



Air Pollution Control Board

San Diego County Air Pollution Control District

GOVERNING BODY

GREG COX
First District

DIANNE JACOB
Second District

DAVE ROBERTS
Third District

RON ROBERTS
Fourth District

BILL HORN
Fifth District

AGENDA ITEM

DATE: May 11, 2016

AP02

TO: Air Pollution Control Board

SUBJECT: NOTICED PUBLIC HEARING - ADOPTION OF PROPOSED NEW RULE 67.12.1 – POLYESTER RESIN OPERATIONS, AND REPEAL OF EXISTING RULE 67.12 – POLYESTER RESIN OPERATIONS (DISTRICTS: ALL)

Overview

This is a request for the Air Pollution Control Board to adopt proposed new Rule 67.12.1 to reduce the volatile organic compounds (VOCs) emitted from polyester resin materials used in the manufacture of products such as aerospace components, synthetic marble products, surfboards and boats. VOCs emitted into the air contribute to the formation of ground level ozone, an air pollutant. Despite substantial air quality improvement over the past two decades, San Diego County has not yet attained state and federal air quality standards (limits) for ozone. Consequently, the Air Pollution Control District (District) is required by state and federal law to update its regulations as necessary to reflect the latest advances in technology to further reduce ozone-forming emissions. Adoption of Rule 67.12.1 will help fulfill this requirement.

If adopted, Rule 67.12.1 will replace existing Rule 67.12, which was last updated in 1996 and is now outdated. Since 1996, manufacturers of polyester resin materials have developed new materials that contain less VOCs while still meeting appearance, durability, strength, and other performance needs. Proposed Rule 67.12.1 reflects the development and availability of these lower emitting materials. Several air districts throughout California have already adopted the same requirements and compliant polyester resin materials are now readily available and are largely in use in San Diego County.

If adopted, proposed new Rule 67.12.1 will take effect in one year for existing facilities, and existing Rule 67.12 will be automatically repealed at that time. This one year grace period provides time for affected businesses to use their existing inventories of conventional polyester resin materials and then transition to the new lower emitting materials required by Rule 67.12.1. Any future new operations must comply with new Rule 67.12.1 upon startup.

Substantial outreach to affected facilities was conducted during the rule development process. No significant concerns were raised and all known issues have been addressed. Additional outreach is planned upon adoption of the proposed new rule, including distribution of an advisory to affected parties to enhance awareness of the new requirements. Additionally, the

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amended rules will be submitted to the U.S. Environmental Protection Agency through the California Air Resources Board for approval as part of the San Diego County portion of the State Implementation Plan for attaining and maintaining air quality standards.

Recommendation(s)

AIR POLLUTION CONTROL OFFICER

1. Find that the adoption of proposed new Rule 67.12.1 and repeal of existing Rule 67.12 are categorically exempt from the provisions of the California Environmental Quality Act pursuant to California Code of Regulations, Title 14, Section 15308, as an action taken to assure the protection of the environment, where the regulatory process involves procedures for protection of the environment, and pursuant to California Code of Regulations, Title 14, Section 15061(b)(3), since it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment.
2. Adopt the Resolution entitled RESOLUTION ADOPTING NEW RULE 67.12.1 – POLYESTER RESIN OPERATIONS AND REPEALING RULE 67.12 – POLYESTER RESIN OPERATIONS OF REGULATION IV OF THE RULES AND REGULATIONS OF THE SAN DIEGO COUNTY AIR POLLUTION CONTROL DISTRICT.

Fiscal Impact

There is no fiscal impact associated with these recommendations. There will be no change in net General Fund cost and no additional staff years are required.

Business Impact Statement

Adopting proposed new Rule 67.12.1 will not adversely impact the business community. Compliant polyester resin materials are widely available and equally priced, or only marginally more expensive. Most affected facilities already comply with the proposed new rule. Furthermore, the new requirements will not apply to existing businesses for one year, allowing time to deplete existing inventories of conventional materials and transition to lower emitting materials.

Advisory Board Statement

At its meeting on February 10, 2016, with a quorum present, the Air Pollution Control District Advisory Committee voted unanimously in support of the District's recommendations.

Background

San Diego County does not meet the current California and National Ambient Air Quality Standards for ozone, and therefore is classified as an ozone nonattainment area. Both state and federal laws require the District to adopt and implement rules to control emissions of ozone precursors, including VOCs. In addition, as control technologies advance and new or tighter limits on air pollutant emissions become feasible, the District is required under state and federal laws to update its rules accordingly. Proposed new Rule 67.12 is a result of these state and federal requirements.

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Proposed new Rule 67.12.1 will limit VOC emissions from polyester resin materials and cleaning solvents used in the manufacture of products such as aerospace components, synthetic marble products, surfboards and boats. The proposed rule also limits emissions of particulate matter that results from the sanding of newly manufactured polyester resin products. In addition, the rule contains updated record keeping requirements and test methods.

There are 24 facilities in San Diego County that are currently subject to existing Rule 67.12 and thus subject to proposed new Rule 67.12.1, with total VOC emissions from polyester resin operations of approximately 25 tons per year. The proposed new rule will reduce VOC emissions by approximately 4 tons per year or 16%. Most affected facilities already voluntarily comply with the proposed standards and thus the emission reductions are occurring. Nevertheless, adoption of Rule 67.12.1 is necessary to account for these emission reductions in the air quality program and fulfill state and federal mandates.

Pursuant to state law, District staff have compared the proposed new rule to other local or federal requirements for the control of air pollutant emissions from polyester resin operations (Attachment B). In addition, staff have evaluated the cost-effectiveness of any potential control options that achieve the same emission reduction objectives as the proposed rule (Attachment C).

District staff conducted a public workshop to discuss the proposed requirements with affected parties. No significant concerns were raised and all known issues have been addressed, as described in a workshop report that was distributed to interested parties (Attachment D).

Socioeconomic Impact Assessment

State law requires the District to perform an assessment of the socioeconomic impacts when adopting, amending, or repealing a rule that will significantly affect air quality or emission limitations. A review conducted by District staff found that proposed new Rule 67.12.1 will not significantly affect air quality or emission limitations. Most affected facilities already comply with the proposed standards. Emission reductions have already occurred due to compliant polyester resin materials being widely available and largely in use in San Diego County. The District does not expect additional, significant emission reductions as a result of the adoption of proposed new Rule 67.12.1. Accordingly, a socioeconomic impact assessment is not required and has not been prepared.

Environmental Statement

The California Environmental Quality Act (CEQA) requires environmental review for certain actions. The District conducted a review to determine if CEQA applies to the adoption of proposed Rule 67.12.1. Most affected facilities already use materials that comply with the proposed new rule. If adopted, the rule will further reduce VOC emissions from polyester resin operations in San Diego County. District staff thus determined that the adoption of Rule 67.12.1 and repeal of Rule 67.12 are categorically exempt from the provisions of CEQA pursuant to California Code of Regulations, Title 14, Section 15308, as an action taken to assure the protection of the environment, where the regulatory process involves procedures for protection

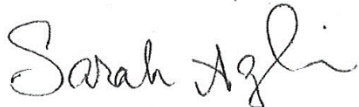
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of the environment, and pursuant to Section 15061(b)(3), since it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment.

Linkage to the County of San Diego Strategic Plan

Today's proposed actions support the Sustainable Environments Initiative in the County of San Diego's 2016–2021 Strategic Plan with an objective to enhance the quality of the environment by focusing on sustainability, pollution prevention and strategic planning. Proposed new Rule 67.12.1 will reduce air pollutant emissions and improve air quality in San Diego County.

