal
Extreme High Gloss	340	2.8	360	3.0
Extreme Performance	420	3.5	360	3.0
Heat-Resistant	420	3.5	360	3.0
Metallic	420	3.5	420	3.5
Multi-Component	340	2.8	275	2.3
One-Component	275	2.3	275	2.3
Pretreatment Coating	420	3.5	420	3.5
Refrigerated Glass Door Coating	480	4.0	=	=
Solar-Absorbent	420	3.5	360	3.0
Strippable Booth Coating	240	2.0	=	=

**Table 336-6: Coating Limits for Paper, Fabric, Film, Foil, and Vinyl**

Coating Category	kg VOC/kg Coating (lb VOC/lb solids)	kg VOC/kg Solids (lb VOC/lb solids)	g VOC/l	lb VOC/gal
Fabric	=	=	350	2.9
Paper, Film, and Foil Surface Coating (Not Including Pressure Sensitive Tape and Label)	0.08	0.40	=	=
Pressure Sensitive Tape and Label Surface Coating	0.067	0.20	=	=
Strippable Booth Coating	=	=	240	2.0
Vinyl	=	=	450	3.8

**Table 336-7: Coating Limits for Pleasure Craft**

Coating Category	g VOC/l	lbs VOC/gal
All Other Pleasure Craft Surface Coatings for Metal or Plastic	420	3.5
Aluminum Substrate Antifoulant Coating	560	4.7
Extreme High Gloss Topcoat	600	5.2
Finish Primer/Surfacer	600	5.2
High Build Primer/Surfacer	340	2.8
High Gloss Topcoat	420	3.5
Other Substrate Antifoulant Coating	400	3.4
Pretreatment Wash Primer	780	6.5
Strippable Booth Coating	240	2.0

**302 APPLICATION METHODS FOR SURFACE COATINGS:**

**302.1** ~~A person~~ An owner or operator shall employ use one of the following methods for all applications of surface coating materials containing more than 2 pounds of VOC per gallon (240 g/L), minus exempt compounds (VOC Regulatory):

- 302.1 ~~a.~~ A HVLP spray gun; ~~or~~
- 302.2 ~~b.~~ An Electrostatic system; ~~or~~



- 302.3 c. A system that atomizes principally by hydraulic pressure, including “airless” and “air assisted airless”;
- 302.4 d. ~~HVLP Spray Gun; Non atomizing or non spraying application methods, such as but not limited to dipping, rolling, or brushing; or Hand application methods, including but not limited to:~~
  - e. (1) Flow Coat;
  - f. (2) Roll Coat;
  - g. (3) Dip-Coating;
  - h. ~~Hand Application Methods;~~
- 302.5 e. **An Alternative Application Method:** Any method approved by the Administrator of the Federal EPA or the Control Officer as having a transfer efficiency of 65% or greater as HVLP-equivalent.

**302.2** An owner or operator is allowed to use an application method other than that described in Section 302.1 of this rule:

- a. For applications of surface coating materials containing less than or equal to 2 pounds of VOC per gallon (240 g/L), minus exempt compounds (VOC Regulatory).
- b. For applications of surface coating materials containing more than 2 pounds of VOC per gallon (240 g/L), minus exempt compounds (VOC Regulatory):
  - (1) If VOC emissions from the finishing application are captured and directed to an ECS complying with the provisions of Section 305 of this rule; or
  - (2) If coating the inside of pipes and tubes with a wand-style applicator; or
  - (3) If using an airbrush or other small gun that has a reservoir capacity not exceeding 250 cc (8.8 fl. oz.) and is used solely for detailing, lettering, touch-up, and/or repair.

**303** **CLEANUP OF APPLICATION EQUIPMENT:** ~~A person~~ An owner or operator shall comply with the following when using VOC-containing material to clean application equipment:

303.1 ~~Disassemble any spray gun and other application equipment and clean it in:~~

- ~~a. A container which remains covered at all times, except when the application equipment is being handled in the container, or transferred into or out of the container; or~~
- ~~b. A commercially sold gun cleaning machine which shall be operated and maintained as stipulated in the Air Pollution Permit’s Operation and Maintenance (O&M) Plan, or in the absence of its mention in the O&M Plan, according to manufacturer’s or distributor’s instructions.~~

303.2 ~~Vapor Pressure Limits: Any person subject to this rule using VOC solvent to clean coating application equipment shall use only solvent which, as used, has a VOC vapor pressure below 35 mm Hg at 20° C (68° F), except for sprayless equipment exempted pursuant to subsection~~

**303.1** **Spray-Gun Cleaning Requirements:**

- a. Clean spray-guns without spraying or atomizing a solvent cleaner with the gun.
- b. **Spray-Gun Cleaning Machine:** Use a spray-gun cleaning machine that complies with the following requirements unless the owner or operator complies with the manual spray-gun cleaning requirements in Section 303.2 of this rule.
  - (1) **Spray-Gun Cleaning Machine-General Requirements:** The spray-gun cleaning machine shall meet all of the following requirements:
    - (a) Be designed to clean spray-guns.
    - (b) Have at least one pump that drives solvent cleaner through and over the spray-gun.
    - (c) Have a basin which permits containment of the solvent cleaner.
    - (d) Be kept in proper repair and free from liquid leaks.
    - (e) Be fitted with a cover.
    - (f) Be located on-site where the spray application occurs; and
    - (g) Be operated and maintained according to manufacturer’s or distributor’s instructions.
    - (h) **Porous Material:**
      - (i) Do not clean nor use porous or absorbent materials to clean parts or products in a cleaning machine. For the purpose of this rule, porous or absorbent materials include, but are not limited to, cloth, leather, wood, and rope.
      - (ii) Do not place an object with a sealed wood handle, including a brush, in or on a cleaning machine.
      - (iii) Do not place porous or absorbent materials, including, but not limited to, cloth, leather, wood, and rope in or on a cleaning machine.
  - (2) **Automatic Spray-Gun Cleaning Machine:** An automatic spray-gun cleaning machine shall have a self-covering or enclosing cover feature that in the cover’s closed position allows no gaps exceeding 1/8 inch (3 mm) between the cover and the cabinet. This self-enclosing feature shall be maintained and consistently cover or enclose to these gap limits.
  - (3) **Non-Automatic Remote Reservoir Spray Gun Cleaning Machine:** A non-automatic remote reservoir Spray-Gun Cleaning Machine cleaning machine shall meet all of the following requirements:
    - (a) Drain solvent cleaner from the sink/work-space quickly into a remote reservoir when work-space is not in use;
    - (b) Machine reservoir shall not have cumulative total openings, including the drain opening(s) exceeding two square inches in area; and so that the reservoir will not allow VOC vapors to escape to the atmosphere; and
    - (c) Allow a machine design in which The base of the sink/work-space may function as the reservoir’s top surface, as long as the fit/seal between sink base and reservoir container allows the reservoir to meet the opening limits specified in Section 303.1(b)(3)(b) of this rule.



- 303.2 Manual Spray-Gun Cleaning Requirements:** An owner or operator manually cleaning spray-guns shall comply with the following requirements:
- a. Disassembled spray-guns must be cleaned by non-mechanical, hand-held method of application of cleaners including but not limited to paint brushes, hand rollers, caulking guns, trowels, spatulas, syringe daubers, rags, and sponges;
  - b. If disassembled spray-guns must be are soaked in a vat which they shall remain covered at all times, except when the application equipment is being handled in the container or transferred into or out of the container;
- 304 **HANDLING AND DISPOSAL OF VOC:**
- 304.1 **Use And Storage:** A person shall cover and keep covered each VOC containing material which is not currently in use. A person shall store finishing and cleaning materials in closed or covered leak free containers.
- 304.2 **Disposal Of VOC And VOC-Containing Material:** A person shall store all VOC containing materials intended for disposal including, but not limited to, rags, waste coatings, waste brushes, waste rollers, waste applicators, waste solvents, and their residues, in closed, leakfree containers which are legibly labeled with their contents and which remain covered when not in use.
- 304 WORK PRACTICES-HANDLING, DISPOSAL AND STORAGE OF VOC-CONTAINING MATERIAL:** An owner or operator of any surface coating facility shall store, handle, and dispose of VOC-containing material in a manner that prevents the evaporation of VOC to the atmosphere. Work practices limiting VOC emissions include, but are not limited to, all of the following:
- 304.1 Use and Storage:** An owner or operator shall cover and keep covered each VOC-containing material which is not currently in use. An owner or operator shall store finishing and cleaning materials in closed or covered leak-free containers.
- 304.2 Disposal of VOC-Containing Material:** An owner or operator shall store all VOC-containing materials intended for disposal including, but not limited to, rags, waste coatings, waste brushes, waste rollers, waste applicators, waste solvents, and their residues, in closed, leak free containers. The containers shall remain covered with a leak tight cover, when not in use.
- 304.3 Minimize spills of VOC-containing coatings, thinners, and coating-related waste materials.**
- 304.4 Convey VOC-containing coatings, thinners, and coating-related waste materials from one location to another in closed containers or pipes.**
- 304.5 Containers in which VOC-containing materials are stored must have a legible label identifying the container's contents.**
- 305 **EXEMPTIONS:**
- 305.1 **Categorical Exemptions:** This rule does not apply to the following operations:
- a. Aerospace coating operations (Rule 348).
  - b. Architectural coating, including buildings and erected structures (Rule 335).
  - c. Cleaning: VOC loss from cleaning or stripping a surface for coating or other purpose is regulated by Rule 331.
  - d. Marine vessel exterior refinishing.
  - e. Polyester coatings applied to polyester composites.
  - f. Printing and graphic arts coating (Rule 337).
  - g. Semiconductor manufacturing (Rule 338).
  - h. Coating a highway vehicle or mobile equipment (Rule 345).
  - i. Wood: Coating Wood Furniture (Rule 342); Coating Wood Millwork (Rule 346).
- 305.2 **Exemptions for Qualified Materials:** Rule 336 does not apply to the following materials that meet the specific qualification(s) and limitation(s) set forth herein:
- a. **Leak Preventing Materials:** Sealants, adhesives, caulking, and similar materials used on the following substrates for the primary purpose of leak prevention are exempt from this rule:
    - (1) Non-metallic substrates; and
    - (2) Used substrates, post manufacture, such as, but not limited to, old joints and seals on pipe and valve assemblies.
  - b. **Adhesive Use:**
    - (1) Adhesive and adhesive primer applications are exempt from this rule, except for the 2 categories that appear in Table 1, namely adhesive materials applied to other metal parts and products (as defined in Section 231), and adhesives used in paper coating (as defined in Section 233).
    - (2) Any adhesive exempted by this Rule 336 and to which no other rule in Regulation III specifically applies shall comply with the provisions of Rule 330 (Volatile Organic Compounds) of these Rules & Regulations.
  - c. **Certain Joint Fillers:** Caulking and beaded sealants used to fill gaps or to fill joints between surfaces are exempt from this rule, except those used in manufacturing other metal parts and products as defined in Section 231 of this rule, or in the manufacturing of cans.
  - d. **Extreme Performance Coatings:** Extreme performance coatings are exempt from the VOC limits of Table 1 when used under the following conditions:
    - (1) Used on internal combustion engine components that are normally above 250°F (121°C) during use; or
    - (2) Used at temperatures above 250°F (121°C) on items that are both included under SIC (Standard Industrial Classification, 1987) codes 3661, 3663, 3669, 3677, 3678, 3679, or 3769 and are electronic products in space vehicles and/or are communications equipment. The US Government Printing Office "Standard Industrial Classification Manual, 1987" (and no future editions) is incorporated by reference and is on file at the Maricopa County Air Quality Department, 1001 N. Central Ave., Phoenix, Arizona 85004.
- 305.3 **ECS Use In Lieu Of Equipment/Practice:** In lieu of meeting an equipment or work practice standard within Sections 302, 303, or 304, an owner or operator is allowed to instead use an ECS that has a capture efficiency not less than 90% and meets all ECS requirements in Section 306.



- 305.4 **Spray Gun And VOC Limit Exemptions:** The following are exempt from subsection 301.1, subsection 301.2, and Section 302 of this rule:
  - a. Coating with an aerosol can.
  - b. Touch up or repair coating operations as defined in Sections 250 and 240.
  - c. Low usage coatings which in aggregate of all formulations do not exceed 55 gallons (208 liters) per year facility wide if the operator updates usage records of these coatings on each day of their use, pursuant to subsection 501.2.
  - d. A small surface coating source (SSCS) as defined in Section 243. However, once a small surface coating source exceeds either the 15 lb per day or the 2 tons per year limits that are required to maintain SSCS status that facility is permanently subject to the limits of subsection 301.1, subsection 301.2, and Section 302, with the following exception:
    - (1) For such a facility that does not have either a 15 lb/day or a 2 ton/year VOC emission limit in an Air Pollution Permit for processes regulated by this rule, an owner or operator may retain the exemption if s/he agrees in writing to enforceable permit conditions that establish these or stricter limits.
    - (2) However, a facility that violates its permit limit of either 15 lbs VOC/day or 2 tons VOC/yr. for coating process regulated by this Rule 336 is permanently subject to the limits of subsections 301.1 and 301.2, and Section 302.
  - e. A Quality Class Q protective coating that is used on equipment, structures, and/or components within a containment facility of a nuclear power plant and is approved in accordance with either ANSI standards N101.2 and N101.4 or with ASTM Standards D3911 and D3843.
  - f. A tactical military equipment coating that is approved in a Maricopa County Air Pollution Permit subsequent to a sufficient demonstration by the user that no compliant substitute exists.

- 305.5 **Special Facilities/Operations:**
  - a. **Silicone Release Coatings:** Silicone release coating operations controlled by an ECS pursuant to subsection 301.2 are exempt from the 85 percent overall control efficiency requirement if the ECS demonstrates at least 70 percent overall control and the coating is applied with a liquid seal air spray system.
  - b. **Bonding Impact Resistant Rubber Lining To Metal:** An adhesive and an adhesive primer are exempt from Table 1 limits, but shall not have a VOC content of material exceeding 850 grams of VOC per liter (7.1 lb/gal), if such adhesive is used to bond sheets/strips of rubber to metal equipment so that such rubber sheathing directly contacts material received by the metal and so protects the metal. This exception does not apply to any other situations where adhesives are used to bond rubber to metal.

305.6 **Exemption Of Coating Applicator Cleanup:** A person is allowed to use solvent that has at 20° C (68° F) a total VOC vapor pressure above 35 mm Hg for cleaning coating application equipment, but only if such application equipment does not use spray devices and the same principal solvent is used for cleaning as is used in the coating.

- 305.7 **Low Usage Allowance for Restricted Guns:** A person may employ spray guns otherwise prohibited by Section 302 for use with coatings over 2 lb VOC /gal under the following limited conditions:
  - a. If VOC emissions from the finishing application station, are captured and directed to an ECS complying with the provisions of Section 306.
  - b. To coat the inside of pipes and tubes with a wand style applicator.
  - c. Using an airbrush or other small gun that has a reservoir capacity not exceeding 250 cc (8.8 fluid ounces) and is used solely for detailing, lettering, touchup, and/or repair.

306 **305** **REQUIREMENTS FOR AIR POLLUTION CONTROL EQUIPMENT AND EMISSION CONTROL SYSTEM (ECS) MONITORING EQUIPMENT REQUIREMENTS:**

- 306.1 **ECS Control Efficiencies:** To meet the requirements pursuant to subsection 301.2, subsection 305.3, or subsection 305.7, an ECS shall be operated as follows:
  - a. **Overall ECS Efficiency:** Overall, the ECS shall prevent at least 85% of the mass of the VOC emitted by each coating or process so controlled from entering the atmosphere except as successfully controlled pursuant to the alternative in subsection 306.1e(2).
  - b. **Capture Efficiencies:**
    - (1) For an ECS used pursuant to subsection 301.2 and/or subsection 305.7, capture shall be at least 87%.
    - (2) For an ECS used pursuant to subsection 305.3, capture shall be at least 90%.
  - c. **Control Efficiency Of The Emissions Processing Subsystem:**
    - (1) The emissions processing subsystem of the ECS shall reduce the mass of VOC entering it by at least 90 percent; or
    - (2) **Alternative for Very Dilute Input:** For VOC input concentrations of less than 100 ppm (as carbon) at the inlet of the ECS emissions processing subsystem, an ECS' VOC processing subsystem also satisfies the processor efficiency requirements of this rule if:
      - (a) The VOC output is consistently less than 20 mg VOC/M3 (as carbon) adjusted to standard conditions; and
      - (b) The ECS consistently shows an overall control efficiency of at least 85% when tested pursuant to subsection 503.3 at VOC input concentrations exceeding 100 ppm (as carbon).
  - d. Coating that exceeds the applicable VOC limits in Table 1 shall be clearly identified such that coating operators are informed an ECS must be used.

**305.1** **ECS Control Efficiencies:** To meet the requirements pursuant to Section 301.2 of this rule, an ECS shall be operated as follows:

- a. **Overall ECS Efficiency:** The overall control efficiency of an ECS shall be determined by multiplying the capture efficiency by the destruction efficiency of the control device expressed as a percentage. An owner or operator, who



chooses to use an ECS instead of meeting the limits in Tables 336-1 through 336-7 of this rule and specified application methods, shall operate an ECS that has a 90 percent overall ECS efficiency.

- b. Alternative for Very Dilute Input:** For VOC input-concentrations of less than 100 ppm (as methane) at the inlet of the ECS, the control efficiency is satisfied if the VOC output is less than 20 mg VOC/m<sup>3</sup> (as methane) adjusted to standard conditions.

**306.2 305.2 Operation and Maintenance (O&M) Plan Required for ECS:**

- a. An owner or operator shall provide and maintain (an) O&M Plan(s) for any ECS, any other emission processing equipment, and any ECS monitoring devices that are used pursuant to this ~~Rule 336 rule~~ or to ~~an air pollution control permit~~ a Maricopa County Air Pollution Permit.
- b. The owner or operator shall submit to the Control Officer for approval the O&M Plans of each ECS and each ECS monitoring device that is used pursuant to this ~~Rule 336 rule~~.
- c. The owner or operator shall comply with all the identified actions and schedules provided in each O&M Plan.

**306.3 305.3**

**Providing and Maintaining ECS Monitoring Devices:** ~~Any person~~ An owner or operator incinerating, adsorbing, or otherwise processing VOC emissions pursuant to this rule shall provide, properly install and maintain in calibration, in good working order and in operation, devices described in the facility's O&M Plan that indicate temperatures, pressures, rates of flow, or other operating conditions necessary to determine if air pollution control equipment is functioning properly and is properly maintained. Records shall be kept pursuant to Section 502 of this rule which demonstrate that the ECS meets the overall control standard required by ~~subsection 306.1~~ Section 305.1 of this rule and is operated in accordance with the equipment manufacturer's specifications.

**306.4 305.4**

**O&M Plan Responsibility:** An owner or operator of a facility that is required to have an O&M Plan pursuant to ~~subsection 306.2~~ Section 305.2 of this rule must fully comply with all O&M Plans that the owner or operator has submitted for approval, but which have not yet been approved, unless notified otherwise by the Control Officer in writing. ~~If revisions to the plan have been submitted and not yet been approved by the Control Officer, then an owner or operator shall comply with the most recent O&M plan on file at Maricopa County Air Quality Department.~~

**305.5**

**Operation and Maintenance (O&M) Plan Contents for an ECS:** An O&M Plan for any ECS including any ECS monitoring devices shall include all of the following information:

- a. ECS equipment manufacturer;
- b. ECS equipment model;
- c. ECS equipment identification number or identifier that owner or operator subject to this rule assigns to such ECS equipment when manufacturer's equipment identification number is unknown; and
- d. Information required by Sections 502 and 503 of this rule.

**SECTION 400 – ADMINISTRATIVE REQUIREMENTS**

**401 COMPLIANCE SCHEDULE VOC LIMITS:**

**401.1 Emission Control System (ECS):** By August 1, 1999: An owner or operator installing an ECS shall:

- a. ~~All new~~ Implement all recordkeeping provisions ~~shall be in effect~~, including ~~subsections 501.1e and 501.2a~~ Section 502 of this rule.
- b. ~~Announce the~~ The intention to use an ~~Emission Control System ( ECS )~~ shall be announced to the Control Officer in writing if:
- (1) ~~The~~ the ECS is used as an alternative to meeting the ~~spray gun provisions~~ VOC limits of Section ~~302~~ 301.1 of this rule. ~~or~~
- (2) ~~The ECS is used as an alternative to meeting the gun cleaning machine provisions of Section 303.~~

**401.2 Spray Guns:** By November 1, 1999, the following shall be in continuing use:

- a. Spray guns required pursuant to Section 302;
- b. ~~Cleaning solvent(s) having the required vapor pressure pursuant to Section 303, and the data sheet(s) confirming the vapor pressure.~~

**401.3** By May 1, 2000, the ECS announced pursuant to subsection 401.1b shall be in continuing use.

**401.2 VOC Limits and Rule Requirements:** Upon adoption of this rule, the owner or operator shall ~~discontinue purchase of materials that are non-compliant with Section 301.1 of this rule. The owner or operator has up to May 2, 2017 to complete use of existing non-compliant materials already purchased. A schedule for phasing out non-compliant materials shall be prepared and made available to an inspector upon request. This schedule shall specify that only compliant materials will be used after May 2, 2017.~~

**402 COMPLIANCE SCHEDULE O&M PLAN:** O&M Plans for ECS equipment subject to this rule shall be revised/updated by February 2017. The Control Officer shall notify the applicant in writing of approval or denial.

**SECTION 500 – MONITORING AND RECORDS**

**501 RECORDKEEPING AND REPORTING:** Any person subject to this rule shall comply with the following requirements of subsections 501.1 and 501.2 that apply to materials regulated by this Rule 336. Records shall be retained for 5 years and shall be made available to the Control Officer upon request. An owner or operator shall comply with the following recordkeeping requirements:

**501.1** Records shall be retained for five years and shall be made available to the Control Officer without delay upon verbal or written request.

**501.1 501.2**

**Current Lists:** Maintain a current list of coatings or any other VOC-containing materials regulated by this rule. The list:

a. ~~Maintain a current list of coatings, adhesives, reducers, thinners, gun cleaning materials, additives, and any other VOC-containing materials regulated by this rule; give the VOC content of material for each as received (before thinning). A complete, neat assemblage of this data meets the requirements for a list. Express VOC content in 1 of 3 forms: pounds~~



- VOC per gallon, grams VOC per liter, or the percent VOC by weight along with the specific gravity or density, (2 numbers are required).
- b. **Less Stringent Recordkeeping for Consistently Low Users:** An operator of a facility that always uses less than 2 gallons per day total of thinner and coating (listed in Table 1), meets the listing and recording requirements of subsections 501.1a, 501.1c, and 501.2 if:
- (1) All purchase receipts/invoices of VOC-containing material that is regulated by this rule for the most recent 12 months are kept together; and
  - (2) Current data sheets show the VOC content of material for every VOC containing substance currently used that is regulated by this rule.
- e. **Facilities That Are Not Small Surface Coating Sources:** Facilities that are not small surface coating sources shall do the following:
- (1) **Coatings:** For all coatings (except those recorded under the subsection 305.4c low usage allowance), make the following listings for coatings and adhesives that have VOC limits in Table 1:
    - (a) **VOC Before Reducing:** The VOC content of each coating as received, minus exempt compounds. (This figure is sometimes called the "EPA Method 24" VOC content on manufacturer's data sheets). If the coating is a multi-part coating, list the VOC content which the manufacturer states the coating will have once you have mixed all the necessary parts together in the proportions specified by the manufacturer.
    - (b) **List Maximum VOC Content Of Coating As Applied:** For each coating that you thin/reduce or add any additive to, record in a permanent log either of the following:
      - (i) The maximum number of fluid ounces thinner/reducer that you ever add to a gallon of unreduced coating (or maximum g/liter), and the maximum fluid ounces of every other additive you mix into a gallon of the coating; or
      - (ii) The VOC content of the coating, after adding the maximum amount of thinner/reducer and other additives that you would ever add, as determined by the formula in subsection 255.1.
  - (2) **Applicator Cleanup Solvent:** Have a hardcopy of the VOC vapor pressure (VP) at 20°C (68°F) of solvent(s) used to clean spray guns, hoses, reservoirs, and any other coating application equipment. Any one of the following ways of providing the VP data is sufficient:
    - (a) A current manufacturer's technical data sheet;
    - (b) A current manufacturer's safety data sheet (MSDS);
    - (c) Actual test results; or
    - (d) A letter signed by an official or lab manager of the supplying facility.
- a. **Shall express VOC content in one of the following forms:**
- (1) Pounds VOC per gallon;
  - (2) Grams VOC per liter; or
  - (3) The percent VOC by weight along with the specific gravity or density.
- b. **Shall have the written value of the VOC coating, in one of the following forms. The documentation must provide accurate VOC content values or be based on enforceable test methods as approved by the Administrator to determine the VOC content.**
- (1) A manufacturer's technical data sheet;
  - (2) A manufacturer's safety data sheet (SDS or MSDS); or
  - (3) Actual test results.
- c. **Shall maintain usage or purchase records as follows:**
- (1) **Monthly:** Records of the amount of VOC-containing materials purchased or used shall be totaled by the end of the month for the previous month. This includes, but is not limited to, all coating materials, all materials added during preparation of coatings, all materials used to clean coating application equipment, and all materials used to clean coating application areas.
  - (2) **Grouping by VOC Content:** For purposes of recording usage, an owner or operator may give VOC coatings, cleaners, and solvents of similar VOC content (VOC Regulatory) a single group-name, distinct from any product names in the group. The total usage of all the products in that group is then recorded under just one name. In such a case, the owner or operator must also keep a separate list that identifies the product names of the particular solvents included under the group name. To the group name shall be assigned the highest VOC content (VOC Regulatory) among the members of that group, rounded to the nearest tenth of a pound of VOC per gallon of material or to the nearest gram VOC per liter of material.
- d. **Shall make the following listings for all coatings that have VOC limits listed in Tables 336-1 through 336-7 of this rule:**
- (1) **VOC Before Reducing:** The VOC content of each coating as received, minus exempt compounds. List the manufacturer's final VOC content as mixed in the proportions specified by the manufacturer.
  - (2) **List Maximum VOC Content of Coating as Applied:** For each coating that is thinned/reduced or additive is introduced, record in a permanent log the VOC content, after mixing the maximum amount of thinner/reducer and other additives, as determined by the formula in the definition of VOC Regulatory of this rule. This log will include the following:
    - (a) The maximum number of fluid ounces thinner/reducer added to a gallon of unreduced coating (or maximum g/liter) and the maximum fluid ounces of every other additive mixed into a gallon of the coating; or





- b. The VOC content of gaseous emissions entering and exiting an ECS shall be determined by either EPA Method 18 referred to in ~~subsection 503.2b~~ Section 503.2(b) of this rule, or EPA Method 25 and its submethod, referred to in ~~subsection 503.2d~~ Section 503.2(d) of this rule.
- c. Capture efficiency of an ECS shall be determined either by the methods in ~~503.2e~~ Section 503.2(e) of this rule (EPA Method 204 and its submethods), or by using mass balance calculation methods in concert with the methods in ~~503.2a~~ Section 503.2(a) of this rule (EPA Methods 2, 2a, 2c, and 2d).
- d. Measurement of air pressure at the center of the spray gun tip ~~and air horns~~ of an air-atomizing spray gun (~~reference subsection 302.1: Section 225~~) shall be performed using an attachable device in proper working order supplied by the gun's manufacturer for performing such a measurement.
- e. Temperature measurements shall be done with an instrument with an accuracy and precision of less than one-half degree Fahrenheit (0.25°C) for temperatures up to 480°F (250°C).

**503.2 Compliance Determination-Test Methods Adopted Incorporated by Reference:** The following test methods are approved for use for the purpose of determining compliance with this rule. The test methods ~~The EPA test methods as they exist in the Code of Federal Regulations (CFR) (July 1, 1998), as listed below, are adopted are incorporated~~ by reference in Appendix G of the Maricopa County Air Pollution Control Regulations. The other test methods listed here are also adopted by reference, each having paired with it a specific date that identifies the particular version/revision of the method that is adopted by reference. These adoptions by reference include no future editions or amendments. Copies of test methods referenced in this Section 503 are available at the Maricopa County Air Quality Department, 1001 N. Central Ave., Phoenix, AZ, 85004. Alternative test methods as approved by the Administrator or other EPA-approved test methods may be used upon prior written approval from the Control Officer. When more than one test method is permitted for the same determination, an exceedance under any method will constitute a violation. Copies of test methods referenced in this section are available at the Maricopa County Air Quality Department, 1001 N. Central Avenue, Suite 125, Phoenix, AZ 85004-1942.

- a. EPA Methods 2 (“Determination of Stack Gas Velocity and Volumetric Flow Rate”), 2a (“Direct Measurement of Gas Volume Through Pipes and Small Ducts”), 2c (“Determination of Stack Gas Velocity and Volumetric Flow rate in Small Stacks or Ducts”), and 2d (“Measurement of Gas volumetric Flow Rates in Small Pipes and Ducts”). All 4 of the foregoing methods are in 40 CFR 60, Appendix A.
- b. EPA Method 18 (“Measurement of Gaseous Organic Compound Emissions by Gas Chromatography”) and its submethods (40 CFR 60, Appendix A).
- c. EPA Test Method 24 (“Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings”) (40 CFR 60, Appendix A).
- d. EPA Method 25 (“Determination of Total Gaseous Non-methane Organic Emissions as Carbon”) and its submethods (40 CFR 60, Appendix A).
- e. EPA Test Methods 204 (“Criteria for and Verification of a Permanent or Temporary Total Enclosure”), 204a, 204b, 204c, 204d, 204e, and 204f (Appendix M, 40 CFR 51).
- f. California’s Bay Area Air Quality Management District (BAAQMD) Method 31 (April 15, 1992), “Determination of Volatile Organic Compounds in Paint Strippers, Solvent Cleaners, and Low Solids Coatings.”
- g. California’s South Coast Air Quality Management District (SCAQMD) Method 313-91 (April 1997).

**503.3 Test Methods for ECS:** For coatings/adhesives controlled pursuant to ~~subsection 302.1 or subsection~~ Section 305.3 305 of this rule:

- a. Measurements of VOC emissions from an ECS shall be conducted in accordance with EPA Methods 18 or its submethods, or by Method 25 or its submethods (40 CFR 60, Appendix A).
- b. Capture efficiency of an ECS shall be determined by mass balance in combination with ventilation/draft rate determinations done in accordance with ~~subsection 503.3(e)~~ Section 503.3(c) of this rule or with US EPA Test Methods 204, 204a, 204b, 204c, 204d, 204e, and 204f (Appendix M, 40 CFR 51).
- c. Ventilation/draft rates shall be determined by EPA Methods 2, 2a, 2c, and 2d (40 CFR 60, Appendix A).

**504 FORMULA FOR TOTAL VOC VAPOR PRESSURE:** Equivalent to: VOC COMPOSITE PARTIAL PRESSURE. Reference ~~subsection 303.2~~



$$PP_c = \frac{\sum_{i=1}^n (W_i)(VP_i) / MW_i}{\frac{W_w}{18} + \sum_{j=1}^m \frac{W_{ej}}{MW_{ej}} + \sum_{i=1}^n \frac{W_i}{MW_i}}$$

<del><math>W_i</math></del>	=	<del>Weight of the "i"th VOC compound in grams</del>
<del><math>W_w</math></del>	=	<del>Weight of water in grams</del>
<del><math>W_{ej}</math></del>	=	<del>Weight of the "j"th non-precursor compound in grams</del>
<del><math>MW_i</math></del>	=	<del>Molecular weight of the "i"th VOC compound in grams per gram mole, e.g., one gram mole of isopropyl alcohol weighs 60 grams</del>
<del><math>MW_{ej}</math></del>	=	<del>Molecular weight of the "j"th non-precursor compound, e.g., 1 gram mole of acetone weighs 58 grams</del>
<del><math>PP_c</math></del>	=	<del>VOC composite partial pressure at 20°C in mm mercury (Hg)</del>
<del><math>VP_i</math></del>	=	<del>Vapor pressure of the "i"th VOC compound at 20°C in mm Hg</del>
<del>18</del>	=	<del>Weight of one gram mole of water</del>

**NOTICE OF FINAL RULEMAKING  
MARICOPA COUNTY AIR POLLUTION CONTROL REGULATIONS  
REGULATION III – CONTROL OF AIR CONTAMINANTS  
RULE 342: COATING WOOD FURNITURE AND FIXTURES**

[M16-287]

**PREAMBLE**

- |                  |   |  |
|------------------|---|--|
| <b><u>1.</u></b> | <b><u>Rule affected:</u></b><br>Rule 342: Coating Wood Furniture and Fixtures   | <b><u>Rulemaking action</u></b><br>Amended |
| <b><u>2.</u></b> | <b><u>Statutory authority for the rulemaking:</u></b><br>Authorizing statutes: A.R.S. §§ 49-474, 49-479, and 49-480<br>Implementing Statute: A.R.S. § 49-112  |  |
| <b><u>3.</u></b> | <b><u>The effective date of the rule:</u></b><br>Date of adoption: November 2, 2016   |  |
| <b><u>4.</u></b> | <b><u>List of public notices addressing this rulemaking:</u></b><br>Notice of Briefing to Maricopa County Manager: May 2015<br>Notice of Stakeholder Workshops: August 3, 2015, December 17, 2015, and February 9, 2016<br>Notice of Maricopa County Board of Health Meeting: April 25, 2016<br>Notice of Proposed Rulemaking: 22 A.A.R. 1184, May 13, 2016   |  |
| <b><u>5.</u></b> | <b><u>Name and address of department personnel with whom persons may communicate regarding the rulemaking:</u></b><br>Name: Hether Krause<br>Maricopa County Air Quality Department<br>Planning and Analysis Division<br>Address: 1001 N Central Avenue, Suite 125<br>Phoenix, Arizona 85004<br>Telephone: (602) 506-6010<br>Fax: (602) 506-6179<br>E-mail: aqplanning@mail.maricopa.gov  |  |
| <b><u>6.</u></b> | <b><u>Explanation of the rule, including the department's reasons for initiating the rulemaking:</u></b><br><b>Summary:</b><br>Rule 342 (Coating Wood Furniture and Fixtures) limits the emission of volatile organic compounds (VOCs) from the surface preparation and coating of wood furniture and fixtures. The Clean Air Act (CAA) requires that the U.S. Environmental Protection Agency (EPA) and the states control VOC emissions because VOCs react in the presence of sunlight to form ground-level ozone, a major component of "smog" which is hazardous to human health and the environment. Ozone is largely created by a photochemical reaction between nitrogen oxides (NO <sub>x</sub> ) and VOCs in the presence of sunlight. NO <sub>x</sub> and VOCs, called ozone precursors, create ground-level ozone in urban areas because ozone precursors are emitted from vehicle exhausts, fuel combustion, and VOC coatings used for various surface |  |



coating operations such as those regulated in Rule 342. The Phoenix area, determined by violations of the National Ambient Air Quality Standards (NAAQS), has been reclassified from “marginal” to “moderate” nonattainment for the 2008 eight-hour ozone NAAQS. (86 FR 26697, May 4, 2016).

Revisions to Rule 342 addressed the requirements of the State Implementation Plan (SIP) for “moderate” nonattainment for the 2008 eight-hour ozone NAAQS. Rule 342 revisions included Reasonably Available Control Technology (RACT) for VOCs. The Maricopa County Air Quality Department (department):

- Added or clarified text in order to meet the Control Techniques Guideline (CTG) for this rule – “Control of Volatile Organic Compound Emissions from Wood Furniture Manufacturing Operations”, April 1996
- Moved the exemptions from Section 307 to Section 103
- Deleted “red” and “green” gun tagging requirements
- Added or revised definitions in Section 200
- Revised Section 300 to clarify of the use of spray guns and the handling and disposal of VOC-containing materials
- Redesigned the table in Section 301 for easier reading
- Added VOC leak detection and repair requirements in Sections 300 and 500 to meet CTG and RACT requirements
- Revised the compliance schedule in Section 400
- Added annual operator training requirements to Section 400
- Revised the finishing material list in Section 500
- Added recordkeeping requirements for monthly VOC leak detection inspection and repair and annual operator training in Section 500

In addition, the amendments corrected typographical or other clerical errors; made minor grammatical changes to improve readability or clarity; modified the format, numbering, order, capitalization, punctuation, or syntax of certain text to increase standardization within and among rules; or made various other minor changes of a purely editorial nature. As these changes did not alter the sense, meaning, or effect of the rules, they are not described in detail here, but can be readily discerned in the “underline/ strikeout” version of the rules contained in Item 17 of this notice.

**Background:**

The Clean Air Act Amendments (CAAA) of 1990 required ozone nonattainment areas to implement reasonably available control technology (RACT) to control volatile organic compound (VOC) emissions. This RACT determination for the associated industry was to be incorporated into the state implementation plan (SIP). RACT is defined by the United States Environmental Protection Agency (EPA) as “The lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility.” (44 FR53761, September 17, 1979) To assist state and local agencies in determining RACT, the EPA issues Control Techniques Guidelines (CTG) for specific sources. The CTG describes the “presumptive norm” for RACT and includes a review of current knowledge, technology and costs of a variety of emission control techniques. These guidelines provide state and local environmental agencies a guide in establishing reasonably available control technology (RACT) regulations for local wood furniture finishing operations. The state or local agency can then use the presumptive norm for RACT or develop more stringent measures to meet the established ozone standards.

In 1989, the EPA began the process of establishing the CTG presumptive norm for the wood furniture industry. Drafts of a CTG were presented in November 1991 to the National Air Pollution Control Techniques Advisory Committee (NAPCTAC) without a RACT determination for the wood furniture industry.

The wood furniture industry started to develop its own report in early 1991. This report evaluated a variety of emission control technologies for their technical feasibility and associated cost. The report also included “an extensive analysis of the economic impacts of the control technologies...”<sup>1</sup> (page 1-3). The industry report did not include any RACT recommendations.

During this same time, the EPA began work on a national emission standard for hazardous air pollutants (NESHAP) for the wood furniture industry. The NESHAP establishes limits for hazardous air pollutants (HAPs). Because the CTG document was further along in the development than the NESHAP, industry was concerned they would be required to install control technologies to meet the CTG then later when the NESHAP was promulgated, have to invest again in different technologies. To address this issue, the EPA and industry agreed establish a committee and develop both the CTG and NESHAP through regulatory negotiation (58 FR 34011, June 23, 1993). In November 1994, the committee reached consensus on the CTG and NESHAP framework and principles. The EPA issued the CTG for the wood finishing industry on May 20, 1996 (60 FR 25223).

The department began the rulemaking process for new Rule 342 (Coating Wood Furniture and Fixtures) during the same time period as the EPA was developing the CTG. Rule 342 was proposed to apply “...to any facility applying finishing material to furniture or fixtures made of wood or wood-derived material.”<sup>2</sup> The rulemaking included VOC limits for the maximum concentration of VOC for various sealers and topcoats; emission control system (ECS) requirements; requirements for the use of various types of spray guns; and compliance options for small sources. On February 15, 1995, the department submitted Rule 342 to the Maricopa County Board of Supervisors (Board) for adoption. Stakeholders raised objection to the proposed rule because the option of meeting VOC limits through the use of averaging had been omitted from the proposed rule. The EPA was still in the process of drafting the CTG so no final determination had been made at the federal level concerning the averaging provision of the CTG. The department stated that the averaging provisions had been withdrawn from the draft rule because the department could not, at that time, demonstrate that the averaging provisions would meet the proposed VOC limits. The Board voted to continue Rule 342 to allow the department and Stakeholders to reach an agreement on the inclusion of the averaging provisions.<sup>3</sup>

The department and Stakeholders worked together to revise the draft Rule 342. On April 3, 1996, the Board again conducted a public hearing on the revised draft Rule 342. There were no objections to the proposed rule and the Board unanimously approved Rule 342, effective April 3, 1996.<sup>4</sup>



Additional alternative provisions were proposed to Rule 342. These included the proposed additions of separate appendices for small emitters of VOC and ECS requirements. Additional proposed revisions included an optional allowance of up to five percent (5%) of total coating to be applied by a conventional spray gun; recordkeeping formatting; clarification and addition of definitions; and use of colored tags on guns used to apply a higher VOC coating material.<sup>5</sup> The Board unanimously approved the additional proposed revisions for Rule 342 on November 20, 1996.<sup>6</sup> At this time, the department determined that Rule 342 met the CTG RACT standards for a “marginal” nonattainment area classification.

