SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Draft Staff Report
Proposed Amended Rule 1106 – Marine and Pleasure Craft Coatings
Proposed Amended Rule 1107 – Coating of Metal Parts and Products

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Table of Contents

EXECUTIVE SUMMARY

Air districts, such as the South Coast Air Quality Management District (South Coast AQMD). which exceed the National Ambient Air Quality Standards (NAAQS) established by the United States Environmental Protection Agency (U.S. EPA) are required to develop and submit a State Implementation Plan (SIP) for U.S. EPA approval. SIPs consist of rules and documents that a state or local air district implements, maintains, and enforces to fulfill requirements of the Clean Air Act (CAA) and are used to demonstrate how the region will meet the NAAQS. If U.S. EPA issues a SIP disapproval or partial disapproval of a rule, South Coast AQMD will face the possibility of sanctions by the federal government and other consequences under CAA unless the identified rule deficiencies are not corrected and approved by U.S. EPA. Offset sanctions would be triggered 18 months after the effective date of a final disapproval and highway funding sanctions would be triggered six months after the offset sanctions are imposed. CAA would also require U.S. EPA to promulgate a Federal Implementation Plan within 24 months of the disapproval effective date. Sanctions will not be imposed if U.S. EPA determines that a subsequent SIP submission corrects the deficiencies before the applicable deadline.

On August 22, 2022, U.S. EPA proposed a limited SIP disapproval for Rule 1106 – Marine and Pleasure Craft Coatings (Rule 1106) and Rule 1107 – Coating of Metal Parts and Products (Rule 1107). The limited disapproval cited the deficiency of referencing ASTM D7767-11, "Standard Test Method to Measure Volatiles from Radiation Curable Acrylate Monomers, Oligomers and Blends and Thin Coatings Made from Them" (ASTM D7767), which is not a U.S. EPA-approved test method and cannot be used to enforce a SIP approved rule.[1] The U.S. EPA also recommended removing two product categories to improve Rule 1106, as those categories are not listed in the 1996 U.S. EPA Control Techniques Guidelines for Shipbuilding and Ship Repair Operations (Surface Coating), which will be referred to as the U.S. EPA Marine Coating CTG in this staff report.

Proposed Amended Rule 1106 (PAR 1106) and Proposed Amended Rule 1107 (PAR 1107) will address the deficiency and incorporate U.S. EPA comments.

BACKGROUND

Regulatory History for Rules 1106 And 1107

Rule 1106 is a source specific rule that was adopted to reduce volatile organic compound (VOC) emissions from marine and pleasure craft coatings formulated for use in the marine environment. Rule 1106 regulates marine coatings applied to boats, ships, and vessels, their appurtenances, and structures such as piers, docks, buoys and oil drillings rigs intended for the marine environment, and for pleasure craft. Rule 1106 was adopted on November 4, 1988, and it has been subsequently amended eight times, with the most recent amendment on May 3, 2019. The May 2019 amendment combined the requirements of Rule 1106 and Rule 1106.1 – Pleasure Craft Coating Operations (Rule 1106.1) into one rule, rescinded Rule 1106.1, aligned VOC content limits with U.S. EPA Marine Coatings CTG and the requirements of other California air districts, prohibited the possession and sale of non-compliant coatings, established requirements for transfer efficiency, and provided rule clarifications. The May 2019 amendment also included a new definition for Energy Curable Coatings that referenced test method ASTM D7767 and a new exemption for coatings with VOC content of 50 g/L or less that referenced ASTM D7767. For Energy Curable

[1] 87 Fed. Reg. 51300, 51302 (August 22, 2022)

Coatings, test results from the ASTM D7767 method were allowed, in conjunction with product formulation data, to be used to verify if these coatings qualified for this new exemption. Formulation data is the product recipe which includes all the components in a product, including the VOC content and amount of each component.

Rule 1107 is a source specific rule that was adopted to reduce VOC emissions from metal coating operations. Rule 1107 was adopted on June 1, 1979, and it has been subsequently amended eighteen times, with the most recent amendment on February 7, 2020. The February 2020 amendment addressed the Reasonably Available Control Technology (RACT) deficiencies raised by U.S. EPA and the changes to VOC limits requested by the California Air Resources Board (CARB). Additionally, the amendment included a definition for Energy Curable Coatings which referenced ASTM D7767 and added ASTM D7767 to the Methods of Analysis subdivision, which includes test methods that can be used to determine the VOC content of regulated coatings.

Background on ASTM D7767

Determining the VOC content of most ultraviolet, electron beam, and light-emitting diode (UV/EB/LED) materials can accurately be measured using U.S. EPA Reference Method 24 (Method 24), which includes a non-solids test method specifically for the analysis of UV/EB/LED materials. However, Method 24 is not an appropriate method for thin film materials, which are applied at such a thin film the weight of the materials cannot be accurately measured. Members of industry who represent the UV/EB/LED industry developed a test method to estimate the VOC of these thin film materials, that method was adopted in 2011 by the ASTM Committee as ASTM D7767.