Respectfully submitted,



SARAH E. AGHASSI
Deputy Chief Administrative Officer



ROBERT J. KARD
Air Pollution Control Officer

ATTACHMENT(S)

- Attachment A – Resolution Adopting New Rule 67.12.1 – Polyester Resin Operations and Repealing Rule 67.12 – Polyester Resin Operations, of Regulation IV of the Rules and Regulations of the San Diego County Air Pollution Control District
- Attachment B – Comparative Analysis
- Attachment C – Incremental Cost-Effectiveness Analysis
- Attachment D – Workshop Report
- Attachment E – Existing Rule 67.12 – Polyester Resin Operations to be Repealed

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AGENDA ITEM INFORMATION SHEET

REQUIRES FOUR VOTES: ☐ Yes ☒ No

WRITTEN DISCLOSURE PER COUNTY CHARTER SECTION 1000.1 REQUIRED
☐ Yes ☒ No

PREVIOUS RELEVANT BOARD ACTIONS:

May 15, 1996, Amendment of Rule 67.12 – Polyester Resin Operations

BOARD POLICIES APPLICABLE:

N/A

BOARD POLICY STATEMENTS:

N/A

MANDATORY COMPLIANCE:

N/A

**ORACLE AWARD NUMBER(S) AND CONTRACT AND/OR REQUISITION
NUMBER(S):**

N/A

ORIGINATING DEPARTMENT: AIR POLLUTION CONTROL DISTRICT

OTHER CONCURRENCES(S): N/A

CONTACT PERSON(S):

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**RESOLUTION ADOPTING NEW RULE 67.12.1 – POLYESTER RESIN OPERATIONS
AND REPEALING RULE 67.12 – POLYESTER RESIN OPERATIONS, OF
REGULATION IV OF THE RULES AND REGULATIONS OF THE
SAN DIEGO COUNTY AIR POLLUTION CONTROL DISTRICT**

On motion of Member Horn, seconded by Member Cox, the following resolution is adopted:

WHEREAS, the San Diego County Air Pollution Control Board (Board), pursuant to Section 40702 of the Health and Safety Code, adopted Rules and Regulations of the Air Pollution Control District (District) of San Diego County; and

WHEREAS, said Board now desires to amend said Rules and Regulations; and

WHEREAS, notice has been given and a public hearing has been held relating to the amendment of said Rules and Regulations pursuant to Section 40725 of the Health and Safety Code and Section 51.102 of the Code of Federal Regulations; and

WHEREAS, pursuant to Section 40727 of the Health and Safety Code, the Board makes the following findings:

- (1) (Necessity) The adoption of proposed new Rule 67.12.1 is necessary in order to implement federal requirements for Reasonably Available Control Technology and state requirements for all feasible control measures to achieve the ambient air quality standards for ozone in San Diego County, and the repeal of Rule 67.12 is necessary in order to maintain clarity of requirements for those affected;
- (2) (Authority) The adoption of proposed new Rule 67.12.1 and repeal of Rule 67.12 are authorized by Health and Safety Code Section 40702;
- (3) (Clarity) Proposed new Rule 67.12.1 and the repeal of Rule 67.12 can be easily understood by persons directly affected by them;
- (4) (Consistency) The adoption of proposed new Rule 67.12.1 and repeal of Rule 67.12 are in harmony with, and not in conflict with or contrary to, existing statutes, court decisions, and state and federal regulations;
- (5) (Non-duplication) The adoption of proposed new Rule 67.12.1 and repeal of Rule 67.12 will not duplicate existing District, state, or federal requirements;
- (6) (Reference) The adoption of proposed new Rule 67.12.1 and repeal of Rule 67.12 are necessary to comply with: federal law, Clean Air Action Section 182(b)(2), which requires implementation of Reasonably Available Control Technology on stationary

sources of volatile organic compound emissions; and state law, California Health and Safety Code Section 40914(b)(2), which requires adoption of every feasible control measure to reduce ozone-precursor emissions;

WHEREAS, the Board further finds pursuant to Health and Safety Code Section 40001 that adoption of proposed new Rule 67.12.1 will facilitate the attainment of ambient air quality standards; and

WHEREAS, the Board further finds that Rule 67.12 is now duplicative of proposed new Rule 67.12.1, and will be rendered obsolete one year from the effective date of proposed new Rule 67.12.1, at which time existing facilities are required to comply with the new requirements; and

WHEREAS, the Board further finds that an analysis comparing proposed new Rule 67.12.1 with applicable requirements of federal and local regulations has been prepared pursuant to Health and Safety Code Section 40727.2; and

WHEREAS, the Board further finds that an incremental cost-effectiveness analysis pursuant to Health and Safety Code Section 40920.6(a) has been prepared for proposed new Rule 67.12.1 and has been made available for public review and comment, and has been actively considered; and

WHEREAS, the Board further finds that an assessment of the socioeconomic impacts of the proposed new Rule 67.12.1 and repeal of Rule 67.12 is not required pursuant to Health and Safety Code Section 40728.5, as the large majority of affected facilities already comply with the proposed new requirements and proposed new Rule 67.12.1 will not significantly affect air quality or emissions limitations.

NOW THEREFORE IT IS RESOLVED AND ORDERED by the San Diego County Air Pollution Control Board that the Rules and Regulations of the Air Pollution Control District of San Diego County be, and hereby are amended as follows:

1. Proposed new Rule 67.12.1 is to read as follows:

RULE 67.12.1 POLYESTER RESIN OPERATIONS (Adopted *(date of adoption)*)

(a) APPLICABILITY

(1) Except as otherwise provided in Section (b), this rule is applicable to all polyester resin operations, including any associated surface preparation, solvent cleaning and cleaning of application equipment.

(2) Polyester resin operations subject to or exempt from this rule shall not be subject to Rule 66.1.

(b) **EXEMPTIONS**

(1) This rule shall not apply to the following:

(i) Polyester resin operations using less than 20 gallons of polyester resin materials per month. Daily or monthly records of material usage shall be maintained on-site for three years and be made available to the District upon request.

(ii) Coatings subject to Rule 67.0.

(2) Subsections (d)(1) and (d)(2) shall not apply to closed mold polyester resin operations.

(3) Subsection (d)(2) shall not apply to touch-up and repair operations using a hand held air atomized spray gun that has a container for the polyester resin material as part of the gun.

(4) Subsection (d)(5) shall not apply to the following:

(i) Equipment used for buffing, polishing, carving, cutting, deburring, drilling, machining, routing, shearing, sanding, sawing, or surface grinding of fiber reinforced plastic parts that is exclusively vented through a control device that exhausts inside an enclosed building where such equipment is located.

(ii) Dry sanding, grinding or cutting of fiber reinforced plastic parts associated with operations exempt by (b)(1)(i) above.

(c) **DEFINITIONS**

For the purpose of this rule, the following definitions shall apply:

(1) **"Catalyst"** means a substance added to the resin to accelerate the rate of curing.

(2) **"Cleaning Materials"** mean materials containing VOC used for surface preparation or the cleaning of hands, tools, molds or application equipment associated with polyester resin operations.

(3) **"Closed Mold Operation"** means a method of forming objects from polyester resins by placing the material in a confining mold cavity and applying pressure and/or heat.

(4) **"Controlled Enclosure"** means a structure having at least three sides and a roof, and which is designed to capture process emissions to meet the requirements of all District prohibitory standards (e.g., Rules 50, 51, 52, 71, etc.).

