

# Eastern Kern Air Pollution Control District

## **Rule 410.9 WOOD PRODUCTS SURFACE COATING OPERATIONS**

**FINAL STAFF REPORT**

**March 13, 2014**

*Prepared by*

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## I. BOARD ADOPTION

Rule 410.9, Wood Products Surface Coating Operations was adopted by the Eastern Kern Air Pollution Control District (District)'s Governing Board on March 13, 2014 at its regular Board meeting in Rosamond California.

Rule 410.9 became effective and enforceable upon adoption. A copy of the Rule has been submitted to the California Air Resources Board (ARB) for their review and then to be forwarded to the U.S. Environmental Protection Agency (EPA) for inclusion into the State Implementation Plan (SIP).

## II. INTRODUCTION

Rule 410.9 is designed to reduce volatile organic compound (VOC) emissions from wood product coatings, and from the cleaning, storage, and disposal of organic solvents and waste solvent materials associated with the use of wood product coatings. Rule 410.9 will also provide administrative requirements for recording and measuring VOC emissions.

On November 6, 2013 the District held a public rule development workshop at the Mojave Veteran's Building in Mojave, CA. At this workshop District staff presented proposed Draft Rule 410.9, Wood Products Surface Coating Operations. The District submitted copies of the proposed rule to ARB and EPA for an initial review prior to the workshop. A 30-day public review and comment period followed the workshop.

District received comments and suggested changes from EPA, ARB, and industry. District considered all comments and suggested changes.

Appendix A is a copy of Adopted Rule 410.9, Wood Products Surface Coating Operations.

Appendix B is the District's Response to Comments following the November 6, 2013 public workshop held at the Mojave Veteran's Center in Mojave, CA.

## III. RACT BACKGROUND

The Clean Air Act (CAA) as amended in 1990 requires that State Implementation Plans (SIP's) for certain ozone nonattainment areas be revised to require implementation of Reasonably Available Control Technology (RACT) to limit VOC emissions. The U.S. Environmental Protection Agency (EPA) defines RACT as *the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility*. Section 183(a)(3) and Section 183(g)(3) of the CAA required the EPA Administrator to issue a Control

Techniques Guideline (CTG) that presents feasible RACT control measures for VOC emissions from coatings and solvents used in Wood coatings.

The CTG is intended to provide State and local air pollution control authorities with an information base for proceeding with analyses of RACT for their own regulations. The CTG contains a review of current knowledge and data concerning the technology, impacts, and costs associated with various emission control techniques. Where applicable, the EPA recommends that States adopt requirements consistent with the presumptive RACT. However, these measures are only a recommendation; States may develop their own RACT requirements that consider economic and technical circumstances. No Federal law or regulation precludes States from requiring more stringent controls than those recommended as RACT.

#### **IV. RULE DEVELOPMENT**

Rule 410.9 applies to wood product surface coating and adhesion operations. Surface coatings are designed to protect wooden surfaces from the environment, heat, abrasion, and chemicals. There are three types of coatings included in the coating application process which are:

1. An enhancement of the grain using a stain to add color to the wood;
2. Application of a sanding sealer prior to the coating operations; and
3. Application of a clear topcoat to form a transparent or translucent solid protective film.

Surface coating adhesion operations utilize compounds to adhere (join) wood and other materials to wood products. Surface coating and adhesion processes utilize the following processes: surface preparation, coating application, drying, and clean-up.

In an effort to maintain rule consistency within the area, District staff reviewed the following SIP approved rules from adjacent air districts:

- Antelope Valley Air Quality Management District (AVAQMD), Rule 1136;
- San Joaquin Air Pollution Control District (SJVAPCD), Rule 4606.
- South Coast Air Quality Management District (SCAQMD), Rule 1136; and

In order to promote regulatory uniformity throughout Kern County, Rule 410.9 is primarily based on SJVAPCD's Rule 4606, Wood Products and Flat Wood Paneling Products Coating Operations amended October 16, 2008.

## V. APPLICABILITY

Requirements of Rule 410.9 shall apply to commercial wood products coating operations. This rule will not apply to residential (noncommercial) operations.

Wood product manufacturing and rework facilities are generally covered by the Standard Industrial Classification (SIC) codes listed in Table 1 below. Facilities classified under other SIC codes may be subject to the Rule if the facility meets the definition of a major source and the definition of a wood product manufacturing facility.