In 2012, South Coast AQMD Laboratory staff traveled to 3M headquarters in Minneapolis, MN to meet with a developer of ASTM D7767 observed the following limitations of the method:

1) The method provides only an estimation of the VOC content, a distinction that was confirmed in-person by the creator of the method during the 3M visit;
2) The VOC estimate is based on the measurement of the reactive components (i.e., acrylate monomers, oligomers, and blends), not of the fully formulated product which also includes the pigments and additives that are excluded so that the product can be tested at a thick enough film in order to accurately measure the weight loss for VOC quantification;
3) Supplier-specified cure condition, end-use film thickness, and specific photo-initiator are required to accurately perform the method; and
4) It is not a direct method for measuring volatiles from thin coatings, as the method was developed to help formulators identify and select lower VOC constituents during coating production.

ASTM D7767 also cannot be used for enforcement purposes. South Coast AQMD relies on laboratory testing of the fully formulated product collected in the field to determine if a product complies with VOC limits. The South Coast AQMD Laboratory cannot independently perform ASTM D7767 and have the confidence that the results accurately reflect the composition of a sample collected in the field. If South Coast AQMD compliance staff collected a sample of a thin-film energy curable product, the manufacturer would need to supply the raw materials and a photo-initiator for South Coast AQMD Laboratory staff to accurately perform the method. ASTM D7767 offers no ability to confirm that the components supplied by the manufacturer are the actual constituents of the product collected in the field.

South Coast AQMD staff have expressed concerned over the years that Method D7767 does not measure VOC content with sufficient accuracy to be used for compliance purposes. Further, the method does not directly measure the VOC content of fully formulated materials as they are used, and only measures the VOC content of the reactive components, which is not suitable for enforcement purposes.

PUBLIC PROCESS

The development of PAR 1106 and PAR 1107 has been conducted through a public process. Staff had a discussion with U.S. EPA and held a Public Consultation meeting on November 9, 2022. Proposed rule language was included in the presentation for the Public Consultation Meeting, which was released November 4, 2022, and the Initial Draft PAR 1106 and PAR 1107 were released November 9, 2022.

AFFECTED FACILITIES

Rule 1106 is applicable to any person who supplies, sells, offers for sale, markets, manufactures, blends, packages, repackages, possesses or distributes any Marine or Pleasure Craft Coating and any associated solvent used with a Marine or Pleasure Craft Coating for use within the South Coast AQMD jurisdiction, as well as any person who applies, stores at a worksite, or solicits the application of any Marine or Pleasure Craft Coating and any associated solvent used with a Marine or Pleasure Craft Coating within the South Coast AQMD jurisdiction.

Rule 1107 is applicable to all metal coatings operations except those performed on aerospace assembly, magnet wire, marine craft, motor vehicle, metal container, and coil coating operations. This rule does not apply to the coating of architectural components coated at the structure site or at a temporary unimproved location designated exclusively for the coating of structural components. Approximately 1,100 facilities are subject to existing Rule 1107.

CONTROL TECHNOLOGY

The proposed amendments do not include requirements for control technologies.

SUMMARY OF PROPOSAL

Proposed Amendments to Rule 1106

PAR1106 will remove the references to test method ASTM D7767 by deleting the definition for Energy Curable Coatings and the language in the paragraph (i)(1) exemption that refers to the test method. The revision does not change the exemption for coatings with a VOC content of 50 g/L or less under paragraph (i)(1).

In addition, PAR 1106 will remove two product categories, Elastomeric Adhesives and Metallic Heat Resistant Coating, as recommended by U.S. EPA as they are not listed in the 1996 U.S. EPA Marine Coatings CTG, and subject them to other appropriate categories as shown in Table 1. Elastomeric Adhesives should be subject to Rule 1168 – Adhesive and Sealant Applications under the category All Other Adhesives. Metallic Heat Resistant Coating will be subject to Heat Resistant Coating in PAR 1106.

Table 1. Comparison of VOC Limits for Current and Future Categories

Current Category	VOC Limit (g/L)	Rule	*New Category*	VOC Limit (g/L)
Elastomeric Adhesives	730	1168	*All Other Adhesives*	250
Metallic Heat Resistant Coating	530	1106	*Heat Resistant Coating*	420

Removing the category for an Elastomeric Adhesive from Rule 1106 helps clarify the rule as the applicability includes coatings and their associated solvents, but not adhesives. Rule 1168 includes several categories of sealants and adhesives for marine applications including Top and Trim Adhesives, Marine Deck Sealants and Marine Deck Sealant Primers. Products that formerly fell under the Elastomeric Adhesive category will have to comply with a lower VOC limit. Staff has identified Elastomeric Adhesives that comply with the Rule 1168 VOC limit. In addition, Rule 1168 includes a low-use exemption for facilities that use 55 gallons or less that could assist a facility using a Marine Elastomeric Adhesive that does not comply with the Rule 1168 VOC limit. Staff is not aware of any end user or Marine Elastomeric Adhesive manufacturer that will be impacted by this change and is not anticipating any VOC reduction.