(5) **"Controlled Process"** means a modification to a dry sanding, grinding or cutting operation which uses water sprays, vacuum devices or other techniques to control the emission of particulates to the atmosphere to meet the requirements of all District prohibitory standards (e.g., Rules 50, 51, 52, 71, etc.).

(6) **"Corrosion Resistant Resin"** means a resin which is used to make products for corrosion resistant applications such as, but not limited to, tooling, fuel or chemical tanks, boat hulls, pools, and outdoor spas.

(7) **"Cross-Linking"** means the process of joining two or more polymer chains together.

(8) **"Cure"** means polymerization, i.e., the transformation from a liquid to a solid state, to achieve desired product physical properties, including hardness.

(9) **"Electrostatic Spray"** means an application method accomplished by charging atomized particles for deposition by electrostatic attraction.

(10) **"Exempt Compound"** means the same as defined in Rule 2.

(11) **"Filler"** means a finely divided inert (non-VOC) material, which may be added to the resin to enhance its mechanical properties and extend its volume. Resin fillers include, but are not limited to, silica, carbon black, talc, mica and calcium carbonate.

(12) **"Fiberglass"** means a fiber similar in appearance to wool or cotton fiber but made from glass.

(13) **"Fire Retardant Resin"** means a resin designed for the purpose of delaying the spread of combustion.

(14) **"Gel Coat"** means a polyester resin surface coat, either pigmented or clear, providing a cosmetic enhancement and improved resistance to exposure.

(15) **"High Strength Resin"** means a resin with a casting tensile strength of 10,000 psi or more, used to manufacture high performance products.

(16) **"High-Volume Low-Pressure (HVLP) Spray"** means an application method using a spray applicator and pressurized air which is designed to be operated and which is operated at an atomizing pressure between 0.1 and 10.0 psig, measured dynamically at the center of the applicator's air cap and the applicator's air horns.

(17) **"Inhibitor"** means a substance designed to slow down or prevent a chemical reaction.

(18) **"Lamination Resin"** means an orthophthalate, isophthalate and dicyclopentadiene resin which is used in composite system made of layers of reinforcement fibers and resins.

(19) **"Manual Application"** means the application of resin to an open mold using a hand lay-up technique. Components of successive plies of resin-impregnated reinforcement fibers are applied using hand tools such as brushes and rollers.

(20) **"Monomer"** means an organic compound, such as styrene, that combines with itself or other similar compounds by a cross-linking reaction to become a part of a cured thermosetting resin.

(21) **"Non-Atomizing Application"** means an application technology in which the resin is not broken into droplets or an aerosol as it travels from the application equipment to the surface of the part. Non-atomizing application equipment includes, but is not limited to, flow coaters, chopper flow coaters, pressure fed resin rollers, resin impregnators, and fluid impingement technology.

(22) **"Polyester"** means a complex polymeric ester, derived from di-functional acids and alcohols, which is dissolved in a monomer.

(23) **"Polyester Resin Materials"** means unsaturated polyester cross-linking agents, catalysts, gel coats, inhibitors, and any other material containing VOC used in a polyester resin operation.

(24) **"Polyester Resin Operation"** means the fabrication, rework, repair, or touch-up of composite products using any of the following methods: mixing, pouring, hand lay-up, impregnation, injection, forming, winding, spraying, and curing of polyester resin materials.

(25) **"Polymer"** means a large chemical chain composed of identical cross-linked groups, such as polystyrene.

(26) **"Primer Gel Coat"** means a gel coat used to coat the surface of composite parts prior to top-coat painting.

(27) **"Repair"** means the addition of polyester resin materials to portions of a previously fabricated product in order to mend mechanical damage which occurs after the normal fabrication process.

(28) **"Resin"** means any of a class of organic polymers of natural or synthetic origin used in reinforced products to surround and hold fibers and/or fillers, and which is solid or semi-solid in the cured state.

(29) **"Solid Surface Resin"** means a resin used without gel coats to fabricate homogenous solid surface products.

(30) **"Specialty Gel Coat"** means a gel coat used for tooling or in conjunction with fire retardant, corrosion-resistant, or high strength materials.

(31) **"Surface Preparation"** means the cleaning of surfaces by utilizing cleaning materials prior to further treatment, sale or intended use.

(32) **"Touch-up"** means that portion of the polyester resin operation that is necessary to cover minor imperfections.

(33) **"Tub/Shower Resin"** means a dicyclopentadiene resin, along with orthophthalate and isophthalate resins, which are used to fabricate bathware products.

(34) **"Vapor Suppressed Resin"** means a resin which has been modified to minimize the weight loss from VOC emissions during polymerization.

(35) **"Volatile Organic Compound (VOC)"** means the same as defined in Rule 2.

(36) **"VOC Content per Volume of Material"** means the weight of VOC per volume of cleaning material, and is calculated by the equation provided in Rule 2.

(d) **STANDARDS**

(1) **Polyester Resin Materials**

(i) Except as provided in Subsections (b)(1) and (b)(2), a person shall not apply any polyester resin material with monomer content in excess of the following percentages, by weight, as applied:

<u>CATEGORY</u>	<u>MONOMER WEIGHT %</u>
Clear Gel Coat	
Marble Gel Coat	40%
Other Clear Gel Coats	44%
Pigmented Gel Coat	
White and Off-White Gel Coats	30%
Other Non-White Gel Coats	37%
Primer Gel Coat	28%
Specialty Gel Coat	48%
Resins	
Marble Resins	10% or 32% without fillers
Solid Surface Resins	17%
Tub/Shower Resins	24% or 35% without fillers
Lamination Resins	31% or 35% without fillers
Fire Retardant Resins	38%
Corrosion Resistant Resins	48%
High Strength Resins	40%
Other Resins	35%

(ii) Except as provided in Subsections (b)(1) and (b)(2), a person shall not apply any vapor suppressed resin material unless the weight loss from the VOC

emissions is 50 grams per square meter or less of exposed surface area during polymerization.

(2) Application Equipment for Polyester Resin Operations

Except as provided in Subsections (b)(2) and (b)(3), no polyester resin material shall be applied unless one of the following application methods is used:

(i) Manual or other non-atomizing application techniques; or

(ii) Electrostatic spray; or

(iii) Air-Assisted Airless Spray; or

(iv) Airless Spray; or

(v) High-Volume, Low-Pressure (HVLP) spray: facilities using an HVLP spray gun shall have available on site pressure gauges in proper operating condition to measure the air cap pressure or have available manufacturer's technical information regarding the correlation between the handle air inlet pressure and the air cap pressure. If the correlation option is used to demonstrate compliance, a handle air inlet pressure gauge will be required on site in proper operating condition to measure the handle air inlet pressure.

(3) Surface Preparation and Solvent Cleaning Materials

A person shall not conduct surface preparation or solvent cleaning unless the VOC content of the cleaning material is 25 grams per liter (0.21 lbs/gal) of material, or less as used.

(4) Cleaning of Application Equipment

A person shall not use VOC containing materials for the cleaning of application equipment used in operations subject to this rule unless:

(i) The VOC content of the cleaning material is 25 grams per liter (0.21 lbs/gal) of material, or less as used; or

(ii) The cleaning material is flushed or rinsed through the application equipment in a contained manner that will minimize evaporation into the atmosphere; or

(iii) The application equipment or equipment parts are cleaned in a container which is open only when being accessed for adding, cleaning, or removing application equipment or when cleaning material is being added, provided the cleaned equipment or equipment parts are drained to the container until dripping ceases; or

(iv) A system is used that totally encloses the component parts being cleaned during washing, rinsing and draining.