**TABLE 1  
WOOD PRODUCT MANUFACTURING SIC CODES**

<b>SIC Code</b>	<b>Description</b>
2400	Lumber and Wood Products, Except Furniture
2430	Millwork, Veneer, Plywood, and Structural Wood
2431	Millwork, doors, and molding
2435	Hardwood Veneer and Plywood
2436	Softwood Veneer and Plywood
2440	Wood Containers
2490	Miscellaneous Wood Products
2491	Wood Preserving
2492	Particleboard
2493	Reconstituted Wood Products
2499	Wood Products, Not Elsewhere Classified
2510	Household Furniture
2511	Wood Household Furniture, Except Upholstered
2512	Wood Household Furniture, Upholstered
2517	Wood Television, Radio, phonograph, and Sewing Machine Cabinets
2521	Wood Office Furniture
2541	Wood Office and Store Fixtures, Partitions, Shelving, and Lockers
2512	Wood Household Furniture, Upholstered
3940	Dolls, Toys, Games and Sporting and Athletic
3995	Burial Caskets

## VI. REQUIREMENTS

Section V of Rule 410.9 contains the compliance requirements associated with wood product coatings operations, which include:

- Table of Standards - VOC Content Limits
- Coating Application Equipment Cleaning
- Coating Strippers
- Storage and Disposal of VOC Containing Materials
- Application Equipment Requirements
- VOC Emission Control System
- Prohibition of Solicitation

### Table of Standards

With the exception of the exemptions listed in Section IV of Rule 410.9, an operator shall not apply to any wood product, any coating, aerosol, or adhesive with a VOC content as applied, that exceeds the applicable limit specified in Tables 2 or Table 3.

**TABLE 2  
VOC CONTENT LIMITS FOR WOOD PRODUCT COATING OPERATION**

<b>VOC Content Limits Expressed in Grams per Liter Less Water and Exempt Compounds</b>		
<b>Content Category</b>	<b>VOC Limit g/l</b>	<b>VOC Limit lb/gal</b>
1. Clear Topcoat	275	2.3
2. Clear Sealers	240	2.3
3. Filler	275	2.3
4. High-Solids Stain	240	2.0
5. Ink	500	4.2
6. Mold-Seal Coating	750	6.3
7. Multi-Colored Coating	275	2.3
8. Pigmented Coating	275	2.3
9. Sanding Sealer	240	2.3

**TABLE 3**  
**VOC CONTENT LIMITS FOR WOOD PRODUCT COATING OPERATION**

VOC Content Limits Expressed in Grams per Liter of Material, as Applied		
VOC Content Category	VOC Limit g/l	VOC Limit lb/gal
1. Low-Solids Stain	120	1.0
2. Stripper	350	2.9

### **Coating Substitutions**

Wood coatings are known to contain hazardous air pollutants such as xylenes, toluene, ethyl benzene, ethylene glycol monobutyl ether and other glycol ethers, methyl ethyl ketone (MEK), methyl isobutyl ketone (MIBK), methanol, styrene and formaldehyde. No-HAP and Low-HAP coatings contain no to low level hazardous air pollutants (HAPS), such as waterborne, high-solids UV cured and powder coatings. Waterborne and high solids materials are generally used for coating substitutions.

Such coatings are suitable for certain applications, but not all. Paint suppliers and the wood product industry generally have targeted high volume materials for reformulation efforts. Therefore, lower VOC formulations may not be available for most of the low volume specialty coating categories.

### **Equipment Changes**

The principal technique used by the wood products industry to control VOC emissions from coating application and cleaning is product substitution, which eliminates or reduces the generation of emissions. Emission reduction is obtained using less energy and producing less waste than using a control device to achieve the same emission reductions.

The wood products industry has implemented several equipment changes that directly reduce the level of VOC emissions. While there are equipment changes that affect emissions from every process, the three changes predominantly used in the industry are high volume, low pressure spray (HVLSP), electrostatic application, and hand rolling.

## **VII. EXEMPTIONS**

Rule 410.9 details a number of VOC containing products that are exempt from the VOC content requirements listed in Table 2 and Table 3. These exemptions include:

- Residential noncommercial operations.

- Small wood products coating operations (< 20 gallons usage/year).
- Coating of wooden musical instruments.
- The application of coatings by template (to add designs, letters or numbers to wood products).
- Refinishing, replacement, and custom replica furniture coating operations.
- Aerosol-spray coatings used for touch up and repair.
- Specific types of finishes (imitation wood grain, crackle lacquers, and faux and leaf finishes).
- Architectural coatings

## **VIII. ADMINISTRATIVE REQUIREMENTS**

Rule 410.9 contains an extensive list of the Administrative Requirements. Please see Section VI, Administrative Requirements of Appendix A for complete details.

## **IX. TEST METHODS**

Rule 410.9 contains a number of specific test methods that must be followed in order to ensure compliance with the rule. See Section VII of Appendix A.

## **X. RULE CONSISTENCY ANALYSIS**

Pursuant to Section 40727.2 of the California Health and Safety Code, prior to adopting, amending, or repealing a rule or regulation, the District is required to perform a written analysis that identifies and compares the air pollution control elements of Rule 410.9 with the corresponding elements of existing or proposed District and EPA rules, regulations, and guidelines that apply to the same source category. Rule elements that were analyzed are emission limits or control efficiency, operating parameters and work practices, monitoring and testing, and recordkeeping and reporting requirements.