The VOC limit for Metallic Heat Resistant Coatings will also be lower than the current limit. In this case, the VOC limit will be aligned with the U.S. EPA Marine Coatings CTG. The South Coast AQMD is in extreme non-attainment for ozone and VOC emissions are a precursor for ozone formation; therefore, VOC limits should never exceed the federal standards. Exception can be allowed for niche products that serve a very specific need provided there have very low sales volumes. In the case of Metallic Heat Resistant Coatings, staff identified coatings that comply with the 420 g/L VOC limit and has not identified a need for a higher VOC coating category. Staff is not aware of any end user or Metallic Heat Resistant Coating manufacturer that will be impacted by this VOC limit change and is not anticipating any VOC reductions.

Remove Definition for Energy Curable Coatings in paragraph (c)(9)

Paragraph (c)(9) defines Energy Curable Coatings and includes a reference to ASTM D7767. The term "Energy Curable Coatings" is only used in the portion of the paragraph (i)(1) exemption that staff is also proposing to delete. Staff is proposing to delete the definition as the term is not used anywhere else in the rule.

(c) Definitions

~~*(9) ENERGY CURABLE COATINGS are single-component reactive products that cure upon exposure to visible-light, ultra-violet light or to an electron beam. The VOC content of thin film Energy Curable Marine and Pleasure Craft Coatings may be determined by manufacturers using ASTM Test Method 7767-11 "Standard Test Method to Measure Volatiles from Radiation Curable Acrylate Monomers, Oligomers, and Blends and Thin Coatings Made from Them".*~~

Revise Exemption Provision Related to Energy Curable Coatings in paragraph (i)(1)

Paragraph (i)(1) provides an exemption for coatings containing 50 g/L VOC or less. Staff is proposing the following revision to remove the reference to ASTM D7767.

(i) Exemptions

With the exception of paragraphs (d)(6) and (d)(7), the provisions of this rule shall not apply to:

(1) Marine or pleasure craft coatings that have a VOC content of 50 g/L or less, or its equivalent, less water and exempt compounds, as applied~~, provided that for energy curable coatings, product formulation data and test results, determined by ASTM D7767-11, shall first be submitted to the Executive Officer by the manufacturer~~.

Remove Definition for Elastomeric Adhesive in paragraph (c)(8)

Paragraph (c)(8) defines Elastomeric Adhesives. Staff is proposing to delete the definition based on the U.S. EPA recommendation.

(c) Definitions

~~(8) ELASTOMERIC ADHESIVE is any adhesive containing natural or synthetic rubber.~~

Remove Definition for Metallic Heat Resistant Coating in paragraph (c)(25)

Paragraph (c)(25) defines Metallic Heat Resistant Coatings. Staff is proposing to delete the definition based on the U.S. EPA recommendation.

(c) Definitions

~~(25) METALLIC HEAT RESISTANT COATING is any coating that contains more than 5 grams of metal particles per liter of coating as applied and must withstand temperatures over 80 °C (176 °F).~~

Revise Table of Standards I in paragraph (d)(1)

Paragraph (d)(1) provides a table of standards for marine coating category VOC limits. Staff is proposing the following revisions based on the U.S. EPA recommendation.

(d) Requirements

(1) VOC Content of Marine Coatings

Except as otherwise provided in this rule, a person shall not apply a marine coating within the South Coast AQMD jurisdiction with a VOC content in excess of the following limits shown in the Table of Standards I that are expressed as grams of VOC per liter of coating, as applied, less water and exempt solvents:

TABLE OF STANDARDS I

MARINE COATING CATEGORY	VOC LIMITS Less water and exempt compounds Grams per Liter (g/L)	
	BAKED	AIR DRIED
	CURRENT LIMIT	CURRENT LIMIT
Antenna Coating		340
Antifoulant Coatings:		
Aluminum Substrates		560
Other Substrates		400
~~Elastomeric Adhesives (with 15%, by Weight, Natural or Synthetic Rubber)~~		~~730~~
Inorganic Zinc Coating		340
Low Activation Interior Coating		420
Mist Coating		610
Navigational Aids Coating		340
Nonskid Coating		340
Organic Zinc Coating		340
Pre-Treatment Wash Primer	420	420
Repair and Maintenance Thermoplastic Coating		340
Sealant for Wire-Sprayed Aluminum		610
Special Marking Coating		420
Specialty Coatings:		
Heat Resistant Coating	360	420
~~Metallic Heat Resistant Coating~~		~~530~~
High Temperature Coating		500
Tack Coating		610
Topcoats:		
Extreme High-Gloss Coating	420	490
High Gloss Coating	275	340
Undersea Weapons Systems Coating	275	340
Any Other Coating Type	275	340

Proposed Amendments to Rule 1107

PAR 1107 will remove the references to the ASTM test method D7767 by removing the definition for Energy Curable Coatings and subparagraph (e)(1)(C) for thin film energy curable coating VOC content determinization. The revisions will not impact other provisions of the rule.