(5) Except as provided in Subsection (b)(4), conduct all dry sanding, grinding and cutting operations of polyester resin products either inside a controlled enclosure or using a controlled process. For marine vessel repair operations, this requirement shall apply only for sanding, grinding or cutting operations conducted on the exterior of a vessel hull. This requirement shall not apply to any portable drilling operations.

(e) CONTROL EQUIPMENT

(1) In lieu of complying with the provisions of Section (d) of this rule, an owner/operator may use an air pollution control system which:

(i) Has been installed in accordance with an Authority to Construct; and

(ii) Includes an emission collection system which captures and transports emissions generated by polyester resin operations to an air pollution control device; and

(iii) Has a combined emissions capture and control device efficiency of at least 90% by weight.

(2) A person electing to use control equipment pursuant to Subsection (e)(1) shall submit to the Air Pollution Control Officer for approval an Operation and Maintenance plan for the proposed emission control device and emission collection system and receive approval prior to operation of the control equipment. Thereafter, the plan may be modified, with Air Pollution Control Officer approval, as necessary to ensure compliance. Such plan shall:

(i) Identify all key system operating parameters. Key system operating parameters are those necessary to ensure compliance with Subsection (e)(1)(iii), such as temperature, pressure, and/or flow rate; and

(ii) Include proposed inspection schedules, anticipated ongoing maintenance, and proposed record keeping practices regarding the key system operating parameters.

(3) Upon approval of the Air Pollution Control Officer, a person subject to the requirements of Section (e) shall implement the Operation and Maintenance plan and shall comply with the provisions of the approved plan thereafter.

(f) RECORD KEEPING

(1) Any person subject to the provisions of this rule shall maintain records of VOC-containing materials in accordance with the following:

(i) Maintain a current list of each polyester resin material, surface preparation and cleaning material in use, which provides all of the data necessary to evaluate compliance, including, but not limited to:

(A) Manufacturer's name, identification, and material specifications for each polyester resin material, surface preparation and cleaning material used.

(B) For polyester resin materials, the monomer content percent, by weight, as applied; the VOC content of any catalysts, fillers, and/or diluents, including thinners; the application method; and the applicable category of each resin or gel coat as specified in Subsection (d)(1).

(C) For vapor suppressed resins, manufacturer's information on the weight loss from the VOC emissions during resin polymerization.

(D) For surface preparation and cleaning materials, the VOC content expressed in grams per liter (lbs/gal) of material, as used.

(ii) Maintain daily or monthly records of the amount of each polyester resin material used.

(iii) Maintain monthly inventory, purchasing or dispensing records of the amount of each VOC-containing surface preparation and cleaning material used.

(2) Any person using control equipment pursuant to Section (e) of this rule shall:

(i) Maintain records in accordance with Subsection (f)(1); and

(ii) For all polyester resin materials, surface preparation and cleaning materials not in compliance with Subsections (d)(1) or (d)(3), maintain daily records of the amount of each polyester resin material, surface preparation and cleaning material used; and

(iii) Maintain daily records of key system operating parameters as approved in the Operation and Maintenance plan. Such records shall be sufficient to document continuous compliance with Subsection (e)(1)(iii) during periods of emission producing activities.

(3) All records shall be retained on site for at least three years, and be made available to the District upon request.

(g) TEST METHODS

When more than one test method or set of test methods are specified in this Section, 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 the rule.

(1) The monomer content of resins subject to Subsection (d)(1)(i) of this rule shall be determined in accordance with South Coast Air Quality Management District (SCAQMD) Method 312-91 (Determination of Percent Monomer in Polyester Resin), April 1996.

(2) The polyester resin material weight loss per square meter subject to Subsection (d)(1)(ii) of this rule shall be determined in accordance with SCAQMD Method 309-91 (Determination of Static Volatile Emissions), February 1993.

(3) The VOC content of surface preparation or cleaning materials containing 50 grams of VOC per liter or less, subject to the requirements of Subsections (d)(3) and (d)(4), shall be determined by SCAQMD Method 313-91 (Determination of Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry), February 1997, or by SCAQMD Method 308-91 (Quantification of Compounds by Gas Chromatography), February 1993.

(4) The content of methyl acetate, acetone and parachlorobenzotrifluoride shall be determined in accordance with the ASTM Test Method D6133-02(2014) (Standard Test Method for Acetone, p-Chlorobenzotrifluoride, Methyl Acetate or t-Butyl Acetate Content of Solventborne and Waterborne Paints, Coatings, Resins, and Raw Materials by Direct Injection Into a Gas Chromatograph), or its most current version.

(5) Measurements of exempt compound content, except for those determined in accordance with Subsection (g)(4), shall be conducted in accordance with SCAQMD Test Method 303-91 (Determination of Exempt Compounds), August 1996.

(6) The overall control efficiency of air pollution control equipment operated pursuant to Subsection (e)(1)(iii) shall be determined by multiplying the capture efficiency of the emission collection system by the control efficiency of the air pollution control device. The control efficiency of the air pollution control device shall be determined using Environmental Protection Agency (EPA) Test Methods 25A and/or 18 (40 CFR Part 60, Appendix A), both dated September 1996, and in accordance with a protocol approved by the Air Pollution Control Officer.

(7) Capture efficiency of an emission collection system pursuant to Subsection (e)(1)(iii) shall be determined according to EPA Test Method 204 and 204A through 204F (40 CFR Part 51, Appendix M), as applicable, dated June 1997, and technical document "Guidelines for Determining Capture Efficiency," dated January 1995. Subsequent to the initial compliance demonstration period, appropriate key system operating parameters as approved by the Air Pollution Control Officer may be used as indicators of the performance of the emission control system.

(8) Other test methods which are determined to be equivalent to the test methods specified in this rule and approved, in writing, by the Air Pollution Control Officer, California Air Resources Board, and EPA may be used in place of the test methods specified in this rule.

(h) **COMPLIANCE SCHEDULE**

(1) All new operations or processes subject to this rule shall comply with all applicable requirements upon initial startup.

(2) All existing operations or processes subject to this rule shall comply with all applicable requirements no later than *(one year from date of adoption)*.

(3) The owner or operator of an existing operation that chooses to comply with the rule by installing air pollution control equipment pursuant to Section (e) of this rule shall:

(i) By *(6 months from date of adoption)*, submit to the Air Pollution Control Officer an application for an Authority to Construct and a Permit to Operate an air pollution control system as specified in Section (e).

(ii) By *(18 months from date of adoption)*, comply with all applicable rule requirements.

2. Existing Rule 67.12 is to be repealed in its entirety.

IT IS FURTHER RESOLVED AND ORDERED that proposed new Rule 67.12.1 of Regulation IV shall take effect May 11, 2016.

IT IS FURTHER RESOLVED AND ORDERED that the repeal of Rule 67.12 of Regulation IV shall take effect May 11, 2017.

APPROVED AS TO FORM AND LEGALITY
COUNTY COUNSEL

BY: Paula Forbis
SENIOR DEPUTY

The foregoing Resolution was passed and adopted by the Air Pollution Control District, County of San Diego, State of California, on this 11th day of May, 2016, by the following vote:

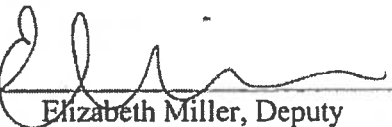
AYES: Cox, Jacob, D. Roberts, R. Roberts, Horn

- - -

STATE OF CALIFORNIA)
County of San Diego)^{SS}

I hereby certify that the foregoing is a full, true and correct copy of the Original Resolution entered in the Minutes of the San Diego County Air Pollution Control Board.