Rule 342 remained unchanged until 2013 when the department opened the rule for a “limited scope” rulemaking. This limited scope revision provided the means for the department to streamline the approval of updates to the EPA definition of VOC to provide a consistent definition of VOC and “non-precursor organic compounds” throughout the rules. In addition, the 2013 rule revision now allows businesses to use a wider range of materials, thus leveling the playing field for companies within Maricopa County with those operating in other jurisdictions.<sup>7</sup>

The County failed to meet the EPA deadline of July 20, 2015 for the 2008 8-hour ozone standard in order to maintain the marginal area attainment status. Anticipating a reclassification to moderate nonattainment status, the department reviewed and revised Rule 342 to meet the CTG RACT. The department determined that Rule 342 partially met RACT for a moderate nonattainment area with the current VOC emission limits in the various wood coating processes. The department identified two requirements in the CTG that were not included in the Rule 342: operator training requirements and VOC leak detection and repair. Recordkeeping requirements were also required for each additional requirement. The department determined that these requirements should be included as RACT for the moderate nonattainment classification. The rule revisions added operator training requirements, VOC leak detection inspections, VOC leak detection repair, and recordkeeping requirements. The department has determined that the previous and current revisions to Rule 342 now meet RACT requirements for Maricopa County.

As of October 2015, there were eight-two (82) permits issued by Maricopa County Air Quality that include Rule 342 requirements<sup>8</sup>. Three permits are Title V sources, but not necessarily Title V for VOC emissions from wood finishing only. Fifteen (15) permits are general woodworking permits. The remaining permits are Non-Title V permits. Some Non-Title V permitted facilities may be “synthetic minors” meaning the facility has accepted an emission limit below the Title V threshold. The Non-Title V permittees may or may not be permitted with the primary process being wood finishing.

Previous to this rulemaking, a Stakeholder inquired if Rule 342 applied to businesses primarily engaged in other activities in addition to the manufacturing of furniture or the repair and reconditioning of furniture. In a technical guidance issued by the department (TG#98-007) on October 1, 1998, the department concluded, at that time, that if the business was primarily engaged in other activities and the manufacturer of furniture that Rule 342 did apply. If the business was engaged in other activities than furniture manufacturing and only reconditioned or repaired furniture, then they would not be subject to Rule 342. In this rulemaking, the department further clarified the applicability of Rule 342. Section 103 (Exemptions) was added to include total exemptions and partial exemptions addressing the reconditioning or repair of furniture. The department rescinded #TG98-007 with this rule revision.

#### **Issues Raised and Discussed During this Rulemaking Process:**

The department held three Stakeholder workshops: August 3, 2015, December 17, 2015, and February 9, 2016. Stakeholders included representatives from AF Lorts Company, AG Layne, American Coatings Association, Andrews Environmental Management LLC, Copperstate Cabinet, Crown Custom Millwork, Geosyntec Consultants, Legends Furniture Company, Oak Canyon Manufacturing Inc, Oakcraft Inc, Ping, RPM Wood Finishes Group, Ryley Carlock and Applewhite Law Firm, SATA GmbH & Co. KG, The Sherwin-Williams Company, SWCA Environmental Consultants, Trendwood, Woodcase Fine Cabinetry Inc, Wurth Louis, and the EPA. Workshop discussions included the applicability of RACT to the current rule; the economic impact a reduction of VOC limits would have on the industry; the addition of operator training and recordkeeping requirements; the addition of leak detection and recordkeeping requirements; and alternative gun technologies now available.

#### **RACT Issues Raised and Discussed**

#### **VOC EMISSION LIMITS**

The department originally proposed to reduce the VOC emission limits for all coating types. Stakeholders said that the proposed reduction in the VOC limits goes beyond the established RACT requirements. The American Coatings Association responded:

The current [original department proposed lower VOC limit] 275 g/l VOC industrial wood coating formulation technology that was developed for use in southern California for industrial customers could not be applied in the even hotter and dryer climate in Arizona. The majority of manufacturers and shops do not have air conditioning or operate in temperature and humidity controlled environments. Solventborne 275 g/l coatings rely on acetone that volatilize too quickly in the hot and dry environment of AZ and therefore does not spray well and produces an aesthetically unacceptable finish. Reformulating with other exempt compounds will increase the cost of the coatings, since these cost more than acetone. In addition, waterborne coatings that meet the 275 g/l limits have similar aesthetic issues.

Also due to the Maricopa County's hot desert climate, we suggest that there are application difficulties with the [department proposed lower limit] 120 g/L (material) VOC Low-Solids Stain and Low-Solids Toner and Washcoat. Traditional High Solids Stain at <350 g/L VOC has not emerged as an acceptable alternative in other jurisdictions because the time required for curing before application of sealer and/or topcoat is generally considered excessive.<sup>9</sup>

Stakeholders requested that the department conduct more research to determine the VOC limits that would meet current RACT. The Stakeholders also requested documentation of the emissions inventory for the wood finishing industry in Maricopa County and how much emission reduction is hoped to be achieved with the proposed VOC limits. The original proposed VOC limits were from air agencies located in areas designated as serious nonattainment for ozone. The department reviewed other rules of air agencies that are located in moderate ozone nonattainment areas. The department determined the proposed VOC emission limits were too stringent for a



moderate nonattainment area. Table 342-2 retained the current VOC emission limits and clarified the VOC emission limits for specific types of coatings. Other revisions to Table 342-2 included the addition of strippable booth coating, and low VOC topcoat VOC limits.

**VOC LEAK DETECTION AND REPAIR**

Section 304 and Section 501.4 were added to include VOC Leak Detection and Repair standards. The department referred to the CTG to determine the requirements for leak detection and repair. CTG Section 5.3.1.2 VOC Transfer<sup>1</sup> (pg 5-7) describes the leak inspection program. The minimum criteria identified in the CTG included a monthly inspection frequency; procedures for addressing leaking equipment; and a maximum time frame for completing repairs unless replacement equipment has been ordered. The department worked with the Stakeholders to draft Section 304 of the rule to include leak inspections for “equipment used to transfer or apply VOC-containing finishing materials.” In addition, monthly leak inspection is now required. Leak repair specifies the first attempt to repair is to be made within five days of detection with final repairs completed within fifteen days. Additional items were added in the final repair section. Options to meet the final repair time frame also include the option of removing the leaking equipment from service and an option of replacing the leaking equipment with a new purchase within three months of leak detection. Section 501.4 identifies the information that is required to document VOC leak detection and any required repairs. Stakeholders requested that the rule list out the specific information required for the inspection records. The department added a list to clarify the VOC leak detection and repair requirements for the owner or operator as well as for inspection purposes.

**EMPLOYEE TRAINING REQUIREMENTS**

Section 403 (Annual Operator Training Requirements to Reduce VOC Emissions) includes training requirements for employees. CTG Section 5.3.3 General Work Practice Requirements<sup>1</sup> (pg 5-14) outlines the minimum requirements for a training program. The CTG recommends annual training that includes coating application, cleaning and washoff techniques, proper equipment operation, methods to reduce solvent usage, and proper management of VOC waste materials. Stakeholders requested this section be clearly identified to be applicable to VOC-containing materials only. Stakeholders were concerned facility operations that did not involve VOC-containing materials may be noted as being in non-compliance during an inspection. The department revised the section title to be specific to VOC emissions. In addition, the department included specific training as recommended in the CTG. The department is allowing up to six months after the rule adoption for facilities to come into compliance with the rule revisions. The department added Section 501.5 (Annual Operator Training Records Required by Section 403 of this Rule) to list out the specific requirements for the training recordkeeping. The list clarified the employee training requirements for the owner or operator as well as for inspection purposes.

Section 100 Issues Raised and Discussed

Section 100, Table 342-1 (Applicable Standard Industrial Classification (SIC) Codes) was added as a convenience to the reader. Stakeholders and department staff agreed that the addition of the table with the SIC title will make it easier to identify the type of woodworking to which the rule applies. Since the definition of WOOD FURNITURE AND FIXTURES in Section 236 of the rule lists the SIC numbers to identify what constitutes wood furniture and fixtures and therefore as to what Rule 342 applies, the department included such SIC in the Applicability section of the rule. Although SIC codes have been updated to North American Industry Classification System (NAICS), the department did not include NAICS in Rule 342. Rule 342 was revised to be consistent with the CTG; the CTG uses SIC codes as the means by which to determine applicability; therefore, the department did not include NAICS in Rule 342.

The department added Section 103 (Exemptions) and deleted Section 307 from the current rule. The exemptions described in current Rule 342, Section 307 were difficult to locate within the rule. Stakeholders and department staff agreed that moving the exemptions to the beginning of the rule made it easier to identify rule applicability to a facility. In addition, Stakeholders requested that the department clarify in the exemption section that sources subject to Rule 342 are exempt from other Maricopa County Air Pollution Control Regulations. The department added Section 103.1(c) to address this concern.

Section 200 Issues Raised and Discussed

The previous rule definition of CERTIFIED PRODUCT DATA SHEET (CPDS) required that “...an officer of a coating supplying operation...” sign the CPDS. Stakeholders stated that the suppliers do not sign the CPDS that accompany the VOC-containing materials creating a situation where the facility cannot comply with the rule as written. The CPDS definition was taken from the definitions in the CTG Model Rule language. In the years since the CTG was issued, manufacturers and suppliers have included the VOC content information on labels and on product information supplied to the facilities. The American Coatings Association supported the suggestion to remove the signature requirement for the CPDS. Further discussion asked if the definition was even needed in the rule. Since the only reference to a CPDS was in Appendix A to Rule 342, the department deleted the definition of “CPDS” from Section 200 and added the definition of “CPDS” to Appendix A to Rule 342.

The definition of a HIGH-VOLUME, LOW PRESSURE SPRAY GUN (HVLP) was added. At the time the CTG was written, the “disadvantage of HVLP systems in general is that the HVLP systems are reportedly not always able to apply finishes as quickly as the other spray techniques.”<sup>1</sup> (pg. 2-25) Since the HVLP spray gun operated at a 10 psi, a psi at or below a low pressure spray gun, it was assumed that by defining LOW PRESSURE SPRAY GUN, an HVLP gun would be included in the definition. Since the issuance of the CTG, manufacturers have continued to refine the HVLP spray gun. It is now the most common type of spray gun in use and considered the industry standard in which to measure spray gun efficiency against. The inclusion of the definition of HVLP spray gun provides language consistent with current industry and manufacturing terms. In addition to the addition of the definition of HVLP, Stakeholders requested referencing HVLP spray guns whenever low pressure spray guns were specified in the rule. The department added the definition of HVLP spray gun, retained the definition of LOW PRESSURE SPRAY GUN, and included references to HVLP spray guns where appropriate in the rule.

Stakeholders requested that the definition of WORKING DAY be revised to limit the definition to when VOC-containing material is used. Stakeholders stated that there are times when “manufacturing” is taking place, but no VOC-containing materials are being used. Examples of these types of “manufacturing” operations include the prep work, such as cutting and sanding, of wood materials. Revising



the definition to include just the operations involving VOC-containing material would follow the rule's intent and applicability as stated in Section 100 of the rule. Since the rule does not cover the emissions of particulate matter and does limit the emissions to VOC emissions, the department revised the definition of WORKING DAY to a day or days when "...the application of VOC-containing finishing material [is applied] to wood furniture or fixtures."

#### Section 300 Issues Raised and Discussed

The department originally proposed to reduce the VOC emission limits for all coating types. After further review (refer to "RACT Issues Raised and Discussed" section above) the current VOC emission limits were retained. Table 342-2 was revised to clarify the emission limits for specific types of coatings and includes the VOC limits for strippable booth coating and low VOC topcoats.

Section 304 was revised to add requirements for VOC Leak Detection and Repair standards. Refer to "RACT Issues Raised and Discussed" section above for a detailed discussion.

Section 305 was renumbered to Section 306 and to specify that the section is applicable to the handling and disposal of VOC-containing materials. Stakeholders expressed concerns that non-VOC-containing materials may be noted as being in non-compliance during an inspection. There was concern that Section 305.1 (Use and Storage) was unclear as to when a material is considered "in use". The department considered this issue and revised the provision in Rule 342, Section 306 to specify that storage containers for VOC-containing materials must be covered when not in use.

Section 306 included requirements for manufacturers of wood furniture coatings and not to stationary sources. The department has authority (under Arizona Revised Statutes) to regulate stationary sources of air pollution, not manufacturers of coatings. Therefore Section 306 was deleted in its entirety.

Section 307 was deleted in its entirety. The exemptions are now included in Section 103 of the Rule 342. Refer to the detailed discussion in above "Section 100 Issues Raised and Discussed".

#### Section 400 Issues Raised and Discussed

Section 401.2 was revised to delete the past compliance dates. The requirement stated in Section 401.2(b) is now incorporated into the main paragraph in Section 401.2. Section 401.2(a) was deleted since the compliance date has passed.

Section 403 (Gun Tagging Requirements) is deleted. Gun tagging requirements are no longer needed.

Section 403 (Annual Operator Training Requirements to Reduce VOC Emissions) includes training requirements for employees. Section 5.3.3 "General Work Practice Requirements" of the CTG<sup>1</sup> (pg 5-14) outlines the minimum requirements for a training program. Refer to "RACT Issues Raised and Discussed" section above for a detailed discussion. The department added specific training requirements as recommended in the CTG and is allowing up to six months after rule adoption for facilities to come into compliance with the training requirements as stated in the rule revisions.

#### Section 500 Issues Raised and Discussed

Section 501.1 was revised to specify that a current list of all VOC-containing material be updated by the end of the following month.

Section 501.1(b) (How to Express VOC Content) and Section 501.1(c) (Acceptable Format) are deleted. Section 501.1(d) (Mix Ratios) is retained, re-numbered, and clarified; a current list of VOC-containing mix ratios for catalyst/hardeners shall be maintained if the manufacturer's recommended mix ratio is not followed or when the manufacturer has no recommendations.

Section 501.4 (Monthly VOC Leak Detection Inspection and Repair Records) identifies the information that is now required to document VOC leak detection and any required repairs. Stakeholders requested that the rule list out the specific information that is required for the inspection records. This list will make it clear for the owner or operator as well as for inspection purposes. Refer to "RACT Issues Raised and Discussed" section above for a detailed discussion.

The department added Section 501.5 (Annual Operator Training Records Required by Section 403 of this Rule) to list out the specific requirements for the training recordkeeping. This list will make it clear for the owner or operator as well as for inspection purposes.

Appendix A(d)(1) definitions were revised to include the definition of CERTIFIED PRODUCT DATA SHEET (CPDS). Stakeholders questioned if the definition of a CPDS was even needed in the rule. Appendix A to Rule 342 does reference the certified product data sheet. The Stakeholders and department agreed to delete the definition from Section 200 and added CERTIFIED PRODUCT DATA SHEET to the definitions in Appendix A to Rule 342.

The department added Table 342-3 (Formula 2 Neutral Point VOC Content of Coating) in Appendix A(d)(6). The department felt a table would be easier to read to determine the neutral point for the various coatings; the department did not change the VOC limits.

The Green Tag requirements in Appendix B(d)(2) were deleted for consistency throughout the rule. The heading for Appendix B(e)(1) (Housekeeping Functions) was revised. Stakeholders requested that "Keep Coatings..." be changed to "Keep VOC-Containing Materials...", so the header will read "Keep VOC-Containing Materials, Cleaners, & Waste-Materials Covered".

The department clarified Appendix C to Rule 342(d) regarding the compliance schedule for Emission Control Systems (ECS). The section addresses all emissions that are vented to an ECS and does not apply to millwork.

#### Description of Amendments:

The department revised the following throughout the rule:

- Renumbered the sections to reflect additions or deletions
- Changed "subsection" to "section"
- Deleted "no person" and inserted "an owner or operator"
- Added references throughout the rule to HVLP spray guns where ever requirements for low-pressure spray guns are cited
- Deleted the duplicate Section 307.2(e) and Errata Note 1
- Added the title of test methods
- Deleted the past compliance dates
- Included English measurements followed by metric measurements in parenthesis
- Deleted references to "red" and "green" tags for spray guns



Revisions to Section 100:

- Added Table 342-1 (Applicable Standard Industrial Classification Codes)
- Added Section 103 (Exemptions)

Revisions to Section 200:

- Deleted the definition of CERTIFIED PRODUCT DATA SHEET
- Added the definition of HIGH-VOLUME, LOW PRESSURE SPRAY GUN (HVLV)
- Revised the definition of KILOGRAMS VOC PER KILOGRAM OF COATING SOLIDS
- Revised the definition of VOC SOLVENT
- Revised the definition of WORKING DAY

Revisions to Section 300:

- Revised the table in Section 301.1
- Revised the wording in Section 301.1 and delete 301.1(a) and (b)
- Deleted section 301.1(c)
- Revised the wording in Section 302.1
- Added Section 304 (VOC Leak Detection and Repair)
- Added the wording in Section 305
- Deleted Section 307

Revisions to Section 400:

- Deleted past compliance dates in Section 401
- Revised the wording in Section 401.2
- Revised Section 403 (Gun Tagging Requirements)
- Added Section 403 (Annual Operator Training Requirements to Reduce VOC Emissions)

Revisions to Section 500:

- Revised Section 501.1(b) (List Maximum VOC Content of Finishing Material as Applied)
- Deleted Section 501.1(b) (How to Express VOC Content)
- Deleted Section 501.1(c) (Acceptable Format)
- Deleted Section 501.1(d) (Mix Ratio)
- Added Section 501.4 (Monthly VOC Leak Detection Inspection and Repair Records)
- Added Section 501.5 (Annual Operator Training Records Required by Section 403 of this Rule)
- Revised Section 502 (Compliance Determination-Test Methods)

Revisions to Appendix A:

- Added the definition of CERTIFIED PRODUCT DATA SHEET to Appendix A(d)(1)
- Added Table 342-3 (Formula 2 Neutral Point VOC Content of Coating) in Section d(6)

Revisions to Appendix B:

- Revised the text in Section B(e)(1) (Housekeeping Functions) to match the text in Sections 306.1 (Handling and Disposal of VOC-Containing Materials-Use and Storage) and 306.2 (Handling and Disposal of VOC-Containing Materials-Disposal of VOC and VOC-Containing Material)
- Revised the text in Section B(e)(2) (Housekeeping Functions) to match the text in Section 305.1 (Cleanup and Cleaning Supply and Application Equipment-Booth Cleaning)
- Revised the title of Section d(2) (Conventional Spray Gun Restriction)
- Deleted **Section d(2)(a) (Green Tag Requirements)**

Revisions to Appendix C:

- Clarified (d) regarding the compliance schedule for Emission Control Systems (ECS). The section addresses all emissions that are vented to an ECS and does not apply to millwork.

References Cited:

1. "Control of Volatile Organic Compound Emissions from Wood Furniture Manufacturing Operations", EPA-453/R-96-007, April 1996.
2. Arizona Administrative Register, 1 A.A.R. 100, February 17, 1995.
3. Maricopa County Clerk of the Board Certified Minutes, February 15, 1995.
4. Maricopa County Clerk of the Board Certified Minutes, April 03, 1996.
5. Arizona Administrative Register, 2 A.A.R. 4305, October 18, 1996.
6. Maricopa County Clerk of the Board Certified Minutes, November 20, 1996.
7. Arizona Administrative Register, 19 A.A.R. 3611, November 22, 2013.
8. Department email between Cheri Dale, Doug Kober and Philip McNeely, October 27, 2015.
9. Department email from David Darling, American Coatings Association, September 01, 2015.

**7. Demonstration of compliance with A.R.S. §49-112:**

Under A.R.S. § 49-479(C), a county may not adopt a rule or ordinance that is more stringent than the rules adopted by the Director of the Arizona Department of Environmental Quality (ADEQ) for similar sources unless it demonstrates compliance with the applicable requirements of A.R.S. §49-112.

§ 49-112 County regulation; standards

§ 49-112(A)



When authorized by law, a county may adopt a rule, ordinance or other regulation that is more stringent than or in addition to a provision of this title or rule adopted by the director or any Board or commission authorized to adopt rules pursuant to this title if all of the following conditions are met:

1. The rule, ordinance or other regulation is necessary to address a peculiar local condition.
2. There is credible evidence that the rule, ordinance or other regulation is either:
  - (a) Necessary to prevent a significant threat to public health or the environment that results from a peculiar local condition and is technically and economically feasible.
  - (b) Required under a federal statute or regulation, or authorized pursuant to an intergovernmental agreement with the federal government to enforce federal statutes or regulations if the county rule, ordinance or other regulation is equivalent to federal statutes or regulation.
3. Any fee or tax adopted under the rule, ordinance or other regulation will not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

§ 49-112(B)

When authorized by law, a county may adopt rules, ordinances or other regulations in lieu of a state program that are as stringent as a provision of this title or rule adopted by the director or any Board or commission authorized to adopt rules pursuant to this title if the county demonstrates that the cost of obtaining permits or other approvals from the county will approximately equal or be less than the fee or cost of obtaining similar permits or approvals under this title or any rule adopted pursuant to this title. If the state has not adopted a fee or tax for similar permits or approvals, the county may adopt a fee when authorized by law in the rule, ordinance or other regulation that does not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

The department complies with A.R.S. § 49-112(A) in that Maricopa County fails to meet the National Ambient Air Quality Standards for both ozone and particulates. The County failed to meet 2008 8-hour ozone standard by the marginal area attainment date of July 20, 2015. The EPA issued a final rule, effective June 3, 2016, reclassifying the Maricopa County area to “moderate” (published at 86 FR 26697, May 4, 2016). Further, a portion of the County was classified as a serious ozone nonattainment area under the previous 1-hour ozone standard requiring the county to continue to maintain the measures and requirements that allowed the county to attain that standard. Revisions to Rule 342 addressed the requirements of the State Implementation Plan (SIP) for “moderate” nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS). The amendments in Rule 342 included Reasonably Available Control Technology (RACT).

The department complies with A.R.S. § 49-112(B) in that the amendments to Rule 342 are not more stringent than or in addition to a provision of Title 49 or rule adopted by the director or any Board or commission authorized to adopt rules pursuant to Title 49, address the peculiar local conditions in Maricopa County, are authorized under A.R.S. Title 49, Chapter 3, Article 3, and are not in lieu of a state program.

**8. Documents or studies referenced and/or reviewed for this rulemaking:**

Not applicable

**9. Showing of good cause why the rule is necessary to promote a statewide interest if the rule will diminish a previous grant of authority of a political subdivision:**

Not applicable

**10. Summary of the economic, small business, and consumer impact:**

The following discussion addresses each of the elements required for an economic, small business and consumer impact statement under A.R.S. § 41-1055. The economic summary is based on the number of Title V and Non-Title V permits issued by the Maricopa County Air Quality Department.

**An identification of the rulemaking.**

This rulemaking revised Rule 342 (Coating Wood Furniture and Fixtures).

**An identification of the persons who will be directly affected by, bear the costs of or directly benefit from the rulemaking.**

The persons who are directly affected by and bear the costs of this rulemaking will be facilities in Maricopa County that own or operate a facility in which the surface preparation and coating of wood furniture and fixtures takes place. The department has issued a Title V permit or Non-Title V permit to 67 facilities subject to Rule 342.

**A cost benefit analysis of the following:**

**(a) The probable costs and benefits to the implementing agency and other agencies directly affected by the implementation and enforcement of the rulemaking.**

The department anticipates that some of the permitted facilities might incur costs for VOC leak detection and repair (Sections 300 and 500), annual training requirements (Section 400), and associated recordkeeping (Section 500). These costs are described in more detail in Section 9(c) below.

Rule 342 revisions included several changes that are highly likely to ease the regulatory burden in terms of the number of entities regulated under the Rule or the amount of time required to comply with the Rule:

- Section 103.1 exempts sources subject to Rule 342 from Rule 330 (Volatile Organic Compounds) and Rule 336 (Surface Coating Compounds);
- Section 306 is deleted; thus removing all coatings manufacturers from being subject to Rule 342;
- Section 403 is deleted; spray gun tagging is no longer required.

It is expected that the department will benefit from the increased clarity of the rule with decreased time to inspect a facility or prepare a permit. The benefits of the rule revision are anticipated to be a result of the following:

- The addition and clarification of Rule 342 text in order to meet the Control Techniques Guideline (CTG) for this rule “Control of Volatile Organic Compound Emissions from Wood Furniture Manufacturing Operations”, April 1996;



- The addition of exemptions to Section 100 of Rule 342;
  - The addition and revision of definitions found in Section 200 of Rule 342;
- The revision of Section 300 included the redesign of the table in Section 301 for easier reading;
- Clarification of the use of spray guns;
  - Clarification of the requirements for handling and disposal of VOC-containing materials;

Revision of the compliance schedule in Section 400 of Rule 342;

- The addition of annual operator training requirements to Section 400 of Rule 342;
- The revision of the finishing material list in Section 500 of Rule 342;
- The modification of the format, numbering, order, capitalization, punctuation, or syntax of certain text to increase standardization within and among rules.

**(b) The probable costs and benefits to a political subdivision of this state directly affected by the implementation and enforcement of the rulemaking**

The rule revisions did not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

**(c) The probable costs and benefits to businesses directly affected by the rulemaking, including any anticipated effect on the revenues or payroll expenditures of employers who are subject to the rulemaking.**

The Rule 342 revisions could result in the subject entities incurring costs for training, leak detection, and recordkeeping. In order not to underestimate the potential impacts of the Rule 342 revisions, a cost analysis was conducted that included the following assumptions:

- All facilities incur training, leak detection, and recordkeeping costs. That is, for the purpose of not underestimating the costs with the rule revisions, the department assumed that no permitted facility had in-house training prior to the Rule 342 revisions.
- Training New Employees. The owner/operator spends 30 minutes developing a training checklist, two hours in training the new employee during which the owner/operator will use the checklist to ensure all topics are covered, and spends 5 minutes to place the checklist in the employee’s file when completed.
- Annual Refresher Training. The owner/operator is assumed to use the checklist to ensure he/she addresses all parts of the training. Other assumptions made to estimate costs: a single piece of paper is circulated for employees to sign, documenting that they received the annual training; the owner/operator takes 5 minutes to file the annotated checklist and sign-in sheet; the annual refresher training is conducted at the facility; and for a 30-minute refresher training, the estimated costs include 30 minutes for each employee as well as the owner/operator.
- Leak Inspection Program. For the purpose of estimating costs associated with the Rule 342 revisions, these assumptions were made: The owner/operator spends 60 minutes to list each piece of equipment and its specific checks and another 15 minutes generating 12 copies (one for each month) and placing these in a storage folder; and each month, a worker is assumed to spend 45 minutes going through the leak inspection checklist and performing the checks, 15 minutes to update the records for any repairs/ replacements done during the month, and 5 minutes to file the copy.

The economic analysis used the 25<sup>th</sup> percentile, average, and 90<sup>th</sup> percentile industry wages in Maricopa County for the new employee, average employee, and owner/operator. To estimate potential costs to a business, it was assumed that in the first year that rule revisions are in effect, every business hires a new employee, develops training for new and existing employees, conducts the training, develops the leak inspection program, conducts 12 monthly inspections, and incurs the recordkeeping costs for training and leak detection. Costs differ by business depending on the number of employees that receive the annual training. First-year costs are used in the economic analysis. Subsequent years will not require the development costs for the training and leak inspection program.

Table 1 illustrates the cost estimation calculations for a business with 10 employees in the first year of the proposed rule revisions. In this case, the cost is about \$315 for a facility that has no training of new hires, no annual refresher training for all employees, and no leak detection program.

**Table 1. Training, Leak Inspection, and Recordkeeping Costs—Example First-Year Costs**

Cost Element	Estimated Cost
New Hire Training	\$63.77
Leak Detection-Checklist Development	\$22.48
Leak Detection-Inspection and Recordkeeping	\$155.22
Annual Refresher Training--Trainer	\$13.49
Per-Employee Cost	\$5.97
Number of Employees	10
Refresher Training Costs	\$59.70
Costs in Impact Analysis	\$314.66

A leak inspection program and employee training would benefit a business by minimizing material lost through the leak as well as any imperfections caused by the malfunctioning equipment. It was assumed that most, if not all, businesses would have a leak inspection program in place because it is cost-effective to do so. Facilities to which Rule 342 applies would also benefit from the increased clarity of the rule to reduce non-compliance.

**A general description of the probable impact on private and public employment in businesses, agencies and political subdivisions of this state directly affected by the rulemaking.**



Of the 67 facilities with a Title V or Non-Title V permit, 8 belong to non-commercial entities such as educational or medical facilities, airport authorities, a military air force base, and a governmental entity. The estimated cost for any of these noncommercial entities is small compared to its operating budget. As such, the department projects no discernable impacts on the noncommercial facilities.

The department examined the impacts on commercial facilities through two metrics: the ratio of first-year costs to (a) annual revenue and (b) projected net income. The data source for revenues is the location/business-specific data in the *Demographics Now* commercial database. To estimate net income, the revenues were multiplied by the ratio of net income to revenues reported in IRS statistics for the wood product manufacturing industry. The national average is that net income is 3.9 percent of revenues for all businesses in the industry including businesses with no positive net income. The economic analysis indicates that, under the proposed revisions, the maximum impact was about one-quarter of one percent (0.24 percent) of revenues. All but five businesses showed less than a 3 percent reduction in net income as a result of potential incremental costs for complying with the Rule 342 revisions.

The aggregate estimated first-year costs for all commercial facilities is slightly less than \$29,000. The U.S. Commerce Department, Bureau of Economic Analysis (BEA) developed the Regional Input-Output Modeling System (RIMS II) to estimate the loss in output, earnings, and employment associated with spending increases/decreases by industry and region. For this analysis, the department used the multipliers for the furniture and related product manufacturing industry in Maricopa County. The department compared the estimated losses in output, earnings, and employment against the Gross Domestic Product (GDP) for durable goods manufacturing in the Phoenix-Mesa-Glendale Metropolitan Statistical Area (estimated by BEA), annual payroll data for wood furniture fabrication and coating from the Census County Business Patterns (CPB) data for Maricopa County, the employment data from the same CPB dataset, and the Bureau of Labor Statistics data on labor force and unemployment rate for Maricopa County, respectively. The aggregate costs of Rule 342 revisions lead to no discernable impact on output, employment, or unemployment rate in Maricopa County. The potential change in earnings is less than 0.07 percent.

**A statement of the probable impact of the rulemaking on small businesses.**

The economic analysis indicates that, under the proposed revisions, the maximum impact was about one-quarter of one percent (0.24 percent) of revenues for small businesses. Five small businesses showed more than a 3 percent reduction and less than a 6.5 percent in net income as a result of potential incremental costs for complying with the Rule 342 revisions. The actual impacts would be less because the comparison of costs to net income is made with pre-tax costs and not after-tax costs and could be lessened by any training programs currently in place.

**(a) An identification of the small businesses subject to the rulemaking.**

Small businesses subject to this rulemaking are those facilities in Maricopa County with surface preparation and coating of wood furniture and fixtures that have either fewer than 100 employees or less than \$4 million in revenues for the most recent fiscal year. Of the 67 facilities with a Title V or Non-Title V permit, 8 are non-commercial and of the 59 commercial businesses, 51 are considered small.

**(b) The administrative and other costs required for compliance with the rulemaking.**

The costs to comply with the annual refresher training in the proposed rule revisions will vary for each business depending on the number of employees. The department estimated that the first-year cost for a business with 10 employees to comply with all administrative and other costs from the Rule 342 revisions would be about \$315. The aggregate estimated first-year costs for all commercial facilities is slightly less than \$29,000.

**(c) A description of the methods that the agency may use to reduce the impact on small businesses.**

**(i) Establishing less costly compliance requirements in the rulemaking for small businesses.**

By correcting and clarifying existing rule provisions and definitions, this rulemaking lessens or eases the regulatory burden for small businesses.

**(ii) Establishing less costly schedules or less stringent deadlines for compliance in the rulemaking.**

This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability.

**(iii) Exempting small businesses from any or all requirements of the rulemaking.**

This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability.

**(d) The probable cost and benefit to private persons and consumers who are directly affected by the rulemaking.**

Given that the maximum impact on commercial entities is about 0.36 percent of revenues, even a price increase to recover the costs associated with the Rule 342 revisions would not be discernable to consumers. Thus, the department projects no discernable impacts on consumers.

**A statement of the probable effect on state revenues.**

With no discernable costs to pass through to customers, there is no projected change in consumer purchase patterns and, thus, no impact on state revenues from sales taxes.

**A description of any less intrusive or less costly alternative methods of achieving the purpose of the rulemaking.**

This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability. The department also examined an alternative scenario in which the owner/operator successfully completes an on-line training class and uses the material in training the other staff. This alternative was more expensive and had less quantifiable benefits such as reduced VOC emissions. Thus, the department selected the less burdensome alternative.

**11. Name and address of department personnel with whom persons may communicate regarding the accuracy of the economic, small business, and consumer impact:**



Name: Hether Krause  
 Maricopa County Air Quality Department  
 Planning and Analysis Division  
 Address: 1001 N Central Avenue, Suite 125  
 Phoenix, AZ 85004  
 Telephone: (602) 506-6010  
 Fax: (602) 506-6179  
 E-mail: aqplanning@mail.maricopa.gov

**12. Description of the changes between the proposed rule, including supplemental notices and final rule:**

Since the Notice of Proposed Rulemaking was published on May 13, 2016 (22 A.A.R. 1184), the department added the following amendments:

- Metric equivalents were included to provide consistency throughout the rule.
- Section 504 (Compliance Determination-Test Methods Incorporated by Reference): Included text that allows for the use of alternative test methods to determine compliance with the rule and that allows test methods as approved by the Administrator to be used and clarified the provision regarding when more than one test method is permitted for a compliance determination.
- Appendix A, Section b(1): The metric equivalent of 25 tons was changed to 22.7 megagrams (Mg) to reflect the accurate conversion of tons to megagrams.

**13. Summary of the comments made regarding the rule and the department response to them:**

Since the Notice of Proposed Rulemaking was published on May 13, 2016 (22 A.A.R. 1184), the department received no comments.

**14. Any other matters prescribed by the statute that are applicable to the specific department or to any specific rule or class of rules:**

Not applicable

**15. Incorporations by reference and their location in the rule:**

The following test methods are incorporated by reference in Rule 342, Section 502:

EPA Test Method 24—Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings (40 CFR 60, Appendix A-7)

The following test methods are incorporated by reference in Rule 342, Appendix C to Rule 342:

EPA Test Method 25 —Determination of Total Gaseous Nonmethane Organic Emissions as Carbon or an applicable submethod of Method 25 (Title 40, CFR Part 60, Appendix A)

EPA Test Method 18—Measurement of Gaseous Organic Compound Emissions by Gas Chromatography

"Guidelines for Determining Capture Efficiency" January 9, 1995, Candace Sorrell, Source Characterization Group A, Office of Air Quality Planning and Standards, US EPA.

EPA Test Method 2—Determination of Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot Tube)

EPA Test Method 2A—Direct Measurement of Gas Volume Through Pipes and Small Ducts

EPA Test Method 2C - Determination of Gas Velocity and Volumetric Flow Rate in Small Stacks or Ducts (Standard Pitot Tube)

EPA Test Method 2D—Measurement of Gas Volume Flow Rates in Small Pipes and Ducts

**16. Was this rule previously an emergency rule?**

No

**17. Full text of the rule follows:**

**MARICOPA COUNTY**  
**AIR POLLUTION CONTROL REGULATIONS**  
**REGULATION III – CONTROL OF AIR CONTAMINANTS**  
**RULE 342**  
**COATING WOOD FURNITURE AND FIXTURES**  
**INDEX**

**SECTION 100 – GENERAL**

- 101 PURPOSE
- 102 APPLICABILITY
- 103 EXEMPTIONS

**SECTION 200 – DEFINITIONS**

- 201 ADHESIVE
- 202 AEROSOL-SPRAY COATING
- 203 AIR-ATOMIZED SPRAY (GUN)
- 204 ARCHITECTURAL COATING
- 205 BASECOAT
- 206 CERTIFIED PRODUCT DATA SHEET
- 207 COATING
- 208 CONVENTIONAL AIR-ATOMIZED SPRAY (SYSTEM)



~~209~~    208    CUSTOM REPLICA FURNITURE  
~~210~~    209    DAY  
~~211~~    210    DILUENT  
~~212~~    211    ELECTROSTATIC APPLICATION  
~~213~~    212    EMISSION CONTROL SYSTEM (ECS)  
~~214~~    213    FACILITY  
~~215~~    214    FAUX FINISH  
~~216~~    215    FINISHING MATERIAL  
~~217~~    216    HIGH SOLIDS STAINS  
217    HIGH-VOLUME, LOW PRESSURE (HVLP) SPRAY GUN  
218    KILOGRAMS VOC PER KILOGRAM OF COATING SOLIDS  
219    LOW PRESSURE SPRAY GUN  
220    LOW SOLIDS STAINS  
221    NONPERMANENT FINAL FINISH  
222    POUNDS VOC PER POUND OF COATING SOLIDS  
223    REPAIR COATING  
224    RESTRICTED-USE GUN  
225    SEALER OR PRIMER  
226    SINGLE RESIN-LAYER FINISH  
227    STAIN  
228    STRIPPABLE BOOTH COATING  
229    STRIPPING OPERATION  
230    TOPCOAT  
231    TOUCH UP COATING  
232    TRANSFER EFFICIENCY  
233    VOC-BORNE COATING  
234    VOC-CONTAINING SOLVENT  
235    WASHCOAT  
236    WOOD FURNITURE AND FIXTURES  
237    WOOD-PRODUCT  
238    WORKING DAY

**SECTION 300 – STANDARDS**  
301    LIMITATIONS–VOC CONTENT  
302    LIMITATION OF CONVENTIONAL AIR-ATOMIZED SPRAY AND OTHER SPRAY METHODS ATOMIZING WITH HIGH-PRESSURE AIR  
303    OPERATION AND MAINTENANCE  
304    VOC LEAK DETECTION AND REPAIR  
~~304~~    305    CLEANUP AND CLEANING SUPPLY AND APPLICATION EQUIPMENT  
~~305~~    306    HANDLING AND DISPOSAL OF VOC-CONTAINING MATERIALS  
~~306~~    DESIGNATION OF VOC CONTENT REQUIREMENT  
~~307~~    EXEMPTIONS

**SECTION 400 – ADMINISTRATIVE REQUIREMENTS**  
401    COMPLIANCE SCHEDULE FOR APPENDIX C  
402    REGULATORY CLARIFICATION  
403    GUN-TAGGING REQUIREMENTS ANNUAL OPERATOR TRAINING REQUIREMENTS TO REDUCE VOC EMISSIONS

**SECTION 500 – MONITORING AND RECORDS**  
501    RECORDKEEPING AND REPORTING  
502    COMPLIANCE DETERMINATION–TEST METHODS INCORPORATED BY REFERENCE

**APPENDIX A TO RULE 342**  
**APPENDIX B – A SHORT-FORM OPTION**  
**APPENDIX C TO RULE 342**

Adopted 04/03/96  
Revised 11/20/96  
Revised 09/25/13

Adopted 04/03/1996; Revised 11/20/1996; Revised 09/25/2013; and Revised 11/02/2016

MARICOPA COUNTY  
AIR POLLUTION CONTROL REGULATIONS  
REGULATION III – CONTROL OF AIR CONTAMINANTS  
RULE 342  
COATING WOOD FURNITURE AND FIXTURES

**SECTION 100 – GENERAL**



- 101 **PURPOSE:** To limit emissions of volatile organic compounds (VOC) from the surface preparation and coating of wood furniture and fixtures.
- 102 **APPLICABILITY:** The provisions of this rule apply to any facility in Maricopa County applying finishing material to furniture or fixtures made of wood or wood derived material. Simplified provisions of Appendix B in this rule may be used by facilities which agree to a permit limit of less than 10 tons (9.1 megagrams (Mg)) of VOC emissions per year. For sources emitting less than 2 tons (1.8 Mg) of VOC per year, ~~consult subsection 307-24~~ refer to Section 103.2(d) of this rule. This rule does not apply to the coating of any millwork included under SIC code #2431 (Millwork).