### **Results of Consistency Analysis**

#### **District Rules**

Facilities subject to Rule 410.9 could also be subject to the following rules:

Rule 410, Organic Solvents

Rule 410.2, Disposal and Evaporation of Solvents

Rule 410.3, Organic Solvent Degreasing Operations

Rule 410.7, Graphic Arts

Rule 411, Storage of Organic Liquids

Rule 422, New and Modified Stationary Source Review Rule

Rule 423, National Emissions Standards for Hazardous Air Pollutants



## **EPA Rules and Regulations**

### **A. EPA-Control Technique Guidelines (CTG)**

1. CTG EPA-453/R-96-007 1996/04 applies to *Control of Volatile Organic Compound Emissions from Wood Furniture Manufacturing Operations* located in marginal, moderate, serious or severe ozone nonattainment areas that has the potential to emit greater than or equal to 25 tons/year of VOC, and equal to greater than 10 tons/year of VOC for extreme ozone nonattainment areas. Rule 410.9 is more stringent than the CTG limits (CTG was developed in 1996). Therefore, District Rule 410.9 is more stringent than the CTG.
2. CTG EPA 453/R-06-004 applies to *Control Techniques Guidelines Flat Wood Paneling Coatings* operations located in marginal, moderate, serious or severe ozone nonattainment areas that have the potential to emit greater than or equal to 25 tons/year of VOC, and equal to greater than 10 tons/year of VOC for extreme ozone nonattainment areas.

This CTG applies to the use of the following flat wood coatings: fillers, sealers, "groove" coats, primers, stains, basecoats, inks, and topcoats. The CTG identifies design and work practice standards for flat wood paneling, such as roll coating. The CTG also identifies add-on controls such as oxidizers and solvent recovery systems.

Rule 410.9 identifies solvent VOC content limits or a control system with efficiencies of at least 90% capture and 90% control, and that would not allow more emissions than if compliant materials were utilized. For printed interior wall panels made of hardwood plywood and thin particleboard the recommended limitation is 2.9 kg of VOC per 100 sq. meters of coated surface; the natural finish hardwood plywood panel limit is 5.8 kg per 100 sq. meters; class II finish for hardboard paneling is 4.8 kg per 100 sq. meters.

### **B. EPA - Alternative Control Technology (ACT)**

Currently no EPA ACT guidance document for wood products coating operations.

### **C. Standards of Performance for New Stationary Sources (NSPS)**

Currently no NSPS guidance document for wood products coating operations.

## **XI. VOC REDUCTIONS**

ARB emissions inventory shows state-wide VOC emissions of 8.29 tons of VOC per day for this industry.

**TABLE 4**  
**Annual Average Emissions for California (2009)**

<b>Category</b>	<b>tons/day</b>
<b>Wood Furniture and Fabricated Products Coatings</b>	
Coatings	6.91
Primer	0.13
Varnishes/Shellacs	0.03
Enamel Topcoats	0.09
Lacquer Topcoats	0.28
Oil Based Coatings	0.31
Water Based Coatings	0.01
<b>Flatwood Products</b>	
Coatings	0.00
Sealers	0.03
Stains	0.00
Varnishes/Shellacs	0.01
Topcoats	0.05
Basecoats	0.01
Water Based Coatings	0.00
<b>Preparation Solvents</b>	
Cleanup Solvents - Coatings	0.43
<b>Total</b>	<b>8.29</b>

Rule 410.9 provides a variety of VOC limits on primers, coatings, adhesives, and sealants used in the manufacturer and refinishing of wood products and components. These are the primary control requirements in the rule (see Section V of Rule 410.9). Although Rule 410.9 only applies to a small number of sources located within the District, some degree of VOC emissions reductions will be accomplished and contribute to the District's goal of achieving attainment.

## **XII. ECONOMIC IMPACTS**

Pursuant to California Health & Safety Code (CH&SC) §40920.6(a), the District is required to analyze the cost effectiveness of new rules or rule amendments that implement Best Available Retrofit Control Technology (BARCT) or all feasible measures. Rule 410.9 employs federal RACT requirements but not BARCT or all feasible measures, and is therefore not subject to the cost effectiveness analysis mandate.

### **XIII. ENVIRONMENTAL IMPACTS**

Both the California Environmental Quality Act (CEQA) and ARB policy require an evaluation of the potential adverse environmental impacts of proposed projects. The intent of Rule 410.9 is to protect public health by reducing the public's exposure to potentially harmful VOC emissions. An additional consideration is the impact that the rule may have on the environment. District has determined that no significant adverse environmental impacts should occur as a result of adopting Rule 410.9.

Pursuant to the Section 15061, Subsections (2) & (3) of the CEQA Guidelines, staff will prepared and file a Notice of Exemption for this project upon adoption.

### **XIV. SOCIOECONOMIC IMPACTS**

CHSC Section 40728.5 exempts districts with a population of less than 500,000 persons from the requirement to assess the socioeconomic impacts of adopted rules. Eastern Kern County population is below 500,000 persons.