DAVID HALL
Clerk of the Air Pollution Control Board

By: 
Elizabeth Miller, Deputy



Resolution No. 16-047
Meeting Date: 05/11/16 (AP2)

COMPARATIVE ANALYSIS

PROPOSED NEW RULE 67.12.1 – POLYESTER RESIN OPERATIONS

STATUTORY REQUIREMENTS

Prior to adopting, amending, or repealing a rule or regulation, California Health and Safety Code Section 40727 requires findings of necessity, authority, clarity, consistency, non-duplication, and reference, as defined therein. As part of the consistency finding and to ensure proposed rule requirements do not conflict with or contradict other Air Pollution Control District (District) or federal regulations, Health and Safety Code Section 40727.2(a) requires the District to perform a written analysis identifying and comparing the air pollution control standards and other provisions of proposed new Rule 67.12.1 with existing or proposed District rules and guidelines and existing federal rules, requirements, and guidelines applying to the same source category.

ANALYSIS

Proposed new Rule 67.12.1 applies to polyester resin operations and associated cleaning operations emitting volatile organic compounds (VOC). The U.S. Environmental Protection Agency (EPA) has published a Control Techniques Guidelines (CTG) for Fiberglass Boat Manufacturing Materials applicable to this source category. This CTG applies to fiberglass boat manufacturing operations where the total actual VOC emissions from all fiberglass boat manufacturing operations are 15 pounds per day or greater.

EPA has also published two federal regulations that apply to polyester resin operations: Subpart VVVV – National Emission Standard for Hazardous Air Pollutants (NESHAP) for Boat Manufacturing, and Subpart WWWW – NESHAP for Reinforced Plastic Composites Production. Both NESHAPs apply to major sources of air toxics (i.e., 10 tons per year of any one air toxic, or 25 tons per year of a combination of air toxics.)

In addition, District New Source Review (NSR) Rule 20.2 – Non-Major Stationary Sources, also applies to any new or modified polyester resin operation that would be subject to new Rule 67.12.1. Rule 20.2 requires that any non-major new or modified emission unit that has a post-project potential to emit of 10 pounds/day or more of VOC be equipped with Best Available Control Technology (BACT). For polyester resin operations, BACT is identified as either use of an add-on emission control system, or if such system is demonstrated to be not cost-effective, compliance with the requirements of current Rule 67.12. Since new Rule 67.12.1 contains VOC content limits for various polyester resin materials and cleaning materials that are more stringent than the existing rule, these limits will become the new BACT requirements.

CONCLUSION

As shown in Table 1, there are no conflicts or contradictions between proposed new Rule 67.12.1 and EPA's CTG Control Techniques Guidelines. Furthermore, there are no contradictions between the proposed new rule and the District's NSR Rule 20.2 BACT requirements.

TABLE 1 – COMPARATIVE ANALYSIS

Items for Comparison	Proposed New Rule 67.12.1	CTG for Fiberglass Boat Manufacturing Materials
Applicability	All polyester resin operations and associated surface preparation and coating application equipment cleaning.	Fiberglass boat manufacturing operations where the total actual VOC emissions from all fiberglass boat manufacturing operations are 15 lbs/day or greater.
Exemptions	Exempt from rule: polyester resin operations using 20 gallons or less of polyester resin materials per month. Exempt from controlled enclosure/controlled process requirement: dry sanding, grinding or cutting of fiber reinforced plastic parts associated with exempt operations.	No exemptions
VOC Content Standards	VOC content limits for various categories of polyester resin materials and cleaning solvents.	VOC content limits for various categories of polyester resin materials and cleaning solvents.
Add-On Emission Control Requirements	Capture and control efficiency >90 % by weight, as an alternative to complying with VOC content limits.	Control system that will achieve an equivalent reduction in emissions as achieved by complying with the applicable VOC limits.
Recordkeeping	Current list of polyester resin materials and solvent materials used with the VOC content and daily or monthly usage records. Records to be kept for three years.	N/A
Test Methods	Various methods approved by EPA or ARB, including VOC content, vapor pressure, and capture efficiency.	None Specified

* There are currently no applicable federal New Source Performance Standards (NSPS) to this source category. National Emission Standards for Hazardous Air Pollutants (NESHAP) – Boat Manufacturing (NESHAP Subpart VVVV) and Reinforced Plastic Composites Production (NESHAP Subpart WWW) – apply to facilities that emit more than 10 tons/year of any one hazardous air pollutant (HAP) or 25 tons/year of a combination of HAPs. There are currently no sources in San Diego County that are subject to these two NESHAPs.

INCREMENTAL COST-EFFECTIVENESS ANALYSIS

PROPOSED NEW RULE 67.12.1 – POLYESTER RESIN OPERATIONS

Health and Safety Code Section 40920.6(a) requires air districts to identify one or more potential control options that achieve at least the same benefit as the proposed rule, assess the cost-effectiveness of those options, and calculate the incremental cost-effectiveness of each identified option. Incremental cost-effectiveness is defined as the difference in control costs divided by the difference in emission reductions between two potential control options achieving the same emission reduction goal.

The primary objectives in proposing new Rule 67.12.1 are to ensure ongoing compliance with federal requirements to implement current Reasonably Available Control Technology (RACT) and state requirements to adopt all feasible measures applicable to polyester resin operations. The proposed new rule will reduce volatile organic compound (VOC) emissions by specifying more stringent VOC limits for polyester resin materials and cleaning materials. Similar requirements are already implemented in other air districts in California and compliant materials are widely available in the marketplace and already used by most affected businesses.

There are no potential control options providing equivalent emission reductions from polyester resin operations other than the mandatory use of add-on emission control systems, which could cost upwards of \$200,000. Due to high costs, this control option would have very unfavorable cost-effectiveness and incremental cost-effectiveness values and is therefore not feasible.

Most affected facilities already voluntarily comply with the proposed new rule, so no additional costs would be incurred. For those few facilities that must use new materials, compliant polyester resin materials are widely available and equally priced, or only marginally more expensive. The higher incremental cost of the new materials is still much lower than the cost of controls.

AIR POLLUTION CONTROL DISTRICT
COUNTY OF SAN DIEGO

DRAFT PROPOSED NEW
RULE 67.12.1 – POLYESTER RESIN OPERATIONS

WORKSHOP REPORT

A workshop notice on the draft proposed new Rule 67.12.1 – Polyester Resin Operations, was mailed to all permit holders in San Diego County. Notices were also mailed to all economic development corporations and chambers of commerce in San Diego County, trade associations, various resin manufacturers, the U.S. Environmental Protection Agency (EPA), the California Air Resources Board (CARB), and other interested parties.

The workshop was held on July 21, 2015, and was attended by 17 people. Oral and written comments were received before, during, and after the workshop. A summary of the comments and the Air Pollution Control District's (District) responses to these comments are as follows:

1. WORKSHOP COMMENT

Since compliant polyester resin materials have already penetrated the San Diego County market due to similar regulations in place in nearby California air districts such as the South Coast Air Quality Management District (SCAQMD), are all affected facilities within the County already in compliance with the proposed new rule? Did the District identify any polyester resin materials that are not in compliance with the proposed new rule?

DISTRICT RESPONSE

Yes, with the exception of two individual products, all of the affected facilities within San Diego County are already in compliance with the proposed monomer content percent limits specified in Subsection (d)(1). The two individual polyester resin materials that are not in compliance with the proposed new rule are (1) a corrosion resistant resin at 48.5% styrene (the proposed limit is 48%), and (2) a non-white gel coat at 41% (the proposed limit is 37%). The facilities using these materials are aware of the discrepancy, and the proposed compliance schedule provides up to one year after the date of rule adoption to switch to compliant materials.