**Table 342-1: APPLICABLE STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODES\***

<u>Standard Industrial Classification (SIC) code</u>	<u>SIC Title</u>
2434	Wood Kitchen Cabinets
2511	Wood Household Furniture, Except Upholstered
2512	Wood Household Furniture, Upholstered
2517	Wood Television, Radio, Phonograph, and Sewing Machine Cabinets
2519	Household Furniture, Not Elsewhere Classified
2521	Wood Office Furniture
2531	Public Building and Related Furniture
2541	Wood Office and Store Fixtures, Partitions, Shelving, and Lockers
2599	Furniture and Fixtures, Not Elsewhere Classified
2515	Mattresses, Foundations, and Convertible Beds

\*Per the United States Department of Labor Occupational Safety and Health Administration. Web access at <https://osha.gov/index.html>

**103 EXEMPTIONS:**

**103.1 Total Exemptions:**

- a. This rule does not apply to the coating of any millwork included under SIC code 2431 Millwork.
- b. The following materials are exempt from this rule:
  - (1) Adhesives.
  - (2) Architectural coatings.
  - (3) Printing ink.
  - (4) Coatings that are not applied on or over a wood product substrate.
- c. Sources subject to Rule 342 are exempt from the following Maricopa County Air Pollution Control Regulations:
  - (1) Rule 330 (Volatile Organic Compounds)
  - (2) Rule 336 (Surface Coating Operations)

**103.2 Partial Exemptions:**

- a. **Aerosol Spray Can Coating:** Coatings in aerosol spray cans not exceeding 22 fl. oz. (0.66 liter) capacity and used exclusively for touch-up and/or repairs are subject to only the reporting requirements in Section 500 of this rule.
- b. The following are exempt from the VOC limits in Section 301.1 of this rule, but shall comply with all other provisions of this rule:
  - (1) The use of the following coating types when the annual total use of all such types together is less than 250 gallons (948 liters):
    - (a) Prepackaged aerosol spray cans which are not used for touch-up or repair;
    - (b) Metal leaf finishes; and
    - (c) Faux finishes.
  - (2) Refinishing, Replacement, and Custom Replica Furniture Operations:
    - (a) Any refinishing operation necessary for preservation;
    - (b) To return the furniture or fixture to original condition;
    - (c) To replace missing furniture to produce a matching set; or
    - (d) To produce custom replica furniture.
  - (3) Stains, washcoats, glazes, toners, inks, and other coatings not specified in Section 301.1 of this rule.
- c. The coating for a single resin-layer finish which does not exceed a VOC limit of 3 lb VOC/lb solids (3 kg VOC/kg solids) for completed finishes up to 3 dry mils thickness or does not exceed 2.3 lb VOC/lb solids (2.3 kg VOC/kg solids) for finishes over 3 dry mils is exempt from the VOC limits of Section 301.1 of this rule if all of the following conditions are met:
  - (1) The containers are clearly marked "FOR USE IN SINGLE RESIN LAYER FINISH";
  - (2) Facility records clearly identify this material: "DOES NOT MEET THE VOC LIMITS OF SECTION 301, RULE 342. FOR USE ONLY IN SINGLE RESIN-LAYER FINISHES"; and
  - (3) The booth used to apply a single resin-layer finish above 2.3 lb VOC/lb solids (2.3 kg VOC/kg solids) is dedicated to that operation only, and is clearly labeled "FOR SINGLE RESIN-LAYER FINISHES ONLY".
- d. **Small Source Status:** A furniture coating facility which at any time demonstrates that it currently meets all the requirements in Sections 103.2(d)(1) of this rule is exempt from all provisions of this rule except for the sections listed in Section 103.2(d)(2) of this rule.



- (1) **Small Source Status Requirements:**
  - (a) Facility records demonstrate that no more than a total of 55 gallons (209 liters) of VOC-containing wood-product coatings and VOC-containing solvent are used in any consecutive 12-month period; and
  - (b) The monthly total usage of VOC-containing wood-product coatings and VOC-containing solvent divided by that month's number of working days of coating application does not exceed 3.0 gallons (11.4 liters) per working day; and
  - (c) The facility emits less than 4000 pounds (1814 kg) VOC, facility-wide per year from all wood-product coating operations, all VOC-containing diluent added to coatings, all VOC-containing solvent cleaning and stripping, and VOC-containing solvent used for coating equipment cleanup.
- (2) Small Sources shall comply with all of the following sections of Rule 342:
  - (a) Section 303: OPERATION AND MAINTENANCE;
  - (b) Section 304: LEAK DETECTION AND REPAIR;
  - (c) Section 306: HANDLING AND DISPOSAL OF VOC-CONTAINING MATERIAL;
  - (d) Section 400: ADMINISTRATIVE REQUIREMENTS; and
  - (e) Section 500: MONITORING AND RECORDS.
- e. **Using Conventional and other Restricted Use Guns:** In addition to the uses of restricted-use guns allowed under Sections 302.2(a), (b), and (c) of this rule, an owner or operator may use a conventional air-atomized or other restricted use gun to apply coatings exceeding 1 lb VOC/1 lb solids (1kg VOC/1 kg solids) if both of the following conditions are met:
  - (1) The volume of such coating applied in this way is less than five percent (5%) of the total semi-annual volume of coating applied at the facility; and
  - (2) A log is kept pursuant to Section 501.2(c) of this rule of the amount of coating used by each such gun. This shall be done daily or each time coating is added to the gun's coating reservoir; and semi-annual calculation shall be made pursuant to Section 501.2 of this rule.

**SECTION 200 – DEFINITIONS:** For the purpose of this rule, the following definitions shall apply, in addition to those definitions found in Rule 100 (General Provisions and Definitions) of these rules. In the event of any inconsistency between any of the Maricopa County air pollution control rules, the definitions in this rule take precedence.

- ~~201~~ **ADHESIVE:** Any substance, usually having a fluid phase during application, used principally to bond two or more surfaces into close proximity with one another.
- ~~202~~ **AEROSOL SPRAY COATING:** A coating which is sold in a hand-held, pressurized, non-refillable container, usually of less than 22 fluid ounces (0.66 liter) capacity, and which is expelled from the container in a finely divided form when a valve on the container is depressed.
- ~~203~~ **AIR-ATOMIZED SPRAY (GUN):** Equipment used to apply coatings in which the chief means of atomizing the coating is via pressurized air which also mixes into the cloud of coating particles after expulsion from a spray nozzle.
- ~~204~~ **ARCHITECTURAL COATING:** Any coating applied to stationary structures and their appurtenances, to mobile homes, to pavements or to curbs.
- ~~205~~ **BASECOAT:** A coat of colored material, usually opaque, that is applied before graining inks, glazing coats, or other high-hiding finishing materials. A basecoated surface usually receives a topcoat ~~also~~.
- ~~206~~ **CERTIFIED PRODUCT DATA SHEET:** ~~A document, signed by an officer of a coating supplying operation, stating precisely the maximum VOC content of a particular coating as supplied.~~
- ~~207~~ **206** **COATING:** Any liquid, fluid, or mastic composition which is converted to a solid (or semi-solid) protective, decorative, or adherent film or deposit after application to a substrate as a thin layer.
- ~~208~~ **207** **CONVENTIONAL AIR-ATOMIZED SPRAY:** Any spray coating method in which the coating is atomized principally by mixing it with compressed air at an air pressure greater than 10 pounds per square inch (gauge) at the point of atomization, and which is not used with an electrostatic transfer system. Airless and air-assisted airless spray technologies are not conventional air-atomized spray because the principal means of atomizing the coating is via hydraulic pressure and not by mixing the coating with compressed air.
- ~~209~~ **208** **CUSTOM REPLICIA FURNITURE:** Furniture individually produced or repaired after an order has been received from a client specifying a particular style and period, using both the style and the methods of construction, including materials, joinery, and finishes, which are authentic to the period.
- ~~210~~ **209** **DAY:** A period of 24 consecutive hours beginning at midnight.
- ~~211~~ **210** **DILUENT:** For the purpose of this rule, any fluid in or added to a coating such as thinner, retarder, reducer, solvent, or drying accelerator which solubilizes, adjusts concentration, viscosity, flow, or drying rates and which evaporates as the coating film solidifies and cures.
- ~~212~~ **211** **ELECTROSTATIC APPLICATION:** A method of applying coating by electrically charging coating droplets or particles causing their deposition onto a substrate by electrostatic attraction.
- ~~213~~ **212** **EMISSION CONTROL SYSTEM (ECS):** A system for reducing emissions of organic compounds, consisting of both collection and control devices which are approved in writing by the Control Officer and are designed and operated in accordance with good engineering practice.
- ~~214~~ **213** **FACILITY:** For the purpose of this rule, all the pollutant-emitting activities located on one or more contiguous or adjacent properties, under the control of the same person or persons under common control, and described by one or more of the industrial groupings listed in Section ~~238~~ 236 of this rule.



- 214 **FAUX FINISH:** A finish intended to simulate a surface other than wood, including, but not limited to, stone, sand, metal, fur and leather.
- 215 **FINISHING MATERIAL:** A coating other than one designed solely or principally as an adhesive, temporary maskant, and/or preservative. For wood furniture and fixtures, finishing materials include, but are not limited to, topcoats, sealers, primers, stains, basecoats, washcoats, enamels, toners, glazes, and graining inks.
- 216 **HIGH SOLIDS STAINS:** Stains which are formulated to enhance wood grain and change wood color, but not conceal surface grain. For the purpose of this rule, high solids stains are stains that contain at least 120 grams of solids per liter (1 lb/gal) of stain as applied, and can include wiping stains and glazes.
- 217 **HIGH-VOLUME, LOW PRESSURE (HVLP) SPRAY GUN:** Spray equipment that is used to apply coating by means of a spray gun that operates at 10 psig of atomizing air pressure or less at the center of the air cap. A permanently affixed manufacturer's gun identification or manufacturer's gun literature shall identify and be proof of an HVLP gun.
- 218 **KILOGRAMS VOC PER KILOGRAM OF COATING SOLIDS:** A measurement that is used in this rule to express the VOC content of a coating. For any coating, kilograms VOC per kilogram coating solids is numerically identical to both pounds of VOC per pound of coating solids and to grams VOC per gram of coating solids. Abbreviations used include kg VOC/kg solids (lb VOC/lb solids) or simply kg/kg (lb/lb).
- 219 **LOW PRESSURE SPRAY GUN:** An air-atomized spray gun which by design functions best at tip air cap pressures below 10 psig (0.7 bar) measured according to ~~subsection~~ Section 502.2 of this rule, and for which the manufacturer makes no public claims that the gun can be used effectively above 12 psig (0.8 bar).
- 220 **LOW SOLIDS STAINS:** Stains which are formulated to enhance wood grain and change wood color, but not conceal surface grain. For the purpose of this rule, low solids stains are stains that contain up to one (1) pound of solids per one gallon (120 grams of solids per liter) (1 lb/gal) of stain as applied, and include sap stain, toner, and non-grain-raising (NGR) stains.
- 221 **NONPERMANENT FINAL FINISH:** A material such as wax, polish, non-oxidizing oil or similar substance which retains its effect only temporarily and must be periodically reapplied to a surface to maintain or restore the material's intended effect.
- 222 **POUNDS VOC PER POUND OF COATING SOLIDS:** A measurement of a coating's VOC content identical with kilograms VOC per kilogram of coating solids.
- 223 **REPAIR COATING:** A coating used to recoat portions of a previously coated product to cover mechanical damage to that previous coating following normal painting operations.
- 224 **RESTRICTED-USE GUN:** Any spray gun which atomizes coating using compressed air, such that in normal use or a use advertised by the manufacturer or distributor, the tip air cap pressure exceeds 12 psig (0.8 bar) in measurements done pursuant to ~~subsection 502.2~~ Section 500 of this rule. Restricted-use gun also includes, but is not limited to, all conventional air-atomized spray guns.
- 225 **SEALER OR PRIMER:** A film-building finishing material used to seal the pores of wood or wood-derived material before additional coats of finishing material are applied. Finishing materials used primarily to alter the appearance or color of the substrate, such as stains, washcoats, glazes, inks, and toners, are not sealers.
- 226 **SINGLE RESIN-LAYER FINISH:** A completed, consumer ready finish, which has received only one application of resin-based coating serving as both sealer and topcoat, and having a total average dry finish thickness from the top of the finish to the surface of the wood-product substrate not exceeding 3 mils (0.076 mm) before sanding, as determined pursuant to the test method in ~~subsection 502.3~~ Section 500 of this rule. If a washcoat is also used, the finish is not a single resin-layer finish.
- 227 **STAIN:** A coating, excluding sealers and topcoats, that is formulated to enhance wood grain and change wood color, but not conceal surface grain. Stain includes all high solids stains and all low solids stains.
- 228 **STRIPPABLE BOOTH COATING:** A coating which is applied to spray booth surfaces to receive the overspray and protect the substrate, and which is designed to be readily pulled off in strips or sheets and disposed of.
- 229 **STRIPPING OPERATION:** Any operation in which organic VOC-containing solvent is used to remove coating from a substrate.
- 230 **TOPCOAT:** The last permanent, functional film-building finishing material applied to a manufactured wood product. When the wood-product substrate is already sealed with sealer, any further coats that build a functional film are topcoats. Finishing materials used primarily to alter the appearance or color of the substrate, such as stains, washcoats, glazes, inks, and toners are not topcoats. A nonpermanent final finish is not a topcoat.
- 231 **TOUCH UP COATING:** A coating used to cover minor coating imperfections after the main coating operation.
- 232 **TRANSFER EFFICIENCY:** The ratio of the weight of coating solids deposited on an object to the total weight of coating solids used in a coating application step or series of such steps, expressed as a percentage.
- 233 **VOC-BORNE COATING:** A coating in which the volatile portion contains, by weight, more VOC than water.
- 234 **VOC-CONTAINING SOLVENT:** A solvent or diluent, used to solvate, dilute, reduce, thin, clean or strip, in which the weight-percent of VOC exceeds the weight percent of water.
- 235 **WASHCOAT:** A transparent special purpose coating having a solids content by mass of 12.0 percent (12.0%) or less, and which is used to seal wood-product surfaces for any of the following purposes: to prevent undesired staining, to control penetration of subsequent finishes, to provide a barrier when paper laminates are applied to the wood-product, to seal glazes, and to improve adhesion of a waterborne topcoat.
- 236 **WOOD FURNITURE AND FIXTURES:** All furnishings made of wood-product that are included in Standard Industrial Classification (SIC) numbers code 2434, 2511, 2512, 2515, 2517, 2519, 2521, 2531, or 2541, ~~or 2599~~ as well as wood-product on convertible furniture under SIC number 2515.
- 237 **WOOD-PRODUCT:** Wood or wood-derived material, such as chipboard, particle board, fiberboard, pressed board, paper, and any other material derived from wood, bamboo, cane, or rattan, that retains some of the physical structure(s) of such original material(s), even if only at a microscopic level.



**238 WORKING DAY:** A day, or any part of a day, in which a facility is engaged in ~~manufacturing~~ the application of VOC-containing finishing material to wood furniture or fixtures.

**SECTION 300 – STANDARDS**

**301 LIMITATIONS – VOC CONTENT:**

**301.1** ~~No person~~ An owner or operator shall ~~not~~ apply a topcoat or sealer to wood furniture or fixtures ~~or shall not apply a strippable booth coating~~ unless VOC content is limited to ~~the pounds of VOC per pound of solids (kg VOC/kg solids) or to the grams of VOC per liter~~ the VOC limits in one of the columns in Table 342-2 below:

a. ~~General VOC Limits of Coatings~~

	Column A Lb VOC/lb solids	Column B Grams VOC/liter **
Topcoat	1.8	635
Sealer	1.9	645
Acid-cured, alkyd amino topcoat	2.0	655
Acid-cured, alkyd amino vinyl sealer	2.3	680

~~\*\*less non-precursor compounds & water~~

**Table 342-2: General VOC Limits of Coatings**

Coating Type	Lb VOC/lb solids is equivalent to kg VOC/kg solids	lb VOC /Gallon*	Grams VOC/liter*
Sealer	1.9	5.38 lb/gal	645 g/l
Topcoat	1.8	5.29 lb/gal	635 g/l
Acid-Cured Alkyd Amino Vinyl Sealer	2.3	5.67 lb/gal	680 g/l
Acid-Cured Alkyd Amino Conversion Varnish Topcoat	2.0	5.46 lb/gal	655 g/l
Strippable Booth Coating	0.8	3.0 lb/gal	360 g/l
Low VOC Topcoat (No VOC limit for Sealer when used with low VOC topcoat)	0.8	3.0 lb/gal	360 g/l

\* less non-precursor compounds and water

- b. ~~Option: Lower VOC topcoat and Unlimited Sealer: There is no VOC limit on sealer when the sealer's topcoat does not exceed 0.8 lb VOC/lb (0.8 kg/kg).~~
- e. ~~Coatings with no VOC limits: Stains, washcoats, glazes, toners, inks, and other coatings not specified in this subsection 301.1 nor in subsection 301.2 have no VOC limits.~~

~~301.2 Strippable Booth Coatings: No person shall use a strippable booth coating unless, as applied, the coating has either no more than 0.8 lb VOC/lb solids or no more than 3.0 lb/gal (360 g/l) less non-precursor volatile compounds.~~

~~301.3 **301.2 Emission Control System (ECS) as an Alternative Control:** A facility may meet the VOC limits of either or both subsections 301.1 and 301.2 Section 301.1 of this rule if the owner or operator complies with all provisions in this rule's Appendix C: ALTERNATIVE COMPLIANCE WITH SECTION 301 VOC LIMITS AND/OR SECTION 302 SPRAY-METHOD RESTRICTIONS BY USING AN EMISSIONS CONTROL DEVICE and with the other applicable provisions of this rule.~~

~~301.4 **301.3 Averaging:** An owner or operator of a larger furniture coating facility meeting the applicability requirements of subsection b., in this rule's Appendix A: AN AVERAGING ALTERNATIVE, may comply with ~~subsection 301.1a.~~ Section 301.1 of this rule by complying with Averaging-Formula 1 or Averaging-Formula 2 in Appendix A and by complying with all other applicable provisions of Appendix A.~~

~~301.5 **301.4 Smaller Source Option:** The owner or operator of a facility that has emitted ≥ two (2) or more tons (1.8 Mg) but less than 10 ten (10) tons (9.1 Mg) per year of VOC from all wood coating and associated operations is exempted from all provisions under Sections 300, 400, and 501 (but not Sections 100, 200, and 502) if all provisions are complied with in this rule's Appendix B: A SHORT-FORM OPTION. Sources emitting less than ≥ two (2) tons (1.8 Mg) of VOC per year may be allowed exemptions pursuant to ~~subsection 307.2d~~ Section 103.2(d) of this rule.~~

**302 LIMITATION OF CONVENTIONAL AIR-ATOMIZED SPRAY AND OTHER SPRAY METHODS ATOMIZING WITH HIGH-PRESSURE AIR:**

**302.1 Evidence of Transfer-Efficient Spray Equipment:** ~~No person~~ An owner or operator shall ~~not~~ spray wood furniture with coating exceeding 1 lb VOC/lb solids (1 kg VOC/kg solids) without providing evidence of ~~possession and use or~~ manufacturer's specifications of a low pressure spray gun or system; an HVLP spray gun; an electrostatic system; or a system in which the energy for atomization is provided principally via hydraulic pressure; this includes air assisted airless and ultra-low-volume-air assisted technologies. Such requirement does not apply to any facility, activity or person specifically exempted by ~~applicable subsections of Section 307~~ Section 103 of this rule, or to any specific system which is approved by the Administrator as ~~having a transfer efficiency consistently exceeding 64%.~~ HVLP-equivalent.

**302.2 Limitation of Air-Atomized Spray Gun other than Low Pressure or HVLP Spray Guns:** ~~No person~~ An owner or operator shall ~~not~~ use a conventional air-atomized spray gun or other restricted use gun, except:



- a. To apply finishing materials that have a VOC content not exceeding 1.0 lb VOC/lb solids (1.0 kg/kg).
- b. If VOC emissions from the finishing application station, employing such a gun, are captured and directed to an ECS, pursuant to the provisions of Appendix C: ALTERNATIVE COMPLIANCE WITH SECTION 301 VOC LIMITS AND/OR SECTION 302 SPRAY-METHOD RESTRICTIONS BY USING AN EMISSIONS CONTROL DEVICE.
- c. For touch-up and repair under either of the following conditions:
  - (1) ~~such~~The application is performed after completion of the entire finishing operation; or
  - (2) ~~such~~The application is performed after applying stain, and before any further coating, by equipment having a total capacity not exceeding 2.1 gallons (8 liters).
- d. To apply less than ~~5%~~five percent (5%) of all coating pursuant to ~~subsection 307.2.e~~Section 103.2(e)(1) of this rule.

**303 OPERATION AND MAINTENANCE:** ~~Any person~~ An owner or operator subject to this rule shall operate and maintain in proper working order all process equipment in which VOC-containing materials are used or stored.

**304 VOC LEAK DETECTION AND REPAIR:**

**304.1 Leak Inspection:** ~~An owner or operator shall conduct a visual inspection once per month of pumps, valves, flanges, or other equipment used to transfer or apply VOC-containing finishing materials or VOC-containing solvents.~~

**304.2 Leak Repair:** The owner or operator shall repair a leak within the time frames listed below:

- a. A first attempt to repair a leak shall be made no later than five (5) working days after the leak was first detected.
- b. Final repairs shall be made within fifteen (15) working days after the leak was first detected unless the leaking equipment is to be either:
  - (1) Removed from service within three (3) months after the leak was first detected; or
  - (2) Replaced by a new purchase within three (3) months after the leak was first detected.

**304 305 CLEANUP AND CLEANING SUPPLY AND APPLICATION EQUIPMENT:**

**304.1 305.1 Booth Cleaning:** ~~No person~~An owner or operator shall not clean spray booth components using a VOC-containing solvent containing more than ~~8.0~~eight percent (8.0%) by weight of VOC, including water and non-precursor compounds, except for: conveyors; continuous coaters and their enclosures; and metal filters and while refurbishing spray booths. If the spray strippable booth coating is being replaced, ~~a person~~ an owner or operator shall not use ~~no~~ more than 1.0 gallon (3.8 liters) VOC-containing solvent per booth to clean the spray booth.

**304.2 305.2 Cleaning Guns and Lines:** ~~A person~~ An owner or operator shall collect all VOC-containing solvent used to clean spray guns and shall pump or drain all VOC-containing solvent used for line cleaning into non-leaking container(s). Such containers shall be immediately closed or covered after all the VOC-containing solvent has been collected, and shall remain so except when in use.

**305 306 HANDLING AND DISPOSAL OF VOC-CONTAINING MATERIALS:**

**305.1 306.1 Use and Storage:** ~~A person~~ An owner or operator shall cover and keep covered each VOC-containing material intended for the day's production, which is not currently in use. ~~A person~~ An owner or operator shall store VOC-containing finishing and cleaning materials in closed containers.

**305.2 306.2 Disposal of VOC and VOC-Containing Material:** ~~A person~~ An owner or operator shall store all VOC-containing materials intended for disposal, including, but not limited to, rags, waste coatings, waste solvents and their residues, in closed containers; ~~which are legibly labeled with their contents and which shall remain covered when not in use except when contents are being added or removed.~~

**306 DESIGNATION OF VOC CONTENT REQUIREMENT:** Effective May 3, 1996, a manufacturer of wood furniture coatings which are subject to this rule shall provide on each coating container or as an accompanying specification of each coating container a designation of VOC content. For topcoats and sealers, this shall be in pounds of VOC per pound of coating solids (g/g) or in pounds VOC per gallon (g/lg) less water and non-precursor volatile compounds. This requirement shall not apply to containers having a capacity of one liter (1.05 quart) or less.

**307 EXEMPTIONS:**

**307.1 Total Exemption:** The following materials are exempt from this rule: adhesives, architectural coatings, printing ink, and coatings not applied on or over a wood product substrate.

**307.2 Partial Exemptions:**

- a. Touch-up Cans: Coatings in aerosol spray cans not exceeding 22 fl. oz. (0.66 liter) capacity used exclusively for touch-up and/or repairs are subject only to the recording requirements of this rule.
- b. The following shall be exempt from subsection 301.1 and Section 302:
  - (1) The use of the following coating types when the annual total use of all such types together is less than 250 gallons (948 liters): prepackaged aerosol spray cans which are not used for touch-up or repair, metal leaf finishes, and faux finishes.
  - (2) Refinishing, Replacement, and Custom Replica Furniture Operations: Any refinishing operation necessary for preservation, to return the furniture or fixture to original condition, to replace missing furniture to produce a matching set, or to produce custom replica furniture.
- c. The coating for a single resin layer finish which does not exceed a VOC limit of 3 lb VOC/lb solids for completed finishes up to 3 dry mils thickness or does not exceed 2.3 lb/lb for finishes over 3 dry mils is exempt from the VOC limits of subsection 301.1 if all of the following conditions are met:
  - (1) The containers are clearly marked "FOR USE IN SINGLE RESIN LAYER FINISH";
  - (2) Facility records clearly identify this material: "DOES NOT MEET THE VOC LIMITS OF SECTION 301, RULE 342. FOR USE ONLY IN SINGLE RESIN LAYER FINISHES"; and



- (3) The booth used to apply a single resin layer finish above 2.3 lb VOC/lb solids is dedicated to that operation only, and is clearly labeled "FOR SINGLE RESIN LAYER FINISHES ONLY".
- d. **Small Source Status:** A furniture coating facility which at any time demonstrates that it currently meets all the requirements in subsections 307.2d (1) and (2) of this rule following, is exempt from all provisions of this rule except for Section 303 "Operation & Maintenance" and Section 305 "Handling and Disposal of VOC". An operator of such an exempted facility shall keep on the premises current records of all coating related materials currently used, and their VOC content. For this purpose, a complete, updated set of receipts/invoices and Material Safety Data Sheets (MSDSs) will suffice if each receipt/invoice is retained on the premises at least two years.
- (1) Facility records demonstrate that no more than a total of 55 gallons (209 liters) of VOC borne wood product coatings plus VOC solvent are used in any month and that such monthly total divided by that month's number of days of coating application does not exceed 3.0 gallons (11.4 liters); and
- (2) The facility emits less than 1814 kg (4000 lb) VOC, facility wide per year from all wood product coating operations including VOC in both solvent borne and water borne coatings, all VOC diluent added to coatings, all solvent cleaning and stripping, and VOC solvent used for coating equipment cleanup.
- e. **Using Conventional and other Restricted Use Guns; Red Tag:** In addition to the uses of restricted use guns allowed under subsections 302.2 a., b., and c., a person may use a conventional air atomized or other restricted use gun to apply coatings exceeding 1 lb VOC/lb if all the following conditions are met:
- (1) The volume of such coating applied in this way is less than 5% of the total volume of coating applied at the facility;
- (2) Each gun has a red tag when spraying materials exceeding 1 lb VOC/lb. Requirements for gun tagging are in Section 403;
- (3) A log shall be kept pursuant to subsection 501.2e. of the amount of coating used by each such gun. This shall be done daily or each time coating is added to the gun's coating reservoir; and semi annual calculation shall be made, pursuant to subsection 501.2.
- Errata Note**<sup>1</sup>
- e. **Using Conventional and other Restricted Use Guns; Red Tag:** In addition to the uses of restricted use guns allowed under subsections 302.2 a., b., and c., a person may use a conventional air atomized or other restricted use gun to apply coatings exceeding 1 lb VOC/lb if all the following conditions are met:
- (1) The volume of such coating applied in this way is less than 5% of the total volume of coating applied at the facility;
- (2) Each gun has a red tag when spraying materials exceeding 1 lb VOC/lb. Requirements for gun tagging are in Section 403;
- (3) A log shall be kept pursuant to subsection 501.2e. of the amount of coating used by each such gun. This shall be done daily or each time coating is added to the gun's coating reservoir; and semi annual calculation shall be made, pursuant to subsection 501.2.

## SECTION 400 – ADMINISTRATIVE REQUIREMENTS

- 401 COMPLIANCE SCHEDULE FOR APPENDIX C:** The following schedule applies, with exceptions for an Emission Control System provided in Appendix C.
- 401.1 Sources Emitting 50 TPY:** Each facility which has applied for or received a Title V permit, or a permit with an annual VOC limit of 50 tons (45.35 Mg) or more, or which has had an aggregate VOC emission to atmosphere after December 31, 1989, of 50.0 tons (45.35 Mg) or more in any calendar year or 300 pounds (136 kg) or more in any working day, emitted in compliance with all requirements of this rule ~~and have submitted~~ must submit a Control Plan. The Control Plan shall set forth the maximum VOC content of each coating-as-applied and provide documentation showing how these values were determined.
- 401.2 Other Sources:** ~~The schedule follows for any~~ Any wood furniture and/or fixture facility with total VOC emissions to atmosphere in each of the years 1990 through 1995 of no more than 300 pounds (136 kg) in any working day and 50.0 tons (45.35 Mg) in any calendar year, emitted from wood coating operations and associated cleaning processes, which has emitted more than 25 tons (22.7 Mg) of VOC from coating operations in any of the years 1993 through 1995 must submit a Control Plan, setting forth the maximum VOC content and copies of the documentation showing how the coating-as-applied values were determined.
- a. A facility shall be in compliance with all applicable provisions of this rule, except for Section 301 and Section 302 by May 3, 1996. Such facility shall be in compliance with Section 301 and Section 302 of this rule by November 15, 1996.
- b. **Control Plan:** A facility which has emitted more than 25 tons of VOC from coating operations in any of the years 1993 through 1995 must submit a Control Plan by August 1, 1996, setting forth the maximum VOC content and copies of the documentation showing how the coating as applied values were determined.
- 402 REGULATORY CLARIFICATION:**
- 402.1 Status with Respect to Rules 330 (Volatile Organic Compounds) and 336 (Surface Coating Operations):** ~~No~~ A wood furniture or fixture coating operation is not subject to Rule 330 or to Rule 336 of these rules.
- 402.2 Component Materials that were Subject to Prior Regulation:** The regulatory status of facilities, owners or operators is not affected by the fact that component materials, such as wood composites or paneling, may have been subject to Reasonably Available Control Technology (RACT) or other regulatory requirements in their original manufacture, before their subsequent use by a facility in Maricopa County.

<sup>1</sup> This errata note is not part of Rule 342. For the reader's convenience, the second subsection 307.2e. was an earlier draft of the section not intended to be left in the rule. It will be removed for the next revision of this rule.



**402.3 Other Rules:** Nothing in this rule exempts a person from complying with the NESHAP (National Emission Standards for Hazardous Air Pollutants) for coating wood furniture and fixtures or from complying with any other applicable Federal, states, and local laws or regulations.

**402.4 Coating over Wood Coating(s) the same as Coating onto Wood:** The VOC limits for finishing materials given in ~~section 301.1~~ Section 301.1 of this rule apply to such coatings whether applied directly onto any area of wood-product substrate or on any intermediate layer(s) of coating on the wood-product substrate.

**403 GUN TAGGING REQUIREMENTS:** An owner or operator shall use a red 4 square inch vivid, durable tag, sticker, or painted emblem/label visible on the gun or within 3 ft of the gun on the gun's hose to meet the tagging/labeling requirements of subsection 307.2e.

**403 ANNUAL OPERATOR TRAINING REQUIREMENTS TO REDUCE VOC EMISSIONS:**

**403.1** An owner or operator shall train new and existing employees in the coating application, cleanup, and finish equipment operation if the employee uses VOC-containing materials. Training must include the following information:

- a.** Proper coating application;
- b.** Cleaning, washoff, and waste procedures;
- c.** Proper finish equipment operation; and
- d.** Methods to reduce solvent usage.

**403.2** Employees hired after [adoption date of this rule], shall be trained upon hiring, unless previously trained within the past year.

**403.3** Employees hired prior to [adoption date of this rule], shall be trained by [six months after adoption date of this rule].

**403.4** Employees shall be given refresher training annually.

**403.5** Training records shall be maintained per Section 500 of this rule.

**SECTION 500 – MONITORING AND RECORDS**

**501 RECORDKEEPING AND REPORTING:** An owner or operator shall keep the following records and lists in a consistent and complete manner and shall make them available to the Control Officer without delay during normal business hours. Each record shall be maintained a minimum of five (5) years.

**501.1 Current List:**

- a. VOC-Containing Materials:** A current list of all VOC-containing material shall be maintained which contains their name or code and their VOC content. Any qualified single resin-layer finish shall be identified as such. VOC-containing material list shall be updated by the end of the following month.
- b. How to Express VOC Content:**
  - (1) ~~Non-Coatings: Use grams VOC/liter or lb VOC/gal. for reducers, thinners, cleaners, etc.~~
  - (2) ~~Stains: Use lb VOC/gal.~~
  - (3) ~~Topcoats and Sealers: Use either lbs VOC/lb solids or g VOC/liter (lb VOC/gal) except:~~
    - (a) ~~Any topcoat or sealer sprayed with a conventional or other restricted use gun shall be expressed in lbs VOC/lb solids.~~
    - (b) ~~Two VOC content values must appear for each topcoat and each sealer that is expressed as grams VOC per liter or pounds VOC per gallon: both grams VOC/liter (lb VOC/gal) including water and non-precursor organic compounds, and grams VOC/liter (lb VOC/gal) less water and non-precursor organic compounds.~~
  - (4) ~~Other Coatings: Use grams/liter (or lb/gal) or lbs VOC/lb solids for coatings that are neither sealers nor topcoats, such as washcoats, glazes, etc.~~
- c. Acceptable Format:** VOC containing materials shall be listed neatly and completely. The following is an example of an acceptable method:  
Example: Identify and list each VOC containing material in one of the following 6 categories: 1. topcoats; 2. sealers; 3. catalyst/hardeners; 4. diluents, such as reducers, coating solvents and thinners; 5. cleaning and stripping solvents; and 6. other VOC containing materials. Next to each material, record the VOC content found on the container, an MSDS, an invoice, or other source.
- d. b. Mix Ratios:** A current list of VOC-containing mix ratios for catalyst/hardeners shall be maintained ~~if of the manufacturer's recommended mix ratio is not followed or of components, including but not limited to adding reducers and catalyst/hardeners, except when the manufacturer has no recommendations for any additions.~~

**501.2 Schedule for Recording Material Usage:**

- a. Daily Updates for Non-Compliant Material:** The amount of each working day's use of each topcoat, sealer or booth material that exceeds applicable VOC limits of Section 301 or Section ~~304~~ 305 of this rule shall be totaled and logged by the end of the following ~~workday~~ working day. VOC content shall be entered for each such material.
- b. Monthly Update for Materials Compliant with Sections 301 and ~~304~~ 305 of this Rule:** By the end of the following month, an owner or operator shall update the following records for each month:
  - (1) For each topcoat and sealer to which reducer is added at any time after its arrival at a facility, enter the VOC content in lb VOC/lb solids (kg VOC/kg solids) or in grams/liter (lb/gal) lb VOC/gal (grams VOC/liter), less water and non-precursor organic compounds. This requirement shall not apply if the reducer is itself compliant with respective topcoat's and sealer's VOC limit in Table 342-2 of this rule.
  - (2) The amount of coating, the amount of catalyst/hardener, and the amount of reducer/coating diluent used.
  - (3) The quantity and ~~type~~ name of organic VOC-containing solvent used each month for stripping and cleaning.
  - (4) The quantity of organic VOC-containing solvent disposed of offsite during the month just ended.



(5) **Exception:** Update yearly the totals of the usage of each VOC-containing material known to be used in amounts less than 15 gallons (57 liters) per year.

c. **Semi-Annual Updates of Coatings Applied with Restricted Use Gun:** Records associated with the Section 302 limitations on the use of conventional air-atomized spray equipment and other restricted-use guns shall be kept. These records shall show for each semi-annual period the volume (VR) of finishing materials exceeding solids (1 lb VOC/ lb solids) (1 kg VOC/kg solids) applied with conventional air-atomized spray guns and other restricted use guns. In addition, the total volume of all finishing material (AMV) used throughout the facility shall be determined. The total volume (VR) so applied over the previous six-months is divided by the total of all coatings used in the same period (AMV) and these calculations and the result are entered in the log.

**501.3 Disposal/Recovery:** An owner or operator shall keep records of disposal/recovery of all VOC-containing materials.

**501.4 Monthly VOC Leak Detection Inspection and Repair Records:** The owner or operator shall maintain monthly leak detection and repair records that document, at a minimum, the following:

- a. Name of person conducting the leak detection inspection.
- b. The date the inspection was conducted.
- c. The equipment inspected.
- d. Any leaks that were detected or, note if no leaks were detected.
- e. If a leak was detected, then include all of the following information on the inspection record:
  - (1) The date the leak was detected.
  - (2) The date of the first attempt of repair.
  - (3) The results of the first attempt of repair.
  - (4) The date and results of subsequent repairs, if necessary.
  - (5) The results and date of the final repair.

**501.5 Annual Operator Training Records Required by Section 403 of this Rule:** The owner or operator shall maintain a copy of the training program and shall include, at a minimum, the following:

- a. A list of employees trained and date trained; and
- b. Training material used for training.

**502 COMPLIANCE DETERMINATION – TEST METHODS INCORPORATED BY REFERENCE:** When more than one test method is permitted for a determination, an exceedance of the limits established in this rule, as determined by any of the applicable test methods, constitutes a violation of this rule. The following test methods are approved for use for the purpose of determining compliance with this rule. The test methods are incorporated by reference in Appendix G of the Maricopa County Air Pollution Control Regulations. Alternative test methods as approved by the Administrator or other EPA-approved test methods may be used upon prior written approval from the Control Officer. When more than one test method is permitted for the same determination, an exceedance under any method will constitute a violation.

**502.1** Measurement of VOC content, pursuant to the VOC limits of subsections 301.1, 301.2, and 302.2, and subsections 304.1 and 307.2c, shall be conducted and reported in accordance with EPA Test Method 24 (40 CFR 60, Appendix A). Acetone content shall be determined within the context of Method 24 by EPA Method 311 or other method acceptable to EPA. Multi-part coatings including those with reactive diluent(s) shall be tested by Method 24 procedures.

**502.1** Measurement of VOC Content: EPA TEST METHOD 24—DETERMINATION OF VOLATILE MATTER CONTENT, WATER CONTENT, DENSITY, VOLUME SOLIDS, AND WEIGHT SOLIDS OF SURFACE COATINGS (40 CFR 60, Appendix A-7) shall be used to determine the VOC content and the solids content by weight of the coating materials.

**502.2** Measurement of air pressure at the center of the spray gun tip air cap and air horns of a conventional air-atomized spray gun (reference Section 302) shall be performed using a device in proper working order supplied by the gun's manufacturer for performing such a measurement.

**502.3** Measurement of mil thickness to determine compliance with single resin-layer finish parameters in Section 227 of this rule and subsection 307.2e Section 103.2(c) of this rule shall be performed by draw bar and calculations using the weight and area of the film and the density of the cured coating solids, by a Tooke Inspection Gage according to the instructions of its manufacturer, or by other means used for the purpose by a major coating manufacturer's laboratory or quality control.