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# **APPENDIX A**

## **RULE 410.9**

### **WOOD PRODUCTS SURFACE COATING OPERATIONS**

**RULE 410.9 Wood Products Surface Coating Operations** – Adopted 3/13/2014

**I. Purpose**

The Purpose of this Rule is to limit Volatile Organic Compound (VOC) emissions from wood product surface coatings. This Rule specifies wood coatings, storage, cleanup and disposal of organic solvents and waste solvent materials associated with the use of wood product coatings.

**II. Applicability**

Provisions of this Rule shall apply to surface coating of wood products.

**III. Definitions**

- A. Air Dried: A process whereby the coated object is cured or dried at ambient temperature or at a temperature below 194°F.
- B. Application Equipment: A device, including, but not limited to, a spray gun, brush, and roller, used to apply adhesives, coatings, or inks.
- C. ASTM: American Society for Testing and Materials.
- D. Baked: A process whereby the coated object is heated above ambient temperature to a temperature at or above 194°F for the purpose of curing or drying.
- E. Brush Coating: The manual application of coatings using brushes or rollers.
- F. Capture Efficiency: In percent, is the ratio of the weight of the VOC in the effluent stream entering the control device to the weight of VOC emitted from wood product coating operations, both measured simultaneously, and can be calculated by the following equation:
- $$\text{Capture Efficiency} = [W_c/W_e] \times 100$$
- Where:  $W_c$  = weight of VOC entering control device  
 $W_e$  = weight of VOC emitted
- G. Clear Sealer: A coating containing binders, but not opaque pigments, which seals the wood product prior to application of the subsequent coatings.
- H. Clear Topcoat: A final coating which contains binders, but not opaque pigments, and is specifically formulated to form a transparent or translucent solid protective film.
- I. Coating: A material which is applied to a surface and which forms a film in order to beautify and/or protect such surface.

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- J. Composite Wood: A manufactured material consisting of tightly compressed wood fibers bonded with resins which includes, but is not limited to, particleboard, fiberboard and hardboard.
- K. Cured Adhesive, Cured Coating, or Cured Ink: an adhesive, coating, or ink that is dry to the touch.
- L. Degreaser: A tank, tray, drum or other container in which objects to be cleaned are exposed to a solvent or solvent vapor in order to remove contaminants. The objects to be cleaned include, but are not limited to, parts, products, tools, machinery, and equipment. An enclosed spray application equipment cleaning system is not a degreaser.
- M. Dip Coating: The process in which a substrate is immersed in a solution (or dispersion) containing the coating material, and then withdrawn after allowing the excess coating to drain.
- N. Dissolver: An organic solvent that is added to an adhesive, coating, or ink in order to melt or to liquefy solid particles.
- O. EPA: United States Environmental Protection Agency
- P. Filler: A material which is applied to a wood product, and whose primary function is to build up, or fill the voids and imperfections in the wood product to be coated. This shall not include composite wood edge filler.
- Q. Grams of VOC per Liter of Coating, Less Water and Exempt Compounds: The weight of VOC content per combined volume of VOC and coating solids and can be calculated by the following equation:
- $$\text{Grams of VOC per liter of coating, less water and exempt compounds} = \frac{W_s - W_w - W_{ec}}{V_m - V_w - V_{ec}}$$
- Where:
- $W_s$  = weight of volatile compounds (grams)  
 $W_w$  = weight of water (grams)  
 $W_{ec}$  = weight of exempt compounds (grams)  
 $V_m$  = volume of material (liters)  
 $V_w$  = volume of water (liters)  
 $V_{ec}$  = volume of exempt compounds (liters)
- R. High Gloss Coating: Any coating which achieves at least 85% reflectance on a 60 degree gloss meter when tested by ASTM Method D-523-08.
- S. High-Solid Stains: Stains containing more than 1 pound of solids per gallon of material, and include wiping stains, glazes, and opaque stains.

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- T. High-Volume, Low-Pressure (HVL) Spray Equipment: Spray equipment permanently labeled as such and which is designed and operated between 0.1 and 10 pounds per square inch, gauge, (psig) air atomizing pressure measured dynamically at the center of the air cap and at the air horns and with liquid supply pressure less than 50 psig.
- U. Ink: A fluid that contains dyes and/or colorants and is used to make markings but not to protect surfaces.
- V. Liquid Leak: A visible solvent leak from a container at a rate of more than three drops per minute, or a visible liquid mist.
- W. Low-Solid Stain: A stain containing 1 pound, or less, of solids per gallon of material.
- X. Maintenance Cleaning: The cleaning of tools, forms, molds, jigs, machinery, and equipment (except coating application equipment, ink application equipment, or adhesive application equipment), and the cleaning of work areas where maintenance or manufacturing occurs.
- Y. Mold-Seal Coating: the initial coating applied to a new mold or repaired mold to provide a smooth surface which, when coated with a mold release coating, prevents products from sticking to the mold.
- Z. Multi-Colored Coating: a coating which exhibits more than one (1) color when applied and which is packaged in a single container and applied in a single coat.
- AA. Non-Absorbent Container: A container made of non-porous material that does not allow the migration of solvents through it.
- BB. Non-Atomized Solvent Flow: Solvents in the form of a liquid stream without the introduction of any propellant.
- CC. Pigmented Coating: A final opaque coating which contains binders and colored pigments, and is specifically formulated to hide the wood surface and form a solid protective film.
- DD. Potential to Emit: The maximum capacity of a facility to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the facility to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation, emissions, or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation is enforceable by the EPA Administrator.
- EE. Roll Coating: The application of coatings from a paint trough to a flat surface by a mechanical series of rollers.
- FF. Sanding Sealer: A coating containing binders, which seals the wood prior to application of the subsequent coatings.