2. WORKSHOP COMMENT

The District should include an alternative annual usage exemption limit, in addition to the new proposed 20 gallon per month exemption in amended Subsection (b)(1), for those facilities that only perform polyester resin operations intermittently throughout the year.

DISTRICT RESPONSE

The District disagrees. The proposed 20 gallon per month exemption is consistent with analogous rules in other California air districts.

3. WORKSHOP COMMENT

The District should add an additional polyester resin material category to Subsection (d)(1)(i) for "Tooling Resins" with a monomer content percent limit of 55%. Even though used in relatively small quantities, tooling resin is an important type of polyester raw material for composites manufacturers. A tool (mold) is used many times – sometimes hundreds of times – to make composite products, and the resin used to manufacture a tool has to perform successfully in this very demanding service. In recognition of the very high level of performance needed for tooling resin, the organic Hazardous Air Pollutant (HAP) emission limits for open mold application of tooling resin in EPA's Subpart WWWW – National Emissions Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production, allows up to 55% monomer content for these materials.

DISTRICT RESPONSE

The District disagrees that a separate category for "Tooling Resin" is necessary. Many facilities use corrosion resistant resins for tooling applications. The "Corrosion Resistant Resins" category has a monomer content limit of 48%. The proposed definition of "Corrosion Resistant Resin" in Section (c) has been amended to clarify that tooling is an example of a corrosion resistant application. This proposed new language is consistent with analogous rules in other California air districts.

4. WORKSHOP COMMENT

Proposed Subsection (b)(2) exempts closed mold polyester resin operations from complying with the monomer content percent limits and the application equipment standards specified in Subsections (d)(1) and (d)(2), respectively. Accordingly, the District should clarify in proposed Subsection (d)(2) that the specified application equipment standards do not apply to closed molding operations, as provided in Subsection (b)(2).

DISTRICT RESPONSE

The District agrees and has added language to proposed Subsection (d)(2) to clarify that the application equipment standards do not apply to closed mold polyester resin operations.

5. WORKSHOP COMMENT

Proposed Subsection (d)(2) specifies various application equipment and methods for polyester resin operations. With the exception of the application methods listed at Subsection (d)(2)(i) – manual application and other non-atomizing techniques, the application methods listed are spray painting technologies that are not used in composites manufacturing, i.e., electrostatic spray; air-assisted airless spray; airless spray; and HVLP (High-Volume, Low-Pressure) spray. The District should consider adding similar application equipment options to those listed in the SCAQMD Rule 1162 – Polyester Resin Operations, Subsection (c)(1)(A), which reflect the currently available low-emission application equipment for polyester resin open molding operations.

DISTRICT RESPONSE

Proposed Subsection (d)(2)(i) is intended to allow for the application equipment and methods specified in SCAQMD Rule 1162 Subsection (c)(1)(A). To clarify this point, the District has added definitions for “manual application” and “non-atomizing application” to proposed Section (c). These definitions identify the technology options listed in SCAQMD Rule 1162.

6. WORKSHOP COMMENT

With regard to volatile organic compound (VOC) emissions, the District's due diligence shows that most facilities are already in compliance with the proposed polyester resin material monomer content standards specified in Subsection (d)(1). With regard to particulate emissions, facilities keep their sanding and grinding operations to a minimum, and the fire code already requires clean up. Why does the District propose to regulate these sanding and grinding operations in this rule?

DISTRICT RESPONSE

Sanding and grinding operations are commonly performed in conjunction with composites manufacturing and are a source of particulate matter, which is a regulated air pollutant and subject to ambient air quality standards under federal and State law. To ensure such operations do not cause or contribute to an air quality problem, proposed Subsection (d)(5) requires these operations to be conducted inside a controlled enclosure or using a controlled process. The District has proposed language in Subsection (b)(4)(ii) that will exempt this requirement for very small polyester resin operations.

7. WORKSHOP COMMENT

Existing Rule 67.12 – Polyester Resin Operations, has a requirement for self-closing containers in Subsection (d)(1)(iv). Why was the requirement for self-closing containers excluded from the draft proposed new rule?

DISTRICT RESPONSE

At the time existing Rule 67.12 was written, acetone was considered a VOC. In order to minimize VOC emissions, the requirement for self-closing containers was added. Since then, EPA has added acetone to the list of compounds excluded from the definition of a VOC. Therefore, the self-closing container requirement is no longer necessary. However, due to acetone's high flammability, it is recommended that facilities store acetone according to local fire safety codes and regulations. The storage of polyester resin materials would be subject to Rule 67.17 – Storage of Materials Containing Volatile Organic Compounds, which requires all containers used to store, transfer, or apply materials containing VOC to remain closed when not in use.

8. WORKSHOP COMMENT

In some District rules, manufacturers are required to meet the VOC limits in the rule, and therefore are required to sell only compliant materials within San Diego County. Are manufacturers required to meet the monomer content percent limits in draft proposed new Rule 67.12.1, and sell only compliant products?

DISTRICT RESPONSE

No, the draft proposed new rule does not require manufacturers to sell only compliant products. Since some operations are exempt from complying with the monomer content standards specified in Subsection (d)(1), there is no prohibition on the manufacture of non-compliant products.

9. WORKSHOP COMMENT

The District stated that upon the implementation of draft proposed new Rule 67.12.1, it will begin to use the EPA recommended Unified Emission Factors (UEF) for polyester resin operations in place of the 1995 EPA AP-42 emission factors. What effect will these new emission factors have on facilities within San Diego County?

DISTRICT RESPONSE

The UEF emission factors have been used by the District's Engineering Division for the past several years when processing new permit applications and a number of facilities are already using these factors to calculate their VOC emissions. The existing polyester resin permits and permit conditions have been reviewed and the District does not expect there to be any negative effect on existing facilities from the use of the new UEF emission factors. The District will work with the affected facilities, through its Small Business Assistance Coordinator, to facilitate the transition to the new UEF factors.

10. WORKSHOP COMMENT

Some permits for polyester resin operations have permit conditions that require facilities to use polyester resin materials below a specified monomer content percent limit. With the lower monomer content percent limits now being proposed in draft new Rule 67.12.1, how will changes to these permit conditions be made once the rule has been adopted by the Air Pollution Control Board?

DISTRICT RESPONSE

Following rule adoption, the District's Engineering Division will review the affected permits for appropriate changes consistent with the new rule. A small number of these permits may require a permit application to re-evaluate and appropriately revise the permit. For the majority of the required permit revisions, the District plans to make the necessary changes directly (without the need for a permit application) and will send copies of these permits with the updated conditions to the affected facilities for review.

11. EPA COMMENT

The exemption in proposed Subsection (b)(1) applies to polyester resin operations that emit less than 5 pounds of VOC per operating day for each calendar month. On a gallon per month volume basis of polyester resin usage, this value greatly exceeds the allowable exemptions in other analogous rules such as 20 gallons per month in Eastern Kern Air Pollution Control District (EKAPCD) Rule 432, Subsection III.A, and no exemption in SCAQMD Rule 1162. Please consider removing or lowering the proposed exemption level.

DISTRICT RESPONSE

The District agrees. The proposed 5 pounds of VOC per day threshold exemption has been deleted and a proposed new exemption has been added in its place for 20 gallons per month of polyester resin materials. In order to align the permit exemption thresholds with Rule 67.12.1 applicability, the District also proposes to amend the polyester resin permit exemption thresholds found in Rule 11 (Exemptions from Permit Requirements), Subsection (d)(13)(vi), from 5 pounds of VOC per day to 20 gallons per month.