Remove Definition for Energy Curable Coatings in paragraph (b)(15)

Paragraph (b)(15) defines Energy Curable Coatings and includes a reference to ASTM D7767. The term "Energy Curable Coatings" is only used in subparagraph (e)(1)(C), which staff is also proposing to delete. Staff is proposing to delete the definition as the term is not utilized anywhere else in the rule.

(b) Definitions

~~*(15) ENERGY CURABLE COATINGS are single-component reactive products that cure upon exposure to visible-light, ultra-violet light, or an electron beam. The VOC content of thin film energy curable coatings may be measured by manufacturers using ASTM D7767-11 (2018) – Standard Test Method to Measure Volatiles from Radiation Curable Acrylate Monomers, Oligomers, and Blends and Thin Coatings Made from Them.*~~

Remove paragraph (e)(1)(C)

Staff is proposing to delete subparagraph (e)(1)(C) which references ASTM D7767 for thin film energy curable coating VOC content determinization.

(e) Methods of Analysis

All applicable methods of analysis shall be as cited in paragraphs (e)(1) through (e)(6), or any other applicable method approved in writing by the Executive Officer, United States Environmental Protection Agency (U.S. EPA), and the California Air Resources Board (CARB).

(1) Determination of VOC Content

~~*(C) Thin Film Energy Curable Coatings*~~

~~*The VOC content of thin film energy curable coatings may be measured by manufacturers using ASTM D7767-11 (2018) – Standard Test Method to Measure Volatiles from Radiation Curable Acrylate Monomers, Oligomers, and Blends and Thin Coatings Made from Them.*~~

EXPECTED EMISSIONS REDUCTIONS

Proposed Amended Rules 1106 and 1107 are not anticipated to result in emission reductions. Subjecting the Rule 1106 Elastomeric Adhesives and Metallic Heat Resistant Coating categories to other appropriate categories in Rule 1168 and Rule 1106, respectively, should not change the emission profile. There are products in the market that can meet the lower limits proposed and facilities can use higher-VOC adhesives pursuant to the Rule 1168 55-Gallon exemption in paragraph (e)(6).

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Pursuant to the California Environmental Quality Act (CEQA) Guidelines Sections 15002(k) and 15061, the proposed project (PAR 1106 and PAR 1107) is exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3). A Notice of Exemption has been prepared pursuant to CEQA Guidelines Section 15062 and if the proposed project is approved, the Notice of Exemption will be filed for posting with the county clerks of Los Angeles, Orange, Riverside, and San Bernardino counties, and with the State Clearinghouse of the Governor's Office of Planning and Research.

SOCIOECONOMIC ANALYSIS

The proposed amendments are administrative in nature and are not expected to have socioeconomic impacts. Staff is not aware of any end user, Marine Elastomeric Adhesive manufacturer, or Metallic Heat Resistant Coating manufacturer that will be impacted by this change and is not anticipating any VOC reduction.

DRAFT FINDINGS UNDER THE HEALTH AND SAFETY CODE 40727

Before adopting, amending, or repealing a rule, the Health and Safety Code requires South Coast AQMD to adopt written findings of necessity, authority, clarity, consistency, non-duplication, and reference, as defined in Health and Safety Code Section 40727. The draft findings are as follows:

Necessity – PAR 1106 and PAR 1107 are necessary to: 1) satisfy the requirements of CAA, and 2) address U.S. EPA proposed SIP disapproval in a timely manner to avoid possible sanctions by the federal government and other consequences under CAA.

Authority – The South Coast AQMD Governing Board obtains its authority to adopt, amend, or repeal rules and regulations from Health and Safety Code Sections 39002, 40000, 40001, 40440, 40702, 40725 through 40728, 41508, and 41700.

Clarity – The South Coast AQMD Governing Board has determined that PAR 1106 and PAR 1107 are written and displayed so that the meaning can be easily understood by persons directly affected by them.

Consistency – The South Coast AQMD Governing Board has determined that PAR 1106 and PAR 1107 are in harmony with, and not in conflict with or contradictory to, existing statutes, court decisions, federal or state regulations.

Non-Duplication – The South Coast AQMD Governing Board has determined that PAR 1106 and PAR 1107 do not impose the same requirement as any existing state or federal regulation, and the proposed amendments are necessary and proper to execute the powers and duties granted to, and imposed upon, the South Coast AQMD.