**APPENDIX A TO RULE 342**

**AN AVERAGING ALTERNATIVE**

- a. **Purpose:** The averaging provisions of this Appendix to Rule 342 allow the owner or operator of a furniture coating facility, which meets eligibility requirements, increased options in choosing coating types. These provisions expand the range of the allowable VOC contents of coatings while limiting overall VOC emissions to amounts less than would be emitted at the VOC-content limits of ~~subsection~~ Section 301.1 of this rule.
- b. **Eligibility to Apply:** The owner or operator of any furniture coating operation, reasonably capable of annually emitting more than 25 tons (22.7 Mg) of VOC and having at least one of the following four statuses with respect to VOC emissions, may apply to average:
  - (1) Has emitted more than 25 tons (24.7 22.7 Mg) of VOC in any year since 1989 and has a Maricopa County Air Quality Permit or is under consideration for such permit by the Control Officer;
  - (2) Has in its permit a VOC-emissions limit of 50 tons (45.4 Mg) or more;
  - (3) Has applied for or received Title V status.
- c. **How to Apply:** An applicant shall submit a request for eligibility to the Control Officer. This request shall include a summary of the chief reasons for requesting eligibility for averaging.



- (1) The Control Officer shall provide a brief questionnaire eliciting responses intended to reveal whether the operator has sufficient understanding and preparation to successfully average. This questionnaire shall require a sample of their intended recordkeeping format along with calculations containing the expected amount and VOC-contents of coatings intended to be used in averaging.
  - (2) The Control Officer may request confirmation, correction, or clarification from the owner or operator for responses to the questionnaire that are questionable; that appear unclear, erroneous, incomplete, or non-pertinent, or for which there is contrary evidence.
  - (3) The owner or operator shall submit a correctly completed questionnaire, signed by a responsible officer of the facility, no later than 14 calendar days prior to the first day of averaging.
  - (4) Control Officer approval of the completed questionnaire shall constitute an acceptance of application for minor permit revision. The Control Officer may request additional information characteristically required for minor revisions to the permits of wood furniture coaters as a class.
  - (5) Control Officer approval does not necessarily constitute satisfaction of all federal requirements nor preempt the EPA Administrator's asserting a right of approval.
- d. Definitions of Terms used in an Averaging Regime, for the Purposes of the Provisions of this Appendix to Rule 342:**
- (1) **CERTIFIED PRODUCT DATA SHEET:** A document provided by a coating supplier stating precisely the maximum VOC content of a particular coating as supplied. The maximum VOC content of a particular coating may be expressed as the VOC content by percent weight or VOC content Pounds per Gallon and Solid Content by percent weight or percent Non-Volatile and Density; or for any of these described expressions, equivalent information is acceptable.
  - (2) **CREDIT CONSUMING COATING (EXCEEDING COATING):** In an averaging regime, coating with average VOC content exceeding the neutral point for its particular coating type, such as topcoat, sealer, etc. A credit consuming coating requires the use of credit generating coating(s) in order that the combination of all coatings in use will not exceed the limit set by the left side of the averaging formula.
  - (3) **CREDIT CONSUMING PIECE/EXCEEDING PIECE:** In an averaging regime, a piece of furniture which is a member of a model-line of furniture receiving such a high proportion of credit-consuming coating that when the VOC contents and coating quantities received by the model-line, are entered into an averaging formula of Section i., the sum yielded by the right side of the formula is consistently larger than the sum yielded by the left side of the formula.
  - (4) **CREDIT GENERATING COATING:** A coating which has VOC content well below the neutral point and, thus, is used in an averaging regime to create surplus VOC credit(s) to offset the excess emissions of particular credit consuming coating(s).
  - (5) **CREDIT GENERATING PIECE:** In an averaging regime, a piece of furniture which is a member of a model-line of furniture receiving so much credit generating coating that when the VOC contents and coating quantities, received by the model-line, are entered into an averaging formula, the sum yielded by the right side of the formula is consistently less than the sum yielded by the left side of the formula.
  - (6) **NEUTRAL POINT:** The particular number representing the VOC content of a particular coating type having the mathematical property that if it is included in an averaging formula it has no effect on the numerical results of the formula, regardless of how much of the coating is used. The neutral point VOC content for each affected coating-type is as follows:

**Using Formula 1:**

Topcoat neutral point - 0.72 kg VOC/kg pound VOC per pound coating solids (0.72 kg VOC/kg solids). (Stains, sealers, etc. do not appear in Formula 1)

**Using Formula 2:**

The neutral point VOC content for each of the 5 types of coating in Formula 2 is as follows:

**Table 342-3 Formula 2 Neutral Point VOC Content of Coating**

Coating Type	VOC Content Neutral Point	VOC Content Neutral Point
Topcoat	1.62 lb VOC/lb solids	1.62 kg VOC/kg solids
Sealer coat	1.71 lb VOC/lb solids	1.71 kg VOC/kg solids
Washcoat	8.1 lb VOC/lb solids	8.1 kg VOC/kg solids
Basecoat	1.08 lb VOC/lb solids	1.08 kg VOC/kg solids
Stain	5.942 lb VOC/gallon	0.712 kg VOC/liter

The neutral point VOC content for each of the 5 types of coating in Formula 2 is as follows:

Topcoat 1.62 kg VOC/kg solids; sealer coat 1.71; washcoat 8.1; basecoat 1.08

The neutral point for stains is expressed in kilograms VOC per liter of coating 0.712 kg VOC/liter

**e. Basic Requirements for all Averaging Regimes:**

- (1) **Entire Workdays Working Days:** Averaging regimes must be in place for no less than an entire 24 hour period and at all times during such 24-hour period. Normally, a workday working day will be the calendar day in which work commences. However, an owner or operator may designate in writing a workday working day schedule beginning and ending at a specific time between 12 midnight and 4:30 AM if the last shift normally ends between midnight and 4:30 AM, unless the Control Officer issues written disapproval. The times of the averaging workday working day may be changed if written notification has been given the Control Officer at least five workdays working days before the start of the intended new schedule, and no communication of disapproval has been issued within this time by the Control Officer.
- (2) **Averaging Applies Plant-Wide:** An averaging regime applies throughout a facility to all production furniture coating occurring during all 24 hours of a workday working day for which an averaging regime is declared.
- (3) **No Exemption for Single Resin-Layer Finishes or Acid-Cured, Alkyd Amino Coatings:**



- (a) In averaging regimes using Formula 2, for surfaces which receive in total only one application of film building coating, the neutral point for that coating shall be the same as that for a sealer,  $1.71 \text{ lb VOC/lb solids}$   ~~$\text{kg VOC/kg solids}$~~  ( $1.71 \text{ kg VOC/kg solids}$ ), and it shall be totaled with sealers in the averaging formula.
- (b) Acid-cured, alkyd amino coatings, with or without vinyl chemistry, shall have the same neutral points in Formula 2 as do other sealers ( $1.71 \text{ lb VOC/lb solids}$  or  $1.71 \text{ kg VOC/kg solids}$ ) and topcoats ( $1.62 \text{ lb VOC/lb solids}$  or  $1.62 \text{ kg VOC/kg solids}$ ) ( ~~$1.71$  and  $1.62$ , respectively~~) and shall be totaled in with the other sealers and topcoats in Formula 2.
- (4) **Identifying Credit Consuming Models:** Each furniture/finish model must be identified which on average does not by itself (i.e., by the combination of all coatings it receives) meet the applicable averaging formula (and must be offset by models whose coatings generate VOC credits). The model name and/or code of each credit consuming model must be identified in a permanent record for that purpose, along with a designation indicating that the model produces excess emissions. This designation can be the average grams of VOC above the formula limit, the maximum grams above the limit, number of exceeding grams at the first standard deviation, relative risk, or other term(s) created by the owner or operator that fulfill this purpose for the facility.
- (5) **Exemption for Physically Separated Lines:**
- (a) At the Control Officer's discretion, an exemption from the requirement that the entire facility participate when an averaging regime is in effect can be granted for an additional coating line if: Such a coating line is both physically separate from the operations involving averaging and all monitoring, recordkeeping, and coating equipment including coating reservoirs are kept separate from the monitoring, recordkeeping and coating equipment participating in an averaging regime. The burden of demonstration is on the owner or operator that there is no significant risk of confounding enforcement, monitoring, recordkeeping, and equipment activities between the lines.
- (b) **Dual Averaging Regimes:** A facility which has received such a subsection e.(5)(a) exemption has the option of running each separated line using an averaging regime. However, all requirements of this rule must be complied with by each separated line.
- (6) **Declaration of Averaging:** On any working day of a Control Officer presence at a facility permitted to average, the owner or operator shall correctly announce without delay whether an averaging regime is currently in effect, and on an averaging working day shall also forthwith supply a listing of each coating participating in the averaging formula, along with the VOC content and the coating category of each.
- f. **Recordkeeping and Monitoring:** In addition to the requirements of Section 501 of this rule, an owner or operator shall do the following:
- (1) **Daily List the Components:** Prior to applying any coating on an averaging working day, a list shall be made of each coating name/code to be used that working day in the averaging formula and its expected VOC content as applied. This list shall be available to the Control Officer without delay.
- (2) **Daily calculation Deadline:** After each working day using averaging, an owner or operator shall determine the results of averaging for that completed ~~production~~ working day by midday on the next ~~workday~~ working day. These results shall be put into hardcopy in the same format that the owner or operator used in the approved application questionnaire. Some other format may be used if the Control Officer has given the format approval before beginning averaging.
- (3) **Log in:** An owner or operator shall arrange and keep the hardcopy results of each working day's averaging in a form that allows the results of each averaging working day within the 13 months prior to a Control Officer visit to be accessed by the Control Officer without delay.
- (4) **Content of Weekly Summary of Production-Coating:** By the end of the first shift of the workweek, totals for the workweek just completed shall be compiled as follows:
- (a) For each model and color, the total number of furniture pieces coated;
- (b) The name and quantity applied for each stain, washcoat, basecoat, sealer, topcoat, and diluent recorded. The quantity of stain shall be expressed in liters; the quantity of the other coatings expressed in kilograms;
- (c) The VOC content for each such coating and diluent, expressed in lb VOC/lb solids or kg VOC/kg solids; and the non-precursor organic compound (NP) content of each, expressed either in kg NP/kg solids or kg NP/kg coating-including-NP shall be recorded, except that the VOC content of each stain shall be expressed in kg VOC per liter of coating, including any water or non-precursors.
- (d) **Monthly Totals for Non-Averaged Coatings:** For coatings that do not participate in the averaging formulas, the total kilograms used shall be updated monthly. Coatings of the same type may be totaled together under a single VOC-content value if their VOC contents are within  $\pm 2\%$  of that value.
- (5) **Handling Unavoidable Data Loss and Data Processing Equipment Malfunctions:** An owner or operator shall put an accounting system in continual effect that allows the retrieval or reconstruction of data. When data required by this rule is lost, the Control Officer shall be notified forthwith and such data shall be reconstructed and due calculations completed within two ~~facility workdays~~ working days. The Control Officer may request that a hardcopy of the retrieved information be provided him/her by the same clock time, two ~~workdays~~ working days hence.
- (6) **Report Submittal Schedule:**
- (a) **Semi-Annual Reports:** An owner or operator shall submit a summary of the records, including all exceedances, by July 20 for the first half of the year and by January 20 of the following year for the second half. Included shall be certified product data sheets for coatings whose VOC content is determined by the supplier and not directly by the facility, and a statement that the coatings for which certified product data sheets are submitted were the coatings actually used. All the foregoing shall be certified to and signed by a responsible official of the facility.
- (b) **Initial Compliance Report:** Within 60 days after the third working day ever of averaging, an owner or operator shall submit a report to the Control Officer containing all the elements required by subsection f.(6)(a) above.
- g. **Test Procedures and Requirements:**



- (1) An owner or operator shall cause to be performed EPA Test Method 24 - Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings, tests on a sample of each coating intended to be used in an averaging regime, prior to using such coating in any averaging regime. These samples shall be taken at three levels of dilution: prior to adding any diluent; with the minimum weight of VOC-containing solvent/diluent typically used; and with the maximum weight of VOC-containing solvent/diluent expected ever to be needed.
- (2) An acetone determination shall be made in conjunction with Method 24 using EPA Test Method 311 - Analysis of Hazardous Air Pollutant Compounds in Paints and Coatings by Direct Injection into a Gas Chromatograph; or other method approved by EPA at the three dilution levels stipulated in subsection g.(1).
- (3) **The Status of Certified Product Data Sheets:** After the initial Method 24 tests pursuant to subsection g.(1), an owner or operator may substitute the specific certified product data sheet, based on Method 24, for any coating for any of the three levels of dilution stipulated in subsection g.(1), in lieu of directly overseeing the Method 24 tests.
  - (a) However, a certified product data sheet is not valid and shall not be submitted if it is neither for a dilution level in subsection g.(1) nor for the actual dilution level of a coating as applied during averaging.
  - (b) When the results of a Method 24 test, performed pursuant to a Control Officer initiative or directive, differ from the certified product data sheet, the Control Officer may require an owner or operator to have Method 24 tests conducted at a testing facility agreed to by the Control Officer and may require that the results of such tests be the values used in calculating averages.

**h. Sanctions:**

- (1) If an exceedance of the limits of an averaging formula is determined to be in violation of this rule, at least two violations may be charged: at least one violation for exceeding the limits in ~~subsection 301.1~~ Section 301.1 and a separate violation for exceeding the limit determined by the averaging formula in Section i. of this Appendix. Unless the Control Officer chooses otherwise, the number of violations issued for an exceedance of an averaging limit shall be one greater than the number of exceeding coatings participating in the averaging formula. Each working day the average is exceeded will be counted as a separate incident.
- (2) **Continuance:** The Control Officer may disallow an owner or operator the continuance of averaging at a facility which has failed to comply with one or more provisions of this Appendix on three separate working days in any period of 12 consecutive months, or which has been found guilty of a major violation of such provisions, except as prohibited by other rule or statute.

**i. Two Averaging Formulas:** The following are the two mathematical formulas from which one may be chosen to be used for an averaging regime.

- (1) If topcoats consistently average less than 0.72 kg VOC per kg solids on a mass solid basis, an owner or operator may use Formula 1.

$$\sum_{i=1}^n 0.72(TC_i) \geq \sum_{i=1}^n ER_{TC_i}(TC_i) \quad \text{Formula 1}$$

- (2) For other coating systems using averaging, Formula 2 shall be used.

$$\sum_{i=1}^n 1.62(TC_i) + 1.71(SE_i) + 8.1(WC_i) + 1.08(BC_i) + 0.712(ST_i) \geq \sum_{i=1}^n ER_{TC_i}(TC_i) + ER_{SE_i}(SE_i) + ER_{WC_i}(WC_i) + ER_{BC_i}(BC_i) + ER_{ST_i}(ST_i) \quad \text{Formula 2}$$

where:

- $N$  = number of finishing materials participating in averaging;
- $TC_i$  = kilograms of solids of topcoat  $i$  used;
- $SE_i$  = kilograms of solids of sealer  $i$  used;
- $WC_i$  = kilograms of solids of washcoat  $i$  used;
- $BC_i$  = kilograms of solids of basecoat  $i$  used;
- $ST_i$  = liters of stain  $i$  used (water and any non-precursor content are not subtracted);
- $ER_{TC_i}$  = VOC content of topcoat  $i$  in kg VOC/kg solids, as applied;
- $ER_{SE_i}$  = VOC content of sealer  $i$  in kg VOC/kg solids, as applied;
- $ER_{WC_i}$  = VOC content of washcoat  $i$  in kg VOC/kg solids, as applied;
- $ER_{BC_i}$  = VOC content of basecoat  $i$  in kg VOC/kg solids, as applied; and
- $ER_{ST_i}$  = VOC content of stain  $i$  in kg VOC/liter, as applied.

- j. Pre-RACT Coating use is Limited:** If a coating was used before 1993, and is still used for the same purposes, and it had a VOC content then which is lower than the neutral point for that coating type, then that coating may only be used in the averaging equation if the coating is now lower in VOC than before 1993. If that coating is used in averaging, the left side of the averaging formula must reflect the pre-RACT VOC content and not the current RACT neutral point for that type of coating. To effect this, additional mathematical terms must be added, one on the left and one on the right side of the formula. For example, if one can prove one used a high solids topcoat at 1.5 kg VOC/kg solids before 1993 (the year regulation negotiations began) and now thin the same product less so that it is consistently less than 1.5 kg/kg, one can enter it as a separate term. It appears in the formula below as "1.5(TU)" where "TU" stands for the total kilograms of solids of this unique topcoat used during an averaging working day. "TU" appears on both sides of the inequality sign. ERu is the actual VOC content that was in this unique topcoat on a particular averaging working day. Along with this, the meaning of the term (TCi) becomes slightly altered to mean the total topcoat solids used of every other topcoat beside the unique topcoat "U":



$$\sum_{i=1}^n 1.62(TC_i) + 1.5(TU) + 1.71(SE_i) + 8.1(WC_i) + 1.08(BC_i) + 0.712(ST_i) \geq \sum_{i=1}^n ER_{TC_i}(TC_i) + ER_U(TU) + ER_{SE_i}(SE_i) + ER_{WC_i}(WC_i) + ER_{BC_i}(BC_i) + ER_{ST_i}(ST_i)$$

Similarly, any other unique coatings that meet such requirements and are used in averaging must each have its own set of two terms inserted into the averaging formula. Moreover, once a pre-RACT coating is used in averaging, the term for its VOC content must stay in the equation as long as that pre-RACT coating is used, even if one later needs to raise the VOC content of the pre-RACT coating to a level above its historical VOC content.

#### APPENDIX B – A SHORT-FORM OPTION

- a. **Applicability:** This Appendix B to Rule 342 only applies to operators of facilities which have a permit or permit modification limiting VOC emissions from all wood furniture and millwork coating to less than 10 tons (9.1 Mg), and the permit or Control Officer states in writing that this Appendix B applies. For those facilities for which this Appendix B does apply, no provisions within Sections 301 through 501, inclusive, shall be used to substitute for provisions in this Appendix B. Facilities subject to this Appendix B are also subject to all of Sections 100, 200, and 502.
- b. **Definitions:** For the purposes of this Appendix B, the following definition shall apply:
- (1) **MINUS EXEMPT MATERIALS (MINUS EXEMPTS):** Means the same as “less water and non-precursor organic compounds” in specifying VOC content.
- c. **VOC Limits for Topcoats and Sealers**
- (1) **The Principal VOC Limits:** Meet either the lbs VOC/lb solids limit or the lbs VOC/gal, minus exempts, limit: All sealers and topcoats: 2 lbs VOC/lb solids (2 kg VOC/kg solids) or 5.45 lb VOC/gal (653 g/l).
- (2) **VOC Tradeoff Options:** These 2 options each require special conditions.
- (a) **Low VOC topcoat with Higher VOC Sealer:**  
Low VOC topcoat: 0.8 lb VOC/lb solids (0.8 kg VOC/kg solids) or 3.83 lb/gal (455 g/l) limit for topcoat.  
Higher VOC sealer: no VOC limit for sealer under such topcoat.
- (b) **One-Step Finish:**  
Higher VOC combination sealer and topcoat: 3 lb VOC/lb solids (3 kg VOC/kg solids) or 6.0 lb/gal limit (719 g/l).  
The 2 Conditions:  
I. A single wet application of either sealer or topcoat (not both)  
II. Thickness of the dry finish cannot exceed 3 dry mils, as determined by the test method in ~~subsection~~ Section 502.3 of this rule.
- d. **Spray Method Requirements:**
- (1) **Have Guns with Higher Transfer:** If you spray coating having over 1 lb VOC/lb solids (1 kg VOC/kg solids) you must use and have in evidence for an inspector at least one of the following onsite:
- Low pressure gun with less than 12 psig at tip air cap. ~~Examples: pure HVLP gun; a turbine gun.~~
  - An HVLP gun or a turbine gun with 10 psig or less at air cap.
  - Airless; includes air-assisted airless.
  - An electrostatic system.
- (2) ~~Green Tag Option: Restriction on conventional guns and other restricted use guns:~~ **Conventional Spray Gun Restriction:**
- (a) ~~Green Tag Requirements: A conventional air atomized or other restricted use gun shall have a durable and visible green tag, sticker, or painted emblem, no less than 4 square inches in area on the gun or within 3 ft of the gun on the gun's hose, or the facility is in violation. But, such a tag is not required at a facility having and using only coatings which contain less than 1 lb VOC/lb solids as applied. Coatings which have less than 4.30 lb VOC/gal (515 g/l) minus exempt materials also meet this requirement.~~
- (b) ~~Prohibition: No coating over 1 lb VOC/lb solids (1 kg VOC/kg solids) may be applied with a conventional air-atomized or other restricted use gun unless the coating meets the requirements of Section 103.2.e of this rule. This prohibition includes, but is not limited to, traditional lacquers, washcoats, and low-solids stains. (“Conventional air atomized gun” is defined in Section 208. “Restricted use gun” is defined in Section 225.)~~
- (3) **Exemptions from VOC and Spray-Method Limits:** Prepackaged aerosol spray in cans under 22 fl. oz. (0.66 liter), faux and metal-leaf finish are exempt from Appendix B's subsections c.(1) and (2) and d.(1) and (2) as is any refinishing operation necessary for preservation, to return furniture to original condition, to replace missing furniture items to complete a matching set, or to produce custom replica furniture. But nothing exempted by the previous sentence is exempt from inventory of VOC emissions or from other provisions of this Appendix B.
- e. **Housekeeping Functions:**
- (1) **Keep Coatings VOC-Containing Materials, Cleaners, & Waste-Materials Covered:** ~~Coatings and cleaners not in use, as well as waste coatings, cleaning materials including solvent dipped rags, and solvent used to clean spray equipment must be collected into a closed container or a container which is closed immediately after receiving such material. An owner or operator shall cover and keep covered each VOC-containing material intended for the day's production, which is not currently in use. An owner or operator shall store VOC-containing finishing and cleaning materials in closed containers. An owner or operator shall store all VOC-containing materials intended for disposal, including, but not limited to, rags, waste coatings, waste solvents and their residues, in closed containers, which shall remain covered except when contents are being added or removed.~~
- (2) **Booth Cleaning:** ~~If booth/components other than metal filters are cleaned with solvent, no solvent which is more than 3.8 lb/VOC per gallon (455 g/l) shall be used. However, up to 1 gallon of solvent over 3.8 lb VOC/gal may be used for cleaning a booth as part of~~



~~replacing coating on the booth. An owner or operator shall not clean spray booth components using a VOC-containing solvent containing more than eight percent (8.0%) by weight of VOC, including water and non-precursor compounds, except for: conveyors; continuous coaters and their enclosures; and metal filters and while refurbishing spray booths. If the strippable booth coating is being replaced, an owner or operator shall not use more than 1.0 gallon (3.8 liters) VOC-containing solvent per booth to clean the spray booth.~~

f. **Records:** Keep a list of all VOC-containing material with the name and amount of VOC in each: Express VOC content either as ~~lb/lb~~ lb VOC/lb solids (kg VOC/kg solids) or lb/gal lb VOC/gal (g VOC/l). For topcoat and sealer contents which are expressed in lb VOC/gal, this must be minus water and non-precursors.

(1) **If you ever do your own Reducing or Thinning of a Sealer or Topcoat:**

Keep a list of the maximum VOC content of any material after you thin it or add any additives at your facility.

(2) **Keep Receipts for 5 Years** of the amount received for each VOC-containing material and of the amount of all VOC-containing waste materials sent for recycling or hazardous waste collection.

(3) **What to Record and How often:** Record the amount in the following 4 categories, (a) to (d), noting either the amount “used” or the amount “received” since your last records update:

(a) All coatings including topcoats, sealers, stains, etc., including all parts, catalysts, activators, additives, hardeners; (not reducers). If you use conventional guns at all, total separately the coatings having less than 1 lb VOC/lb solids;

(b) All VOC-containing reducers and diluents to be used for reducing or diluting coatings (not cleaning);

(c) All VOC-containing solvents, strippers, thinners, and VOC-containing materials used for cleaning and cleanup (not reducing); and

(d) All other VOC-containing materials connected with wood coating. Omit janitorial and building maintenance.

(e) **How often to Update your Records:** Update the above items in (a), (b), (c), and (d) weekly if your total monthly use of all coatings and diluents [(a) + (b)] is 250 gallons (946 liters) or more. Otherwise, update monthly. You may record just once a year those types of materials of which you use less than 15 gallons (57 l) ~~of~~.

**Example:** I use 5 kinds of graining ink. Added all together, I use 14 gallons of all graining ink combined: I only have to update my graining inks once a year.

APPENDIX C TO RULE 342

ALTERNATIVE COMPLIANCE WITH SECTION 301 VOC LIMITS AND/OR SECTION 302 SPRAY-METHOD RESTRICTIONS BY USING AN EMISSIONS CONTROL DEVICE

a. **Eligibility:** A person is allowed to meet the VOC limits of either or both ~~subsections 301.1 and 301.2~~ Sections 301.1 and 301.2 of this rule by using an ECS which reduces VOC emissions overall, including capture and processing, by at least 81 percent by weight. Such an ECS may also be used to comply with ~~subsection 302.2~~ Section 302.2 of this rule spray method provisions.

b. **Operation and Maintenance (O&M) Plan Required for ECS:**

(1) The owner or operator of an emission control system (ECS) used to meet the requirements of Section 301 of this rule shall provide the Control Officer with an Operation and Maintenance (O&M) Plan. This O&M Plan shall specify key system operating parameters, such as temperatures, pressures and/or flow rates, necessary to determine compliance with this rule, and describe in detail procedures and their frequency of implementation needed to maintain the ECS.

(2) The Control Officer's written approval of the O&M Plan is required. The owner or operator shall consistently implement all provisions of the O&M Plan.

(3) **Changes in Frequency:** Changes involving reduction in the frequency or extent of procedures or parameters in a Control Officer-approved O&M Plan shall have the written consent of the Control Officer prior to being implemented.

(4) **Other Changes:** An updated O&M Plan must be submitted to the Control Officer for review within ~~40~~ ten (10) days of any changes not involving reduction in frequency or extent of procedures or parameters of an approved O&M Plan. Within five (5) working days of a written disapproval of such changes, either the original O&M Plan shall be reinstated or an alternative plan, negotiated with the affected facility and approved in writing by the Control Officer, shall be instituted.

c. **Providing and Maintaining ECS Monitoring Devices:** Any person operating an emission control system (ECS) pursuant to ~~subsection 301.3~~ Section 301.3 of this rule shall install, maintain, and calibrate monitoring devices described in the O&M Plan submitted to the Control Officer pursuant to subsection b. of this appendix. The monitoring devices shall measure temperatures, pressures, rates of flow, or other operating conditions necessary to determine if air pollution control equipment is functioning properly.

(1) **ECS Operation and Maintenance Records:** On each working day that an ECS is used to comply with Section 301 of this rule, an owner or operator shall make a permanent record of the operating parameters of the key systems described in the O&M Plan. For each working day or period in which the O&M Plan requires that maintenance be performed, a permanent record shall be made of the maintenance actions taken, within 24 hours of maintenance completion. An explanation shall be entered for scheduled maintenance that is not performed during the period designated in the O&M Plan.

(2) **Other Records Required when Complying Via ECS:** An owner or operator choosing to meet the requirements of Section 301 through the use of an ECS shall maintain, in addition to the monthly records required by ~~subsection 501.2~~ Section 501.2 of this rule:

(a) Daily documentation showing the VOC content of the finishing material, as applied, in pounds VOC/pound solids when VOC-containing solvent or other VOC is added to the finishing material before application.

(b) Daily records showing the amount of coating, the amount of catalyst/hardener, and the amount of VOC-containing solvent, reducer, and/or diluent used.

d. **Compliance Schedule for ECS:** An owner or operator of a wood furniture coating facility shall have such facility in compliance per the following schedule. Total VOC emissions ~~is are~~ are the total facility-wide VOC from all ~~wood-coating operations and associated cleaning processes. It includes millwork coating, that are vented to the ECS.~~

(1) **Sources Emitting 50 TPY:** ~~The owner or operator of a wood furniture coating facility shall be in full Full compliance with all applicable requirements of this rule shall be by November 15, 1996, if such facility has applied for or received a Title V permit, its~~



permit has a VOC-emissions limit of 50 tons (45.35 Mg) or more, or which has had an aggregate VOC emission to atmosphere after December 31, 1989, of 50.0 tons (45.35 Mg) or more in any calendar year or 300 pounds (136 kg) or more in any working day. In addition, an owner or operator shall provide the Control Officer with:

- (a) Both proof of a binding contract for an ECS and a compliance plan ~~by June 3, 1996~~, listing dates of completion of increments of progress toward meeting the requirements of ~~subsection 301.3~~ Section 301.2 of this rule.
  - (b) An O&M Plan for the ECS ~~by November 15, 1996~~.
- (2) ~~Other Sources: A~~ **Other Sources:** ~~The owner or operator of a wood furniture coating facility shall be in compliance with Section 301 and Section 302 of this rule by November 15, 1996 and with Section 301 by January 15, 1997, if its~~ the total VOC in each of the years 1990 through 1995 ~~of is~~ less than 300 pounds (136 kg) in any working day and 50.0 tons (45.35 Mg) in any calendar year. In addition, the owner or operator shall provide the Control Officer with:
- (a) Both proof of a binding contract for an ECS and a compliance plan ~~by June 3, 1996~~, listing the dates of completing the increments of progress toward meeting the requirements of the ~~subsection 301.3~~ Section 301.3 of this rule; and
  - (b) An O&M Plan for the ECS ~~by January 2, 1997~~.
- e. **Test Methods for an ECS**
- (1) Control efficiency of an emission control device used to meet the requirements of Section 301 shall be determined according to EPA ~~Reference~~ Test Method 25 - Determination of Total Gaseous Nonmethane Organic Emissions as Carbon or an applicable submethod of Method 25 (Title 40, CFR Part 60, Appendix A).
  - (2) EPA Test Method 18- Measurement of Gaseous Organic Compound Emissions by Gas Chromatography shall be used if specified by the Control Officer when a non-precursor organic compound is present in the input of a control device used to meet the requirement of Section 301 of this rule.
  - (3) Capture efficiency of an emission control device used to meet the requirements of Section 301 shall be determined by mass balance in combination with ventilation/draft rate determinations done in accordance with subsection e.(4), following, or according to "Guidelines for Determining Capture Efficiency" January 9, 1995, Candace Sorrell, Source Characterization Group A, Office of Air Quality Planning and Standards, US EPA. This EPA document is available at the Maricopa County Air Quality Department, 1001 N. Central Ave., Phoenix, Arizona, 85004.
  - (4) Ventilation/draft rates of an emission control device used to meet the requirements of Section 301 of this rule shall be determined by one or more of the following EPA Test Methods: 2, 2A, 2C, or 2D.
    - (a) EPA Test Method 2 - Determination of Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot Tube)
    - (b) EPA Test Method 2A - Direct Measurement of Gas Volume Through Pipes and Small Ducts
    - (c) EPA Test Method 2C - Determination of Gas Velocity and Volumetric Flow Rate in Small Stacks or Ducts (Standard Pitot Tube)
    - (d) EPA Test Method 2D - Measurement of Gas Volume Flow Rates in Small Pipes and Ducts

**NOTICE OF FINAL RULEMAKING  
MARICOPA COUNTY AIR POLLUTION CONTROL REGULATIONS  
REGULATION III – CONTROL OF AIR CONTAMINANTS  
RULE 345: VEHICLE AND MOBILE EQUIPMENT COATING**

[M16-288]

**PREAMBLE**

- | <b><u>1. Rules affected</u></b>   | <b><u>Rulemaking action</u></b>  |
|---|--|
| Rule 345: Vehicle and Mobile Equipment Coating  | Amend  |
| <b><u>2. Statutory authority for the rulemaking:</u></b>  |  |
| Authorizing statutes: A.R.S. §§ 49-474, 49-479, and 49-480  |  |
| Implementing statute: A.R.S. § 49-112   |  |
| <b><u>3. The effective date of the rule:</u></b>  |  |
| Date of adoption: November 2, 2016  |  |
| <b><u>4. List of public notices addressing this rulemaking:</u></b>   |  |
| Notice of Briefing to Maricopa County Manager: January 7, 2013  |  |
| Notice of Stakeholder Workshops: July 10, 2014; December 16, 2015, and February 22, 2016                              |  |
| Notice of Maricopa County Board of Health: September 10, 2014   |  |
| Notice of Proposed Rulemaking: 20 A.A.R. 2687, October 3, 2014  |  |
| Notice of Supplemental Proposed Rulemaking: 22 A.A.R. 1552, June 10, 2016   |  |
| <b><u>5. Name and address of department personnel with whom persons may communicate regarding the rulemaking:</u></b> |  |
| Name:   | Kathleen Sommer or Hether Krause<br>Maricopa County Air Quality Department<br>Planning and Analysis Division |
| Address:  | 1001 N Central Avenue, Suite 125<br>Phoenix, Arizona 85004   |
| Telephone:  | (602) 506-6010   |
| Fax:  | (602) 506-6179   |
| E-Mail:   | aqplanning@mail.maricopa.gov   |
| <b><u>6. Explanation of the rule, including the department's reasons for initiating the rulemaking:</u></b>           |  |



**Summary:** This amendment of Rule 345 (Vehicle and Mobile Equipment Coating) updates requirements and work practices for commercial vehicle coating operations that emit volatile organic compounds (VOCs) from paints or coatings used in this industry. This amendment improves Rule 345 so it is more effective in controlling VOC emissions without lowering existing regulated VOC coating thresholds. This amendment also captures the requirements listed in two technical guidances that will be rescinded upon adoption of these rule amendments: #TG99-003 (1999) and “Spray Gun Conditional Approvals”.

Included in this amendment is clarification that provisions of this rule do not apply to the Automobile and Light Duty Truck Assembly Coating Operations as none of these assembly coating operations are found in Maricopa County. The provisions of this rule were last revised over 15 years ago and technologies and definitions have changed over time. This amendment updates Rule 345 with newer technologies and terms that specifically apply to this regional area.

VOC ambient emissions react in the presence of sunlight to form ground-level ozone, a major component of “smog” and are hazardous to human health and the environment. Ozone is largely created by a photochemical reaction between nitrogen oxides (NO<sub>x</sub>) and VOCs in the presence of sunlight. NO<sub>x</sub> and VOCs are called ozone precursors. Ground-level ozone is a common air quality problem in urban areas because ozone precursors are emitted from vehicle exhausts, fuel combustion, and volatile organics used by industries such as the vehicle equipment coating operations regulated by Rule 345. The Phoenix area, determined by violations of the National Ambient Air Quality Standards (NAAQS), has been reclassified from “marginal” to “moderate” nonattainment for the 2008 eight-hour ozone NAAQS. (86 FR 26697, May 4, 2016) The department amended Rule 345 to more effectively regulate VOCs, in response to this higher nonattainment classification.

Additionally, the revisions of this rule correct typographical or other clerical errors; make minor grammatical changes to improve readability or clarity; modify the format, numbering, order, capitalization, punctuation, or syntax of certain text to increase standardization within and among rules; or make various other minor changes of a purely editorial nature. As these changes do not alter the sense, meaning, or effect of the rule, they are not described in detail here, but can be readily discerned in the “underline/ strikeout” version of the rule contained in Item 17 of this notice.

**Background:** This amendment of Rule 345 is the result of feedback received during two phases of workshops held over the last several years. Three workshops were held in 2013 and 2014. A Phoenix area stakeholder meeting was held January 16, 2014 to review definition of the terms found in the Rule 345 tables and revise them to be compatible with this regional area. A Notice of Proposed Rulemaking (NPRM) was published in the Arizona Administrative Register on October 3, 2014 (20 A.A.R. 2687). The fourth and fifth workshops were held December 16, 2015 and February 22, 2016, respectively. The revisions to Rule 345 reflect changes requested by stakeholders from these workshops and comments received from the national and local regulated communities. A list of the changes found in this rulemaking are described as follows:

**Issues Raised and Discussed During This Rulemaking Process:**

Rule 345 revisions from the 2013 and 2014 workshops include clarifying standards and work practices and deleting obsolete rule requirements. For example, obsolete requirements applicable to suppliers and manufacturers of vehicle paints and coatings have been deleted. Other changes in the rule include determining applicability of VOC coating limits based on vehicle weight instead of on the vehicle part where paint is applied. This amended rule eliminates the unnecessary reference to the classification of the vehicle to be coated or facility doing the coating with the North American Industrial Classification System (NAICS). The changes in Rule 345 also address the two Technical Guidances: #TG99-003 (1999) (Section 102.3) and “Spray Gun Conditional Approvals” (Section 303.1(d)) as they will be rescinded upon adoption of this amendment to Rule 345. Other issues raised include:

**New Technology Spray Gun Approvals:** Work practices that specify HVLP spray gun compliance determination have been amended to allow for use of new technology spray guns. This eliminates the tedious approval process now required as each new spray gun technology becomes available. Several stakeholders requested the rule clarify acceptable compliance demonstration for a new spray application method. In response to this request the requirements in Section 303.1(d) of the rule now state: “Any specific system which is approved by the Administrator as HVLP-equivalent” can be used as an application method. The definition of HVLP spray gun has also been clarified to include two methods for compliance demonstration of the HVLP status of the gun. Section 218 of the rule defines:

**High-Volume, Low Pressure (HVLP) Spray Gun:** Spray equipment that is used to apply coating by means of a spray gun that operates at 10 psig of atomizing air pressure or less measured from the center of the air cap. A permanently affixed manufacturer’s gun HVLP identification or manufacturer’s gun literature shall identify and be proof of an HVLP gun.

These new requirements provide that the facility owner or operator no longer need to request approval to the Control Officer to use a new gun technology. This change streamlines the approval process for new spray gun technologies.

**Multi-Stage VOC Calculation and VOC Coating Thresholds:** The department considered changing the multi-stage VOC calculation to that which is recommended in the California Air Resources Board (CARB) Suggested Control Measure (SCM) Model rule. Changing the method of calculating the multi-stage VOC coating thresholds requires a simultaneous lowering of the VOC coating thresholds. The department determined that for this regional area, updating the terms in the Rule 345 tables was sufficient to increase the effectiveness of this rule and did not need to lower the VOC coating thresholds. This aligns the department with the VOC threshold recommendations found in the EPA National Rule for Vehicle coatings.

**VOC Coating Thresholds:** The VOC coating thresholds have been changed to correspond to the weight of the vehicle as opposed to the current rule where the VOC thresholds for the coatings are determined by the substrate or the surface on which the coatings are applied. As mentioned above, the department removed the North American Industrial Classification System (NAICS) from the rule. Instead, VOC coating limits are determined by vehicle size as defined according to vehicle weight (above or below 8600 lbs. GVW) and is defined in the following two sections of this rule: Section 217 (Heavy Duty Vehicle) and Section 221 (Light Duty Vehicle).

**Exemption When Coating with a Non-Refillable Aerosol Can:** This rule exemption selectively applies when coating with non-refillable aerosol container that is less than 22 fluid ounces (0.66 liter).



**Reporting Requirement for Large Users:** The reporting requirement for large users was an obsolete requirement that has been removed from the amended rule. Arizona Department of Environmental Quality (ADEQ) has also deleted this requirement from their coating rule.

**Regulation of Suppliers or Manufacturers:** The regulation of suppliers or manufacturers of vehicle paint coatings has been deleted from this rule.