12. EPA COMMENT

In proposed Section (c), please add definitions for "manual application" and "non-atomizing application" similar to those in EKAPCD Rule 432 II, FF and NN respectively, or in San Joaquin Valley Air Pollution Control District (SJVAPCD) Rule 4684, 3.34 and 3.42 respectively.

DISTRICT RESPONSE

The District agrees. Definitions for "manual application" and "non-atomizing application" have been added to draft proposed new Rule 67.12.1.

13. EPA COMMENT

In proposed Subsection (d)(1)(i), please add additional resin categories and monomer content percent limits for resins with fillers and without fillers for marble resins, tub/shower resins, lamination resins as well as for solid surface resins. See SCAQMD Rule 1162(c)(2)(A) or EKAPCD Rule 432 IV.A., Table 1.

DISTRICT RESPONSE

The District agrees. New resin categories and monomer content percent limits have been added to the proposed new rule for marble resins, tub/shower resins, lamination resins, and solid surface resins.

14. EPA COMMENT

In proposed Subsection (d)(3)(ii), the allowance of up to 200 grams or less per liter VOC content limit, or a total VOC vapor pressure of 45 mm Hg or less, for solvent cleaning materials used for aerospace components, is consistent with the Control Technique Guideline (EPA-453/R-97-004) (Control of VOC Emissions from Coating Operations at Aerospace Manufacturing and Rework Operations) and SCAQMD Rule 1124 (Aerospace Assembly and Component Manufacturing Operations). However, please consider a 25 grams or less per liter VOC content limit for aerospace components similar to the limit specified in Subsection (d)(3)(i) for non-aerospace components.

DISTRICT RESPONSE

The District agrees. The proposed 200 grams or less per liter VOC content limit or a total VOC vapor pressure of 45 mm Hg or less for aerospace solvent cleaning materials has been deleted.

15. EPA COMMENT

In proposed Subsection (e)(1)(iii), we recommend revising the combined emissions capture and control device efficiency to 90% by weight instead of 85%, consistent with other air districts, such as SCAQMD Rule 1162(d) and EKAPCD Rule 432 IV.A.4.b.

DISTRICT RESPONSE

The proposed combined emissions capture and control device efficiency has been amended to 90% by weight. In San Diego County, polyester resin operations are normally conducted in large open warehouse type settings, in which a 90% combined capture and control device efficiency may be difficult to achieve. Proposed Section (e) allows facilities the option of installing control equipment in lieu of complying with the provisions in Section (d) – Standards. However, since compliant materials are readily available, the District does not expect facilities to use this control option to come into compliance.

16. EPA COMMENT

In proposed Subsection (f)(1)(i)(B) – Recordkeeping, the VOC content should be included in the recordkeeping requirements (see, e.g., SCAQMD Rule 1162(e)(1)(B) or EKAPCD Rule 432 V.A.2).

DISTRICT RESPONSE

The District agrees. Language has been added to proposed Subsection (f)(1)(i)(B) to require the VOC content for resin additives to be recorded.

17. EPA COMMENT

In proposed Subsection (f)(3), it is recommended that records be retained on site for five years instead of three years (see, e.g., SJVAPCD Rule 4684, 6.1.7., and EKAPCD Rule 432 V.A.7.)

DISTRICT RESPONSE

The District disagrees. The three year records retention requirement is consistent with all other District prohibitory rules. A five year records retention requirement places too great a burden on local facilities.

18. CARB COMMENT

CARB has no official comments at this time.

MWA:AMO:jlh
02/03/16

RULE 67.12. POLYESTER RESIN OPERATIONS (Effective 3/14/89:
Rev. Adopted & Effective 5/15/96)

TO BE REPEALED (effective date of repeal)

(a) APPLICABILITY

Except as otherwise provided in Section (b), this rule is applicable to polyester resin operations.

Polyester resin operations subject to this rule shall not be subject to Rule 66.

(b) EXEMPTIONS

(1) Except for marine vessel repair operations, the provisions of this rule shall not apply to any polyester resin operations where the combined consumption of polyester resins, including corrosion resistant resin, fire retardant resin, gel coat, and cleaning materials is less than 1 gallon for each operating day.

(2) The provisions of this rule shall not apply to any marine vessel repair operation using polyester resin materials where the combined consumption of polyester resins, including corrosion resistant resin, fire retardant resin, gel coat, and cleaning materials is less than 0.5 gallon for each operating day.

It shall be the responsibility of any person claiming either of the exemptions specified in Subsections (b)(1) or (b)(2) to maintain daily records necessary for the District to determine the applicability of such an exemption. The records shall be maintained on site for at least three years and shall be made available to the District upon request.

(3) The provisions of this rule shall not apply to coatings subject to Rules 67.3, 67.0 or 67.11.

(c) DEFINITIONS (Rev. Effective 5/15/96)

For the purpose of this rule, the following definitions shall apply:

(1) **"Catalyst"** means a substance added to the resin to accelerate the rate of curing.

(2) **"Cleaning Materials"** means materials containing volatile organic compounds (VOC's) used for the cleaning of hands, tools, molds and spray equipment associated with polyester resin operations.

(3) **"Closed Mold Operation"** means a method of forming objects from polyester resins by placing the material in a confining mold cavity and applying pressure and/or heat.

(4) **"Controlled Enclosure"** means a structure having at least three sides and a roof and which is designed to capture process emissions to meet the requirements of all District prohibitory standards (e.g., Rules 50, 51, 52, 71, etc.).

(5) **"Controlled Process"** means a modification to a dry sanding, grinding or cutting operation which uses water sprays, vacuum devices or other techniques to control the emission of particulates to the atmosphere to meet the requirements of all District prohibitory standards (e.g., Rules 50, 51, 52, 71, etc.).

(6) **"Corrosion Resistant Resin"** means a halogenated, furan, bisphenol A, vinyl ester, or isophthalic resin which is used to make products for exposure to corrosive, caustic and/or acidic agents.

(7) **"Cross-Linking"** means the process of joining two or more polymer chains together.

(8) **"Cure"** means the polymerization, i.e. the transformation from a liquid to a solid state, to achieve desired product physical properties, including hardness.

(9) **"Exempt Compound"** means the same as defined in Rule 2.
(Rev. Effective 5/15/96)

(10) **"Fiberglass"** means a fiber similar in appearance to wool or cotton fiber but made from glass.

(11) **"Fire Retardant Resin"** means a resin designed for the purpose of delaying the spread of combustion.

(12) **"Gel Coat"** means a polyester resin surface coat, either colored or clear, providing a cosmetic enhancement and improvement to exposure resistance.

(13) **"High-Volume Low-Pressure (HVL) Spray"** means a coating application method using pressurized air at a permanent pressure between 0.1 and 10.0 psig, not to exceed 10.0 psig, measured at the air cap of the coating application system, and a permanent liquid coating pressure of not more than 50 psig.

(14) **"Inhibitor"** means a substance designed to slow down or prevent a chemical reaction.

(15) **"Monomer"** means an organic compound that combines with itself or other similar compounds by a cross-linking reaction to become a part of a cured thermosetting resin.

(16) **"Polyester"** means a complex polymeric ester, derived from difunctional acids and alcohols, which is dissolved in a monomer.

(17) **"Polyester Resin Operation"** means any of the following: mixing, pouring, hand lay-up, injection, forming, spraying, and curing of polyester resin materials excluding injection molding.