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- GG. Stripper: Solvent used to remove material such as cured adhesives, cured inks, cured or dried paint, cured or dried paint residue or temporary protective coating.
- HH. Surface Preparation: The removal of contaminants from a surface prior to the application of coatings, inks, or adhesives or before proceeding to the next step of a manufacturing process.
- II. Transfer Efficiency: A ratio of the amount of coating solids adhering to the object being coated to the total amount of coating solids used in the application process, expressed as a percentage.
- JJ. Thinner: A solvent that is used to dilute coatings to reduce viscosity, color strength, and solids, or to modify drying conditions.
- KK. Touch Up: That portion of the coating operation which is incidental to the main coating process but necessary to cover minor imperfections or to achieve coverage as required.
- LL. Volatile organic Compound (VOC): As defined in Rule 102, Definitions.
- MM. Wood Products: Surface-coated room furnishings which include cabinets (kitchen, bath, and vanity), tables, chairs, beds, sofas, shutters, art objects, and any other coated objects made of wood, composite wood, simulated wood material used in combination with wood or composite wood; and/or paper laminated on composite wood.

### IV. Exemptions

Requirements of this Rule shall not apply to the following operations:

- A. Residential noncommercial operations.
- B. Small wood products coating operations (< 20 gallons usage/year).
- C. Coating of wooden musical instruments.
- D. The application of coatings by template (to add designs, letters or numbers to wood products).
- E. Aerosol-spray coatings used for touch up and repair.
- F. Specific types of finishes (imitation wood grain, crackle lacquers, and faux and leaf finishes).Architectural coatings.



**V. Requirement**

- A. With the exception of the exemptions listed in Section IV of Draft Rule 410.9, an operator shall not apply to any wood product, any coating, aerosol, or adhesive with a VOC content as applied, that exceeds the applicable limit specified in Table 1 or Table 2.

**TABLE 1  
VOC CONTENT LIMITS FOR WOOD PRODUCT COATING OPERATION**

<b>VOC Content Limits Expressed in Grams per Liter Less Water and Exempt Compounds</b>		
<b>Content Category</b>	<b>VOC Limit g/l</b>	<b>VOC Limit lb/gal</b>
1. Clear Topcoat	275	2.3
2. Clear Sealers	240	2.3
3. Filler	275	2.3
4. High-Solids Stain	240	2.0
5. Ink	500	4.2
6. Mold-Seal Coating	750	6.3
7. Multi-Colored Coating	275	2.3
8. Pigmented Coating	275	2.3
9. Sanding Sealer	240	2.3

**TABLE 2  
VOC CONTENT LIMITS FOR WOOD PRODUCT COATING OPERATION**

<b>VOC Content Limits Expressed in Grams per Liter of Material, as Applied</b>		
<b>VOC Content Category</b>	<b>VOC Limit g/l</b>	<b>VOC Limit lb/gal</b>
1. Low-Solids Stain	120	1.0
2. Stripper	350	2.9

No person shall use any stripper on wood products unless:

1. The reactive organic compound content is 350 grams per liter (2.9 lb/gal) of material or less; or
  2. The reactive organic compound composite partial pressure of the stripper is 2 mm Hg (0.04 psia) or less at 20°C (68°F).
- B. Most Restrictive VOC Limit: If anywhere on the container of any wood coating, or any label or sticker affixed to the container, or in any sales, advertising, or technical literature supplied by a person, any representation is made that indicates that the coating meets the definition of or is recommended for use for more than one of the coating categories listed in Table 1 or Table 2, then the lowest VOC content limit shall apply.