Reference – In adopting this regulation, the South Coast AQMD Governing Board references the following statutes, which the South Coast AQMD hereby implements, interprets, enforces, or makes specific: Health and Safety Code Section 40440.

COMPARATIVE ANALYSIS

Health and Safety Code Section 40727.2(g) is not applicable to PAR 1107 because the proposed amended rule does not impose a new emission limit or standard, make an existing emission limit or standard more stringent, or impose new or more stringent monitoring, reporting, or recordkeeping requirements and therefore, a comparative analysis is not required. PAR 1106 will impose more stringent emission standards for Metallic Heat Resistant Coating and Elastomeric Adhesives; therefore, staff conducted the following comparative analysis pursuant to California Health and Safety Code Section 40727.2 (g).

PAR1106 is not in conflict with the current National Emission Standards for Hazardous Air Pollutants (NESHAP) for Shipbuilding and Ship Repair Operations (Surface Coating), 40 CFR Part 63, dated June 18, 1996, or the current U.S. EPA Marine Coating CTG, dated August 27, 1996. PAR 1106 will remove the category for Metallic Heat Resistant Coatings, which has a VOC

limit of 530 g/L, and subject those coatings to the Heat Resistant Coating VOC limit of 420 g/L to be consistent with U.S. EPA Marine Coatings CTG. PAR 1106 will remove the category for Elastomeric Adhesives, which has a VOC limit of 730 g/L, and those adhesives will be subject to the Rule 1168 category for All Other Adhesives with a VOC limit of 250 g/L because the U.S. EPA Marine Coatings CTG does not include a category for Elastomeric Adhesives.

The NESHAP for Shipbuilding and Ship Repair Operations (Surface Coating) sets forth Hazardous Air Pollutants ("HAP") emission limits for major source facilities that apply coatings used in volumes of 200 liters (52.8 gallons) or more. Affected sources under this NESHAP are Shipbuilding and Ship Repair Operations (Surface Coating) that are major sources under federal law or are coating operations located within the confines of a federal major source.

U.S. EPA Marine Coating CTG is intended to provide state and local air pollution authorities' information to assist them in determining RACT for VOCs for Shipbuilding and Ship Repair Operations (Surface Coating).

The proposed amendments to Rule 1106 are not expected to reduce or increase VOC emissions. Current Rule 1106 and Proposed Amended Rule 1106 do not regulate Hazardous Air Pollutants (HAP) emissions directly; therefore, the existing as well as the proposed VOC limits of Rule 1106 are not in conflict with federal regulations.

Table 2 has been prepared to show comparisons between South Coast AQMD Proposed Amended Rule 1106, the U.S. EPA CTG, and the NESHAP regulation.

Table 2. Comparative Analysis

Category	South Coast AQMD PAR 1106 – Marine and Pleasure Craft Coatings	1996 U.S. EPA Marine Coating CTG	U.S. EPA NESHAP 40 CFR Part 63 – NESHAP for HAP for Shipbuilding and Ship Repair Operations (Surface Coating)
Purpose	Reduces emissions of VOCs from Marine & Pleasure Craft Coatings.	Provides state and local air pollution authorities' information to assist them in determining RACT, to control VOCs from surface coating operations in the shipbuilding and ship repair industry.	Establishes National Emission Standards for Hazardous Air Pollutants for shipbuilding and ship repair (surface coating) facilities.
Applicability	Applies to local Marine and Pleasure Craft Coatings.	Applies to facilities that perform surface coating operations in the shipbuilding and ship repair industry. Does not include pleasure craft coating operations.	Applies to shipbuilding and ship repair (surface coating) operations at any facility that is a major source. Does not include pleasure craft coating operations.
Averaging Provisions	None.	None.	None.
Units	Mass/Volume: Grams/Liter (less water and exempt compounds).	Mass/Volume: Grams/Liter (minus water and exempt compounds).	Mass/Volume: Grams/Liter (minus water and exempt compounds).
Requirements	VOC Limits for Marine Coatings: Antenna Coating: 340 Antifoulant Coatings: Aluminum Substrates: 560 Other Substrates: 400 Inorganic Zinc Coating: 340 Low Activation Interior Coating: 420 Mist Coating: 610 Navigational Aids Coating: 340 Nonskid Coating: 340 Organic Zinc Coating: 340 Pre-Treatment Wash Primer: 420	VOC Limits for Marine Coatings: General use: 340 Specialty Air flask: 340 Antenna: 530 Antifoulant: 400 Heat resistant: 420 High-gloss: 420 High-temperature: 500 Inorganic zinc high-build: 340 Military exterior: 340 Mist: 610 Navigational aids: 550	VOC Limits for Marine Coatings: General use: 340 Specialty Air flask: 340 Antenna: 530 Antifoulant: 400 Heat resistant: 420 High-gloss: 420 High-temperature: 500 Inorganic zinc high-build: 340 Military exterior: 340 Mist: 610