(18) **"Polyester Resin Materials"** means unsaturated polyesters, cross-linking agents, catalysts, gel coats, inhibitors, and any other material containing VOC used in a polyester resin operation.

(19) **"Polymer"** means a large chemical chain composed of identical cross-linked groups, such as polystyrene.

(20) **"Reclamation System"** means equipment capable of reclaiming spent cleaning materials for reuse. Reclamation may be done onsite or by using an offsite commercial reclamation facility.

(21) **"Repair"** means the addition of polyester resin to portions of a previously fabricated product in order to mend mechanical damage which occurs after the normal fabrication process.

(22) **"Resin"** means any of a class of organic polymers of natural or synthetic origin used in reinforced products to surround and hold fibers, and is solid or semi-solid in the cured state.

(23) **"Touch-up"** means that portion of the polyester resin operation that is necessary to cover minor imperfections.

(24) **"Vapor Suppressed Resin"** means a resin which has been modified to minimize the weight loss from VOC emissions during polymerization.

(25) **"Volatile Organic Compound (VOC)"** means any compound of carbon, which may be emitted to the atmosphere during polyester resin operations, except methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and exempt compounds. For purposes of calculating VOC content of polyester resin material to determine compliance with this rule, any water or any exempt compounds shall not be considered to be part of the polyester resin material. VOC content of cleaning materials is expressed in grams of VOC per liter of material.

(26) **"Waste Material"** means any waste material containing VOC including, but not limited to, any paper or cloth used for cleaning operations, waste resins, and any spent cleaning materials containing VOC.

(d) **STANDARDS**

(1) Any person operating a polyester resin operation subject to this rule shall:

(i) Use polyester resin material which contains no more than 35 percent by weight of monomer, as applied and as indicated in the manufacturer's specifications

for application, or use a vapor suppressed resin such that the weight loss from VOC emissions does not exceed 60 grams per square meter of exposed surface area during resin polymerization, or use a closed mold system. The provisions of this subsection shall not apply to the use of gel coats, corrosion resistant resins or fire retardant resins; and,

(ii) Use gel coats with a monomer content of not more than 45 percent by weight for pigmented gel coats or 50 percent by weight for clear gel coats, as applied and as indicated in the manufacturer's specifications for application; and,

(iii) Use a corrosion-resistant or fire retardant resin with a monomer content of no more than 50 percent by weight, as applied and as indicated in the manufacturer's specifications for application; and,

(iv) Use self-closing containers for storing, except during the transfer of resin or solvent, all polyester resin, VOC containing cleaning materials and solvent-laden rags, including waste materials; and,

(v) Conduct all dry sanding, grinding and cutting operations of polyester resin which contains fiberglass either inside a controlled enclosure or using a controlled process. For marine vessel repair operations this requirement shall apply only for sanding, grinding or cutting operations conducted on the exterior of a vessel hull. This requirement shall not apply to any portable drilling operations; and,

(vi) Use a VOC reclamation system for cleaning materials, unless

(A) the materials contain less than 200 grams of VOC per liter (1.7 lb/gal); or

(B) the materials have initial boiling points greater than 190° C (374° F);
or

(C) the combined usage of materials not complying with (A) or (B) above, is less than 0.5 gallons average per operating day, calculated from monthly records maintained in accordance with Section (f).

The solvent residue from the reclamation system shall not contain more than 20 percent VOC by weight; and,

(vii) Use only airless, air-assisted airless, high-volume low-pressure spray equipment or electrostatic spray equipment for spray operations except for touch-up and repair operations using a hand held air atomized spray gun which has a container for the resin as part of the gun; and,

(viii) Not use a polyester resin or cleaning material subject to this rule that, after December 4, 1990, was newly formulated to contain or reformulated to increase the content of, methylene chloride, trichlorofluoromethane (CFC-11), dichlorodifluoromethane (CFC-12), trichlorotrifluoroethane (CFC-113), dichlorotetrafluoroethane (CFC-114) or chloropentafluoroethane (CFC-115).

(2) A person shall not sell or, offer for sale, a polyester resin or cleaning material subject to this rule that, after December 4, 1990, was newly formulated to contain or reformulated to increase the content of, methylene chloride, trichlorofluoromethane (CFC-11), dichlorodifluoromethane (CFC-12), trichlorotrifluoroethane (CFC-113), dichlorotetrafluoroethane (CFC-114) or chloropentafluoroethane (CFC-115).

(3) A person shall not manufacture, sell, offer for sale, or supply any coating or cleaning materials for use in polyester resin operations unless polyester resin or cleaning material container displays the content of methylene chloride, trichlorofluoromethane (CFC-11), dichlorodifluoromethane (CFC-12), trichlorotrifluoroethane (CFC-113), dichlorotetrafluoroethane (CFC-114), or chloropentafluoroethane (CFC-115).

(e) RESERVED

(f) RECORDKEEPING

Any person subject to the requirements of Subsections (d)(1) of this rule shall maintain records of VOC-containing materials in accordance with the following:

(1) Maintain a current records of polyester resin materials and gel coats used, which provide the manufacturer identification, material specifications, monomer content, content of any catalysts, fillers, and/or diluents, including thinners, and type of each resin (i.e. regular, vapor-suppressed, corrosion-resistant, or fire retardant) or gel coat (i.e. pigmented or clear). For vapor suppressed resins, also maintain records showing manufacturer's information on the weight loss during resin polymerization.

(2) Maintain current records of the manufacturer's identification and VOC content of the cleaning materials used.

(3) Maintain records on a daily or monthly basis showing the manufacturer's identification and amount of each polyester resin material and cleaning material used.

(4) Maintain records of the content of methylene chloride, trichlorofluoromethane (CFC-11), dichlorodifluoromethane (CFC-12), trichlorotrifluoroethane (CFC-113), dichlorotetrafluoroethane (CFC-114) and chloropentafluoroethane (CFC-115) contained in any polyester resin material or cleaning material used.

Such records shall be retained on site for at least three years, and shall be made available to the District upon request.

(g) TEST METHODS

(1) Measurement of the monomer content of resins subject to Subsections (d)(1)(i), (d)(1)(ii), or (d)(1)(iii) of this rule shall be conducted and reported in accordance with SCAQMD Method 312-91 for determination of percent monomer in polyester resin.

(2) Measurement of the polyester resin material weight loss per square meter subject to Subsection (d)(1)(i) of this rule shall be conducted and reported in accordance with SCAQMD Method 309-91 for determination of static volatile emissions.

(3) Measurement of the VOC content of cleaning materials subject to Subsection (d)(1)(vi)(A) of this rule shall be conducted and reported in accordance with EPA Method 24 (40 CFR 60, Appendix A) as it exists on April 6, 1993.

(4) Measurement of the initial boiling point of cleaning materials subject to Subsection (d)(1)(vi)(B) of this rule shall be conducted and reported in accordance with ASTM test method D1078-86 (Distillation Range of Volatile Organic Liquids).

(5) Measurement of the VOC content in solvent residue subject to Subsection (d)(1)(vi) of this rule shall be conducted and reported in accordance with EPA Method 25D as referenced in 56FR 33494.

(6) Perfluorocarbon compound(s) shall be recognized as exempt compounds pursuant to Subsection (c)(9) only if the presence of such compounds is claimed by the manufacturer of the material containing the compound, and if the manufacturer identifies a test method for quantifying the identified compounds which has been approved by the Air Pollution Control Officer, the Air Resources Board, and the Environmental Protection Agency.