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- C. Alternate Emission Control: In lieu of complying with VOC content limits specified in Table of Standards, an emission control system with a capture efficiency of at least 90% and a control efficiency of at least 90% may be used if it has been approved in writing by the Air Pollution Control Officer. Any approved emission control system must be maintained and used in proper working condition at all times.
- D. Equipment Requirements: Spray application of wood coatings shall only be performed by the following: electrostatic equipment, high-volume, low pressure (HVLP) spray equipment, hand roller, flow coat, roll coater, dip coat, paint brush, detailing or touchup guns,
- E. Surface preparation and Equipment Cleanup Requirements: No person shall conduct preparation or equipment cleanup for activities subject to provisions of this Rule unless the following VOC limits are met and methods are used:
1. VOC content of surface preparation solvent shall not exceed 25 g/l (0.2 lb/gal), as calculated pursuant to Section III.Q., unless such cleaning operation is performed within the control of an APCO approved VOC emission control system that meets the requirements of Section V.C.
  2. Cleaning of Coatings Application Equipment: Solvents used for cleaning of coatings application equipment shall comply with both limits specified below:
    - a. Solvent shall have a VOC content of 950 grams or less per liter (7.9 lb/gal) of material; and
    - b. Solvent shall have a VOC composite partial pressure of 35 mm Hg or less at 20/C (68/F).
  3. Cleaning-Devices and Methods: No person shall perform solvent cleaning operations unless one of the following cleaning devices or methods is used:
    - a. Wipe Cleaning;
    - b. Spray bottles or containers with a maximum capacity of 16 fluid ounces from which solvents are applied without a propellant induced force;
    - c. Cleaning equipment having a closed solvent container during cleaning operations, except when depositing and removing objects to be cleaned, and closed during nonoperation except during maintenance and repair of the cleaning equipment itself;
    - d. Remote reservoir cold cleaner operated in conformance with District Rule 410.3, Organic Solvent Degreasing Operations;
    - e. System totally enclosing guns, cups, nozzles, bowls, and other parts during washing, rinsing, and draining procedures;

- f. Non-atomized solvent flow method collecting cleaning solvent in a container or a collection system closed except for solvent collection openings and, if necessary, openings to avoid excessive pressure build-up inside the container; or
- g. Solvent flushing method discharging solvent into a closed container, except for solvent collection openings and, if necessary, openings to avoid excessive pressure build-up inside the container. Discharged solvent from such equipment shall be collected in containers without atomizing into open air. Solvent may be flushed through the system by air or hydraulic pressure, or by pumping.

**VI. Administrative Requirements**

A. Labeling Requirements: Each manufacturer of any wood product coating subject to this Rule shall display information listed in Subsections VI.A.1. through VI.A.3. on coating container (or label) in which coating is sold or distributed or an accompanying data sheet

- 1. Date Code: date coating was manufactured, or date code representing date, shall be indicated on label, lid or bottom of container. If manufacturer uses a date code for any coating, manufacturer shall file an explanation of each code with the Executive Officer of the CARB.
- 2. Thinning Recommendations: statement of manufacturer's recommendation regarding thinning of coating shall be indicated on label or lid of container. This requirement does not apply to thinning of architectural coatings with water. If thinning of coating prior to use is not necessary, recommendation must specify coating is to be applied without thinning.
- 3. VOC Content: Each container or accompanying data sheet of any coating subject to this Rule shall display either maximum or actual VOC content of coating, as supplied, as well as maximum thinning as recommended by manufacturer. VOC content shall be displayed in grams of VOC per liter (or pounds per gallon) of coating. VOC content displayed shall be calculated using product formulation data, or shall be determined using test methods in Subsection VII.

B. Record Keeping Requirements

An operator is required to maintain the coating manufacturer's specifications, either listed on the coating container, product data sheet, or Safety Data Sheet (SDS), available for review and shall maintain daily records which show the following information as applicable:

- 1. A current list of VOC containing products in use containing all data necessary to evaluate compliance, including the following information, as applicable:
  - a. Material name and manufacturer's identification;

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- b. Application method;
  - c. Material type and specific use instructions;
  - d. Specific mixing instructions;
  - e. Maximum VOC content of coating as applied, including thinning solvents; hardeners, etc., excluding water and exempt compounds; and
  - f. Coating composition and density.
2. Daily coating and solvent use records, including the following information for each:
    - a. Volume used of each component and mix ratio;
    - b. VOC content in grams/liter (or pounds/gallon) as applied/used; and
    - c. Volume in liters (or gallons) applied/used.
  3. Capture and control equipment operating records, if applicable, including:
    - a. Periods of operation corresponding to use records kept for Subsection VI.B.2. showing control equipment was used as necessary;
    - b. Key system operating parameters showing operation as required to comply with this Rule and as intended by manufacturer; and
    - c. Date performed, and description of all control system maintenance.

Records required by the proposed Rule shall be retained for a minimum of three (3) years and made available on site during normal business hours to the APCO, ARB, or EPA upon request.

### **VII. Test Methods**

- A. Analysis of Samples - Samples of VOC as specified in this Rule shall be analyzed by U.S. EPA Method 24 Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings and analysis of halogenated exempt compounds shall be conducted using CARB Method 432 - Determination of Dichloromethane and 1,1,1-Trichloroethane in Paints and Coatings , or ASTM D-4457-85 Standard Test Method for Determination of Dichloromethane and 1,1,1-Trichloroethane in Paints and Coatings by Direct Injection into a Gas Chromatograph.
- B. Determination of Emissions - Emissions of VOC shall be measured by U.S. EPA Method 25, 25A, or 25B, as applicable.