Category	South Coast AQMD PAR 1106 – Marine and Pleasure Craft Coatings	1996 U.S. EPA Marine Coating CTG	U.S. EPA NESHAP 40 CFR Part 63 – NESHAP for HAP for Shipbuilding and Ship Repair Operations (Surface Coating)
	Repair and Maint. Thermoplastic Coating: 340 Sealant for Wire-Sprayed Aluminum: 610 Special Marking Coating: 420 Specialty Coatings: Heat Resistant Coating: 360 (baked), 420 (air dried) High Temperature Coating: 500 Tack Coating: 610 Topcoats: Extreme High-Gloss Coating: 420 (baked), 490 (air dried) High Gloss Coating: 275 (baked), 340 (air dried) Undersea Weapons Systems Coating: 275 (baked), 340 (air dried) Any Other Coating Type: 275 (baked), 340 (air dried)	Nonskid: 340 Nuclear: 420 Organic zinc: 360 Pretreatment wash primer: 780 Repair and maint. of thermoplastics: 550 Rubber camouflage: 340 Sealant for thermal spray aluminum: 610 Special marking: 490 Specialty interior: 340 Tack coat: 610 Undersea weapons systems: 340 Weld-through precon. primer: 650	Navigational aids: 550 Nonskid: 340 Nuclear: 420 Organic zinc: 360 Pretreatment wash primer: 780 Repair and maint. of thermoplastics: 550 Rubber camouflage: 340 Sealant for thermal spray aluminum: 610 Special marking: 490 Specialty interior: 340 Tack coat: 610 Undersea weapons systems: 340 Weld-through precon. primer: 650
Operating Parameters	Has HVLP type transfer efficiency requirements for coating application equipment.	No HVLP type transfer efficiency requirements for application equipment.	Does not include the use of HVLP type transfer efficiency for application equipment.
Method to Determine VOC	U.S. EPA Method 24, or South Coast AQMD Method 304, or South Coast AQMD Method 313.	Does not mention U.S. EPA Methods for determining VOC.	U.S. EPA Method 24 of 40 CFR part 60, appendix A.
Capture Efficiency	None.	Does not mention U.S. EPA Methods for capture efficiency.	Does not mention U.S. EPA Methods for capture efficiency.

Category	South Coast AQMD PAR 1106 – Marine and Pleasure Craft Coatings	1996 U.S. EPA Marine Coating CTG	U.S. EPA NESHAP 40 CFR Part 63 – NESHAP for HAP for Shipbuilding and Ship Repair Operations (Surface Coating)
Control Device Efficiency	None.	Does not mention U.S. EPA Methods for control device efficiency.	Does not mention U.S. EPA Methods for control device efficiency.
Work Practices	Defers to Rule 1171 for storage and disposal of VOC containing materials.	Does not contain any work practices recommendations.	VOC containing containers to be kept closed when not in use.
			Minimize spills of VOC containing materials.
Monitoring	None.	None.	None.
Reporting	None.	No mention for reporting.	No mention for reporting.
Recordkeeping	Defers recordkeeping to Rule 109.	No mention for recordkeeping.	Comprehensive records required annually to support compliance.
Other Elements	Prohibition of possession, specification and sale for non-compliant marine and pleasure craft coatings.	No mention of a prohibition of sale requirement.	No mention of a prohibition of sale requirement.
	Offers five exemptions: Marine or pleasure craft coatings with 50 g/L VOC or less, marine coatings applied to interior surfaces of potable water containers, touch-up coatings, aerosol coating products, marine coatings used on vessels intended to be submerged at least 500 feet below the water surface.	No transfer efficiency requirements in the CTG.	Offers two exemptions: annual usage of less than 200 liters for an individual coating and aerosol containers.

COST-EFFECTIVENESS ANALYSIS

Health and Safety Code Section 40920.6 requires a cost-effectiveness analysis when establishing BARCT requirements. PAR 1106 and 1107 do not establish or impose any BARCT requirements; therefore, a cost effectiveness analysis was not conducted. The proposed amendments are administrative in nature and are not expected to have socioeconomic impacts.

INCREMENTAL COST-EFFECTIVENESS ANALYSIS

Health and Safety Code Section 40920.6(a)(3) states that an incremental cost-effectiveness assessment should be performed on identified potential control options that meet air quality objectives. PAR 1106 and PAR 1107 are not establishing or imposing any BARCT requirements that require control options; therefore, an incremental cost effectiveness analysis was not conducted.

APPENDIX A: RESPONSE TO PUBLIC COMMENTS

South Coast AQMD held a Public Consultation on November 9, 2022, via Zoom video conference. Comments were received during the Public Consultation Meeting. One comment letter was received after the comment period that ended on November 23, 2022.

