SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Preliminary Draft Staff Report
Proposed Amended Rule 1107 – Coating of Metal Parts and Products

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CHAPTER 1: BACKGROUND

INTRODUCTION

Rule 1107 – Coating of Metal Parts and Products was adopted in June 1979 to control volatile organic compound (VOC) emissions from metal coating operations. The rule has been amended 17 times since, the last in January 2006. Rule 1107 establishes VOC limits for 22 categories of coatings classified as air-dried (cured below 194 degrees F) or baked (cured at or above 194 degrees F). VOC limits are prescribed for metal coatings in general and include multiple specialty categories. The broadest of the specialty categories include prefabricated architectural one- and multi- component coatings and extreme high-gloss coatings. The remainder of the coating categories encompasses mostly niche operations.

Non-attainment areas are required to implement recommendations in applicable Control Techniques Guidelines (CTG) as soon as practicable. The United States Environmental Protection Agency (U.S. EPA) issued a CTG for Miscellaneous Metal and Plastic Parts Coatings in September 2008.[1] Proposed Amended Rule 1107 is needed to address Reasonable Achievable Control Technology (RACT) deficiencies raised by U.S. EPA for certain exemptions that are overly broad.

BACKGROUND

Metal coatings protect, and in some cases, beautify the substrate they are applied upon. These coatings provide some level of protection from impact, abrasion, and corrosion. They may also need to retain a consistent color and gloss level over an extended period of time. In addition to the desired properties of coating after curing, coatings must also have other acceptable characteristics, especially during application. This can include shelf life, sprayability, rheology, flow, pot life (for multi-component coatings), time-to-tack free, time-to-dry to recoat, and time until full cure. Quick drying times are not always the most desired feature. Acceptable drying times usually fall within a range that varies per the coating process and operation.

The industry sectors that make extensive use of coatings applied to metal parts and products include:

- Steel Product Manufacturing from Purchased Steel (NAICS 3312)
- Cutlery and Handtool Manufacturing (NAICS 3322)
- Architectural and Structural Metals Manufacturing (NAICS 3323)
- Boiler, Tank, and Shipping Container Manufacturing (NAICS 3324)
- Hardware Manufacturing (NAICS 3325)
- Coating, Engraving, Heat Treating, and Allied Activities (NAICS 3328)
- Other Fabricated Metal Product Manufacturing (NAICS 3329)
- Machinery Manufacturing (NAICS 333)
- Computer and Electronic Product Manufacturing (NAICS 334)
- Electrical Equipment, Appliance, and Component Manufacturing (NAICS 335)
- Motor Vehicle Parts Manufacturing (NAICS 3363)

[1] Control Techniques Guidelines for Miscellaneous Metal and Plastic Parts Coatings, U.S. Environmental Protection Agency, Office of Air Quality Planning Standards, Sector Policies and Program Division, September 2008, https://www3.epa.gov/airquality/ctg_act/200809_voc_epa453_r-08-003_misc_metal_plasticparts_coating.pdf

- Other Transportation Equipment Manufacturing (NAICS 3369)
- Metal Household Furniture Manufacturing (NAICS 337124)
- Institutional Furniture Manufacturing (NAICS 337127)
- Office Furniture (except Wood) Manufacturing (NAICS 337214)
- Showcase, Partition, Shelving, and Locker Manufacturing (NAICS 337215)
- Other Miscellaneous Manufacturing (3399)

The industries that supply coatings to facilities are covered by the Paint and Coating Manufacturing sector (NAICS 325510).

REASONABLY AVAILABLE CONTROL TECHNOLOGY (RACT)

The U.S. EPA has defined Reasonably Available Control Technology (RACT) as the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility. RACT for a particular source is determined on a case-by-case basis, considering the circumstances of the individual source. Non-attainment areas are required to implement recommendations in applicable Control Techniques Guidelines (CTG) as soon as practicable[2]. The U.S. EPA issued a CTG for Miscellaneous Metal and Plastic Parts Coatings in September 2008[3]. As part of the development of the CTG, U.S. EPA evaluated the sources of VOC emissions from the metal products coating industries and the available control approaches for addressing these emissions, including the costs of such approaches.