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- C. Determination of Capture Efficiency - Where add-on control equipment is utilized, capture efficiency shall be determined in accordance with 40 CFR Appendix M – Methods 204-204F.
- D. Measurement of Acid Content - Acid content of Pre-Treatment Wash Primers shall be conducted and reported in accordance with ASTM D1613-06 Standard Test Method for Acidity in Volatile Solvents and Chemical Intermediates used in Paint, Varnish, Lacquer, and Related Products.
- E. Demonstration of Transfer Efficiency - Transfer efficiency shall be demonstrated using South Coast Air Quality Management District Method "Spray Equipment Transfer Efficiency Test Procedure for Equipment User".
- F. Determination of VOC Composite Partial Pressures - VOC composite partial pressures shall be determined using either manufacturer's information regarding formulation or using ASTM methods E168-06 – Standard Practices for General Techniques of Infrared Quantitative Analysis, E169-93 – Standard Practices for General Techniques of Ultraviolet- Visible Quantitative Analysis, or E260-96 – Standard practice for Packed Column Gas Chromatography for determination of mole fractions and then summing products of each VOC component's vapor pressure and its mole fraction. For materials containing no non-VOC components, VOC composite partial pressure can be measured directly by ASTM Method D2879-10 – Standard Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope.
- G. Determination of VOC Emissions From Spray Gun Cleaning Systems - VOC emissions from spray gun cleaning systems shall be made using South Coast Air Quality Management District "General Test Method for Determining Solvent Losses from Spray Gun Cleaning Systems".
- H. When more than one test method or set of test methods is specified for any testing, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of this rule."

### **VIII. Compliance Schedule**

#### A. New Sources

1. Owners or Operators of any facility proposing to install wood coating operations and required to comply with Section V of this rule shall obtain an Authority to Construct (ATC) in accordance with Rule 210.1 prior to installation or operation of any wood coating operation.
2. Owners or Operators of any facility with wood coating operations exempt by Section IV of this rule shall maintain records of wood coatings use, in accordance with Section VI, B upon initial operations.

B. Existing Sources

1. Owners or Operators of any facility with wood coating operations required to comply with Section V of this rule shall obtain a valid Permit to Operate (PTO) or an Authority to Construct (ATC). Owner or operator shall apply for an ATC within 180 days from the adoption of this Rule.
2. Owners or Operators of any facility with wood coating operations exempt by Section IV of this rule shall maintain records of wood coatings use within 180 days of this rule being adopted.
3. Owners or operators with valid PTO(s), required to comply with Section V of this rule shall be in full compliance within 12 months of rule adoption.

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**APPENDIX B**

**RULE 410.9**

**WOOD PRODUCTS SURFACE  
COATING OPERATIONS**

**RESPONSE TO COMMENTS**

## 410.9 Final Staff Report - Response to Comments

On November 6, 2013 the District held a public rule development workshop at the Mojave Veteran's Building in Mojave, California to present proposed Draft Rule 410.9, Wood Products Surface Coating Operations. The District submitted copies of the proposed Draft Rule to the Air Resources Board (ARB) and the Region IX office of the U.S. Environmental Protection Agency (EPA) in October, 2013 for an initial 30-day review.

Upon completion of review EPA offered comments and suggested changes to District staff regarding proposed Draft Rule 410.9. ARB did not provide comments or suggested changes but responded to the District that they would wait to review the rule upon submission of the final draft.

Industry representatives present at the 11/6/2013 workshop asked various questions regarding the proposed amendments and submitted written comments within 30-days following the workshop. Appendix B addresses comments, questions, and suggested changes regarding amended Rule 410.9.

Appendix B is separated into two sections based on EPA comments and suggested changes and industry/public comments and questions.

### I. EPA COMMENTS

The following changes were made to the 8/8/2013 proposed version of Draft Rule 410.9 in response to EPA comments.

#### Section I, Purpose

1. EPA recommended adding "*Volatile Organic Compound (VOC)*" to Section I, Purpose because it is the first instance of this term.

District revised per suggestion.

#### Section III, Definitions

1. EPA suggested: *The definition for Coating is mixed with the definition for CFR and should be deleted, as there is already a definition of Coating.*

District removed the term CFR and its definition has been removed.

2. EPA suggested: *The definition of Dip Coating be updated to be consistent with other districts. Other definitions of "Dip Coating" indicate that there is draining of excess material. Consider amending to: "The process in which a substrate is immersed in a solution (or dispersion) containing the coating material, and then withdrawn after allowing the excess coating to drain."*

District revised per suggestion.



3. EPA suggested: *An update of the AS reference in high gloss coating to ASTM method D-523-08.*

District revised per suggestion.