**Description of Proposed Revisions:**

**Amended the following throughout the rule:**

- Deleted the word “person” and inserted the words “owner or operator”
- Deleted past compliance dates and manufacturer/supplier reporting requirements
- Added or revised specific rule section references

**Revised the Following in Section 100:**

- Section 102.1 (Applicability): Clarified that the provisions of this rule do not apply to Control Techniques Guidelines (CTGs) for Automobile and Light Duty Truck Assembly Coating Operations, September 2008. The applicability was also clarified that the rule provisions apply to both motor vehicle and/or mobile equipment coating operations.
- Section 102.2 (Applicability): Clarified that facilities may be subject to federal requirements (NSPS and NESHAP)
- Section 102.3 (Applicability): Added for clarity that replacement for a defective/missing vehicle body part installed in the course of refinishing or repairing the vehicle body is subject to Rule 345, otherwise manufacture of new parts are subject to Rule 336 (Surface Coating Operations) This requirement captures Technical Guidance 99-003 (1999) which can be rescinded upon adoption of this amendment.
- Section 103.1 (Exemptions): Corrected the VOC material threshold below which is exempt from the provisions of Rule 345 and is consistent with other Maricopa County rules. Exemption threshold for use of “low VOC material” is: VOC content, minus exempt compounds that are less than 0.15 lbs. VOC per gallon (18 g VOC/liter) are exempt from the provisions of Rule 345.
- Section 103.2 (Exemptions): Deleted “coating individual parts” from exemptions and moved this section to Applicability: Section 102.3
- Section 103.3 (Exemptions): Re-numbered this section to Section 103.2 and clarified from which parts of this rule “coating with an aerosol spray can” is exempt

**Revised the Following in Section 200:**

- Definition of Basecoat: Deleted this term and replaced it with the term “Single stage process” or “Color coating”
- Definition of “Group I Motor Vehicles and Mobile Equipment”: Deleted this definition
- Definition of “Group II Motor Vehicles”: Deleted this definition
- Section 217 (Definition of “Heavy Duty Vehicle”): Added this term to replace “Group II Motor Vehicles”
- Section 218 (Definition of “High-Volume, Low Pressure (HVL) Spray Gun”): Corrected this definition and deleted the phrase “at the center of the air cap”
- Section 219 (Definition of “in-Use”): Added this definition for clarity
- Section 221 (Definition of “Light Duty Vehicle”): Added this term to replace “Group I Motor Vehicles”
- Section 222 (Definition of “Mixing Instructions”): Clarified this definition with new text
- Section 225: Clarified text to make it consistent with Section 102.1 (Applicability) by adding “and/or mobile equipment” describing the type of coating operations
- Section 227 (Definition of “Multi-Colored Process”): Clarified this definition to exclude reference to “cargo beds”, a term that is used interchangeably with “truck bed liner coatings”
- Section 230 (Definition of “Primer”): for clarity, changed the definition of “Primer (Heavy Duty Vehicles)”
- Section 231 (Definition of “Primer-Sealer”): Clarified definition of “Primer-Sealer (Light Duty Vehicles)”
- Section 232 (Definition of “Primer-Surfacer”): Clarified definition of “Primer-Surfacer (Light Duty Vehicles)”
- Definition of “Solvent Cleaner”: Deleted this term and replaced it with “Surface Preparation”
- Section 236.8 (Definition of “Truck Bed Liner Coating”): Added definition of “Truck Bed Liner Coating” as a subset of “Specialty Coatings”
- Section 236.10 Uniform Finish Blenders: for clarity, reference to “spot repair” was removed from this definition
- Section 237 (Definition of “Spot Repair”): Clarified that spot repair VOC limits only apply to heavy duty trucks.
- Section 241 (Definition of “Surface Preparations”): Changed this term to “Surface Preparation Fluids” from “Surface Preparation and Surface Cleaning Fluids”
- Section 243 (Definition of “Three-Stage Process”): Retained this definition and clarified that it applies to both light duty and heavy duty vehicles
- Section 235 (Definition of “Topcoat”): Deleted this definition
- Section 247 (Definition of “VOC Actual”): Changed definition of “VOC Content” and replaced it with the definition of “VOC Actual”
- Section 248 (Definition of “VOC Content”): Added a new definition of “VOC Content” as it is used throughout the rule and includes both “VOC actual” and “VOC regulatory”
- Section 249 (Definition of “VOC Regulatory”): Added definition of “VOC Regulatory” and specified the calculation of this term

**Revised the Following in Section 300:**

- Section 301 (Standards): for clarity, Section 301 has been reorganized as follows:
  - 301.1 Vehicle Coating
  - 301.2 Light Duty Vehicle and Mobile Equipment Coating



301.3 Heavy Duty Vehicle Coating

- Table 345-1(Spot Repair Coating Threshold): Added the spot repair VOC limit to Table 345-1
- Tables 345-1, 345-2, and 345-3: Clarified in the titles that VOC coating category thresholds are calculated as “VOC regulatory”
- Tables 345-1 and 345-2: Removed “Surface Preparation” thresholds from these tables because they are not a coating
- Table 345-1 (Two-Stage Process): Corrected the VOC limits to read 600 g/l and 5.0 lbs. VOC/gal
- Table 345-1 (Three-Stage Process or More): Added VOC limits for “three-stage process or more”
- Table 345-2 (Clear Coating): Added VOC limits for “clear coating”
- Table 345-2 (Three-Stage Process or More): Added VOC limits for “three-stage process or more”
- Table 345-2 (Three-Stage Process or More): Added VOC limits for “three-stage process or more”
- Section 301.1(c): Clarified “Spot Repair” applies to spot repair on heavy trucks and the application of the pretreatment coating, primer, or coating shall not exceed more than 1 liter each.
- Section 302.1 (Operating Requirements): Clarified surface preparation fluid VOC limits are no more than 1.4 lbs. VOC per gallon as calculated according to Section 503.3 of this rule
- Section 302.2 (Operating Requirements): Added paint stripping requirements
- Section 303.1 (Application Requirements): Changed VOC coating threshold above which Rule 345 application methods are required. Applications are subject to rule requirements when using coatings greater than 2.0 lbs. VOC/gal instead of 3.0 lbs. VOC/gal which is consistent with other Maricopa County Rules
- Section 303.1(a) (Application Requirements): Clarified methods to determine compliance for an HVLP spray gun which are listed in HVLP definition: Section 218 of this rule.
- Section 303.1(d) (Application Requirements): Clarified requirements for HVLP alternative application method. EPA recommends that their approval is sufficient for approval of the Alternative Application Method. This requirement is proposed to state:
- Section 302.1(e): An Alternative Application Method: Any method approved by the Administrator of the Federal EPA as HVLP-equivalent.

These proposed changes in Rule 345 address Technical Guidances: “Spray Gun Conditional Approvals” so it will be rescinded upon adoption of this Amendment to Rule 345 and facilities will no longer need Control Officer approval for use of new spray gun technologies.

- Section 303.3 (Spray Gun Cleaning Requirements): Clarified the requirements to clean spray guns with either a spray gun cleaning machine or manually

**Revised the Following in Section 500:**

- Section 501.1(c): Clarified VOC coating recordkeeping calculation; VOC content for coatings calculated according to Section 249 (VOC Regulatory) of this rule
- Section 501.4: Clarified that recordkeeping required by this rule is for “Hazardous waste manifests that contain VOC materials”
- Section 501.5 (Sufficient Documentation): Added “usage” documentation to the type of documents that can be used for VOC coating records
- Section 501.6: Clarified that purchase records use to document use of VOC-containing materials are retained for five years
- Section 501.7 (Monitoring and Records): Added “aerosol spray-can” recordkeeping
- Section 502.3 (Spray Gun Transfer Efficiency): Clarified methods to demonstrate spray gun transfer efficiency
- Section 502.3(a): Corrected the instructions for measuring air pressure of an air atomized spray gun
- Section 503.1 (VOC Content Calculations-VOC Multi-Stage Calculation): Retained the VOC-multi calculation as is in current Rule 345
- Section 505 (Compliance Determination-Test Methods Incorporated by Reference): Clarified test methods for determining compliance with Rule 345

**7. Demonstration of compliance with A.R.S. §49-112:**

Under A.R.S. § 49-479(C), a county may not adopt a rule or ordinance that is more stringent than the rules adopted by the Director of the Arizona Department of Environmental Quality (ADEQ) for similar sources unless it demonstrates compliance with the applicable requirements of A.R.S. §49-112.

§ 49-112 County regulation; standards

§ 49-112(A)

When authorized by law, a county may adopt a rule, ordinance or other regulation that is more stringent than or in addition to a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if all of the following conditions are met:

1. The rule, ordinance or other regulation is necessary to address a peculiar local condition.
2. There is credible evidence that the rule, ordinance or other regulation is either;
  - (a) Necessary to prevent a significant threat to public health or the environment that results from a peculiar local condition and is technically and economically feasible.
  - (b) Required under a federal statute or regulation, or authorized pursuant to an intergovernmental agreement with the federal government to enforce federal statutes or regulations if the county rule, ordinance or other regulation is equivalent to federal statutes or regulation.
3. Any fee or tax adopted under the rule, ordinance or other regulation will not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

§ 49-112(B)



When authorized by law, a county may adopt rules, ordinances or other regulations in lieu of a state program that are as stringent as a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if the county demonstrates that the cost of obtaining permits or other approvals from the county will approximately equal or be less than the fee or cost of obtaining similar permits or approvals under this title or any rule adopted pursuant to this title. If the state has not adopted a fee or tax for similar permits or approvals, the county may adopt a fee when authorized by law in the rule, ordinance or other regulation that does not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

The department complies with A.R.S. § 49-112(A) in that Maricopa County fails to meet the National Ambient Air Quality Standards for both ozone and particulates. The County failed to meet 2008 8-hour ozone standard by the marginal area attainment date of July 20, 2015. The EPA issued a final rule, effective June 3, 2016, reclassifying the Maricopa County area to “moderate” (published at 86 FR 26697, May 4, 2016). Further, a portion of the County was classified as a serious ozone nonattainment area under the previous 1-hour ozone standard requiring the county to continue to maintain the measures and requirements that allowed the county to attain that standard.

The department complies with A.R.S. § 49-112(B) in that the amendments to Rule 345 are not more stringent than or in addition to a provision of Title 49 or rule adopted by the director or any Board or commission authorized to adopt rules pursuant to Title 49, address the peculiar local conditions in Maricopa County, are authorized under A.R.S. Title 49, Chapter 3, Article 3, and are not in lieu of a state program.

**8. Documents or studies referenced and/or reviewed for this rulemaking:**

- Clean Air Act Section 183(e) study of VOC emissions from the use of consumer and commercial products to assess their potential to contribute to levels of ozone that violate the National Ambient Air Quality Standards (NAAQS) for ozone [60 FR 15264 (March 23, 1995); 64 FR 13422 (March 18, 1999); 70 FR 69759 (November 17, 2005); 71 FR 28320 (May 16, 2006)]
- “Control Techniques Guidelines for Automobile and Light Duty Truck Assembly Coatings” U.S. Environmental Protection Agency Office of Air Quality Planning and Standards Sector Policies and Programs Division Research Triangle Park, NC, September 2008
- National VOC Rule 1999
- Technology Assessment to Determine the Relationship of Solvent Vapor Pressure and VOC Mass Emissions; South Coast Air Quality Management District, Philip O’Bell, April 10, 2002

**9. Showing of good cause why the rule is necessary to promote a statewide interest if the rule will diminish a previous grant of authority of a political subdivision:**

Not applicable

**10. Summary of the economic, small business, and consumer impact:**

**A. Summary and Identification of Rulemaking:** The following discussion addresses each of the elements required for an economic, small business and consumer impact statement under A.R.S. § 41-1055. This rulemaking revised Rule 345 (Vehicle and Mobile Equipment Coating).

**B. An identification of the persons who will be directly affected by, bear the costs of or directly benefit from the rulemaking.** The persons who will be directly affected by and bear the costs of this rulemaking will be commercial vehicle and mobile equipment coating operations in Maricopa County. The department has issued permits to more than 300 such sources.

**C. Cost Benefit Analysis:**

**Implementation and enforcement of proposed rulemaking for implementing agency.**

This rulemaking corrects and clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability. The department considered the implications of the amendments to the regulated entities and the implementing agency and deemed that none of the rule revisions have potentially significant changes in implementation and enforcement of this rule.

**Other agencies directly affected by the implementation and enforcement of proposed rulemaking.**

There will be no impact to any other agency as a result of these rule changes. The rulemaking will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

**Number of new full-time employees necessary to implement and enforce the rule.**

It is anticipated that new or additional employees are not necessary to implement and enforce the rule.

**The probable costs and benefits to businesses directly affected by the rulemaking, including any anticipated effect on the revenues or payroll expenditures of employers who are subject to the rulemaking.**

The department anticipates that increased clarity provided by the Rule 345 revisions will provide a benefit to the regulated community; it will take less time for sources subject to the rule to understand and comply with the rule, which leads to increased compliance, which leads to decreased costs of compliance to the regulated community. The department does not anticipate these rule revisions to have a significant impact on a person's income, revenue, or employment in this state related to this activity. The rule revision will not impose increased monetary or regulatory costs on individuals so regulated.

However, the benefits of the rule revision are anticipated to be a result of the following changes:

- (i) Restructuring the rule to clarify VOC coating limits required for use, providing greater certainty and saving time for both the regulated community and regulators;
- (ii) Clarifying an exemption for coating with a non-refillable aerosol can;
- (iii) Defining spray gun requirements;
- (iv) Eliminating obsolete reporting requirement for large users;
- (v) Eliminating regulation of suppliers or manufacturers;
- (vi) Updating formula calculations of VOC content of coatings.



- D. **A general description of the probable impact on private and public employment in businesses, agencies and political subdivisions of this state directly affected by the rulemaking:**  
The rule revisions will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.
- E. **A statement of the probable impact of the rulemaking on small businesses**  
**Establishing less costly compliance requirements in the rulemaking for small businesses.**  
By correcting and clarifying existing rule provisions and definitions, this rulemaking lessens or eases the regulatory burden for small businesses.  
**Establishing less costly schedules or less stringent deadlines for compliance in the rulemaking.**  
This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability. Existing schedules and deadlines for compliance with Rule 345 remain unchanged.  
**Exempting small businesses from any or all requirements of the rulemaking.**  
This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability. For example, this rulemaking clarifies an exemption for applying coatings with a non-refillable aerosol can.
- F. **The probable cost and benefit to private persons and consumers who are directly affected by the rulemaking.**  
This rulemaking does not impose any new compliance burdens on regulated entities or introduce additional regulatory requirements and will not impose increased monetary or regulatory costs on any business, persons, or individuals so regulated. Because this rulemaking does not impose any new compliance burdens on regulated entities or introduce additional regulatory requirements, the department deemed that none of the revisions have potentially significant economic impacts. It is expected that the department will benefit from the increased clarity of the rule with decreased time to inspect a facility or prepare a permit. The assumptions of savings with the rule revisions will be reviewed after rule implementation to confirm their effectiveness.
- G. **A statement of the probable effect on county revenues**  
The rule revisions will not impose increased monetary or regulatory costs on the county or other state agencies, political subdivisions of this state, persons, or individuals so regulated.
- H. **A description of any less intrusive or less costly alternative methods of achieving the purpose of the rulemaking.**  
This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability. The rule revisions provide flexibility for the use of different models of spray guns for the application of paints or coatings used by commercial vehicle coating operations.

**11. The department’s contact person who can answer questions about the economic, small business, and consumer impact statement:**

Name: Kathleen Sommer or Hether Krause  
 Maricopa County Air Quality Department  
 Planning and Analysis Division  
 Address: 1001 N Central Avenue, Suite 125  
 Phoenix, Arizona 85004  
 Telephone: (602) 506-6010  
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 E-Mail: aqplanning@mail.maricopa.gov

**12. Description of the changes between the proposed rule, including supplemental notices and final rule:**

Since the Notice of Supplemental Proposed Rulemaking was published on June 10, 2016 (22 A.A.R 1552), the department made the following additional amendments:

- Section 102.1: Clarified applicability that rule provisions apply to both motor vehicle and/or mobile equipment coating operations
- Section 236.10 (Definition of “Specialty Coating-Uniform Finish Blenders”): Deleted the reference to “spot repair”
- Section 237 (Definition of “Spot Repair”): Clarified that spot repair VOC limits only apply to heavy duty vehicles
- Section 301.1(c) (Spot Repair): Clarified that the volume limits for spot repair apply to refinishing heavy duty vehicles
- Table 345-1: Deleted “spot repair”
- Section 501.1(c) (Recordkeeping and Reporting-Products In-Use): Clarified the form in which the VOC content for coatings must be calculated
- Section 501.4 (Recordkeeping and Reporting): Deleted proposed new text re: recordkeeping for hazardous waste manifests that contain VOC materials
- Section 501.6 (Recordkeeping and Reporting): Clarified that purchase records for documenting use of VOC-containing materials must be retained for five years
- Section 505: Included text regarding using alternative test methods to determine compliance with the rule and regarding using test methods as approved by the Administrator and clarified the provision regarding when more than one test method is permitted for a compliance determination

**13. Summary of the comments made regarding the rule and the department response to them:**

Since the Notice of Supplemental Proposed Rulemaking was published on June 10, 2016 (22 A.A.R. 1552), the department received comments from the American Coatings Association (ACA) and the Arizona Public Service Company (APS). The comments and the department’s responses are provided below.

**Comment #1: Sections 237 (Definition of “Spot Repair”) and 301.1(c) (VOC Limits, As Applied-Spot Repair)**

ACA requested that the department re-evaluate the VOC limit requirements for spot repair in Rule 345 for both light duty and heavy duty vehicles. In this evaluation, consider that spot repair is a process and not a coating as there are a variety of methods for



accomplishing this task. Additionally, there is a VOC limit for Uniform Finish Blender currently in the rule, a subset of specialty coatings, and this category includes the spot repair process which applies to light duty vehicles.

**Response #1: Sections 237 (Definition of “Spot Repair”) and 301.1(c) (VOC Limits, As Applied-Spot Repair)**

After a department review of the EPA suggested rule for Automotive Refinishing and the California Air Resources Board Suggested Control Measures (SCMs) for Automotive Refinishing, the VOC limit for spot repair in Rule 345 was revised. In Section 237, the department clarified the definition of spot repair as VOC limits that only apply to heavy duty vehicles and removed the proposed spot repair VOC limit for light duty vehicles in Table 345-1. The department also clarified the volume limits listed for use of spot repair materials in Section 301.1(c). The department clarified that the volume limits for spot repair apply to 1 liter each of pretreatment coating, coating and primer.

**Comment #2:**

APS suggests that “mobile equipment” be included in the applicability for this rule, as these are vehicles that use the same coating categories as a motor vehicle. Recordkeeping is required for VOC coatings, but the calculation required for these VOC materials is not clearly defined in the rule. In Section 501.4, it appears that all hazardous waste manifests need to be recorded for facilities subject to this rule, yet there is nothing else in this rule to indicate that this rule applies to hazardous waste materials. It is not clear what the records retention term is, as currently written in Section 501.6.

**Response #2:**

In Section 102.1, the department agrees with this comment and changed the applicability to clarify that Rule 345 provisions apply to both motor vehicle and/or mobile equipment coating operations. The department added the term “and/or mobile equipment coating” to the rule applicability section. In Section 501.1(c), the department agrees that this required recordkeeping should be more specific as to how it is calculated; this section has been amended to clarify the VOC coating recordkeeping calculation. Regarding Section 501.4, the department has removed this text. Regarding Section 501.6, the department agrees that the stated term required for recordkeeping is confusing; it is not clear whether the term is five years or two years. All reference to keeping records for immediate review for the last two years has been removed from this section to avoid confusion. The section has been clarified to state that purchase records for documenting use of VOC-containing materials must be retained for five years.

**14. Other matters prescribed by statute that are applicable to the specific department or to any specific rule or class of rules**

Not applicable

**15. Incorporations by reference and their location in the rules:**

Incorporations by reference are located in Rule 345, Section 505 (Compliance Determination-Test Methods Incorporated By Reference)

**16. Was this rule previously an emergency rule?**

No

**17. Full text of the rule follows:**

**MARICOPA COUNTY**  
**AIR POLLUTION CONTROL REGULATIONS**  
**REGULATION III – CONTROL OF AIR CONTAMINANTS**  
**RULE 345**  
**MOTOR VEHICLE AND MOBILE EQUIPMENT COATING**  
**INDEX**

**SECTION 100 – GENERAL**

- 101 PURPOSE
- 102 APPLICABILITY
- 103 EXEMPTIONS

**SECTION 200 – DEFINITIONS**

- 201 AEROSOL SPRAY CAN COATING
- 202 AIRLESS AND AIR-ASSISTED AIRLESS SPRAY
- ~~201~~ 203 AUTOMATIC SPRAY GUN-CLEANING MACHINE (GUN CLEANER)
- ~~202~~ 202 AUTOMOBILE/LIGHT DUTY VEHICLE
- 204 BUS
- 205 CLEAR COATING (LIGHT & HEAVY DUTY VEHICLES)
- 206 COLOR COATING (LIGHT & HEAVY DUTY VEHICLES)
- ~~203~~ 207 COATING AS APPLIED
- ~~208~~ 208 COATING COMPONENT
- ~~204~~ 204 CONVENTIONAL AIR ATOMIZED SPRAY (SYSTEM)
- ~~205~~ 209 DAY
- ~~206~~ 206 DEPARTMENT
- ~~207~~ 210 DETAILING GUNS AND TOUCH-UP GUNS
- ~~208~~ 211 DILUENT
- ~~209~~ 212 ELECTROSTATIC APPLICATION
- ~~210~~ 213 EMISSION CONTROL SYSTEM (ECS)
- ~~211~~ 214 ENAMEL
- ~~212~~ 215 FLEXIBLE PLASTIC
- ~~213~~ 216 HARDENER
- ~~214~~ 214 HEAVY TRUCK



- 215 217 HEAVY DUTY VEHICLE
- 216 HIGH VOLUME LOW PRESSURE (HVLP) APPLICATION
- 218 HIGH-VOLUME, LOW PRESSURE (HVLP) SPRAY GUN
- 219 IN-USE
- 217 220 LACQUER
- 218 LOW PRESSURE GUN
- 221 LIGHT DUTY VEHICLE
- 219 222 MIXING INSTRUCTIONS
- 220 223 MOBILE EQUIPMENT
- 224 MOTOR VEHICLE
- 225 MOTOR VEHICLE AND MOBILE EQUIPMENT COATING OPERATION
- 226 MOTORCYCLE
- 221 227 MULTI-COLORED TOPCOAT PROCESS (LIGHT & HEAVY DUTY VEHICLES)
- 228 PAINT STRIPPING
- 229 PRETREATMENT COATING
- 222 PRETREATMENT WASH PRIMER
- 223 230 PRIMER (HEAVY DUTY VEHICLES)
- 224 231 PRIMER-SEALER (LIGHT DUTY VEHICLES)
- 225 232 PRIMER-SURFACER (LIGHT DUTY VEHICLES)
- 226 233 REDUCER
- 227 234 REFINISH, REFINISHING
- 228 235 SINGLE-STAGE TOPCOAT PROCESS (LIGHT & HEAVY DUTY VEHICLES)
- 229 236 SPECIALTY COATING
- 230 237 SPOT REPAIR ON A HEAVY TRUCK DUTY VEHICLE
- 231 SURFACE PREPARATION AND SURFACE CLEANING FLUIDS
- 238 SPRAY-APPLIED COATING OPERATIONS
- 239 STRIPPABLE BOOTH COATING (LIGHT & HEAVY DUTY VEHICLES)
- 232 240 STRIPPERS
- 241 SURFACE PREPARATION FLUIDS
- 233 242 THINNER
- 234 243 THREE-STAGE TOPCOAT PROCESS (LIGHT & HEAVY DUTY VEHICLES)
- 235 TOPCOAT
- 236 244 TOUCHUP COATING
- 245 TRANSFER EFFICIENCY
- 237 246 TWO-STAGE TOPCOAT PROCESS (LIGHT & HEAVY DUTY VEHICLES)
- 238 VEHICLE REFINISHING COATING COMPONENT
- 239 VEHICLE REFINISHING OPERATION
- 240 247 VOC CONTENT ACTUAL
- 248 VOC CONTENT
- 249 VOC REGULATORY
- SECTION 300 – STANDARDS**
- 301 LIMITATIONS: VOC CONTENT OF REFINISH COATINGS FOR LIGHT DUTY VEHICLES VOC LIMITS, AS APPLIED
- 302 OPERATING REQUIREMENTS
- 303 APPLICATION REQUIREMENTS
- 304 STORAGE AND DISPOSAL OF VOC-CONTAINING MATERIAL
- 302 REFINISHING HEAVY DUTY TRUCKS AND TRUCK TRAILERS
- 303 COATING NEW SURFACES & REFINISHING HEAVY VEHICLES
- 304 MIXING REQUIREMENTS
- 305 PREPARATION AND SURFACE CLEANING FLUIDS
- 306 MAINTENANCE
- 307 PAINT GUN REQUIREMENTS AND LIMITS
- 308 EMISSION CONTROL SYSTEM
- 309 CLEANUP AND CLEANING SUPPLY AND APPLICATION EQUIPMENT
- 310 GUN CLEANING MACHINES
- 311 STORAGE AND DISPOSAL OF VOC AND VOC-CONTAINING MATERIAL
- 312 EXEMPTIONS
- SECTION 400 – ADMINISTRATIVE REQUIREMENTS**
- 401 EMISSION CONTROL SYSTEM (ECS) SCHEDULE
- 402 THE RESPONSIBILITIES OF LARGE USERS COMPLIANCE SCHEDULE
- 403 JOBBERS/SUPPLIERS RECORDKEEPING RESPONSIBILITY FOR REFINISHES
- 404 WEIGHT EXCLUSION



**SECTION 500 – MONITORING AND RECORDS**

- 501 RECORDKEEPING AND REPORTING
- 502 COMPLIANCE DETERMINATION
- 503 FORMULAS VOC CONTENT CALCULATIONS
- 504 EMISSION CONTROL SYSTEM (ECS) AND RELATED SYSTEM OPERATING REQUIREMENTS
- 505 TEST METHODS ADOPTED BY REFERENCE COMPLIANCE DETERMINATION-TEST METHODS INCORPORATED BY REFERENCE

Adopted 02/15/95  
 Revised 11/20/96  
 Revised 04/21/99  
 Revised 09/25/13

Adopted 02/15/1995; Revised 11/20/1996; Revised 04/21/1999; Revised 09/25/2013; **Revised 11/02/2016**

**MARICOPA COUNTY  
 AIR POLLUTION CONTROL REGULATIONS  
 REGULATION III CONTROL OF AIR CONTAMINANTS  
 RULE 345  
MOTOR VEHICLE AND MOBILE EQUIPMENT COATING**

**SECTION 100 – GENERAL**

**101 PURPOSE:** To limit emissions of volatile organic compounds (VOCs) from ~~the surface preparation and coating of highway vehicles and mobile equipment.~~ motor vehicle and mobile equipment coating and surface preparation operations.

**102 APPLICABILITY:**

**102.1** The provisions of this rule apply to ~~the coating of any vehicle or mobile equipment able to travel or be drawn upon a highway, except for Original Equipment coatings at light duty vehicle manufacturing plants. A summary is provided by the following directory: any owner or operator, who leases, operates or controls a motor vehicle and/or mobile equipment coating operation that applies coatings to motor vehicles and/or mobile equipment. The provisions of this rule do not apply to automobile and light duty truck assembly coating operations.~~

**DIRECTORY OF THE REGULATIONS THAT APPLY TO NEW FINISHES & TO REFINISHES**

Type of Vehicle ⚡	Applicable Regulation for Original Equipment Coating and Coating on Never-Coated Surface ⚡6+	Applicable Regulation for Refinishing ⚡
Car, pickup, minivan, & light duty utility vehicle, or their chassis, produced on large assembly lines; i.e., included by code #33611 in NAICS, as incorporated by reference in subsection 505.3.	New Source Performance Standard for cars & light duty vehicles made on assembly lines, subpart MM, 40 CFR 60, as incorporated by reference in Rule 360.	Table 1 (of this rule) (vehicle bodies, cabs, and chassis only)
Car, pickup, minivan, or light duty utility vehicle NOT produced on large assembly lines; all motorcycles and golf carts.	Table 3 (of this rule)	Table 1 (vehicle bodies, cabs, and chassis only)
All vehicles that qualify as “heavy trucks”, as defined by §215 of this rule, (buses, large trucks, tractor/trailers, etc.)	Table 3	Table 2 (of this rule) (vehicle bodies, cabs, chassis & their trailers)
All heavy duty vehicles that do not qualify as “heavy trucks”, and all mobile equipment	Table 3	Table 3 except for pretreatment wash

\*Small never coated surfaces on a coated vehicle being refinished are subject to Table 2 or §302.3.

**102.2 NSPS & NESHAP:** In addition to this rule, facilities may be subject to New Source Performance Standards (NSPS) in Rule 360 of these rules and/or to National Emission Standards for Hazardous Air Pollutants (NESHAP) [40 CFR Part 63, Subpart 6-H] in Rule 370 of these rules.

**102.3 Coating Individual Parts:** An owner or operator who exclusively coats separate motor vehicle parts or mobile equipment parts that have never been installed since manufacture or remanufacture are subject to Rule 336 (Surface Coating Operations) of these rules. Replacement for a defective/missing vehicle body part installed in the course of refinishing the vehicle body is subject to Rule 345.

**102.2 103 Non-Applicability:** This rule does not apply to: **EXEMPTIONS:**

a. **103.1 Use of Low VOC Materials:** This rule does not apply to an owner or operator who uses a coating or solvent that materials that contain 2.0% or less VOC by either weight or volume, or have less than 0.17 lbs VOC per gallon (20 g/liter) material VOC content, as determined by the formula in subsection 503.3: has a VOC content, minus exempt compounds, less than 0.15 lbs VOC per gallon (18 g VOC/liter).

b. This rule does not apply to the coating of separate vehicle parts or mobile equipment parts that have never been installed since manufacture or remanufacture, unless they are current replacements for a defective/missing body part and are being coated in the course of refinishing the vehicle body they will become part of.



**103.2** Coating with an Aerosol Spray Can Coating: An owner or operator who uses an aerosol spray can coating is not subject to the VOC limits (Section 301 of this rule) and application requirements (Section 303 of this rule). Aerosol spray can coating records shall be kept according to Section 501.7 of this rule.

~~102.3~~ NSPS & NESHAP: In addition to this rule, facilities may be subject to New Source Performance Standards (NSPS) in Rule 360 and/or to National Emission Standards for Hazardous Air Pollutants (NESHAP) in Rule 370 of these Rules and Regulations.

**SECTION 200 – DEFINITIONS:** For the purpose of this rule, the following definitions shall apply, in addition to those definitions found in Rule 100 (General Provisions and Definitions) of these rules. In the event of any inconsistency between any of the Maricopa County air pollution control rules, the definitions in this rule take precedence.

**201** AEROSOL SPRAY CAN COATING: A coating sold in a hand-held, pressurized, non-refillable container of less than 22 fluid ounces (0.66 liter) capacity and that is expelled from the container in a finely divided form when a valve on the container is depressed.

**202** AIRLESS AND AIR-ASSISTED AIRLESS SPRAY: Any paint spray technology that relies solely on the fluid pressure of the paint to create an atomized paint spray pattern and does not apply any atomizing compressed air to the paint before it leaves the paint nozzle. Air assisted airless spray uses compressed air to shape and distribute the fan of atomized paint, but still uses fluid pressure to create the atomized paint.

~~201~~ **203** AUTOMATIC SPRAY GUN CLEANING MACHINE (GUN CLEANER): A machine which, after being loaded, cleans paint spray guns without the assistance of a person.

~~202~~ AUTOMOBILE/LIGHT DUTY VEHICLE: A vehicle manufactured by a facility that is designated by code 33611 of the 1997 North American Industrial Classification System (NAICS), as incorporated by reference in subsection 505.3. This comprises only vehicles manufactured by a large production line facility that makes the following complete vehicles or chassis [for such vehicles]: automobile, light duty van, light duty motor home, pick up truck, and/or utility vehicle.

**204** BUS: Motor vehicle designed primarily for the transportation of persons with a manufacturer's gross vehicle weight of greater than 8600 pounds and a design capacity of over 12 persons.

**205** CLEAR COATING (LIGHT & HEAVY DUTY VEHICLES): Any coating without pigments that is labeled and formulated for application over a color coating or another clear coating.

**206** COLOR COATING (LIGHT & HEAVY DUTY VEHICLES): Any pigmented automotive coating which contains the visual properties of color and effects and is usually the coating referred to as the paint or "Single-stage process" for purposes of this rule.

~~203~~ **207** COATING AS APPLIED: Refers to a coating at the time immediately prior to its application, including any final addition of solvent to the coating before such coating is applied.

**208** COATING COMPONENT: Any portion of a coating, such as a reducer, thinner, hardener, diluent or additive recommended (by the manufacturer or importer) to distributors or end-users for motor vehicle refinishing. The raw materials, such as polyurethane resin, used to produce the coating component which are mixed by the end user to prepare a coating for application are not considered coating components.

~~204~~ CONVENTIONAL AIR ATOMIZED SPRAY (SYSTEM): A spray which is atomized with air in a system designed to exceed 25 psig (1.7 bar) at the center of the spray gun tip and which is not used with an electrostatic transfer system.

~~205~~ **209** DAY: A period of 24 consecutive hours beginning at midnight.

~~206~~ DEPARTMENT: The Maricopa County Air Quality Department.

~~207~~ **210** DETAILING GUNS AND TOUCH-UP GUNS: Small air spray devices, including air brushes, that operate at no greater than 6 cfm (170 liters per minute) air flow and no greater than 50 psig (3.4 bar) air pressure and are used to coat small areas.

~~208~~ **211** DILUENT: For the purposes of this rule, any fluid in or added to a coating such as thinner, retarder, reducer, solvent, or drying accelerator which solubilizes, adjusts concentration, viscosity, flow, or drying rates and which evaporates as the coating film solidifies and cures.

~~209~~ **212** ELECTROSTATIC APPLICATION: A method of applying coating by electrically charging coating droplets or particles with an electrical device, causing their deposition onto a substrate by electrostatic attraction.

~~210~~ **213** EMISSION CONTROL SYSTEM (ECS): A system, approved in writing by the Control Officer, designed and operated in accordance with good engineering practice to reduce emissions of volatile organic compounds VOC. Such system consists of an emissions collection subsystem and an emissions processing subsystem.

~~211~~ **214** ENAMEL: Any non-lacquer topcoat coating.

~~212~~ **215** FLEXIBLE PLASTIC: A surface or part made of solid (non-rubber) polymer designed to withstand significant deformation without damaging it for its intended use.

~~213~~ **216** HARDENER: A coating component specifically designed to promote a faster cure of an enamel finish.

~~214~~ HEAVY TRUCK: Any cab/tractor, truck, van, bus, or motorhome with a manufacturer's gross vehicle weight rating of 8600 lbs or more that is licensable for highway travel; this includes any trailer or semi-trailer that is equipped to be pulled by any such cab/tractor, truck, or van.

~~215~~ **217** HEAVY DUTY VEHICLE: Any highway vehicle, except for an automobile/light duty vehicle as defined in Section 202. This includes, but is not limited to, all vehicular products manufactured under NAICS code 3362, such as trailers, buses, canopies, and the following: trucks, construction equipment, and recreational vehicles. A vehicle with a manufacturer's gross vehicle weight rating of more than 8600 lbs that is licensable for highway travel and consists of the following categories:

**217.1** Large trucks;

**217.2** Buses;

**217.3** Construction equipment, such as earthmovers, tractors, diggers, mobile cranes, bulldozers, and concrete mixers;

**217.4** Motor homes;



- 217.5 Farm machinery, such as forklifts, tractors, and plows; and
- 217.6 Miscellaneous equipment, such as street cleaners and recreational vehicles.
- 216 **HIGH VOLUME LOW PRESSURE (HVLP) APPLICATION:** A type of coating spray system in which the final air pressure does not exceed 10 psig (67 kilopascals) and which depends on relatively large volumes of air to atomize the coating.
- 218 **HIGH-VOLUME, LOW PRESSURE (HVLP) SPRAY GUN:** Spray equipment that is used to apply coating by means of a spray gun that operates at 10 psig of atomizing air pressure or less at the center of the air cap. A permanently affixed manufacturer's gun identification or manufacturer's gun literature shall identify and be proof of an HVLP gun.
- 219 **IN-USE:** Actively engaging the materials with activities such as mixing, depositing, brushing, rolling, padding, wiping or removing or transferring material into or out of the container.
- 217 220 **LACQUER:** A coating which becomes or remains soft when subjected to heat (thermoplastic), which dries primarily by solvent evaporation, and which is resoluble in its original solvent.
- 218 **LOW PRESSURE GUN:** An air atomized spray gun which by design functions best at tip pressures below 10 psig (0.7 bar), measured according to subsection 502.4, and for which the manufacturer makes no written claims that the gun can be used effectively above 12 psig (0.8 bar).
- 221 **LIGHT DUTY VEHICLE:** A vehicle with a manufacturer's gross vehicle weight rating less than or equal to 8600 lbs that is licensable for highway travel and consists of the following categories:
  - 221.1 Automobiles (transport and capacity less than 12 persons);
  - 221.2 Small and medium-sized trucks and vans;
  - 221.3 Motorcycles; and
  - 221.4 Mobile equipment.
- 219 222 **MIXING INSTRUCTIONS:** The coating or coating component manufacturer's or importer's specification of the quantities of coating components for mixing a coating. The manufacturer's specification of the quantities of coating components for mixing a coating, to combine two or more coating components to make one coating that is the same throughout or to combine two or more substances to make a different substance
- 220 223 **MOBILE EQUIPMENT:** Any equipment that is physically capable of being driven or drawn upon a highway including, but not limited to, the following types of equipment: construction vehicles (such as mobile cranes, bulldozers, concrete mixers); farming equipment (such as wheel tractor, plow, pesticide sprayer); hauling equipment (such as trucks, truck trailers, utility bodies, camper shells); and miscellaneous equipment (such as street cleaners, golf carts, all terrain vehicles (ATVs), mopeds) etc. A light duty vehicle that is physically capable of being driven or drawn upon a highway and that is not eligible as or considered an automobile used for transportation on roads or highways, even if such mobile equipment is self-propelled. Mobile equipment includes, but is not limited to, the following types of equipment:
  - 223.1 Hauling equipment, such as truck trailers, utility bodies, and camper shells;
  - 223.2 Miscellaneous equipment, such golf carts, all-terrain vehicles (ATVs), and mopeds; and
  - 223.3 Equipment used at airport, on docks, in depots, in depots, and industrial and commercial plants.
- 224 **MOTOR VEHICLE:** A self-propelled vehicle for use on the public roads and highways of the State of Arizona and required to be registered under the Arizona State Uniform Motor Vehicle Act. Motor vehicles included but not limited to both light and heavy duty vehicles including any non-motorized attachments.
- 225 **MOTOR VEHICLE AND/OR MOBILE EQUIPMENT COATING OPERATION:** Spray application of coatings for refinishing of assembled motor vehicles and/ or mobile equipment. It does not include the surface coating of motor vehicle or mobile equipment parts or subassemblies at a vehicle assembly plant or parts manufacturing plant.
- 226 **MOTORCYCLE:** A motor vehicle, other than a tractor, having a seat or saddle for the use of the rider and designed to travel on not more than three wheels in contact with the ground and weighing less than 1500 pounds, except that four wheels may be in contact with the ground when two of the wheels are a functional part of a sidecar.
- 221 227 **MULTI-COLORED TOPCOAT PROCESS (LIGHT & HEAVY DUTY VEHICLES):** A topcoat process that exhibits more than one color when applied, is packaged in a single container, and camouflages surface defects on areas of heavy use, such as cargo beds and other surfaces of trucks and other utility vehicles and is applied over a primer or adhesion promoter.
- 228 **PAINT STRIPPING:** The removal of dried coatings from wood, metal, plastic, and other substrates. A single source may have multiple paint stripping operations.
- 229 **PRETREATMENT COATING:** Any coating that contains a minimum of one-half (0.5) percent acid by weight and not more than 16 percent solids by weight necessary to provide surface etching and is labeled and formulated for application directly to bare metal surfaces to provide corrosion resistance and adhesion.
- 222 **PRETREATMENT WASH PRIMER:** A primer that contains a minimum of 0.5 percent acid by weight that is applied directly to bare metal surfaces to provide corrosion resistance and to promote adhesion of subsequent coatings.
- 223 230 **PRIMER (HEAVY DUTY VEHICLES):** Any coating applied prior to the application of a topcoat for the purpose of corrosion resistance and/or adhesion. Any coating, including both sealers and surfacers, which is labeled and formulated for application to a substrate to provide:
  - 230.1 A bond between the substrate and subsequent coats;
  - 230.2 Corrosion resistance;
  - 230.3 A smooth substrate surface; or
  - 230.4 Resistance to penetration of subsequent coats, and on which a subsequent coating is applied. Primers may be pigmented.