NEED FOR PROPOSED AMENDED RULE 1107

PAR 1107 is needed to address several RACT deficiencies identified by the U.S. EPA. In particular, the exemptions for high-performance architectural, vacuum-metalizing, and pretreatment coatings (paragraph (f)(4)) and for electrocoatings (paragraph (f)(8)) are overly broad. In both cases, the exemption threshold is in excess of those allowed under the CTG. Additionally, U.S. EPA recommended improving work practices for storage and handling of metal coatings. Other amendments update test methods, remove obsolete language, and clarify rule language.

AFFECTED INDUSTRIES

Approximately 1,100 facilities are subject to existing Rule 1107. Proposed Amended Rule 1107 (PAR 1107) will not result in direct emission reductions and will not increase costs. Facilities are already using compliant coatings in the high-performance architectural, vacuum-metalizing, and pretreatment coatings and electrocoating categories. Excluding electrocoating, these specialty coating categories already have a 420 g/L VOC limit with numerous compliant coatings available for each category. Electrocoatings are a low-VOC alternative to traditional metal coatings. The work practice for storage and handling of metal coatings, application equipment, and waste

2 Title 40, Code of Federal Regulations (CFR), Section 51.912

3 Control Techniques Guidelines for Miscellaneous Metal and Plastic Parts Coatings, U.S. Environmental Protection Agency, Office of Air Quality Planning Standards, Sector Policies and Program Division, September 2008, https://www3.epa.gov/airquality/ctg_act/200809_voc_epa453_r-08-003_misc_metal_plasticparts_coating.pdf

materials consists of keeping VOC-containing or VOC-laden materials in closed containers when not in use. The updated test methods and removal of obsolete language provide clarification only.

PUBLIC PROCESS

PAR 1107 is being developed through a public process. A Public Workshop is scheduled for December 4, 2019.

CHAPTER 2: SUMMARY OF PROPOSED AMENDED RULE 1107

INTRODUCTION

Proposed Amended Rule 1107 (PAR 1107) will revise certain exemptions to be consistent with Reasonable Available Control Technology (RACT) requirements as recommended in United States Environmental Protection Agency's (U.S. EPA's) *Control Techniques Guidelines for Miscellaneous Metal and Plastic Parts Coatings (September 2008)*. Other amendments address work practices for coating-related activities, update test methods, remove obsolete provisions, and add clarifications.

PROPOSED AMENDED RULE 1107

Definitions (Subdivision (b))

A definition for Energy Curable Metal Coatings has been included to recognize this technology and provide manufacturers a test method to measure volatile organic compound (VOC) content from these coatings An Energy Curable Coating is a single-component reactive product that cures when exposed to visible light, ultra-violet light, or an electron beam. ASTM D7767-11 – Standard Test Method to Measure Volatiles from Radiation Curable Acrylate Monomers, Oligomers, and Blends and Thin Coatings Made from Them may be used to calculate VOC content for Energy Curable Metal Coatings. Manufacturers will be able to use this test method to more accurately determine VOC content for recordkeeping and reporting. The method relies upon testing the coating for VOC content prior to admixing with known interferences such as pigments and sunblockers. Manufacturers then use U.S. EPA Reference Method 24 (Title 40, Code of Federal Regulations, Part 60, Appendix A) – Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings to determine the VOC content of the known interferences separately. The overall VOC content is calculated from the results of ASTM D7767-11 and U.S. EPA Reference Method 24. The separation aspect limits the utility of the method for compliance samples taken from the field as there is currently no way to separate the coatings after admixing them. Staff will continue to work with interested parties to develop an acceptable procedure to further incorporate into ASTM D7767. However, until the field sample issue is resolved, compliance sample testing will continue to be conducted using U.S. EPA Reference Method 24 or other applicable test methods.

