

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

**PREAMBLE**

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|------------------|--|--|
| <b><u>1.</u></b> | <b><u>Rule affected:</u></b>   | <b><u>Rulemaking action</u></b>        |
|                  | Rule 342: Coating Wood Furniture and Fixtures  | Amended                                |
| <b><u>2.</u></b> | <b><u>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.</u></b> | <b><u>The effective date of the rule:</u></b>  |  |
|                  | Date of adoption: November 2, 2016   |  |
| <b><u>4.</u></b> | <b><u>List of public notices addressing this rulemaking:</u></b>   |  |
|                  | Notice of Briefing to Maricopa County Manager: May 2015  |  |
|                  | Notice of Stakeholder Workshops: August 3, 2015, December 17, 2015, and February 9, 2016                           |  |
|                  | Notice of Maricopa County Board of Health Meeting: April 25, 2016  |  |
|                  | 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> |  |
|                  | Name:  | Hether Krause                          |
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| <b><u>6.</u></b> | <b><u>Explanation of the rule, including the department's reasons for initiating the rulemaking:</u></b>           |  |

**Summary:**

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 (HVLP)
- 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**

<b>Cost Element</b>	<b>Estimated Cost</b>
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**

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~~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 307.2d~~ 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\***

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

\*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 REPLICA 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.
- ~~215~~ **214** **FAUX FINISH:** A finish intended to simulate a surface other than wood, including, but not limited to, stone, sand, metal, fur and leather.
- ~~216~~ **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.

- ~~217~~ **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~~

Table 1

	Column A	Column B
	Lb VOC/lb solids	Grams VOC/liter <sup>**</sup>
Topcoat	4.8	635
Sealer	4.9	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**

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

**\* 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 ~~40 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.~~
- e. ~~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 501.2c. 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>**

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<sup>1</sup> This errata note is not part of Rule 342. For the reader's convenience, the second subsection 307.2c. 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.

- 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 501.2c. 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.

**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.~~
- e. ~~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 307.2e., 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 (~~21.7~~ 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.

(3) **(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).

(4) **(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.

(5) **(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~~ 0.72 kg VOC/kg 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**

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

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 lb VOC/lb solids kg VOC/kg solids (1.71 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 lb VOC/lb solids or 1.71 kg VOC/kg solids) and topcoats (1.62 lb VOC/lb solids or 1.62 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. ER<sub>U</sub> 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 (TC<sub>i</sub>) 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) or less.

**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 ~~10~~ 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 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~~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