- 224 231 **PRIMER-SEALER (LIGHT DUTY VEHICLES):** Any coating applied prior to the application of a ~~topcoat~~ final coating for the purpose of corrosion resistance, adhesion of the ~~topcoat~~ coating, and/or color uniformity and to promote the ability of an undercoat to resist penetration by the ~~topcoat~~ coating.
- 225 232 **PRIMER-SURFACER (LIGHT DUTY VEHICLES):** Any coating applied prior to the application of a ~~topcoat~~ final coating for the purpose of filling surface imperfections in the substrate, corrosion resistance, and/or adhesion of the ~~topcoat~~ coating.
- 226 233 **REDUCER:** Any solvent used to thin enamels coatings.
- 227 234 **REFINISH, REFINISHING:** Recoating of previously paint-finished parts of a motor vehicle, motorcycle or of the body of an automobile/light duty vehicle. ~~The body does not include mechanical parts or chassis, except as they are incorporated into the surface of the body, such as a motor driven mirror assembly and coated underbody.~~
- 228 235 **SINGLE-STAGE TOPCOAT PROCESS (LIGHT & HEAVY DUTY VEHICLES):** A ~~topcoat~~ coating consisting of only a single coating formulation applied in one or more coats. Any pigmented automotive coating, excluding automotive adhesion promoters, primers and multi-color coatings, specifically labeled and formulated for application without a subsequent clear coating and that is applied over an adhesion promoter, a primer.
- 229 236 **SPECIALTY COATING:** Any coating that is specifically designated by the coating manufacturer as being one or more of the following:
  - 229.1 236.1 **Adhesion Promoter:** A coating designed to facilitate the bonding of a primer or ~~topcoat~~ coating on surfaces such as trim moldings, door locks, and door sills, where sanding is impracticable, and on plastic parts and the edges of sanded areas.
  - 229.2 236.2 **Bright Metal Trim Repair Coating:** A coating applied directly to chrome plated or other bright metal surface(s) to attain a desired appearance.
  - 229.3 236.3 **Cut-In, or Jambing, Clearcoat:** A fast-drying, ready-to-spray clearcoat applied to surfaces such as door jambs and trunk and hood edges to allow for quick closure.
  - 229.4 236.4 **Elastomeric Coating:** A coating designed for application over flexible parts, such as elastomeric bumpers.
  - 229.5 236.5 **Impact-Resistant Coating:** A specialty coating used on the lower 12 inches (31.6 cm) of a quarter-panel, door, or fender to resist chipping caused by road debris.
  - 229.6 236.6 **Low-Gloss Coating:** A coating which exhibits a gloss reading less than or equal to 25 on a 60° glossmeter.
  - 229.7 236.7 **Radar Dispersing Coating:** A coating designed to disperse radar signals, applied to any part of a military vehicle or military mobile equipment.
  - 236.8 **Truck Bed Liner Coating:** Any coating, excluding clear, color, multi-color, and single stage coatings, labeled and formulated for application to a truck bed to protect it from surface abrasion.
  - 229.8 236.9 **Underbody Coating:** A coating designed for protection and sound deadening that is typically applied to the wheel wells and underbody of an automobile.
  - 229.9 236.10 **Uniform Finish Blenders:** Any coating that is applied ~~in a spot repair~~ for the purpose of blending a paint overspray (“feathered”) area of a repaired ~~topcoat~~ coating to match the appearance of an adjacent existing ~~topcoat~~ coating.
  - 229.10 236.11 **Water Hold-Out Coating:** A coating applied to the interior cavity areas of doors, quarter panels and rocker panels for the purpose of corrosion resistance to prolonged water exposure.
  - 229.11 236.12 **Weld-Through Primer:** A primer that is applied to an area before welding is performed, and that provides corrosion resistance to the surface after welding has been performed.
- 230 237 **SPOT REPAIR ON A HEAVY ~~TRUCK~~ DUTY VEHICLE:** A repair of a damaged or uncoated area of a heavy ~~truck~~ duty vehicle in which not more than a total of 1 liter (1.1 quart) of ~~topcoat(s)~~ coatings and a total of 1 liter of primers are used and such coatings are applied from a reservoir that can hold no more than 1.2 liters when completely full.
- 231 **SURFACE PREPARATION AND SURFACE CLEANING FLUIDS:** ~~Fluids that are used to prepare a surface for further operations by aiding the removal of grime, greases, waxes, unwanted deposits and embedded particles from the surface.~~
- 238 **SPRAY-APPLIED COATING OPERATIONS:** Operations in which coatings are applied using a hand-held device that creates an atomized mist of coating and deposits the coating on a substrate. For the purposes of this rule, spray-applied coating operations do not include the following materials or activities:
  - 238.1 Surface coating applications using powder coating, hand-held, non-refillable aerosol containers, or non-atomizing application technology including, but not limited to, paint brushes, rollers, hand wiping, flow coating, dip coating, electro-deposition coating, web coating, coil coating, touch-up markers, or marking pens;
  - 238.2 Thermal spray operations (also known as metallizing, flame spray, plasma arc spray, and electric arc spray) in which solid metallic or non-metallic material is heated to a molten or semi-molten state and propelled to the work piece or substrate by compressed air or other gas, where a bond is produced upon impact.
- 239 **STRIPPABLE BOOTH COATING (LIGHT & HEAVY DUTY VEHICLES):** A temporary coating that is applied to a paint booth wall to provide a protective film to receive overspray during finishing operations and that is subsequently peeled off and disposed of.
- 232 240 **STRIPPERS:** Powerful solvents used to dissolve permanent, cured coatings, usually to attain a bare substrate.
- 241 **SURFACE PREPARATION FLUIDS:** VOC-containing fluids that are used to prepare a surface for further operations by aiding the removal of grime, greases, waxes, unwanted deposits and embedded particles from the surface. These materials include solvents used for surface preparation or cleaning.
- 233 242 **THINNER:** Any solvent used to reduce the viscosity or solids content of a coating.
- 234 243 **THREE-STAGE TOPCOAT PROCESS (LIGHT & HEAVY DUTY VEHICLES):** A ~~topcoat~~ process composed of a pigmented basecoat color coating, a midcoat, and a transparent clearcoat.
- 235 **TOPCOAT:** Any coating or series of coatings applied over a primer or an existing finish for the purpose of protection or beautification.
- 236 244 **TOUCH-UP COATING:** A coating applied by brush, air-brush, or non-refillable aerosol can to cover minor surface damage.



- 245 **TRANSFER EFFICIENCY:** The ratio of the weight or volume of coating solids adhering to the part being coated to the weight or volume of coating solids as applied in the application process, expressed as a percentage.
- 237 246 **TWO-STAGE TOPCOAT PROCESS (LIGHT & HEAVY DUTY VEHICLES):** A topcoat process consisting of a pigmented basecoat color coating and a transparent clear coating.
- 238 **VEHICLE REFINISHING COATING COMPONENT:** Any portion of a coating, such as a reducer or thinner, hardener, additive, etc., recommended (by its manufacturer or importer) to distributors or end users for vehicle refinishing. The raw materials (such as polyurethane resin, etc.) used to produce the components that are mixed by the end user to prepare a coating for application are not considered vehicle refinish coating components.
- 239 **VEHICLE REFINISHING OPERATION:** For the purposes of this rule, any coating of vehicles or mobile equipment, their parts and components, including partial body collision repairs, for the purpose of protection, restoration or beautification, and which is subsequent to the original coating applied at a coating assembly line at an Original Equipment Manufacturing (OEM) plant.
- 240 247 **VOC CONTENT ACTUAL:** The weight of volatile organic compounds minus the weight water and minus the weight of exempt organic compounds divided by the total volume of the materials. See subsections 503.2 and 503.3. Units of VOC actual are in pounds of VOC per gallon (or grams per liter) of material and shall be calculated using the following equation:

$$VOC\ actual = \frac{W_s - W_w - W_{es}}{V_m}$$

- $W_s$  = weight of all volatile material in pounds (or grams) including VOC, water, non-precursor organic compounds and dissolved vapors
- $W_w$  = weight of water in pounds (or grams)
- $W_{es}$  = weight of all non-precursor organic compounds in pounds (or grams)
- $V_m$  = volume of total material in gallons (or liters)

248 **VOC CONTENT:** The organic chemicals in a material that have a vapor pressure at ordinary room temperature. This vapor pressure results from a low boiling point, which causes large numbers of molecules to evaporate or sublimate from the liquid or solid form of the compound and enter the surrounding air. The term VOC content is a general term used throughout the rule and includes VOC actual and VOC regulatory.

249 **VOC REGULATORY:** The weight of volatile organic compounds minus the weight of water and minus the weight of exempt compounds divided by the volume of material minus the volume of water and minus the volume of exempt compounds. Units of VOC regulatory are in pounds of VOC per gallon (or grams per liter) of material and shall be calculated using the following equation:

$$VOC\ regulatory = \frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

- $W_s$  = weight of all volatile material in pounds (or grams) including VOC, water, non-precursor organic compounds and dissolved vapors
- $W_w$  = weight of water in pounds (or grams)
- $W_{es}$  = weight of all non-precursor organic compounds in pounds (or grams)
- $V_m$  = volume of total material in gallons (or liters)
- $V_w$  = volume of water in gallons (or liters)
- $V_{es}$  = volume of all non-precursor organic compounds in gallons (or liters)

**SECTION 300 – STANDARDS**

301 **LIMITATIONS: VOC CONTENT OF REFINISH COATINGS FOR LIGHT DUTY VEHICLES: VOC LIMITS, AS APPLIED:**

**301.1 Vehicle Coating:**

- a. VOC content calculations are in Section 503 of this rule.
- b. Compliance will be determined based on the VOC content limit expressed in either metric units (grams VOC /l) or English units (lbs VOC/gal).
- c. **Spot Repair on Heavy Duty Vehicles:**
  - (1) The coating shall be applied from a reservoir having a gross volume not exceeding 1.2 liters (5 cups) and containing no more than 1 liter (1.1 qt.) of coating.
  - (2) The application of pretreatment coatings shall not exceed more than 1 liter.
  - (3) The application of primers shall not exceed more than 1 liter.
  - (4) The application of coatings shall not exceed more than 1 liter.
- d. **Uncoated Vehicle Surfaces:** New or never coated surfaces shall comply with the VOC limits of Table 345-3 of this rule, except that pretreatment acid etchant wash shall conform to the VOC limits of pretreatment coating as listed in Tables 345-1 and 345-2 of this rule.
- e. **Mixing Requirements:** An owner or operator who adds VOC-containing thinner, reducer, or diluent to any refinish coating regulated by Tables 345-1, 345-2, or 345-3 of this rule shall meet the applicable VOC limits found in such tables.

301.1 **301.2 Light Duty Vehicle and Mobile Equipment Coating:** No person shall An owner or operator shall not sell for use, supply for use, or apply; coating on a previously finished automobile/light duty vehicle or mobile equipment in Maricopa County unless the coating’s VOC content complies with the applicable limits in Table 345-1 of this rule, except if an owner or operator chooses to use an ECS that reduces VOC emissions as provided in Section 302.3 of this rule.

- a. VOC content is determined according to Sections 502, 503.2, and 505
- b. Compliance will be determined based on the VOC content limit, expressed in metric units. (English units (lbs VOC/gal) are provided for information only.)

TABLE 1



REFINISHES APPLIED TO THE BODIES OF AUTOMOBILE/LIGHT DUTY VEHICLES OR MOTORCYCLES  
VOC LIMITS FOR REFINISH COATINGS AS APPLIED, MINUS EXEMPT COMPOUNDS

Coating category	Grams VOC	Pounds VOC
	per liter	per gal
Pretreatment wash primers	780	6.5
Primers/primer surfacers	580	4.8
Primer sealers	550	4.6
Single/two stage topcoats	600	5.0
Topcoats of more than two stages	630	5.2
Multi-colored topcoats	680	5.7
Specialty coatings	840	7.0
Strippable booth coatings	420	3.5

**TABLE 345-1  
VOC LIMITS (REGULATORY) FOR REFINISHES (COATINGS) APPLIED TO  
LIGHT DUTY VEHICLES AND MOBILE EQUIPMENT**

Coating Category	Grams VOC per liter	Pounds VOC per gal
Clear coatings	600	5.0
Multi-colored processes	680	5.7
Pretreatment coatings	780	6.5
Primer sealers	550	4.6
Primer surfacers	580	4.8
Single-stage processes	600	5.0
Specialty coatings	840	7.0
Strippable booth coatings	420	3.5
Three-stage processes or more	630	5.2
Two-stage processes	600	5.0

301.2 Refinishing Surfaces that are Not Part of Body/Chassis: The recoating of a section of a light duty vehicle that is not part of its body/chassis, its body's appurtenances, nor its wheels, shall comply with the VOC limits of Table 3. This includes drive train, steering gear, suspension, etc.

301.3 Refinishing Replacement Appurtenances on the Vehicle Body: Vehicle body appurtenances such as mirrors, trim strips, license plate frames, etc., used to replace or supplement existing appurtenances on an automobile/light duty vehicle bodies may be coated with coatings that meet the applicable VOC limits in Table 1, even if the item has never been coated or used.

302 **301.3 REFINISHING TRUCKS AND TRUCK TRAILERS Heavy Duty Vehicle Coating:** An owner or operator shall not apply coating on a previously finished heavy duty vehicle in Maricopa County unless the coating's VOC content complies with the applicable limits in Table 345-2 of this rule, except if an owner or operator chooses to use an ECS that reduces VOC emissions as provided in Section 302.3 of this rule.

302.1 Refinish VOC Limits: No person shall apply refinish coating to any section or appurtenance of the body or chassis of a heavy truck unless that coating complies with the VOC limits in Table 2.

a. VOC content is determined according to Sections 502, 503.2, and 505

b. Compliance will be determined based on the VOC content limit, as expressed in metric units. (English units {lbs VOC/gal} are provided for information only.)

302.2 Refinishing Replacement Appurtenances on A Heavy Truck: At the time of (re)placement, a person may coat heavy truck body appurtenances such as mirrors, trim strips, license plate frames, wheel covers, etc., with coatings that meet the applicable VOC limits in Table 2 or the requirements of subsection 302.3, if the item is about to be used to replace or supplement existing appurtenances, even if the item has never been coated or used.

**TABLE 2  
VOC LIMITS FOR REFINISH COATING AS APPLIED TO HEAVY TRUCK BODIES**

VOC LIMIT and Effective Date	Current	November 1, 1999	November 1, 2000	November 1, 2001	
<b>TYPE OF COATING</b>					<b>ROW</b>
Pretreatment wash primer	780 g/L 6.5 lb/gal				1
Primers/primer surfacers	580 g/L 4.8 lb/gal	same	same	420 g/L 3.5 lb/gal	2
Primer sealers	550 g/L 4.6 lb/gal	same	same	420 g/L 3.5 lb/gal	3



Single stage, solid color	600 g/L 5.0 lb/gal	same	same	420 g/L 3.5 lb/gal	4
Single stage, metallic/iridescent	550 g/L 4.6 lb/gal	same	same	420 g/L 3.5 lb/gal	5
2-Stage topecoat basecoat & clearcoat	600 g/L 5.0 lb/gal per formula**	same	same	480 g/L 4.0 lb/gal per formula**	6
Topcoats of more than two stages	630 g/L 5.2 lb/gal per formula**	same	same	480 g/L 4.0 lb/gal for trailers**	7
Spot coats, 1 liter limit each stage	600 g/L 5.0 lb/gal			546g/L (11/2/02)	8
Specialty Coatings as defined by §231	840 g/L 7.0 lb/gal				9
Strippable booth coatings	2.0 lb/gal				

\*\*Formula for computing the VOC content of multi stage coating is in subsection 503.1

**TABLE 345-2  
VOC LIMITS (REGULATORY) FOR REFINISHES (COATINGS) APPLIED TO  
HEAVY DUTY VEHICLES**

Coating Category	Grams VOC per liter	Pounds VOC per gal
Clear coatings	420	3.5
Multi-colored processes	680	5.7
Pretreatment coatings	780	6.5
Primers	480	4.0
Single-stage processes	420	3.5
Specialty coatings	840	7.0
Spot repair	546	4.6
Strippable booth coatings	240	2.0
Three-stage processes or more	480	4.0
Two-stage processes	420	3.5

302.3 Spot Refinishing of Heavy Trucks: A person may coat a heavy truck panel, a juncture of panels, or a body appurtenance using a coating with a VOC content that does not exceed the VOC limits set forth in subsection a below, provided that the coatings as applied meet the requirements as set forth in subsection b:

- a. VOC Limits for Spot Refinishing of Heavy Trucks:
  - (1) Through November 1, 2002 600 g VOC/L (5.0 lb VOC/gal).
  - (2) After November 1, 2002 546 g VOC/L (4.55 lb VOC/gal).
- b. Volume Limits:
  - (1) The coating shall be applied from a reservoir having a gross volume not exceeding 1.2 liters (5 cups) and containing no more than 1 liter (1.1 qt.) of coating.
  - (2) The complete topecoat of a single stage finish shall not use more than 1 liter.
  - (3) The complete topecoat of a multi stage finish shall not exceed 2 liters.
  - (4) The total of all non topecoat process coatings, including wash and primers shall not exceed 1 liter.
- e. Wash Primers may have up to 780 g/L (6.5 lb/gal).

303 COATING NEW SURFACES & REFINISHING HEAVY VEHICLES

- 303.1 Coating New or Never Coated Surfaces: New or never coated surfaces of mobile equipment and of a vehicle, including a heavy truck, that is not manufactured under NAICS code 33611, are subject to a VOC limit of 3.5 lb VOC/gal (420 g/L) for all unbaked coatings over metal or plastic. The VOC content of coating applied on or over surfaces included in Table 3 shall comply with the VOC limits of Table 3.
- 303.2 Refinishing Surfaces that are Not Part of Body/Chassis: The recoating of a section of mobile equipment or a heavy duty vehicle, including a heavy truck, that is not part of its body/chassis, its wheels, nor appurtenances, shall comply with the VOC limits of Table 3. This includes drive train, steering gear, suspension, etc.
- 303.3 Refinishing Mobile Equipment and Heavy Duty Vehicles: No person shall refinish mobile equipment or any heavy duty vehicle that is not a heavy truck unless the coating as applied conforms to the VOC limits in Table 3, except that pre-treatment acid etchant wash shall conform to the VOC limits of row 1 in Table 2.

TABLE 3



VOC Limits for Coating As Applied To Uncoated Vehicle Surfaces COATING

COATING ON METAL SURFACES		
The following includes Coating, Adhesive, & Adhesive Primer	Lbs. per gallon	Grams per liter
Air Dried Coating	3.5	420
Baked Coating [above 200°F (93°C)]	3.0	360
COATING ON VINYL SURFACES		
	3.8	450
COATING ON FABRIC SURFACES		
	2.9	350
COATING PLASTIC SURFACES not defined as flexible		
	3.5	420
COATING FLEXIBLE PLASTIC SURFACES (not Vinyl)		
Primer	4.1	490
Color Topcoat	3.8	450
Basecoat/Clear Coat (Combined System)	4.5	540

TABLE 345-3

VOC LIMITS (REGULATORY) FOR COATING AS APPLIED TO NEW OR NEVER COATED VEHICLE SURFACES

COATING ON METAL SURFACES		
The following includes Coating, Adhesive, & Adhesive Primer	Grams VOC per liter	Pounds VOC per gal
Air-Dried Coating	420	3.5
Baked Coating [above 200°F (93°C)]	360	3.0
COATING ON FABRIC SURFACES		
	350	2.9
COATING FLEXIBLE PLASTIC SURFACES (Not Vinyl)		
- Primer	490	4.1
- Color Coating	450	3.8
- Color Coating/Clear Coat (Combined System)	540	4.5
COATING PLASTIC SURFACES (Not Defined as Flexible)		
	420	3.5
COATING ON VINYL SURFACES		
	450	3.8

304 **Mixing Requirements:**

- 304.1 **Suppliers Provide Mixing Instructions:** No person shall supply vehicle refinishes regulated by Table 1 or Table 2 of this rule unless instructions for proper mixing/diluting are provided.
- 304.2 **Vehicle Appropriate VOC Content and Instructions:** If a supplier of a refinish coating represents that such coating is appropriate to coat a particular type of vehicle listed in Table 1 or Table 2:
  - a. The coating as mixed and applied must meet the applicable VOC limit in Table 1 or Table 2; and,
  - b. The supplier must provide only those mixing/blending instructions that meet the VOC limit; except,
  - e. Instructions that included both compliant and non-compliant formulation directions are acceptable if they have a line, mark, or totally obscuring coating through/over each word of all non-compliant mixing instructions.
- 304.3 **Mixing Requirements for the Coating User:** No person adding VOC containing thinner, reducer, or other diluent to any refinish coating regulated by either Table 1 or Table 2 add such diluents in proportions higher than those specified or recommended by the instructions provided by the supplier of the coating.

302 **OPERATING REQUIREMENTS:**

- 305 **302.1 SURFACE PREPARATION AND SURFACE CLEANING FLUIDS Surface Preparation Fluids:** An owner or operator shall use surface preparation fluids with a VOC content as applied of no more than 1.4 lbs. VOC per gallon as calculated according to Section 503.3 of this rule.
  - 305.1 A person cleaning or preparing a surface of a vehicle or mobile equipment for coating using a wipe method or other non-dip method shall use a material with a VOC content as applied of no more than 1.4 lb. of VOC per gallon as determined by methods set forth subsections 502.1d or 502.3 305.2
  - 305.2 **a.** Neither surface cleaning nor surface preparation material that contains VOC Surface preparation fluids containing VOC shall not be applied by means of motor compressed air if applied in a mist or (finely atomized) spray.
  - 305.3 **b.** Dip cleaning requirements for motor vehicle or mobile equipment surfaces are described in Rule 331 (Solvent Cleaning) of these rules. applies to the dip cleaning of vehicle or mobile equipment surfaces.
- 302.2 Paint Stripping:** An owner or operator using a tank for stripping off coatings or for cleaning objects shall:
  - a.** Cover tanks when not in-use; and
  - b.** Minimize solvent dragout by tilting or rotating the object to drain off any pools of solvent before removing the object from the tank.
- 302.3 Emission Control System (ECS):** As an alternative to meeting the VOC regulatory limits, as applied, pursuant to Tables 345-1, 345-2, and 345-3 of this rule, an owner or operator is allowed to operate an ECS that reduces VOC emissions by at least 85% pursuant to Section 504 of this rule.
- 306 **302.4 Maintenance:** Any person ~~An owner or operator~~ subject to this rule shall operate and maintain in proper working order all production and cleaning equipment in which VOC-containing materials are used or stored.
- 302.5 Storage and Disposal of VOC and VOC-Containing Material:** An owner or operator subject to this rule shall:



- a. Store all VOC-containing materials including, but not limited to, waste coatings, waste solvents and their residues, and rags in closed containers.
- b. Post a legible label identifying all VOC container's contents (greater than one gallon) in clear view on the container.
- c. Keep all VOC containers closed except when contents are added or removed.
- d. Dispose of waste or surplus VOC-containing materials in a manner that minimizes VOC evaporation including, but not limited to, disposing of them in covered containers.
- e. Collect all VOC solvent used to manually clean spray guns in a container and close the container immediately after all of the solvent has been collected.

**303 APPLICATION REQUIREMENTS:**

**303.1** An owner or operator shall use one of the following methods for spray-applied coating operations that use coatings containing more than 2.0 lb VOC/gal (240 g/l):

- a. An HVLP spray gun;
- b. An electrostatic application;
- c. A system that atomizes principally by hydraulic pressure, including "airless", "air-assisted airless"; or
- d. Any specific system which is approved by the Administrator as HVLP-equivalent.

**303.2** An owner or operator is allowed to use an application method other than that described in Section 303.1 of this rule under any of the following conditions:

- a. When conducting a spray-applied coating operation that uses a coating that is less than or equal to 2.0 lb VOC/gal (240 g/l);
- b. If spray guns are designed and used solely for detailing, spot repair, and/or touch-up, and have a maximum reservoir capacity of 250 cc (8.8 fluid ounces); or
- c. When spray applying adhesives.

**303.3** **Spray Gun Cleaning Requirements:** An owner or operator subject to this rule shall minimize VOC emission from cleaning spray guns by ensuring that equipment cleaning is performed without atomizing the solvent and all spent solvent is captured in closed containers.

- a. **Spray Gun Cleaning Machine:** An owner or operator subject to this rule shall use a spray gun cleaning machine that complies with the following requirements unless the owner or operator complies with the manual spray gun cleaning requirements in Section 303.3(b) of this rule.

**(1) General Requirements for Spray Gun Cleaning Machine:** The spray gun cleaning machine shall meet all of the following requirements:

- (a)** Be designed to clean spray guns; and
- (b)** Have at least one pump which drives solvent through and over the spray gun; and
- (c)** Have a basin which permits containment of the solvent; and
- (d)** Be kept in proper repair and free from liquid leaks; and
- (e)** Be fitted with a cover; and
- (f)** Be located on-site where the spray application occurs.

**(2) Automatic Spray Gun Cleaning Machine:** An automatic spray gun cleaning machine shall meet all of the following requirements:

- (a)** Have a self-closing cover or other self-enclosing feature for use when not loading or unloading. The cover's closed position allows no gaps exceeding 1/8 inch (3 mm) between the cover and the cabinet; and
- (b)** Be designed and maintained to prevent operation of its mechanical cleaning feature(s) unless it is completely covered or enclosed to the gap limits specified in Section 303.3(a)(2)(a) of this rule.

**(3) Non-Automatic Remote Reservoir Spray Gun Cleaning Machine:** A non-automatic remote reservoir spray gun cleaning machine shall meet all of the following requirements

- (a)** Drain solvent from the sink/work-space quickly into a remote reservoir when work-space is not in-use; and
- (b)** The machine reservoir shall contain VOC vapors and not have a cumulative total opening, including the drain opening(s), exceeding two square inches; and
- (c)** Allow a machine design in which the base of the sink/work-space functions as the reservoir's top surface, as long as the fit/seal between sink base and reservoir container allows the reservoir to meet the opening limits specified in Section 303.3(b)(3)(b) of this rule.

- b. **Manual Spray Gun Cleaning Requirements:** Manual cleaning of spray guns shall comply with all of the following requirements:

- (1)** Disassembled spray guns shall be cleaned by hand in a bucket or vat with non-mechanical, hand-held equipment including, but not limited to, paint brushes, hand rollers, caulking guns, trowels, spatulas, syringe daubers, rags, and sponges. For the purposes of this rule, brushes shall not be composed of porous materials such as wood or leather; and
- (2)** All solvent used to manually clean spray guns shall be collected into a container which shall be immediately closed after all the solvent has been collected; and
- (3)** Disassembled spray guns shall be cleaned with water or a solvent that is more than ½ water by weight or volume and calculated according to Section 503.3 of this rule.

**303.4** **Line Cleaning:** All solvent used for line cleaning shall be pumped or drained into a container and kept closed when not in-use. Line cleaning shall not be conducted by spraying or atomizing a solvent with a gun.



307 PAINT GUN REQUIREMENTS AND LIMITS

- 307.1 No person shall apply any coating with a VOC content exceeding 3.0 lb VOC/gal (360 g/l) using a spray gun, unless such spraying employs one of the following devices or systems:
  - a. A low pressure spray gun or system (such as HVLP)
  - b. An electrostatic system;
  - c. A system that atomizes principally by hydraulic pressure, including "airless", "air assisted airless";
- 307.2 A person is allowed to use a spray gun other than one allowed by subsection 307.1 under the following conditions:
  - a. For applying materials that have a VOC content not exceeding 3.0 lb VOC/gal (360 g/l) as applied, less water and non-precursor compounds.
  - b. If such guns are designed and used solely for detailing and/or touch up, and have a maximum reservoir capacity of 250 cc (8.8 fluid ounces).
  - c. If such guns are used to apply adhesives.

308 EMISSION CONTROL SYSTEM: As an alternative to meeting an applicable coating VOC limit and/or work practice pursuant to Sections 302, 304, 305, or 307, an operator is allowed to operate an Emission Control System (ECS) that reduces VOC emissions by at least 85%, pursuant to Section 504.

309 CLEANUP AND CLEANING SUPPLY AND APPLICATION EQUIPMENT:

- 309.1 All solvent used to manually clean spray guns shall be collected into a container which shall be immediately closed after all the solvent has been collected.
- 309.2 All solvent used for line cleaning shall be pumped or drained into a container kept closed when not in use.
- 309.3 Tanks used for stripping off coating or for cleaning objects shall be covered when not in use. Solvent dragout shall be minimized by tilting or rotating the object to drain off any pools of solvent before removing the object from above the tank.

310 GUN CLEANING MACHINES: Any person subject to this rule shall use a paint gun cleaning machine to clean paint guns if the vehicle refinishing operation is required to have an Air Pollution Control Permit by Rule 200 of these Rules.

310.1 Manual Pre-Cleaning and Water Cleanup:

- a. Manual cleaning outside of the cleaning machine is allowed if the cleaning machine is used immediately after manual cleaning, and if done without spraying cleaning solvent with the gun.
- b. A cleaning machine is not required to clean a paint gun if the gun is cleaned with water or a cleaning mixture that is more than 1/2 water by weight or volume.

310.2 General Requirements for Gun Cleaning Machines: The gun cleaning machine shall:

- a. Be designed to clean paint guns and be kept in proper repair and free from liquid leaks.
- b. Have at least one pump which drives cleaning solvent through and over the gun, and a basin which permits containment of the cleaning solvent.
- c. Have all covers and other surfaces that are exposed to gaseous or liquid VOC solvent be impervious to both gaseous and liquid VOC solvent.

310.3 Specific Requirements for 2 Types of Cleaning Machines:

- a. Automatic Gun-Cleaning Machine:
  - (1) Shall be self-covering or enclosing when not loading or unloading.
  - (2) The machine shall have a self-closing cover or other self-enclosing feature which in the cover's closed position allows no gaps exceeding 1/8 inch (3 mm) between the cover and the cabinet.
  - (3) The machine shall be designed and maintained to prevent operation of its mechanical cleaning feature(s) unless it is completely covered or enclosed to the gap limits specified in the preceding subsection 310.3a.(2).
- b. Non-Automatic Remote Reservoir Gun-Cleaning Machine:
  - (1) The cleaning machine shall be designed such that cleaning solvent drains from the sink/work space quickly and completely into a remote reservoir when the work space is not in use.
  - (2) The reservoir shall have the ability to contain VOC vapors and shall not have a cumulative total opening, including the drain opening(s), allowing VOC escape to the atmosphere exceeding two square inches in area.
  - (3) Machine designs are allowed in which the base of the sink/work space functions as the reservoir's top surface, as long as the fit/seal between sink base and reservoir container allows the reservoir to meet the opening limits specified in the preceding subsection 310.3b.(2).

311 304 STORAGE AND DISPOSAL OF VOC AND VOC-CONTAINING MATERIAL:

- 311.1 **304.1** Any person An owner or operator subject to this rule shall store all VOC-containing materials including, but not limited to, waste coatings, waste solvents and their residues, and rags in closed containers at all times except when contents are added or removed, such materials are in-use.
- 311.2 **304.2** A container must have a legible label identifying the container's contents.
- 311.3 **304.3** Convey VOC-containing coating and cleaning materials from one location to another in closed containers.
- 311.4 **304.4** Disposal of waste or surplus VOC-containing materials (used for both coating and cleaning) shall be done in a manner that inhibits VOC evaporation, kept in closed containers at all times except when depositing or removing these materials, such as having these These materials shall be hauled off removed from the site in sealed containers.

312 EXEMPTIONS:

- 312.1 Exemptions from other Rules: Maricopa County Air Pollution Rules and Regulations Rules 330 and 336 do not apply to any vehicle or mobile equipment coating or refinishing operation to which this Rule 345 is applicable.



- 312.2 ~~Formal Vehicle Refinishing Training: A student in classes at an accredited school which teaches vehicle refinishing is exempt from the recordkeeping provisions of this rule.~~
- 312.3 ~~Coating with a non-refillable aerosol can is exempt from this Rule 345.~~
- 312.4 ~~Out-of-Date Coatings: Coating otherwise subject to Table 1 limits but manufactured before January 15, 1999, is exempt from Table 1 VOC limits until November 1, 1999.~~

#### SECTION 400 – ADMINISTRATIVE REQUIREMENTS

- 401** ~~ECS EMISSIONS CONTROL SYSTEM (ECS) SCHEDULE: Any owner or operator intending to install an ECS in a facility to comply with requirements of this rule shall complete the requirements of subsection 504.3 Section 504 of this rule.~~
- 402** ~~COMPLIANCE SCHEDULE: An owner or operator subject to this rule shall meet all applicable provisions of this rule by November 2, 2016.~~
- 402** ~~THE RESPONSIBILITIES OF LARGE USERS:~~
- 402.1 ~~The owner or operator of a facility which emits 10,000 pounds or more of VOC in any calendar year must submit a report of such emissions on a form supplied by the Department after the end of that calendar year.~~
- 402.2 ~~An owner or operator of a facility which in a calendar year meets or exceeds any of the following quantities must notify the Control Officer of this fact in writing by February 28 (within two months) after the end of that calendar year:~~
- a. ~~Used a total of 1000 gallons (3785 l) of coating (with reducer and hardener); or~~
- b. ~~Received a total of 1300 gallons (4920 l) of cleaning solvent, lacquer thinner and wash thinner; or~~
- c. ~~Disposed of more than 1000 gallons or 6000 pounds (2722 kg) to hazardous waste collection; or~~
- d. ~~Submitted a total exceeding 9000 pounds (4082 kg) of VOC in the facility's most recently completed Maricopa County annual air emission inventory form.~~
- 402.3 ~~The Control Officer may require in writing a report of annual emissions from a facility which has given notification as required by the preceding subsection 402.2, or from any other facility which in the Control Officer's determination can have annually emitted 5 tons (4536 kg) or more of VOC.~~
- 403** ~~JOBBER/SUPPLIERS RECORDKEEPING RESPONSIBILITY FOR REFINISHES:~~
- 403.1 ~~An owner or operator selling or supplying vehicle refinishing coatings, coating components, or refinishing supplies directly to facilities that refinish automobiles, light duty vehicles, or heavy trucks in Maricopa County shall maintain records of the VOC content of such materials; and~~
- a. ~~Records shall be sufficient to calculate the total VOC annually sold to facilities described in the preceding subsection 403.1.~~
- b. ~~Records shall include sales of cleanup and surface preparation materials that contain more than 2% VOC by weight or volume, or more than 0.17 lb VOC/gal (20 g/L).~~
- 403.2 ~~An owner or operator shall total cumulative vehicle refinishing VOC sold during a current calendar year (pursuant to 403.1) in a quarterly manner, by the end of the month following each quarter.~~
- 403.3 ~~Jobbers or suppliers annually supplying less than 100 pounds of vehicle refinishes and supplying less than 100 pounds of cleaning/surface prep materials to vehicle refinishers are exempt from the requirement of subsections 403.1 and 403.2.~~
- 404** ~~WEIGHT EXCLUSION: Vehicles having a manufacturer's gross vehicle weight rating of 8600 lbs or more are excluded from NAICS code 33611, unless clearly identified as being included by the NAICS, as incorporated by reference in Section 505.~~

#### SECTION 500 – MONITORING AND RECORDS

- 501** ~~RECORDKEEPING AND REPORTING: Any person An owner or operator subject to this rule shall keep the following records. required under this Section 501 in a consistent and complete manner and shall make them available to the Control Officer, without delay during normal business hours. Records shall express VOC content in either English units (pounds of VOC per gallon) or metric units (grams of VOC per liter), less water, non-precursor organic compounds, and exempt compounds.~~
- 501.1** ~~Responsibility for Products In Use: An owner or operator shall maintain written records in the facility which give the name or code number of each VOC-containing product and its VOC content as received. VOC content shall be expressed in pounds of VOC per gallon (or grams/liter), less water and non-precursors, excepting waterborne cleaners which shall include the water:~~
- a. ~~Examples of What to Include: All coating components as received from the supplier, before any in-house blending, such as coating base and tint base for topcoats, midcoats, primers, specialty coatings, sealers, and strippable booth coating; other coating components such as hardeners, catalysts, reducers, promoters, inhibitors and other coating additives; and stripper, wash thinner, lacquer thinner, gun cleaning solvent, surface prep cleaners and other cleaners, including waterborne cleaners which contain some VOC. **VOC-Containing Materials:** An owner or operator shall keep the quantity of the VOC coatings and solvents used in the following form:~~
- a. ~~Material name and manufacturer.~~
- b. ~~Coating type (as listed in Tables 345-1, 345-2, and 345-3 of this rule) and mix ratio specific to the coating.~~
- c. ~~VOC content for coatings calculated as defined in "VOC Regulatory" of this rule.~~
- d. ~~VOC content for cleaners.~~
- 501.2** ~~Alternative Application Method Transfer Efficiency Documentation: Retain records of any specific system which is approved by the Administrator as HVLP-equivalent.~~
- 501.3** ~~HVLP Spray Gun Transfer Efficiency Documentation: Retain records of the HVLP spray gun transfer efficiency and/or demonstration of transfer efficiency.~~
- b. **501.4** ~~Sufficient Documentation: Any one of the following may be used to meet the requirements of subsection 501.1, as long as all VOC-containing refinishing products are accounted for pursuant to subsection 501.1, (first paragraph) Sufficient documentation includes any of the following:~~



- (1) ~~An up-to-date hardcopy (in writing) list prepared for that facility.~~
- (2) ~~Current material safety data sheets (MSDS) or product data sheets showing the VOC content.~~
- (3) a. ~~Purchase or usage documentation that gives VOC content, such as invoices and/or receipts showing VOC content, identifying the coating type (as listed in Section 501.1 of this rule).~~
- (4) b. ~~Current, dated manufacturer's publications such as charts or lists which show VOC content, with the products used in the facility highlighted or otherwise clearly marked.~~

501.2 **501.5** ~~Documentation of Purchases~~ **Records Retention:** ~~Purchase records~~ **Records** showing the volume of each VOC-containing ~~refinishing related product material~~ purchased or used shall be ~~kept available for the current and the previous year. Actual invoices and receipts showing the volume of the material purchased will suffice in place of ledger style records.~~ retained for five (5) years and be made available to the Control Officer upon request, without delay during normal business hours. Records may be kept in either electronic or paper format.

**501.6** **Aerosol Spray Can Coatings:** Maintain purchase or usage records for aerosol spray cans, including VOC content.

**501.3** **Record Retention:** Records shall be retained for five years.

501.4 **501.7** **Records VOC Material Accountability:** The Control Officer may account as VOC emissions to the atmosphere any VOC that is not accounted for by adequate records of disposal or of reuse within a facility.

**502 COMPLIANCE DETERMINATION:**

502.1 For routine purposes, the Control Officer may determine VOC content from a manufacturer's product data document such as a current manufacturer's safety data sheet (MSDS) that provides exact product contents.

502.2 **502.1** Measurement of VOC content of coating materials subject to this rule, including the requirements of Section 301, shall be conducted and reported in accordance with EPA Test Method 24 (as incorporated by reference in Section 505), with the following restrictions for multi-component, polymerizing coatings: Method 24 shall be modified to eliminate the post-mixing dilution step (that employs toluene or other solvent). The mixture shall be spread instead by appropriate technique to form a thin layer, occupying the entire bottom of the foil pan. California's Bay Area Air Quality Management District Method 31 (amended 4/15/92) can be used as a guide for such spreading. **Measurement of VOC Content of Coating Materials Subject to this Rule:** EPA Test Method 24 (as incorporated by reference in Section 505 of this rule) shall be used to determine VOC content of coating materials with the following restrictions for multi-component, polymerizing coatings:

- a. Method 24 shall be modified to eliminate the post-mixing dilution step (that employs toluene or other solvent) for the multi-component, polymerizing coatings.
- b. Method 31 (amended 5/18/2005) California's Bay Area Air Quality Management District shall be used as a guide for the multi-component, polymerizing coating measurement. The VOC measurement requires a specific technique of spreading a thin layer over the entire bottom of a foil pan used for the measurements. Refer to Section 505.2(a) of this rule as a guide for application of this method.