4. EPA suggested: *Revising or removing the definition of Pretreatment Coating because it is not applicable to wood surfaces.*

District removed Pretreatment Coating definition.

#### **Section IV, Exemptions**

1. EPA commented: *SCAQMD has removed the exemption for refinishing, replacement and custom replica furnishing coating operations and SJVAPCD does not include this category for exemption. Consider removing this exemption as low-VOC formulations are available for this usage.*

District removed replacement and custom replica furnishing coating operations exemption.

#### **Section V, Requirements**

1. EPA commented: *There are no sections addressing Control Systems, Application Requirements, Work Practices or Solvent Requirements (for both thinning and surface preparation and cleanup). Please add such sections to complete this rule.*

District added: Most restrictive VOC limit, alternate emission control, equipment requirements, and surface preparation and equipment cleanup requirements.

2. EPA recommended decreasing the limit of Clear Sealer and Sanding Sealer Section V: Table 1: VCAPCD Rule 74.30, Wood Products Coating, has a limit of 240 grams/liter for Sealers. Consider lowering the limit for Clear Sealer and Sanding Sealer to 240 grams/liter.

District has decreased the limit to 240 grams/liter.

2. EPA commented: *Section V: Table 2: Both SMAQMD Rule 463, Wood Products Coating, and previous-mentioned VCAPCD Rule 74.30 have an alternate limit for strippers which is: "the VOC composite partial vapor pressure is 2 mm Hg (0.04 psia) or less at 20 degree C (68 degree F), as calculated..." Consider adding this composite partial vapor pressure as an alternative limit for strippers.*

District revised per suggestion.

## Section VI, Administrative Requirements

### Record Keeping requirements

1. EPA commented: There is no subsection V.B.2. This should be VI.B.2.

District revised per suggestion.

### Test Method

1. EPA suggested adding the general clause about multiple tests: *"When more than one test method or set of test methods is specified for any testing, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of this rule."*

District revised per suggestion.

2. EPA recommended: *All ASTM test standards should include their titles. For ASTM E260, EPA has approved the 1996 version so this may be used if applicable. Since the partial pressures tests are included here, the partial pressure test for strippers should be included in Section V Table 2.*

District revised per suggestion.

3. EPA recommended: *Update titles for both the CARB Method 432 and ASTM-D4457-85. The reference to the Federal Register should be deleted as this is incomplete and should probably be to 40 CFR. Response:*

District revised per suggestion.

4. EPA commented: *In the measurement of acid content the latest version of ASTM D1613 is 1996. Consider using this if applicable.*

District updated ASTM to the latest version which was found to be 2006.

5. EPA commented: *The reference 40 CFR 52.741 should be replaced with "40 CFR Appendix M - Methods 204-204F.*

District: 40 CFR 52.741 has been replaced with 40 CFR Appendix M – Methods 204 – 294F.

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### Compliance Schedule

1. EPA suggested: *Clarify the records required for these facilities by revising the wording to "Owners or Operators of any facility with wood coating operations exempt by Section IV of this rule shall maintain records of wood coatings use, in accordance with Section VI, B upon initial operations."*

District revised per suggestion.

## II. INDUSTRY/PUBLIC COMMENTS

The following comments were made by industry representatives at, and following the 11/6/2013 workshop in Mojave, CA.

### **American Coatings Association**

American Coatings Association (ACA) submitted the following written comments regarding Rule 410.9 on 12/6/2013.

### **Section III, Definitions**

1. ACA: *Remove the definitions for "baked" and "continuous coating" since these do not pertain to wood coatings. The definitions for "baked" and "continuous coating".*

District has removed the definition

### **Section IV, Exemptions**

1. ACA: *To be consistent with the Antelope Valley and South Coast Wood Product Rules, including separate exemptions for Aerosol-spray coatings and touch up and repair.*

District added Aerosol-spray coatings used for touch up and repair to Section IV, Exemptions.

### **Section VI, Administrative Requirements**

#### Label requirements

1. ACA requested the removal of the proposed labeling provisions found in Section VI(A) (pages A-5 and A-6) of proposed draft rule 410.9.

District removed Labeling provisions "Industrial Maintenance Coatings", "Clear Brush Lacquers", "Specialty Primers, Sealers and Undercoaters", "Quick Dry Enamels" and "Non-flat High Gloss Coatings": however, "Date Code", "Thinning

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Requirements” and “VOC Content” remain. The option of having requirements on a data sheet was also added.

### Compliance Schedule

1. ACA: Requested a 12 month window from rule adoption to give manufacturers time to reformulate products and to sell through the current product.

District revised per suggestion.

### **Edwards Air Force Base**

Edwards Air force Base (Edwards) submitted the following written comments regarding Rule 410.9 on 12/6/2013.

### **Section VI, Administrative Requirements**

### Compliance Schedule

1. Edwards: Requested a 12 month window from rule adoption to give manufacturers time to reformulate products and to sell through the current product.

District revised per suggestion.

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