The following responses summarize the key comments received during the Public Consultation:

Comment 1: Clarification for the timeline for U.S. EPA to finalize the disapproval.

Response 1: U.S. EPA has not indicated a timeline for finalizing the disapproval; however, once the disapproval is finalized, South Coast AQMD will face the possibility of sanctions by the federal government and other consequences under the CAA if the identified rule deficiencies are not corrected and approved by U.S. EPA. Offset sanctions would be triggered 18 months after the effective date of a final disapproval and highway funding sanctions would be triggered six months after the offset sanctions are imposed. CAA would also require U.S. EPA to promulgate a Federal Implementation Plan within 24 months of the disapproval effective date. Sanctions will not be imposed if U.S. EPA determines that a subsequent SIP submission corrects the deficiencies before the applicable deadline.

Comment 2: Clarification for the implication of removing Elastomeric Adhesives from Rule 1106 per U.S. EPA recommendation.

Response 2: Elastomeric Adhesives should be subject to Rule 1168 – Adhesive and Sealant Applications under the category All Other Adhesives. Rule 1168 includes several categories of sealants and adhesives for marine applications including Top and Trim Adhesives, Marine Deck Sealants and Marine Deck Sealant Primers. Products that formerly fell under the Elastomeric Adhesive category will have to comply with a lower VOC limit; however, Rule 1168 includes a low-use exemption for facilities that use 55 gallons or less that could assist a facility using a Marine Elastomeric Adhesive that does not comply with the Rule 1168 VOC limit.

Comment Letter #1:

November 29th, 2022

Ms. Heather Farr
South Coast Air Quality Management District
hfarr@aqmd.gov

Re: Public Comments Marine Coatings (Rule 1106) and Metal Coatings (Rule 1107)--OPPOSE

Dear Ms. Farr:

RadTech International is the premier trade association in North America for Ultraviolet/Electron Beam/Light Emitting Diode (UV/EB/LED) technology. We speak on behalf of our over 800 members who are involved in a myriad of industry sectors ranging from printing and packaging to nail polish. UV/EB processes are all electric, eliminating the need for add-on control devices thereby preventing emissions of criteria pollutants (Nitrogen Oxides) and Greenhouse Gases. The materials are not formulated with conventional solvents and therefore the emissions of Volatile Organic Contaminants (VOCs) are negligible. The very low VOC content of these materials has rendered the traditional VOC test method (EPA Method 24) unsuitable as the VOC content is within the error margin of the test (plus or minus 20 grams/liter). Unfortunately, we cannot support the staff proposal for Rules 1106 and 1107.

Rule 1106 (c)(9) & Rule 1107 (b)(15)—Deletion of Definition of Energy Curable Materials

The staff contends that the definition of energy curable materials is being removed to avoid disapproval by the EPA. This decision is premature because the EPA has not issued a disapproval but rather has asked for public comments on a proposed disapproval. Our association and member companies submitted formal comments to EPA on this matter and we are hopeful that we can reach a mutually acceptable solution. Thus, the staff proposal is throwing the cart before the horse by assuming that the EPA will not heed our public comments. Deleting a definition of energy curable materials will be detrimental to the industry. It will bring uncertainty because the rule is silent on including these products as potential compliance options. In contrast, competing technologies enjoy detailed definitions. This approach is inequitable and puts energy curable technology at a competitive disadvantage.

Staff has acknowledged (Rule 1168 Test Method Guidance document; Page 4) that:

"…at this time, there is no method that can be used for enforcement purposes."

The Guidance document also refers to ASTM D7767-11 "as a tool for manufacturers to determine the VOC content of thin film energy curable products" Our industry developed ASTM D7767-11 because both the EPA and the district told us they had no way of measuring the VOC content from our materials as it was too low to measure. Neither the EPA or the district have provided any other alternatives to the test method and thus, eliminating it as an option puts our members at risk of penalties and fines by regulators, including by the district. The EPA has long recognized our industry as pollution prevention dating back to 1997 when the EPA Administrator testified to a Congressional committee. Our materials meet EPA's Lowest Achievable Emission Rate and the district's Best Available Control Technology. Our industry is strongly opposed to the proposal because it is unfair to take away the agreed upon test method and leave us in regulatory limbo.

The EPA approved the method in 2015 as part of the Graphic Arts rule so we do not understand the draconian proposal to reverse course without proposing an alternative or articulating any reason why the method is not suitable. We would hope that the district joins arms with our industry to gain EPA approval of the method rather than prematurely concluding that the EPA will not heed the public comments submitted objecting to the proposed disapproval. UV/EB/LED processes can provide additional emission reductions but putting a hurdle in our path will be detrimental to our Southern California businesses and impede voluntary emission reductions above and beyond those mandates by district rules.

The District should retain the definition of Energy Curable materials. The EPA has never questioned the definition of energy curable materials itself and limited the issue to the test method. By eliminating the definition altogether, the district is going far beyond what EPA is suggesting.