502.3 **502.2** **Low or No-Solids Materials:**

a. The VOC content of solutions, dispersions, and emulsions that have no solids or less than 5% solids shall be determined by either of the following methods: as incorporated by reference in Section 505 of this rule:

- (+) a. Method 313-91 - South Coast Air Quality Management District, Method 313-91, as incorporated by reference in Section 505.
- (-) b. Method 31 of California's Bay Area Air Quality Management District, as incorporated by reference in Section 505.
- b. Measurement of the VOC content of cleaning fluids, including those cleaners limited by Section 305 of this rule, shall be according to the formula in subsection 503. and applicable test methods in Section 505.

502.4 **502.3** With reference to subsection 307.1a, measurement of air pressure at the tip of an air atomized paint spray gun that atomizes shall be performed using a device supplied by the gun's manufacturer for that purpose. The measurement shall be made dynamically at the center of the air cap and at the air horns, with the spray configured to a fan diameter of eight to ten inches on a flat surface being coated. The axis of the fan pattern shall be perpendicular to this surface. **Spray Gun Transfer Efficiency Measurement:** The measurement of air pressure of an air atomized spray gun shall be demonstrated by any of the following methods:

- a. Dynamically at the center of the air cap.
- b. At the air horns, with the spray configured to a fan diameter of eight to ten inches on a flat surface being coated.
- c. The axis of the fan pattern shall be perpendicular to this surface.
- a. Operating the air atomized spray gun using an air pressure tip gauge supplied by the manufacturer of the spray gun. This gauge is an attachable device that is in proper working order and supplied by the gun's manufacturer for performing such a measurement. The gauge, (psig) air atomizing pressure measurement is made dynamically at the center of the air cap. The measurement shall be performed upon request by the Control Officer; or
- b. Providing documentation with manufacturer's technical literature on letterhead of the manufacturer of the spray gun confirming maximum air cap pressure; or
- c. In accordance with the provisions of Section 505.2(d) of this rule.

502.5 **502.4** **Pretreatment Wash Primers:** The acid weight percent of pretreatment wash primers must be determined using the American Society for Testing and Materials (ASTM) Test Method D 1613-96, as incorporated by reference in Section 505. If the pigment in a pretreatment wash primer prevents the use of this test method for determining the acid weight percent of the coating, then the test method shall be used for the nonpigmented component of the coating, and the acid weight percent shall be calculated based on the acid content of the nonpigmented component and the mixing ratio of the nonpigmented component to the remaining components recommended by the regulated entity. **Pretreatment Coatings:** ASTM D1613-06 as



incorporated by reference in Section 505.2(c) of this rule shall be used determine the acid weight percent of a pretreatment coating, with the following exceptions:

- a. The pigment in a pretreatment coating prevents the use of this test method for determining the acid weight percent of the coating, then the test method shall be used for the non-pigmented component of the coating; and
- b. The acid weight percent shall be calculated based on the acid content and the mixing ratio of the non-pigmented component and compared to the remaining components recommended by the regulated entity.

502.6 **502.5**

**ECS Testing:**

- a. The VOC content of gaseous emissions entering and exiting an ECS shall be determined by either EPA Method 18 or EPA Method 25 and its submethod(s), as are incorporated by reference in Section 505. **EPA Method 18 or EPA Method 25 and its Submethod(s)**; These methods, incorporated by reference in Section 505 of this rule, shall be used to determine VOC content of gaseous emissions entering and exiting an ECS.
- b. Capture efficiency of an ECS shall be determined either by EPA Method 204 and its submethods, or by using mass balance calculation methods in concert with EPA Methods 2, 2a, 2c, and 2d, as are incorporated by reference in Section 505 of this rule.

**503 FORMULAS VOC CONTENT CALCULATIONS:** For the purpose of determining compliance with the VOC regulatory limits in Table 345-1 of this rule, an owner or operator shall determine the VOC content of a coating using the procedures described in Section 503.2 of this rule for a single-stage process or as follows for the VOC content of a multi-stage process.

**503.1 VOC Multi-Stage Calculation:** For the purpose of determining compliance with the VOC content limits in Table 1 of this rule, each regulated entity shall determine the VOC content of a coating using the procedures described in subsection 503.2 for a single coating stage or as follows for the VOC content of a multi stage coating.

$$VOC\ multi = \frac{VOC_{bc} + \sum_{i=0}^m VOC_{mci} + (2VOC_{cc})}{M + 3}$$

Where:

- $VOC_{multi}$  = VOC content regulatory of multi-stage ~~topcoat~~ process, in grams VOC/liter (lbs./gal) of coating;
- $VOC_{bc}$  = VOC content regulatory of the ~~basecoat~~ color coating, as determined in ~~subsection 503.2~~ Section 503.2 of this rule;
- $VOC_{mci}$  = VOC content regulatory of midcoat i, as determined in ~~subsection 503.2~~ Section 503.2 of this rule;
- $VOC_{cc}$  = VOC content regulatory of the ~~clearcoat~~ clear coating, as determined in ~~subsection 503.2~~ Section 503.2 of this rule; and
- $M$  = Number of midcoats.

In a situation where a “ground coat” is used prior to a ~~basecoat~~ color coating, use of the equation shall be adjusted as follows: The ground coat will be considered the ~~basecoat~~ color coating and the ~~basecoat~~ color coating will be considered one of the midcoats.

**503.2 Pounds of VOC per Gallon of Coating (Grams VOC/Liter) VOC Single-Stage Calculation:** The mass of VOC per combined volume of VOC plus coating solids before coating application, which can be calculated by the following equation: Each single-stage process shall be calculated as follows:

$$\text{Pounds of VOC per Gallon (Grams/liter) of Coating} = \frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

Where:

- $W_s$  = weight of all volatile material in pounds (or grams) including VOC, water, non-precursor organic compounds or dissolved vapors
- $W_w$  = weight of water in pounds (or grams)
- $W_{es}$  = weight of ~~non-precursors~~ all non-precursor organic compounds in pounds (or grams)
- $V_m$  = volume of total material in gallons (or liters ~~if using grams~~)
- $V_w$  = volume of water in gallons (or liters ~~if using grams~~)
- $V_{es}$  = volume of non-precursor organic compounds in gallons (or liters)

**503.3 VOC Content of Cleaners and Reducers (Material VOC-Content):**

$$VOC\ Content\ of\ ~~Material~~\ Cleaners\ or\ Reducers = \frac{W_s - W_w - W_{es}}{V_m}$$

Using consistently either English or metric measures in the calculations

Where:

- $W_s$  = weight of all volatile material in pounds (or grams) including VOC, water, non-precursor organic compounds and dissolved vapors
- $W_w$  = weight of water in pounds (or grams)
- $W_{es}$  = weight of all non-precursor organic compounds in pounds (or grams)
- $V_m$  = volume of total material in gallons (or liters)

**504 EMISSION CONTROL SYSTEM (ECS) AND RELATED SYSTEM OPERATING REQUIREMENTS:**

**504.1 ECS Requirements:** To meet the requirements pursuant to Section ~~308~~ 302.3 of this rule, an ECS shall be operated as follows:

- a. The emissions-processing subsystem of the ECS shall reduce the VOC entering it by at least 90 percent.



- b. Throughout the period when the VOC content exceeds the applicable VOC limits, the ECS shall be operated to control VOC emissions.
- c. Materials that exceed the applicable VOC-limits shall be clearly identified such that workers are informed an ECS must be used.

**504.2 Recordkeeping for an ECS:**

- a. On each day that an ECS is used to comply pursuant to Section ~~308~~ 302.3 of this rule, an owner or operator shall record the amount and VOC content of the material for which the ECS was used.
- b. **ECS Operation and Maintenance Records:**
  - (1) On each day an ECS is used, make a permanent record of the operating parameters of the key systems as required by the Operations & Maintenance (O&M) Plan.
  - (2) For each day or period in which the O&M Plan requires that maintenance be performed, a permanent record shall be made of the maintenance actions taken within 24 hours of maintenance completion.

**504.3 ECS Schedule:** Any owner or operator of a facility first intending to install and commence to use an ECS pursuant to ~~Section 308~~ Section 302.3 of this rule, shall submit for the Control Officer’s approval an emission control plan describing the following: the ECS by the first day of the 4th month after the month in which such facility becomes subject to the ECS requirement. The plan shall show how the ECS is to be used to achieve full compliance. The plan shall specify dates for completing increments of progress, such as the contractual arrival date of new control equipment. The Control Officer may require a person submitting such emission control plan to submit subsequent reports on progress in achieving compliance. Any and all ECS used to achieve such compliance shall be in operation by 15 months after the facility becomes subject to the ECS requirement.

- a. Within three months that such facility has become subject to the ECS requirement, the owner or operator shall submit the ECS plan to the Control Officer;
- b. The ECS plan shall show how the ECS is to be used to achieve full compliance;
- c. The plan shall specify dates for completing increments of progress, such as the contractual arrival date of new control equipment;
- d. The Control Officer may require a person submitting such ECS plan to submit subsequent reports on progress in achieving compliance; and
- e. Any and all ECS used to achieve such compliance shall be in operation within 15 months after the facility becomes subject to the ECS requirement.

**504.4 Operation and Maintenance (O&M) Plan Required for ECS:** For any ECS used to meet the requirements of this rule:

- a. An owner or operator shall provide and maintain (an) O&M Plan(s) for the ECS and any ECS monitoring device.
- b. The owner or operator shall submit to the Control Officer for approval the O&M Plans of each ECS and each ECS monitoring device.
- c. The owner or operator shall comply with all the identified actions and schedules provided in each O&M Plan.

**504.5 Providing and Maintaining ECS Monitoring Devices:** ~~Any person~~ Any owner or operator incinerating, adsorbing, or otherwise processing VOC emissions pursuant to this rule shall provide, properly install and maintain in calibration, in good working order and in operation, devices described in the facility’s O&M Plan that indicate temperatures, pressures, rates of flow, or other operating conditions necessary to determine if air pollution control equipment is functioning properly and is properly maintained.

**504.6 O&M Plan Responsibility:** An owner or operator of a facility that is required to have an O&M Plan pursuant to ~~subsection 504.4~~ Section 504.4 of this rule must fully comply with all O&M Plans that the owner or operator has submitted for approval, but which have not yet been approved, unless notified otherwise by the Control Officer in writing.

**505 TEST METHODS ADOPTED BY REFERENCE COMPLIANCE DETERMINATION-TEST METHODS INCORPORATED BY REFERENCE:** The EPA test methods as they exist in the Code of Federal Regulations (CFR) (July 1, 1998), as listed below, are adopted by reference. The other test methods listed here are also adopted by reference, each having paired with it a specific date that identifies the particular version/revision of the method that is adopted by reference. These adoptions by reference include no future editions or amendments. Copies of test methods referenced in this section are available at the Maricopa County Air Quality Department, 1001 N. Central Ave., Phoenix, AZ, 85004. The following test methods are approved for use for the purpose of determining compliance with this rule. The test methods are incorporated by reference in Appendix G of the Maricopa County Air Pollution Control Regulations. Alternative test methods as approved by the Administrator or other EPA-approved test methods may be used upon prior written approval from the Control Officer. When more than one test method is permitted for the same determination, an exceedance under any method will constitute a violation. Copies of test methods referenced in this section are available at the Maricopa County Air Quality Department, 1001 N. Central Avenue, Suite 125, Phoenix, AZ 85004-1942.

**505.1 EPA Test Methods:**

- a. EPA Methods 2 (“Determination of Stack Gas Velocity and Volumetric Flow Rate”), 2a (“Direct Measurement of Gas Volume Through Pipes and Small Ducts”), 2e (“Determination of Stack Gas Velocity and Volumetric Flow rate in Small Stacks or Ducts”), and 2d (“Measurement of Gas volumetric Flow Rates in Small Pipes and Ducts”). All 4 of the foregoing methods are in 40 CFR 60, Appendix A.
- b. EPA Method 18 (“Measurement of Gaseous Organic Compound Emissions by Gas Chromatography”) and its submethods (40-CFR 60, Appendix A).
- e. EPA Test Method 24 (“Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings”) (40 CFR 60, Appendix A).



- d. EPA Method 25 (“Determination of Total Gaseous Nonmethane Organic Emissions as Carbon”) and its submethods (40 CFR 60, Appendix A).
  - e. EPA Test Methods 204 (“Criteria For and Verification Of a Permanent or Temporary Total Enclosure”), 204a, 204b, 204c, 204d, 204e, and 204f (Appendix M, 40 CFR 51).
- 505.2 Other Test Methods (Not EPA):
- a. California’s Bay Area Air Quality Management District (BAAQMD) Method 31 (April 15, 1992), “Determination of Volatile Organic Compounds in Paint Strippers, Solvent Cleaners, and Low Solids Coatings”.
  - b. California’s South Coast Air Quality Management District (SCAQMD) Method 313-91 (April, 1997).
  - e. American Society for Testing and Materials (ASTM) Test Method D 1613-96 (1996).
- 505.3 Other Reference Material: North American Industrial Classification System, Executive Office of the President, Office of Management and Budget, 1997, pp. 334-339, et. seq.
- 505.1 EPA Test Methods:**
- a. 40 CFR Part 60, APPENDIX A-1:
    - (1) Method 2-Determination of stack gas velocity and volumetric flow rate (Type S pitot tube);
    - (2) Method 2A-Direct measurement of gas volume through pipes and small ducts;
    - (3) Method 2C-Determination of stack gas velocity and volumetric flow rate in small stacks or ducts (standard pitot tube);
    - (4) Method 2D-Measurement of gas volume flow rates in small pipes and ducts;
  - b. 40 CFR Part 60, APPENDIX A:  
Method 18-Measurement of Gaseous Organic Compound Emissions by Gas Chromatography and its submethods.
  - c. 40 CFR Part 60, APPENDIX A-7:  
Method 24-Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings.
  - d. 40 CFR Part 60, APPENDIX A:  
Method 25-Determination of Total Gaseous Nonmethane Organic Emissions as Carbon and its submethods.
  - e. 40 CFR Part 51, APPENDIX M:  
Methods 204, 204a, 204b, 204c, 204d, 204e and 204f - Criteria for and Verification of a Permanent or Temporary Total Enclosure.
- 505.2 Other Test Methods (Not EPA):**
- a. California’s Bay Area Air Quality Management District (BAAQMD) Method 31 (April 15, 1992; Amended May 18, 2005), “Determination of Volatile Organic Compounds in Paint Strippers, Solvent Cleaners, and Low Solids Coatings”.
  - b. California’s South Coast Air Quality Management District (SCAQMD) Method 313-91 (April, 1997).
  - c. ASTM D1613-06 (2012), Standard Test Method for Acidity in Volatile Solvents and Chemical Intermediates Used in Paint, Varnish, Lacquer, and Related Products.
  - d. California’s South Coast Air Quality Management District (SCAQMD) “Guidelines for Demonstrating Equivalency with District Approved Transfer Efficient Spray- Guns”(September 26, 2002).
  - e. California’s South Coast Air Quality Management District (SCAQMD) “Spray Equipment Transfer Efficiency Test Procedure for Equipment User” (May 24, 1989).

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**REGISTER INDEXES**

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The *Register* is published by volume in a calendar year (See “Information” in the front of each issue for a more detailed explanation).

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Abbreviations for rulemaking activity in this Index include:

**PROPOSED RULEMAKING**

PN = Proposed new Section  
PM = Proposed amended Section  
PR = Proposed repealed Section  
P# = Proposed renumbered Section

**SUPPLEMENTAL PROPOSED RULEMAKING**

SPN = Supplemental proposed new Section  
SPM = Supplemental proposed amended Section  
SPR = Supplemental proposed repealed Section  
SP# = Supplemental proposed renumbered Section

**FINAL RULEMAKING**

FN = Final new Section  
FM = Final amended Section  
FR = Final repealed Section  
F# = Final renumbered Section

**SUMMARY RULEMAKING****PROPOSED SUMMARY**

PSMN = Proposed Summary new Section  
PSMM = Proposed Summary amended Section  
PSMR = Proposed Summary repealed Section  
PSM# = Proposed Summary renumbered Section

**FINAL SUMMARY**

FSMN = Final Summary new Section  
FSMM = Final Summary amended Section  
FSMR = Final Summary repealed Section  
FSM# = Final Summary renumbered Section

**EXPEDITED RULEMAKING****PROPOSED EXPEDITED**

PEN = Proposed Expedited new Section  
PEM = Proposed Expedited amended Section  
PER = Proposed Expedited repealed Section  
PE# = Proposed Expedited renumbered Section

**SUPPLEMENTAL EXPEDITED**

SPEN = Supplemental Proposed Expedited new Section  
SPEM = Supplemental Proposed Expedited amended Section  
SPER = Supplemental Proposed Expedited repealed Section  
SPE# = Supplemental Proposed Expedited renumbered Section

**FINAL EXPEDITED**

FEN = Final Expedited new Section  
FEM = Final Expedited amended Section  
FER = Final Expedited repealed Section  
FE# = Final Expedited renumbered Section

**EXEMPT RULEMAKING****EXEMPT PROPOSED**

PXN = Proposed Exempt new Section  
PXM = Proposed Exempt amended Section  
PXR = Proposed Exempt repealed Section  
PX# = Proposed Exempt renumbered Section

**EXEMPT SUPPLEMENTAL PROPOSED**

SPXN = Supplemental Proposed Exempt new Section  
SPXR = Supplemental Proposed Exempt repealed Section  
SPXM = Supplemental Proposed Exempt amended Section  
SPX# = Supplemental Proposed Exempt renumbered Section

**FINAL EXEMPT RULMAKING**

FXN = Final Exempt new Section  
FXM = Final Exempt amended Section  
FXR = Final Exempt repealed Section  
FX# = Final Exempt renumbered Section

**EMERGENCY RULEMAKING**

EN = Emergency new Section  
EM = Emergency amended Section  
ER = Emergency repealed Section  
E# = Emergency renumbered Section  
EEXP = Emergency expired

**RECODIFICATION OF RULES**

RC = Recodified

**REJECTION OF RULES**

RJ = Rejected by the Attorney General

**TERMINATION OF RULES**

TN = Terminated proposed new Sections  
TM = Terminated proposed amended Section  
TR = Terminated proposed repealed Section  
T# = Terminated proposed renumbered Section

**RULE EXPIRATIONS**

EXP = Rules have expired

*See also “emergency expired” under emergency rulemaking*

**CORRECTIONS**

C = Corrections to Published Rules

**2016 Arizona Administrative Register  
Volume 22 Page Guide**

Issue 1, Jan. 1, 2016.....1-44	Issue 18, April 29, 2016.....917-1016	Issue 35, Aug. 26, 2016.....2235-2302
Issue 2, Jan. 8, 2016.....45-74	Issue 19, May 6, 2016.....1017-1086	Issue 36, Sept. 2, 2016.....2303-2426
Issue 3, Jan. 15, 2016.....75-100	Issue 20, May 13, 2016.....1087-1284	Issue 37, Sept. 9, 2016.....2427-2550
Issue 4, Jan. 22, 2016.....101-134	Issue 21, May 20, 2016.....1285-1336	Issue 38, Sept. 16, 2016.....2551-2588
Issue 5, Jan. 29, 2016.....135-172	Issue 22, May 27, 2016.....1337-1374	Issue 39, Sept. 23, 2016.....2589-2678
Issue 6, Feb. 5, 2016.....173-214	Issue 23, June 3, 2016.....1375-1410	Issue 40, Sept. 30, 2016.....2679-2864
Issue 7, Feb. 12, 2016.....215-250	Issue 24, June 10, 2016.....1411-1585	Issue 41, Oct. 7, 2016.....2865-2942
Issue 8, Feb. 19, 2016.....251-362	Issue 25, June 17, 2016.....1587-1632	Issue 42, Oct. 14, 2016.....2943-3008
Issue 9, Feb. 26, 2016.....363-406	Issue 26, June 24, 2016.....1633-1670	Issue 43, Oct. 21, 2016.....3009-3052
Issue 10, March 4, 2016.....407-544	Issue 27, July 1, 2016.....1671-1722	Issue 44, Oct. 28, 2016.....3053-3134
Issue 11, March 11, 2016.....545-598	Issue 28, July 8, 2016.....1723-1772	Issue 45, Nov. 4, 2016.....3135-3174
Issue 12, March 18, 2016.....599-662	Issue 29, July 15, 2016.....1773-1874	Issue 46, Nov. 11, 2016.....3175-3224
Issue 13, March 25, 2016.....663-692	Issue 30, July 22, 2016.....1875-1936	Issue 47, Nov. 18, 2016.....3225-3274
Issue 14, April 1, 2016.....693-726	Issue 31, July 29, 2016.....1937-2010	Issue 48, Nov. 25, 2016.....3275-3356
Issue 15, April 8, 2016.....727-800	Issue 32, Aug. 5, 2016.....2011-2074	Issue 49, Dec. 2, 2016.....3357-3394
Issue 16, April 15, 2016.....801-846	Issue 33, Aug. 12, 2016.....2075-2162	Issue 50, Dec. 9, 2016.....3395-3464
Issue 17, April 22, 2016.....847-916	Issue 34, Aug. 19, 2016.....2163-2234	Issue 51, Dec. 16, 2016.....3465-3560

**RULEMAKING ACTIVITY INDEX**

Rulemakings are listed in the Index by Chapter, Section number, rulemaking activity abbreviation and by volume page number. Use the page guide above to determine the *Register* issue number to review the rule. Headings for the Subchapters, Articles, Parts, and Sections are not indexed.

**THIS INDEX INCLUDES RULEMAKING ACTIVITY THROUGH ISSUE 51 OF VOLUME 22.**

<b>Acupuncture Board of Examiners</b>	R4-8-101.	PM-697; FM-2175	R3-2-801.	PM-1023; FM-2169	R9-22-712.61	PM-761; FM-2187	
	Table 1.	PM-697; FM-2175	R3-2-806.	PM-1023; FM-2169	R9-22-712.66	PM-761; FM-2187	
	R4-8-203.	PM-697; FM-2175	<b>Agriculture, Department of - Environmental Services Division</b>		R9-22-712.67	PM-761; FM-2187	
	R4-8-403.	PM-697; FM-2175	R3-3-208.	FM-367	R9-22-712.71	PM-761; FM-2187	
	R4-8-407.	PM-697; FM-2175	<b>Agriculture, Department of - Agricultural Councils and Commissions</b>		R9-22-712.75	PM-761; FM-2187	
	R4-8-411.	EXP-14	R3-9-105.	EXP-1393	R9-22-712.90.	SPN-1945	
	R4-8-412.	EXP-14	<b>Arizona Health Care Cost Containment System - Administration</b>		R9-22-730.	FXM-2050	
	R4-8-502.	PM-697; FM-2175	R9-22-401.	PN-1289; FN-3191	<b>Arizona Health Care Cost Containment System - Arizona Long-term Care System</b>		
	<b>Agriculture, Department of - Animal Services Division</b>	R3-2-202.	PM-1021; FM-2167	R9-22-402.	PN-1289; FN-3191	R9-28-702.	PM-2015; FM-3332
		R3-2-405.	EM-1750	R9-22-403.	PN-1289; FN-3191	<b>Arizona Health Care Cost Containment System - Behavioral Health Services for Persons with Serious Mental Illness</b>	
R3-2-411.		FXM-2400	R9-22-404.	PN-1289; FN-3191	R9-21-101.	PM-731; FM-2019	
R3-2-601.		EM-1750	R9-22-405.	PN-1289; FN-3191	R9-21-102.	PM-731; FM-2019	
R3-2-602.		EM-1750	R9-22-406.	PN-1289; FN-3191	R9-21-103.	PM-731; FM-2019	
R3-2-603.		EM-1750	R9-22-407.	PN-1289; FN-3191	R9-21-104.	PM-731; FM-2019	
R3-2-605.		EM-1750	R9-22-408.	PN-1289; FN-3191	R9-21-105.	PM-731; FM-2019	
R3-2-606.		EM-1750	R9-22-701.	PM-761; FM-2187	R9-21-106.	PM-731; FM-2019	
R3-2-608.		EM-1750	R9-22-712.15.	PM-770	R9-21-201.	PM-731; FM-2019	
R3-2-609.		EM-1750	R9-22-712.35.	PM-761; FM-2187			
R3-2-610.		EM-1750	R9-22-712.60.	FM-2187			
R3-2-611.		EM-1750					
R3-2-617.		ER-1750					
R3-2-618.	ER-1750						
R3-2-702.	FXM-2400						
R3-2-703.	FXM-2400						

R9-21-203.	PM-731; FM-2019	R4-6-211.	FXM-3238	R21-8-112.	PM-3181
R9-21-204.	PM-731; FM-2019	R4-6-212.	FXM-3238	R21-8-113.	PM-3181
R9-21-205.	PM-731; FM-2019	R4-6-212.01.	FXM-3238	<b>Clean Elections Commission, Citizens</b>	
R9-21-206.	PM-731; FM-2019	R4-6-214.	FXM-3238	R2-20-101.	PXM-3016
R9-21-206.01.	PM-731; FM-2019	R4-6-301.	FXM-3238	R2-20-104.	PXM-3018
R9-21-208.	PM-731; FM-2019	R4-6-304.	FXM-3238	R2-20-105.	PXM-3021
R9-21-209.	PM-731; FM-2019	R4-6-306.	FXM-3238	R2-20-107.	PXM-3023
Exhibit A	PM-731; FM-2019	R4-6-402.	FXM-3238	R2-20-109.	PXM-1744; PXM-1777; PXM-1883; FXM-2892; PXM-3025
R9-21-301.	PM-731; FM-2019	R4-6-403.	FXM-3238	R2-20-110.	PX#-1888; PXM-1888; FXM-2897; PXM-3096
R9-21-303.	PM-731; FM-2019	R4-6-502.	FXM-3238	R2-20-111.	PX#-1891; PXM-1891; FXM-2899; PXM-3098
R9-21-307.	PM-731; FM-2019	R4-6-601.	FXM-3238	R2-20-112.	PXM-3100
R9-21-309.	PM-731; FM-2019	R4-6-602.	FXM-3238	R2-20-114.	PX#-1893; PXN-1893; FXN-2902
R9-21-310.	PM-731; FM-2019	R4-6-603.	FXM-3238	R2-20-115.	PX#-1895; PXN-1895; FXN-2904; PXM-3102
R9-21-311.	PM-731; FM-2019	R4-6-701.	FXM-3238	R2-20-402.01.	PXM-3104
R9-21-401.	PM-731; FM-2019	R4-6-702.	FXM-3238	R2-20-402.02.	PXN-3106
R9-21-402.	PM-731; FM-2019	R4-6-703.	FXM-3238	R2-20-702.	PXM-1897; FXN-2906
R9-21-403.	PM-731; FM-2019	R4-6-704.	FXM-3238	R2-20-703.	PXM-3107
R9-21-404.	PM-731; FM-2019	R4-6-705.	FXM-3238	<b>Corporation Commission - Fixed Utilities</b>	
R9-21-405.	PM-731; FM-2019	R4-6-802.	FXM-3238	R14-2-802.	PM-411; FM-1949
R9-21-406.	PM-731; FM-2019	<b>Barbers, Board of</b>		<b>Corporation Commission - Transportation</b>	
R9-21-407.	PM-731; FM-2019	R4-5-103.	PR-3179	R14-5-202.	EM-5; EM-1637; FM-2869
R9-21-408.	PM-731; FM-2019	<b>Charter Schools, State Board for</b>		R14-5-203.	EM-5; EM-1637; FM-2869
R9-21-409.	PM-731; FM-2019	R7-5-101.	PM-3057	R14-5-204.	EM-5; EM-1637; FM-2869
R9-21-410.	PM-731; FM-2019	R7-5-201.	PM-3057	R14-5-205.	EM-5; EM-1637; FM-2869
<b>Arizona Health Care Cost Containment System - Medicare Part D Prescription Coverage Extra Help Subsidy Program</b>		R7-5-202.	PM-3057	R14-5-207.	EM-5; EM-1637; FM-2869
R9-30-201.	PM-805	R7-5-203.	PM-3057	<b>Cosmetology, Board of</b>	
R9-30-202.	PR-805	R7-5-204.	PM-3057	R4-10-108.	PM-1941; FM-3329
R9-30-203.	PM-805	R7-5-205.	PM-3057	<b>Deaf and the Hard of Hearing, Commission for</b>	
R9-30-204.	PR-805; PN-805	R7-5-206.	PM-3057	R9-26-101.	P#-177; F#-1675
R9-30-205.	PR-805	R7-5-207.	PM-3057	R9-26-201.	P#-177; PM-177; F#-1675; FM-1675
R9-30-206.	PR-805	R7-5-208.	PN-3057	R9-26-202.	P#-177; PM-177; F#-1675; FM-1675
R9-30-207.	PM-805	R7-5-208.	PN-3057	R9-26-203.	P#-177; PM-177; F#-1675; FM-1675
R9-30-208.	PR-805	R7-5-301.	P#-3057; PN-3057	R9-26-204.	P#-177; PM-177; F#-1675; FM-1675
R9-30-209.	PM-805	R7-5-302.	P#-3057; PN-3057	R9-26-205.	P#-177; PM-177; F#-1675; FM-1675
R9-30-210.	PR-805	R7-5-303.	P#-3057; PN-3057	R9-26-206.	P#-177; F#-1675;
R9-30-211.	PR-805	R7-5-304.	P#-3057; PN-3057		
R9-30-212.	PM-805	R7-5-401.	P#-3057; PN-3057		
R9-30-213.	PM-805	R7-5-402.	PN-3057		
R9-30-214.	PM-805	R7-5-403.	PN-3057		
R9-30-215.	PM-805	R7-5-404.	PN-3057		
R9-30-216.	PM-805	R7-5-501.	PR-3057; P#-3057; PM-3057		
R9-30-218.	PR-805	R7-5-502.	PR-3057; P#-3057; PM-3057		
R9-30-401.	PR-805	R7-5-503.	PR-3057; PN-3057		
R9-30-402.	PR-805	R7-5-504.	PR-3057; PN-3057		
<b>Behavioral Health Examiners, Board of</b>		R7-5-505.	PN-3057		
R4-6-101.	FXM-3238	R7-5-506.	PN-3057		
R4-6-205.	FXM-3238	R7-5-507.	PN-3057		
		R7-5-508.	PN-3057		
		R7-5-509.	PN-3057		
		R7-5-510.	P#-3057; PM-3057		
		R7-5-601.	P#-3057; PM-3057		
		R7-5-602.	PN-3057		
		R7-5-603.	PN-3057		
		R7-5-604.	PN-3057		
		R7-5-605.	PN-3057		
		R7-5-606.	PN-3057		
		R7-5-607.	PN-3057		
		<b>Child Safety, Department of - Foster Home and Child Welfare Agency Facility Safety</b>			

R9-26-207.	P#-177; PN-177 F#-1675; FN-1675	R6-5-5201.	FXR-1607; FXN-1607 PM-1029;	R6-5-7012. R6-5-7013. R6-5-7014.	EXP-2567 EXP-2567 EXP-2567
R9-26-301.	PR-177; P#-177; PM-177; FR-1675; F#-1675; FM-1675;	R6-5-5202. R6-5-5207.	FM-3185 PM-1029; FM-3185 PM-1029;	R6-5-7015. R6-5-7016. R6-5-7017. R6-5-7018.	EXP-2567 EXP-2567 EXP-2567 EXP-2567
R9-26-302.	PR-177; P#-177; FR-1675; F#-1675	R6-5-5217. R6-5-5218.	FM-3185 PM-1029; FM-3185 PM-1029;	R6-5-7019. R6-5-7020. R6-5-7021. R6-5-7022.	EXP-2567 EXP-2567 EXP-2567 EXP-2567
R9-26-303.	PR-177; P#-177; PM-177; FR-1675; F#-1675;	R6-5-5219. R6-5-6501. R6-5-6502.	FM-3185 PM-1029; FM-3185 EXP-2567	R6-5-7023. R6-5-7024. R6-5-7025. R6-5-7026.	EXP-2567 EXP-2567 EXP-2567 EXP-2567
R9-26-304.	PR-177; PM-177; F#-1675; FM-1675	R6-5-6503. R6-5-6503.01. R6-5-6504. R6-5-6505.	EXP-2567 EXP-2567 EXP-2567 EXP-2567	R6-5-7027. R6-5-7028. R6-5-7029. R6-5-7030.	EXP-2567 EXP-2567 EXP-2567 EXP-2567
R9-26-501.	PM-177; FM-1675	R6-5-6506. R6-5-6507.	EXP-2567 EXP-2567	R6-5-7031. R6-5-7032.	EXP-2567 EXP-2567
R9-26-502.	PM-177; FM-1675	R6-5-6508. R6-5-6509.	EXP-2567 EXP-2567	R6-5-7033. R6-5-7034.	EXP-2567 EXP-2567
R9-26-503.	PM-177; FM-1675	R6-5-6510. R6-5-6511.	EXP-2567 EXP-2567	R6-5-7035. R6-5-7036.	EXP-2567 EXP-2567
R9-26-504.	PM-177; FM-1675	R6-5-6601. R6-5-6602.	EXP-2567 EXP-2567	R6-5-7037. R6-5-7038.	EXP-2567 EXP-2567
R9-26-505.	PM-177; FM-1675	R6-5-6603. R6-5-6604.	EXP-2567 EXP-2567	R6-5-7039. R6-5-7040.	EXP-2567 EXP-2567
R9-26-506.	PM-177; FM-1675	R6-5-6605. R6-5-6606.	EXP-2567 EXP-2567	R6-5-8001. R6-5-8002.	EXP-2567 EXP-2567
R9-26-507.	PM-177; FM-1675	R6-5-6607. R6-5-6608.	EXP-2567 EXP-2567	R6-5-8003. R6-5-8004.	EXP-2567 EXP-2567
R9-26-508.	PM-177; FM-1675	R6-5-6609. R6-5-6610.	EXP-2567 EXP-2567	R6-5-8005. R6-5-8006.	EXP-2567 EXP-2567
R9-26-509.	PM-177; FM-1675	R6-5-6611. R6-5-6612.	EXP-2567 EXP-2567	R6-5-8007. R6-5-8008.	EXP-2567 EXP-2567
R9-26-510.	PM-177; FM-1675	R6-5-6613. R6-5-6614.	EXP-2567 EXP-2567	R6-5-8009. R6-5-8010.	EXP-2567 EXP-2567
R9-26-511.	PR-177; PN-177; FR-1675; FN-1675	R6-5-6615. R6-5-6616.	EXP-2567 EXP-2567	<b>Economic Security, Department of - The JOBS Program</b>	
R9-26-512.	PM-177; FM-1675	R6-5-6617. R6-5-6618.	EXP-2567 EXP-2567	R6-10-118. R6-10-125.	EXP-1393 EXP-1393
R9-26-515.	P#-177; PN-177; F#-1675; FN-1675	R6-5-6619. R6-5-6620.	EXP-2567 EXP-2567	R6-10-126. R6-10-304.	EXP-1393 EXP-1393
R9-26-516.	P#-177; F#-1675	R6-5-6621. R6-5-6622.	EXP-2567 EXP-2567	<b>Education, State Board of</b>	
R9-26-517.	PM-177; FM-1675	R6-5-6623. R6-5-6624.	EXP-2567 EXP-2567	R7-2-201. R7-2-300. R7-2-301.	FXM-2239 FXN-143 FXM-143
R9-26-518.	PM-177; FM-1675	R6-5-6701. R6-5-6702.	EXP-2567 EXP-2567	R7-2-302. R7-2-302.01.	FXM-143; FNM-197 FXR-143
<b>Dental Examiners, State Board of</b>		R6-5-6703. R6-5-6704.	EXP-2567 EXP-2567	R7-2-302.02. R7-2-302.04.	FXR-143 FXR-143
R4-11-201.	FM-371	R6-5-6705. R6-5-6706.	EXP-2567 EXP-2567	R7-2-302.05. R7-2-302.06.	FX#-111; FXN-111
R4-11-202.	FM-371	R6-5-6707. R6-5-6708.	EXP-2567 EXP-2567	R7-2-302.07. R7-2-302.08.	FX#-111; FXR-143
R4-11-203.	FM-371	R6-5-6709. R6-5-6710.	EXP-2567 EXP-2567	R7-2-302.09. R7-2-302.10.	FX#-111; FXR-143
R4-11-204.	FM-371	R6-5-6711. R6-5-6712.	EXP-2567 EXP-2567	R7-2-317. R7-2-603.	FXN-111; FXM-143; FXR-197
R4-11-301.	FM-371	R6-5-6713. R6-5-7001.	EXP-2567 EXP-2567	R7-2-607. R7-2-612.01.	FXN-111; FXN-143
R4-11-302.	FR-371	R6-5-7002. R6-5-7003.	EXP-2567 EXP-2567	R7-2-614. R7-2-617.	FXM-648 FXN-2617
R4-11-303.	FM-371	R6-5-7004. R6-5-7005.	EXP-2567 EXP-2567		FXM-667; FXM-2617
R4-11-304.	FM-371	R6-5-7006. R6-5-7007.	EXP-2567 EXP-2567		
R4-11-305.	FM-371	R6-5-7008. R6-5-7009.	EXP-2567 EXP-2567		
R4-11-401.	FM-2307	R6-5-7010. R6-5-7011.	EXP-2567 EXP-2567		
R4-11-402.	FM-2307				
R4-11-403.	FN-2307				
R4-11-405.	FM-2307				
R4-11-406.	FM-2307				
<b>Economic Security, Department of - Developmental Disabilities</b>					
R6-6-1401.	EXP-14				
<b>Economic Security, Department of - Social Services</b>					
Appendix A.	FXR-1603; FXN-1603;				