We request that:

1) The rule adoption be delayed to allow EPA review of our comments
2) Staff join our efforts to obtain EPA approval of ASTM D7767-11 from EPA

Sincerely,

Rita M. Loof

Director, Environmental Affairs

Response to Comment Letter #1:

Staff appreciates the participation of RadTech International in the rule development process.

South Coast AQMD staff agrees that EPA Method 24 is not an appropriate method for thin film UV/EB/LED materials, which are applied at such a thin film the weight of the materials cannot be accurately measured.

Staff proposes to remove the definition for Energy Curable Coatings in PAR 1106 and PAR 1107 to remove the reference to test method ASTM D7767. Removing the definition does not impose an impact to the rule compliance of this coating type under PAR 1106 and PAR 1107. Energy Curable Coatings are not listed as a coating category in the Table of Standards in either rule. The

VOC limits are dependent on the type of coating or the type of substrate to which they are applied, e.g., topcoats, primer, wood coatings, and sometimes on the curing mechanism of the coatings, e.g., air-dried coatings, or baked coatings in Rule 1107. Neither rule contains VOC limits that are specific to Energy Curable Coatings. Once the reference to Energy Curable Coatings is removed from the Exemption subdivision of Rule 1106 and the Methods of Analysis subdivision in Rule 1107, the term "Energy Curable Coatings" will not appear in either rule. To avoid confusion, staff has a policy not to include defined terms that are not used anywhere in the rule language. Staff believes removing the definition will provide clarity.

Staff is proposing to remove the reference to the test method because U.S. EPA proposed a limited SIP disapproval for Rule 1106 and Rule 1107 on August 22, 2022. The limited disapproval cited the deficiency of referencing ASTM D7767, which is not a U.S. EPA-approved test method and cannot be used to enforce a SIP approved rule. The main concern was the inclusion of ASTM D7767 in Rules 1106 and 1107.

The South Coast AQMD has a long history with this test method. South Coast AQMD Laboratory staff met with ASTM D7767 developer (3M, Minneapolis, MN) and confirmed that this method is not applicable for compliance verification purposes. Nevertheless, staff had included a reference to this test method in Rule 1106 based on a request to do so by the commenter. Staff further officially requested that U.S. EPA provide guidance regarding appropriate test methods for UV/EB/LED products. While U.S. EPA originally proposed to approve Rule 1106, they have subsequently proposed a limited disapproval of the rule as it has now been brought to their attention that ASTM D7767 is not a U.S. EPA-approved test method. Staff discussed this issue with U.S. EPA regarding the proposed disapproval and shares U.S. EPA's concerns about the enforceability of this test method.

South Coast AQMD relies on laboratory testing of the fully formulated product collected in the field to determine if a product complies with VOC limits. The South Coast AQMD Laboratory cannot independently perform ASTM D7767 and have the confidence that the results accurately reflect the composition of a sample collected in the field. If South Coast AQMD compliance staff collected a sample of a thin-film energy curable product, the manufacturer would need to supply the raw materials and a photo-initiator for South Coast AQMD Laboratory staff to perform the method. ASTM D7767 offers no ability to confirm that the components supplied by the manufacturer are the actual constituents of the product collected in the field.

South Coast AQMD staff have expressed concerned over the years that Method D7767 does not measure VOC content with sufficient accuracy to be used for compliance purposes. Further, the method does not directly measure the VOC content of fully formulated materials as they are used, and only measures the VOC content of the reactive components, which is not suitable for enforcement purposes.

When there is no appropriate test method, South Coast AQMD relies on the manufacturer's formulation data to confirm the VOC content of Regulated Products. For UV/EB/LED products such as Energy Curable Thin Film products, formulation data can be used to determine VOC content for the purposes of demonstrating compliance with a VOC limit or demonstrating the

material qualifies for the low-VOC exemption. Manufacturers can, and often do, rely on the formulation data to calculate the VOC of their products. Using formulation data to calculate the VOC content of products is an easier and less expensive approach for manufacturers to determine if their products will comply with rule limits. Staff does not anticipate any adverse impact to the UV/EB/LED industry based on this proposed change to Rules 1106 and 1107.

Staff is proposing these amendments now, even though U.S. EPA partial disapproval has not been finalized, due to the severity of the potential sanctions if the deficiency is not corrected and approved. If U.S. EPA issues a final SIP disapproval, South Coast AQMD faces the possibility of sanctions by the federal government and other consequences under the federal CAA. Offset sanctions would be triggered 18 months after the effective date of a final disapproval, and the highway funding sanction would be triggered six months after the offset sanction is imposed. Staff proposes to simultaneously amend both rules to address the deficiency for the disapproval and incorporate U.S. EPA comments. In the case that U.S. EPA does approve the test method at some point in the future, the rules can be revisited.