R7-2-615.	FXM-219; FXM-227; FXM-233; FXM-670; FXM-1912; FXM-2241	R18-2-B1301. PN-3279 R18-2-B1301.01. PN-3279 R18-2-B1302. PN-3279 R18-2-C1301. PN-3279 R18-2-C1302. PN-3279	R12-4-708. PM-810; FR-2200
R7-2-616.	FXM-219	<b>Environmental Quality, Department of - Hazardous Waste Management</b>	R12-4-801. FXM-951
R7-2-619.	FXM-648; FXM-2246	R18-8-201. EXP-2983	R12-4-802. FXM-951; FXM-2209
R7-2-621.	FXM-219; FXM-227; FXM-2248	<b>Environmental Quality, Department of - Safe Drinking Water</b>	R12-4-803. FXM-951; FXM-2209
<b>Environmental Quality, Department of - Air Pollution Control</b>		R18-4-102. FM-379 R18-4-103. FM-379 R18-4-105. FM-379 R18-4-121. FM-379 R18-4-126. FN-379 R18-4-210. FM-379	<b>Health Services, Department of - Health Care Institutions: Licensing</b>
R18-2-611. FXM-987		<b>Environmental Quality, Department of - Solid Waste Management</b>	R9-10-101. FXM-1035
R18-2-611.01. FXM-987		R18-13-902. EXP-2983	R9-10-119. PN-139; EM-420; FN-1343
R18-2-709. EXP-15		R18-13-2701. EXP-2984	R9-10-707. FXM-1035
R18-2-711. EXP-15		R18-13-2702. EXP-2984	R9-10-1002. FXM-1035
R18-2-712. EXP-15		R18-13-2703. EXP-2984	R9-10-1025. FXM-1035
R18-2-713. EXP-15		<b>Environmental Quality, Department of - Underground Storage Tanks</b>	R9-10-1030. FXM-1035
R18-2-717. EXP-15		R18-12-802. EXP-2983	R9-10-1031. FXN-1035
R18-2-732. EXP-15		<b>Environmental Quality, Department of - Water Pollution Control</b>	<b>Health Services, Department of - Labo- ratories</b>
R18-2-101. PM-2431		R18-9-704. FM-1696	R9-14-601. PM-1415; FM-2683
R18-2-102. PM-2431		<b>Environmental Quality, Department of - Water Quality Standards</b>	R9-14-602. PM-1415; FM-2683
R18-2-201. PM-2431		R18-11-106. TM-343; PM-255; FM-2328	R9-14-603. PM-1415; FM-2683
R18-2-203. PM-2431		R18-11-109. TM-343; PM-255; FM-2328	R9-14-605. PM-1415; FM-2683
R18-2-217. PM-2431		R18-11-110. TM-343; PM-255; FM-2328	R9-14-606. PM-1415; FM-2683
R18-2-218. PM-2431		R18-11-112. TM-343; PM-255; FM-2328	R9-14-607. PM-1415; FM-2683
R18-2-301. PM-2431		R18-11-115. TM-343; PM-255; FM-2328	R9-14-608. PM-1415; FM-2683
R18-2-302. PM-2431		R18-11-121. TM-343; PM-255; FM-2328	R9-14-609. PM-1415; FM-2683
R18-2-302.01. PM-2431		Appendix A. TM-343; PM-255; FM-2328	R9-14-610. PM-1415; FM-2683
R18-2-303. PM-2431		Appendix B. TM-343; PM-255; FM-2328	R9-14-611. PM-1415; FM-2683
R18-2-304. PM-2431		Appendix C. TM-343; PM-255; FM-2328	R9-14-612. PM-1415; FM-2683
R18-2-306. PM-2431		<b>Game and Fish Commission</b>	R9-14-613. PM-1415; FM-2683
R18-2-306.01. PM-2431		R12-4-402. PM-2558	R9-14-614. PM-1415; FM-2683
R18-2-306.02. PM-2431; EXP-2982		R12-4-701. PM-810; FM-2200	R9-14-615. PM-1415; FM-2683
R18-2-307. PM-2431		R12-4-702. PM-810; FM-2200	R9-14-616. PM-1415; FM-2683
R18-2-311. PM-2431		R12-4-703. PM-810; FR-2200	R9-14-617. PM-1415; FM-2683
R18-2-312. PM-2431		R12-4-704. PM-810; FR-2200	R9-14-620. PM-1415; FM-2683
R18-2-319. PM-2431		R12-4-705. PM-810; FR-2200	R9-14-621. PM-1415; FM-2683
R18-2-320. PM-2431		R12-4-706. PM-810; FR-2200	Table 1. P#-1415; F#-2683
R18-2-324. PM-2431		R12-4-707. PM-810; FR-2200	Table 6.1. P#-1415; PM-1415; F#-2683; FM-2683
R18-2-326. PM-2431			Exhibit I. PR-1415; FR-2683
R18-2-327. PM-2431			Exhibit II. PR-1415; FR-2683
R18-2-330. PM-2431			Table 6.2.A. PN-1415; FN-2683
R18-2-332. PM-2431			Table 6.2.B. PN-1415; FN-2683
R18-2-334. PM-2431			Table 6.2.C. PN-1415; FN-2683
R18-2-401. PM-2431			
R18-2-402. PM-2431			
R18-2-403. PM-2431			
R18-2-404. PM-2431			
R18-2-405. PM-2431			
R18-2-406. PM-2431			
R18-2-407. PM-2431			
R18-2-408. PM-2431			
R18-2-410. PM-2431			
R18-2-411. PN-2431			
R18-2-412. PM-2431			
R18-2-502. PM-2431			
R18-2-503. PM-2431			
R18-2-504. PM-2431			
R18-2-507. PR-2431			
R18-2-508. PR-2431			
R18-2-512. PM-2431			
R18-2-513. PM-2431			
R18-2-514. PN-2431			
R18-2-515. PN-2431			
R18-2-715. PM-3279			
R18-2-715.01. PM-3279			
Appendix 14. PN-3279			
Appendix 15. PN-3279			
R18-2-1205. PM-2431			
Appendix 1. PR-2431			



Table 6.2.D.	PN-1415; FN-2683	<b>Records and Statistics</b>	R9-19-405.	FXR-1782
Table 6.2.E.	PN-1415; FN-2683	R9-19-101.	R9-19-406.	FXR-1782
Table 6.3.	PN-1415; FN-2683	R9-19-102.	R9-19-408.	FXR-1782
Table 6.4.	PN-1415; FN-2683	R9-19-103.	R9-19-412.	FXR-1782
		R9-19-104.	R9-19-413.	FX#-1782
		R9-19-105.	R9-19-414.	FXR-1782
			<b>Industrial Commission of Arizona</b>	
<b>Health Services, Department of - Loan Repayment Program</b>		R9-19-106.	R20-5-601.	FM-773; FM-1391; PM-2561
R9-15-101.	FXM-851	R9-19-108.	R20-5-602.	FM-773; PM-2561
R9-15-201.	FXR-851; FXN-851	R9-19-109.	R20-5-629.	FM-775; PM-2561
R9-15-202.	FXR-851; FXN-851	R9-19-111.	R20-5-715.	PM-416; FM-2782
R9-15-203.	FXR-851; FXN-851	R9-19-112.01.	R20-5-1301.	FM-1730
R9-15-204.	FXR-851; FXN-851	R9-19-114.	R20-5-1302.	FM-1730
R9-15-205.	FXR-851; FXN-851	R9-19-115.	R20-5-1303.	FM-1730
R9-15-205.01.	FXR-851; FXN-851	R9-19-116.	R20-5-1304.	FM-1730
R9-15-206.	FXR-851; FXN-851	R9-19-117.	R20-5-1305.	FM-1730
Table 2.1.	FXR-851	R9-19-118.	R20-5-1306.	FM-1730
R9-15-207.	FXR-851; FXN-851	R9-19-120.	R20-5-1307.	FM-1730
R9-15-208.	FXR-851; FXN-851	R9-19-201.	R20-5-1308.	FM-1730
R9-15-209.	FXR-851; FXN-851	R9-19-202.	R20-5-1309.	FM-1730
R9-15-210.	FXR-851; FXN-851	R9-19-203.	R20-5-1310.	FM-1730
R9-15-211.	FXR-851; FXN-851	R9-19-204.	R20-5-1311.	FM-1730
R9-15-212.	FXR-851; FXN-851	R9-19-205.	R20-5-1312.	FM-1730
R9-15-213.	FXR-851; FXN-851	R9-19-206.	<b>Insurance, Department of</b>	
R9-15-214.	FXR-851; FXN-851	R9-19-207.	R20-6-111.	EXP-3374
R9-15-215.	FXR-851; FXN-851	R9-19-208.	R20-6-112.	EXP-3374
R9-15-216.	FXR-851	R9-19-209.	R20-6-206.	EXP-3374
R9-15-217.	FXR-851	R9-19-210.	R20-6-308.	EXP-3374
R9-15-218.	FXR-851	R9-19-211.	<b>Lottery Commission, Arizona State</b>	
R9-15-301.	FXR-851	R9-19-212.	R19-3-201.	FM-1379
R9-15-302.	FXR-851	R9-19-213.	R19-3-202.	FM-1379
R9-15-303.	FXR-851	R9-19-214.	R19-3-202.01.	FM-1379
R9-15-304.	FXR-851	R9-19-215.	R19-3-202.03.	FM-1379
R9-15-305.	FXR-851	R9-19-301.	R19-3-202.04.	FM-1379
R9-15-306.	FXR-851	R9-19-302.	R19-3-204.	FM-1379
R9-15-307.	FXR-851	R9-19-303.	R19-3-204.02.	FM-1379
R9-15-308.	FXR-851	R9-19-304.	R19-3-205.	FM-1379
R9-15-309.	FXR-851	R9-19-305.	R19-3-210.	FM-1379
R9-15-310.	FXR-851	R9-19-306.	R19-3-211.	FM-1379
R9-15-311.	FXR-851	R9-19-307.	R19-3-214.	FM-1379
R9-15-312.	FXR-851	R9-19-308.	R19-3-217.	FM-1379
R9-15-313.	FXR-851	R9-19-309.	R19-3-501.	PM-1091; FM-2966
R9-15-314.	FXR-851	R9-19-310.	R19-3-505.	PM-1091; FM-2966
R9-15-315.	FXR-851	R9-19-311.	R19-3-506.	PM-1091; FM-2966
R9-15-316.	FXR-851	R9-19-312.	R19-3-508.	PM-1091; FM-2966
R9-15-317.	FXR-851	R9-19-313.	R19-3-509.	PM-1091; FM-2966
R9-15-318.	FXR-851	R9-19-314.	R19-3-510.	PM-1091; FM-2966
R9-15-101.	FXR-851	R9-19-315.	R19-3-514.	PM-1091; FM-2966
R9-15-101.	FXR-851	R9-19-316.	R19-3-517.	PM-1091; FM-2966
R9-15-101.	FXR-851	R9-19-317.	R19-3-518.	PM-1091; FM-2966
<b>Health Services, Department of - Medical Marijuana Program</b>		R9-19-402.	R19-3-521.	PM-1091; FM-2966
R9-17-202.	PM-3399	R9-19-403.	R19-3-523.	PM-1091; FM-2966
R9-17-204.	PM-3399	R9-19-404.	R19-3-524.	PM-1091; FM-2966
R9-17-310.	PM-3399			
<b>Health Services, Department of - Vital</b>				



R4-26-404.2.	PN-2318	R4-45-101.	PM-549;	R15-3-201.	FXM-1843
R4-26-405.	PM-2318		FM-2181	R15-3-301.	FXM-1843
R4-26-406.	PM-2318	R4-45-102.	PM-549;	R15-3-302.	FXR-1843
R4-26-407.	PM-2318		FM-2181	R15-3-303.	FXR-1843
R4-26-408.	PM-2318	R4-45-105.	PM-549;	R15-3-304.	FXM-1843
R4-26-409.	PM-2318		FM-2181	R15-3-305.	FXM-1843
R4-26-410.	PM-2318	R4-45-201.	PM-549;	R15-3-306.	FXN-1843
R4-26-414.	PM-2318		FM-2181	R15-3-307.	FXM-1843
R4-26-417.	PM-2318	R4-45-203.	PM-549;	R15-3-308.	FXM-1843
			FM-2181	R15-3-309.	FXM-1843
<b>Public Safety, Department of - Alcohol Testing</b>		R4-45-205.	PR-549;	R15-3-310.	FXM-1843
Exhibit E-1.	EXP-2054		FM-2181	R15-3-311.	FXR-1843
Exhibit E-2.	EXP-2054	R4-45-213.	PM-549;	R15-3-312.	FXR-1843
Exhibit E-3.	EXP-2054		FR-2181	R15-3-313.	FXM-1843
Exhibit E-4.	EXP-2054	R4-45-218.	PM-549;	R15-3-314.	FXM-1843
Exhibit E-5.	EXP-2054		FM-2181	R15-3-315.	FXN-1843
Exhibit E-6.	EXP-2054	<b>Retirement System Board, State</b>		R15-3-316.	FXM-1843
Exhibit F-1.	EXP-2054	R2-8-115.	FM-79	R15-3-317.	FXM-1843
Exhibit F-2.	EXP-2054	R2-8-116.	PN-107;	R15-3-318.	FXM-1843
Exhibit F-3.	EXP-2054		FN-1341	R15-3-319.	FXN-1843
Exhibit F-4.	EXP-2054	R2-8-117.	PN-3013	R15-3-501.	FXM-1843
Exhibit F-5.	EXP-2054	R2-8-118.	FM-79		
<b>Radiation Regulatory Agency</b>		R2-8-122.	FM-79	<b>Revenue, Department of - Transaction Privilege and Use Tax Section</b>	
R12-1-102.	FM-603	R2-8-126.	FM-79;	R15-5-175.	EXP-2054
R12-1-303.	FM-603		PM-1727;	<b>Secretary of State, Office of the</b>	
R12-1-306.	FM-603		FM-3081	R2-12-101.	PN-3361
R12-1-308.	FM-603	R2-8-201.	PN-3469	R2-12-102.	PN-3361
R12-1-311.	FM-603	R2-8-202.	PN-3469	R2-12-103.	PN-3361
R12-1-313.	FM-603	R2-8-203.	PN-3469	R2-12-104.	PN-3361
R12-1-320.	FM-603	R2-8-204.	PN-3469	R2-12-105.	PN-3361
R12-1-323.	FM-603	R2-8-205.	PN-3469	R2-12-106.	PN-3361
R12-1-418.	FM-603	R2-8-206.	PN-3469	R2-12-107.	PN-3361
R12-1-452.	FM-603	R2-8-207.	PN-3469	R2-12-108.	PN-3361
R12-1-503.	FM-603	R2-8-401.	PM-2555;	R2-12-109.	PN-3361
R12-1-703.	FM-603		SPM-3234	R2-12-110.	PN-3361
R12-1-1302.	FM-603	R2-8-403.	PM-2555;	R2-12-111.	PN-3361
R12-1-1512.	FM-603		SPM-3234	R2-12-402.	PM-109
R12-1-1901.	FN-603	R2-8-405.	PM-2555;	<b>Secretary of State - Rules and Rulemaking</b>	
R12-1-1903.	FN-603		SPM-3234	R1-1-107.	PM-105
R12-1-1905.	FN-603	R2-8-516.	EXP-3195	<b>Transportation, Department of - Commercial Programs</b>	
R12-1-1907.	FN-603	R2-8-517.	EXP-3195	R17-5-403.	EXP-3195
R12-1-1909.	FN-603	R2-8-602.	PM-1879;	R17-5-901.	PR-2597;
R12-1-1911.	FN-603		FM-3323		PN-2597
R12-1-1921.	FN-603	R2-8-603.	PM-1879;		PN-2597
R12-1-1923.	FN-603		FM-3323	R17-5-902.	PR-2597;
R12-1-1925.	FN-603	R2-8-604.	PM-1879;		PN-2597
R12-1-1927.	FN-603		FM-3323	R17-5-903.	PR-2597;
R12-1-1929.	FN-603	R2-8-605.	PM-1879;		PN-2597
R12-1-1931.	FN-603		FM-3323	R17-5-904.	PR-2597;
R12-1-1933.	FN-603	R2-8-606.	PM-1879;		PN-2597
R12-1-1941.	FN-603		FM-3323	R17-5-905.	PR-2597;
R12-1-1943.	FN-603	R2-8-607.	PM-1879;		PN-2597
R12-1-1945.	FN-603		FM-3323	R17-5-906.	PR-2597;
R12-1-1947.	FN-603	R2-8-704.	PM-2079;		PN-2597
R12-1-1949.	FN-603		FM-3326	R17-5-1001.	PN-2597
R12-1-1951.	FN-603	R2-8-706.	PM-2079;	R17-5-1001.	PN-2597
R12-1-1953.	FN-603		FM-3326	R17-5-1001.	PN-2597
R12-1-1955.	FN-603	R2-8-708.	EXP-2982	R17-5-1001.	PN-2597
R12-1-1957.	FN-603	<b>Revenue, Department of - General Administration</b>		R17-5-1001.	PN-2597
R12-1-1971.	FN-603	R15-10-105.	FXM-116	R17-5-1001.	PN-2597
R12-1-1973.	FN-603	R15-10-501.	FXM-116;	R17-5-1001.	PN-2597
R12-1-1975.	FN-603		FXM-1852	R17-5-1001.	PN-2597
R12-1-1977.	FN-603	R15-10-502.	FXM-116	R17-5-1001.	PN-2597
R12-1-1979.	FN-603	R15-10-504.	FXM-116	R17-5-1001.	PN-2597
R12-1-1981.	FN-603	R15-10-505.	FXN-116;	R17-5-1001.	PN-2597
R12-1-19101.	FN-603		FXM-1852	R17-5-1001.	PN-2597
R12-1-19103.	FN-603	R15-10-506.	FXN-1852	<b>Transportation, Department of - Title, Registration, and Driver Licenses</b>	
R12-1-19105.	FN-603	R15-10-702.	EN-2621	R17-4-407.	PXN-194;
R12-1-19107.	FN-603	R15-10-703.	EN-2621		FXN-819;
R12-1-19109.	FN-603	R15-10-704.	EN-2621	R17-4-409.	PXM-194;
Appendix A.	FN-603	R15-10-705.	EN-2621		FXN-819
<b>Respiratory Care Examiners, Board of</b>		<b>Revenue, Department of - Luxury Tax Section</b>		<b>Weights and Measures, Department of</b>	
				R20-2-101.	RC-2786
				R20-2-102.	RC-2786

R20-2-103.	RC-2786	R20-2-601.	RC-2786	R20-2-747.	RC-2786
R20-2-104.	RC-2786	R20-2-602.	RC-2786	R20-2-748.	RC-2786
R20-2-105.	RC-2786	R20-2-603.	RC-2786	R20-2-749.	RC-2786
R20-2-106.	RC-2786	R20-2-604.	RC-2786	R20-2-750.	RC-2786
R20-2-107.	RC-2786	R20-2-605.	RC-2786	R20-2-751.	RC-2786
R20-2-108.	RC-2786	R20-2-701.	RC-2786	R20-2-751.01.	RC-2786
R20-2-109.	RC-2786	R20-2-702.	RC-2786	R20-2-752.	RC-2786
R20-2-110.	RC-2786	R20-2-703.	RC-2786	R20-2-753.	RC-2786
R20-2-111.	RC-2786	R20-2-704.	RC-2786	R20-2-754.	RC-2786
R20-2-112.	RC-2786	R20-2-705.	RC-2786	R20-2-755.	RC-2786
R20-2-113.	RC-2786	R20-2-706.	RC-2786	R20-2-756.	RC-2786
R20-2-114.	RC-2786	R20-2-707.	RC-2786	R20-2-757.	RC-2786
R20-2-115.	RC-2786	R20-2-708.	RC-2786	R20-2-758.	RC-2786
R20-2-116.	RC-2786	R20-2-709.	RC-2786	R20-2-759.	RC-2786
R20-2-117.	RC-2786	R20-2-710.	RC-2786	Table A.	RC-2786
R20-2-201.	RC-2786	R20-2-711.	RC-2786	R20-2-760.	RC-2786
R20-2-202.	RC-2786	R20-2-712.	RC-2786	R20-2-761.	RC-2786
R20-2-203.	RC-2786	R20-2-713.	RC-2786	R20-2-762.	RC-2786
R20-2-204.	RC-2786	R20-2-714.	RC-2786	Table 1.	RC-2786
R20-2-301.	RC-2786	R20-2-715.	RC-2786	Table 2.	RC-2786
R20-2-302.	RC-2786	R20-2-716.	RC-2786	Table 3.	RC-2786
R20-2-303.	RC-2786	R20-2-717.	RC-2786	R20-2-901.	RC-2786
R20-2-304.	RC-2786	R20-2-718.	RC-2786	R20-2-902.	RC-2786
R20-2-305.	RC-2786	R20-2-719.	RC-2786	R20-2-903.	RC-2786
R20-2-306.	RC-2786	R20-2-720.	RC-2786	R20-2-904.	RC-2786
R20-2-307.	RC-2786	R20-2-721.	RC-2786	R20-2-905.	RC-2786
R20-2-308.	RC-2786	R20-2-722.	RC-2786	R20-2-906.	RC-2786
R20-2-309.	RC-2786	R20-2-723.	RC-2786	R20-2-907.	RC-2786
R20-2-310.	RC-2786	R20-2-724.	RC-2786	R20-2-908.	RC-2786
R20-2-311.	RC-2786	R20-2-725.	RC-2786	R20-2-909.	RC-2786
R20-2-312.	RC-2786	R20-2-726.	RC-2786	R20-2-910.	RC-2786
R20-2-313.	RC-2786	R20-2-727.	RC-2786	R20-2-911.	RC-2786
R20-2-401.	RC-2786	R20-2-728.	RC-2786	R20-2-912.	RC-2786
R20-2-402.	RC-2786	R20-2-729.	RC-2786	R20-2-913.	RC-2786
R20-2-403.	RC-2786	R20-2-730.	RC-2786	R20-2-1001.	RC-2786
R20-2-404.	RC-2786	R20-2-731.	RC-2786	R20-2-1002.	RC-2786
R20-2-405.	RC-2786	R20-2-732.	RC-2786	R20-2-1003.	RC-2786
R20-2-406.	RC-2786	R20-2-733.	RC-2786	R20-2-1004.	RC-2786
R20-2-407.	RC-2786	R20-2-734.	RC-2786	R20-2-1005.	RC-2786
R20-2-408.	RC-2786	R20-2-735.	RC-2786	R20-2-1006.	RC-2786
R20-2-409.	RC-2786	R20-2-736.	RC-2786	R20-2-1007.	RC-2786
R20-2-410.	RC-2786	R20-2-737.	RC-2786	R20-2-1008.	RC-2786
R20-2-411.	RC-2786	R20-2-738.	RC-2786	R20-2-1009.	RC-2786
R20-2-412.	RC-2786	R20-2-739.	RC-2786	R20-2-1010.	RC-2786
R20-2-501.	RC-2786	R20-2-740.	RC-2786	R20-2-1011.	RC-2786
R20-2-502.	RC-2786	R20-2-741.	RC-2786	R20-2-1012.	RC-2786
R20-2-503.	RC-2786	R20-2-742.	RC-2786	R20-2-1013.	RC-2786
R20-2-504.	RC-2786	R20-2-743.	RC-2786	Table 1.	RC-2786
R20-2-505.	RC-2786	R20-2-744.	RC-2786		
R20-2-506.	RC-2786	R20-2-745.	RC-2786		
R20-2-507.	RC-2786	R20-2-746.	RC-2786		

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## OTHER NOTICES AND PUBLIC RECORDS INDEX

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Other notices related to rulemakings are listed in the Index by notice type, agency/county and by volume page number. Agency policy statements and proposed delegation agreements are included in this section of the Index by volume page number.

Public records, such as Governor Office executive orders, proclamations, declarations and terminations of emergencies, summaries of Attorney General Opinions, and county notices are also listed in this section of the Index as published by volume page number.

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### THIS INDEX INCLUDES OTHER NOTICE ACTIVITY THROUGH ISSUE 51 OF VOLUME 22.

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**Agency Guidance Document, Notices of**

**Health Services, Department of;** pp. 159, 705

**Retirement System, State;** pp. 3141-3149

**Revenue, Department of;** pp. 1857-1858

**Agency Ombudsman, Notices of**

**Child Safety, Department of;** p. 3375

**Early Childhood Development and Health Board/ First Things First;** p. 353

**Game and Fish Commission;** pp. 62-63, 1649

**Health Services, Department of;** p. 353

**Public Safety, Department of;** p. 2092



**Transportation, Department of;** p. 62

**County Notices Pursuant to A.R.S. § 49-112**

**Maricopa County;** pp. 431-535, 1116-1273, 1552-1572, 1708, 1958-1995, 2095-2149, 2914-2923, 3418-3446, 3479-3542

**Pima County;** pp. 1305-1325, 2631

**Pinal County;** pp. 2253-2288

**Governor's Office**

**Executive Order;** pp. 19-20 (E.O. #2015-11); 20-21 (E.O. #2015-13); 21-22 (E.O. #2015-01); 84 (E.O. #2016-01); 85 (E.O. #2016-02); 86 (E.O. 2015-06); 87 (E.O. #2015-09); 88 (E.O. #2015-12); 426-27 (E.O. #2016-03)

**Declarations;** p. 1703 (M16-176)

**Proclamations;** pp. 23 (M15-350, M15-349); 24 (M15-348); 25 (M15-347); 64 (M15-354, M15-355); 65 (M15-356, M15-357); 66 (M15-358); 123 (M16-04, M16-05); 124 (M16-06, M16-07); 125 (M16-08); 126 (M16-09); 162 (M16-13); 202 (M16-23, M16-24); 203 (M16-25, M16-26); 204 (M16-27); 428 (M16-33, M16-34); 429 (M16-35, M16-36); 430 (M16-430); 585 (M16-38, M16-39); 586 (M16-40, M16-41); 587 (M16-42, M16-43); 588 (M16-44); 653 (M16-45); 678 (M16-50, M16-51); 679 (M16-52, M16-53); 680 (M16-54, M16-55); 681 (M16-57, M16-58); 682 (M16-59); 711 (M16-62, M16-63); 712 (M16-66, M16-56); 713 (M16-67, M16-68); 714 (M16-69, M16-70); 715 (M16-71, M16-72); 788 (M16-64, M16-60); 789 (M16-75); 832 (M16-65, M16-83); 833 (M16-74, M16-84); 834 (M16-86, M16-87); 902 (M16-73, M16-89); 903 (M16-91, M16-85); 904 (M16-76, M16-77); 1002 (M16-88, M16-90); 1003 (M16-92, M16-93); 1004 (M16-94); 1070 (M16-110, M16-111); 1071 (M16-112, M16-113); 1072 (M16-114, M16-115); 1073 (M16-116, M16-117); 1074 (M16-118); 1299 (M16-125, M16-126); 1300 (M16-127, M16-128); 1301 (M16-129, M16-130); 1302 (M16-131, M16-132); 1303 (M16-133, M16-138); 1304 (M16-134); 1359 (M16-143, M16-136); 1360 (M16-144, M16-145); 1361 (M16-137, M16-139); 1549 (M16-147, M16-148); 1550 (M16-149); 1551 (M16-150); 1617 (M16-159, M16-156); 1618 (M16-157, M16-158); 1619 (M16-160, M16-161); 1652 (M16-162, M16-163); 1653 (M16-164, M16-65); 1654 (M16-166, M16-167); 1704 (M16-177, M16-

179); 1705 (M16-181, M16-182); 1706 (M16-183, M16-168); 1758 (M16-187, M16-178); 1759 (M16-180); 1922 (M16-188, M16-189); 1923 (M16-190); 2536 (M16-207); 3031 (M16-243, M16-244); 3032 (M16-245, M16-246); 3033 (M16-247, M16-248); 3034 (M16-249, M16-250); 3035 (M16-251, M16-252); 3114 (M16-253, M16-254); 3115 (M16-255, M16-256); 3153 (M16-257, M16-258); 3154 (M16-259, M16-260); 3155 (M16-261, M16-262, M16-263); 3156 (M16-264, M16-265); 3157 (M16-266); 3204 (M16-270, M16-271); 3205 (M16-272, M16-273); 3206 (M16-274, M16-275); 3207 (M16-276, M16-277)

**Governor's Regulatory Review Council**

**Notices of Action Taken at Monthly Meetings;** pp. 96, 97-98, 402-403, 798, 1014, 1406, 1666, 2007-2008, 2231-2232, 2938-2939, 3131-3132, 3271-3272

**Proposed Delegation Agreement, Notices of**

**Environmental Quality, Department of;** pp. 826, 827, 1545, 3252

**Public Information, Notices of**

**Arizona Health Care Cost Containment System;** pp. 49, 1067

**Child Safety, Department of;** pp. 160, 2626

**Environmental Quality, Department of;** pp. 49, 1112, 2823

**Environmental Quality, Department of - Pesticides and Water Pollution Control;** pp. 1294-1296

**Environmental Quality, Department of - Safe Drinking Water;** pp. 1348-1349

**Environmental Quality, Department of - Water Pollution Control;** pp. 1112, 3110

**Game and Fish Department;** pp. 1349-1354, 1646, 1919

**Health Services, Department of;** pp. 394, 2572; 2986-2987

**Health Services, Department of - Loan Repayment;** p. 346

**Health Services, Department of - Vital Records and Statistics;** p. 899

**Real Estate, Department of;** pp. 2408, 2844

**Rulemaking Docket Opening, Notices of**

**Acupuncture Board of Examiners;** 4 A.A.C. 8; p. 703

**Agriculture, Department of - Animal Services Division;** 3 A.A.C. 2; p. 344

**Arizona Health Care Cost Containment System - Administration;** 9 A.A.C. 22; pp. 784-785, 1293

**Arizona Health Care Cost Containment System - Arizona Long-term Care System;** 9 A.A.C. 28; p. 2057

**Arizona Health Care Cost Containment System - Behavioral Health Services for Persons with Serious Mental Illness;** 9 A.A.C. 21; p. 782

**Arizona Health Care Cost Containment System - Medicare Part D Prescription Coverage Extra Help Subsidy Program;** 9 A.A.C. 30; p. 824

**Behavioral Health Examiners, Board of;** 4 A.A.C. 6; p. 2405

**Barbers, Board of;** 4 A.A.C. 5; p. 2625

**Charter Schools, State Board for;** 7 A.A.C. 5; p. 823

**Child Safety, Department of - Foster Care and Child Welfare Agency Facility Safety;** 21 A.A.C. 8; p. 3198

**Child Safety, Department of - Child Welfare Agency Licensing;** 21 A.A.C. 7; p. 999

**Corporation Commission - Fixed Utilities;** 14 A.A.C. 2; pp. 424-425

**Cosmetology, Board;** 4 A.A.C. 10; p. 1611

**Dental Examiners, State Board of;** 4 A.A.C. 11; p. 2056

**Economic Security, Department of;** 6 A.A.C. 1; p. 2083

**Economic Security, Department of - Cash Assistance Program;** 6 A.A.C. 12; p. 2087

**Economic Security, Department of - Developmental Disabilities;** 6 A.A.C. 6; p. 2085

**Economic Security, Department of - Social Services;** 6 A.A.C. 5; pp. 1065, 2084

**Economic Security, Department of - The JOBS Program;** 6 A.A.C. 10; p. 2086

**Economic Security, Department of - Unemployment Insurance;** 6 A.A.C. 3; p. 2084

**Environmental Quality, Department of - Air Pollution Control;** 18 A.A.C. 2; pp. 998, 3336

**Environmental Quality, Department of - Water Pollution Control;** 18 A.A.C. 9; pp. 16-17

**Environmental Quality, Department of - Water Quality Standards;** 18 A.A.C. 11; pp. 17-18, 345

**Financial Institutions, Department of;** p. 3476

**Game and Fish Commission;** 12 A.A.C. 4; pp. 825, 2569

**Health Services, Department of - Communicable Diseases;** 9 A.A.C. 6; p. 1954

**Health Services, Department of - Emergency Medical Services;** 9 A.A.C. 25; pp. 1612, 3197

**Health Services, Department of - Laboratories;** 9 A.A.C. 14; p. 704

**Health Services, Department of - Medical Marijuana Program;** 9 A.A.C. 17; pp. 423-424, 2407

**Health Services, Department of - Occupational Licensing;** 9 A.A.C. 16; pp. 2909-2910

**Industrial Commission of Arizona;** 20 A.A.C. 5; pp. 239, 2570-2571, 3475

**Mine Inspector, State - Aggregate Mined Land Reclamation;** 11 A.A.C. 3; p. 2057

**Nursing, State Board of;** 4 A.A.C. 19; 2985

**Osteopathic Examiners in Medicine and Surgery;** 4 A.A.C. 22; p. 3251

**Pharmacy, Board of;** 4 A.A.C. 23; pp. 2406, 3196, 3414-3415

**Psychologist Examiners, Board of;** 4 A.A.C. 26; pp. 1109-1110

**Public Safety, Department of;** 13 A.A.C. 1; pp. 2910-2911

**Regulatory Board of Physician Assistants, Arizona;** 4 A.A.C. 17; p. 2217

**Retirement System, State;** 2 A.A.C. 8; pp. 822, 823, 1063-1064, 1918, 2055, 2082, 2568

**Secretary of State, Office of;** 2 A.A.C. 12; pp. 121-122; 239

**Secretary of State - Rules and Rulemaking;** 1 A.A.C. 1; p.121

**State Lottery Commission -** 19 A.A.C. 3; p. 582

**Technical Registration, Board of;** 4 A.A.C. 30; pp. 1110-1111

**Transportation, Department of - Administration;** 17 A.A.C. 1; p. 3139

**Transportation, Department of - Commercial Programs;** 17 A.A.C. 5; pp. 1347, 2089-2090, 2569

**Transportation, Department of - Oversize and Overweight Special Permits;** 17 A.A.C. 6; p. 3140

**Transportation, Department of - Title, Registration, and Driver Licenses;** 17 A.A.C. 4; p. 2088

**Water Resources, Department of;** 12 A.A.C. 15; p. 3475

**Substantive Policy Statement, Notices of**

**Behavioral Health Examiners, Board of;** pp. 706, 3199

**Environmental Quality, Department of;** pp. 58-59; 161, 1356, 1614, 2091

**Health Services, Department of;** pp. 2627, 2988

**Insurance, Department of;** p. 3200

**Peace Officers Standards and Training Board;** p. 348

**Psychologist Examiners, Board of;** pp. 1355, 1647-1648

**Real Estate Department;** pp. 829, 2409, 2845-2846

**Registrar of Contractors;** pp. 60-61, 706-707

**Retirement System, State;** pp. 707-708

**Revenue, Department of;** pp. 1859-1860

**Technical Registration, Board of;** pp. 348

**Transportation, Department of;** p. 3150

**Water Infrastructure Finance Authority;** p. 349-352



2016 RULES EFFECTIVE DATES CALENDAR

A.R.S. § 41-1032(A), as amended by Laws 2002, Ch. 334, § 8 (effective August 22, 2002), states that a rule generally becomes effective 60 days after the day it is filed with the Secretary of State's Office. The following table lists filing dates and effective dates for rules that follow this provision. Please also check the rulemaking Preamble for effective dates.

Table with 12 columns: January (Date Filed, Effective Date), February (Date Filed, Effective Date), March (Date Filed, Effective Date), April (Date Filed, Effective Date), May (Date Filed, Effective Date), June (Date Filed, Effective Date). Rows list dates from 1/1 to 1/31 and corresponding effective dates.



July		August		September		October		November		December	
Date Filed	Effective Date										
7/1	8/30	8/1	9/30	9/1	10/31	10/1	11/30	11/1	12/31	12/1	1/30/17
7/2	8/31	8/2	10/1	9/2	11/1	10/2	12/1	11/2	1/1/17	12/2	1/31/17
7/3	9/1	8/3	10/2	9/3	11/2	10/3	12/2	11/3	1/2/17	12/3	2/1/17
7/4	9/2	8/4	10/3	9/4	11/3	10/4	12/3	11/4	1/3/17	12/4	2/2/17
7/5	9/3	8/5	10/4	9/5	11/4	10/5	12/4	11/5	1/4/17	12/5	2/3/17
7/6	9/4	8/6	10/5	9/6	11/5	10/6	12/5	11/6	1/5/17	12/6	2/4/17
7/7	9/5	8/7	10/6	9/7	11/6	10/7	12/6	11/7	1/6/17	12/7	2/5/17
7/8	9/6	8/8	10/7	9/8	11/7	10/8	12/7	11/8	1/7/17	12/8	2/6/17
7/9	9/7	8/9	10/8	9/9	11/8	10/9	12/8	11/9	1/8/17	12/9	2/7/17
7/10	9/8	8/10	10/9	9/10	11/9	10/10	12/9	11/10	1/9/17	12/10	2/8/17
7/11	9/9	8/11	10/10	9/11	11/10	10/11	12/10	11/11	1/10/17	12/11	2/9/17
7/12	9/10	8/12	10/11	9/12	11/11	10/12	12/11	11/12	1/11/17	12/12	2/10/17
7/13	9/11	8/13	10/12	9/13	11/12	10/13	12/12	11/13	1/12/17	12/13	2/11/17
7/14	9/12	8/14	10/13	9/14	11/13	10/14	12/13	11/14	1/13/17	12/14	2/12/17
7/15	9/13	8/15	10/14	9/15	11/14	10/15	12/14	11/15	1/14/17	12/15	2/13/17
7/16	9/14	8/16	10/15	9/16	11/15	10/16	12/15	11/16	1/15/17	12/16	2/14/17
7/17	9/15	8/17	10/16	9/17	11/16	10/17	12/16	11/17	1/16/17	12/17	2/15/17
7/18	9/16	8/18	10/17	9/18	11/17	10/18	12/17	11/18	1/17/17	12/18	2/16/17
7/19	9/17	8/19	10/18	9/19	11/18	10/19	12/18	11/19	1/18/17	12/19	2/17/17
7/20	9/18	8/20	10/19	9/20	11/19	10/20	12/19	11/20	1/19/17	12/20	2/18/17
7/21	9/19	8/21	10/20	9/21	11/20	10/21	12/20	11/21	1/20/17	12/21	2/19/17
7/22	9/20	8/22	10/21	9/22	11/21	10/22	12/21	11/22	1/21/17	12/22	2/20/17
7/23	9/21	8/23	10/22	9/23	11/22	10/23	12/22	11/23	1/22/17	12/23	2/21/17
7/24	9/22	8/24	10/23	9/24	11/23	10/24	12/23	11/24	1/23/17	12/24	2/22/17
7/25	9/23	8/25	10/24	9/25	11/24	10/25	12/24	11/25	1/24/17	12/25	2/23/17
7/26	9/24	8/26	10/25	9/26	11/25	10/26	12/25	11/26	1/25/17	12/26	2/24/17
7/27	9/25	8/27	10/26	9/27	11/26	10/27	12/26	11/27	1/26/17	12/27	2/25/17
7/28	9/26	8/28	10/27	9/28	11/27	10/28	12/27	11/28	1/27/17	12/28	2/26/17
7/29	9/27	8/29	10/28	9/29	11/28	10/29	12/28	11/29	1/28/17	12/29	2/27/17
7/30	9/28	8/30	10/29	9/30	11/29	10/30	12/29	11/30	1/29/17	12/30	2/28/17
7/31	9/29	8/31	10/30			10/31	12/30			12/31	3/1/17



REGISTER PUBLISHING DEADLINES

The Secretary of State's Office publishes the Register weekly. There is a three-week turnaround period between a deadline date and the publication date of the Register. The weekly deadline dates and issue dates are shown below. Council meetings and Register deadlines do not correlate. Also listed are the earliest dates on which an oral proceeding can be held on proposed rulemakings or proposed delegation agreements following publication of the notice in the Register.

Table with 3 columns: Deadline Date (paper only) Friday, 5:00 p.m., Register Publication Date, and Oral Proceeding may be scheduled on or after. Rows list dates from October 2016 to May 2017.



## GOVERNOR’S REGULATORY REVIEW COUNCIL DEADLINES

The following deadlines apply to all Five-Year-Review Reports and any adopted rule submitted to the Governor’s Regulatory Review Council. Council meetings and Register deadlines do not correlate. We publish these deadlines as a courtesy.

All rules and Five-Year Review Reports are due in the Council office by noon of the deadline date. The Council’s office is located at 100 N. 15th Ave., Suite 402, Phoenix, AZ 85007. For more information, call (602) 542-2058 or visit [www.grrc.state.az.us](http://www.grrc.state.az.us).

### GOVERNOR’S REGULATORY REVIEW COUNCIL DEADLINES FOR 2016

DEADLINE TO BE PLACED ON COUNCIL AGENDA	FINAL MATERIALS DUE FROM AGENCIES	DATE OF COUNCIL STUDY SESSION	DATE OF COUNCIL MEETING
November 17, 2015	December 18, 2015	December 29, 2015	January 5, 2016
December 21, 2015	January 15, 2016	January 26, 2016	February 2, 2016
January 19, 2016 (Tuesday)	February 12, 2016	February 23, 2016	March 1, 2016
February 16, 2016 (Tuesday)	March 18, 2016	March 29, 2016	April 5, 2016
March 21, 2016	April 15, 2016	April 26, 2016	May 5, 2016
April 18, 2016	May 20, 2016	June 1, 2016 (Wednesday)	June 7, 2016
May 23, 2016	June 17, 2016	June 28, 2016	July 6, 2016 (Wednesday)
June 20, 2016	July 15, 2016	July 26, 2016	August 2, 2016
July 18, 2016	August 19, 2016	August 30, 2016	September 7, 2016 (Wednesday)
August 22, 2016	September 16, 2016	September 27, 2016	October 4, 2016
September 19, 2016	October 14, 2016	October 25, 2016	November 1, 2016
October 17, 2016	November 18, 2016	November 29, 2016	December 6, 2016
November 21, 2016	December 16, 2016	December 28, 2016 (Wednesday)	January 4, 2017 (Wednesday)

\*Materials must be submitted by **noon** on dates listed as a deadline for placement on a particular agenda. Placement on a particular agenda is not guaranteed.