The test method for extreme high-gloss coating has been updated to better identify the correct method. The test method identified in high-performance architectural coatings has been updated to reflect changes made in Architectural Aluminum Manufacturer Association publications.

Requirements (Subdivision (c))

Obsolete language in the table containing VOC limits in paragraph (c)(2) has been removed. No VOC limits have changed.

Work practices for storage and handling of metal coatings, application materials, and waste materials is included in paragraph (c)(4). VOC emissions may be reduced by storing VOC-containing coatings, thinners, and coating-related waste materials in closed containers. VOC-laden application tools, including brushes, cloth, or paper, shall be stored and disposed in closed containers.

Methods of Analysis (Subdivision (e))

For clarity, the titles have been added to: (e)(1)(A) for U.S. EPA Reference Method 24; (e)(2) for ASTM D1613; (e)(5) for U.S. EPA Test Method 25, U.S. EPA Test Method 18, and CARB Method 422.

Paragraph (e)(4) add additional test methods to determine capture efficiency to reflect changes to U.S. EPA's technical guidance document[1]. The test methods in the 1995 guidelines were codified into Title 40, Code of Federal Regulations, Part 51, Appendix M, Methods 204-204F. Although several test methods are listed paragraph (e)(4) for determination of capture efficiency and control device efficiency, staff's experience is that the majority of capture efficiency determinations will utilize EPA Method 204 and control efficiency determinations will utilize South Coast AQMD Methods 25.1 and/or 25.3. Other methods listed in paragraph (e)(4) may be used in rare circumstances but are most often not applicable.

Exemptions (Subdivision (f))

Obsolete language has been removed from the exemption in paragraph (f)(2), the provision became effective July 1, 2006.

The exemption in paragraph (f)(4) for high-performance architectural, vacuum-metalizing and pretreatment coatings used at facilities that emit a total of 10 tons or less of VOC per year will be eliminated. The categories listed in this exemption already are allowed specialty VOC content coating limits of 420 g/L. The only facility that qualified under the existing High-Performance Architectural coating category already vents emissions to a control device. Previous rule amendments have eliminated the one gallon per day exemption. There are no known impacts from removing this exemption.

The high volume (66 gallon per month) exemption in paragraph (f)(8) for electrocoating will be eliminated. Advances in electrocoating technology have made electrocoating a low-VOC, non-Hazardous Air Pollutant (HAP) extension of the electroplating line. The electrocoating process is now a low-VOC alternative to traditional VOC-containing metal painting.

[1] Guidance Document for Correcting Common VOC & Other Rule Deficiencies, U.S. Environmental Protection Agency, August 2001, https://ww3.arb.ca.gov/drdb/lbb2001.pdf

CHAPTER 3: IMPACT ASSESSMENT

INTRODUCTION

PAR 1107 is applicable to approximately 1,100 metal coating facilities. These facilities include fabricated metal product manufacturing, architectural and structural metals manufacturing, hardware and machinery manufacturing, and motor vehicle parts manufacturing among other categories. It does not include coatings used for aerospace assembly, magnet wire, marine craft, motor vehicle, metal container, and coil coating operations, or for architectural components coated at the structure site.

RULE ADOPTION RELATIVE TO COST EFFECTIVENESS

PAR 1107 is not expected to result in direct emission reductions and will not increase costs

COMPLIANCE COSTS

No additional costs are expected to be incurred. Facilities are already using compliant coatings in the high-performance architectural, vacuum-metalizing, and pretreatment coatings and electrocoating categories. Those specialty coating categories already have a 420 g/L limit with numerous compliant coatings available for each category. The work practice for storage and handling of metal coatings, application equipment, and waste materials consists of keeping VOC-containing or VOC-laden materials in closed containers when not in use. The updated test methods and removal of obsolete language provide clarification only.

SOCIOECNOMIC ASSESSMENT

The amendments proposed are not expected to impose any additional costs to facilities or result in other socioeconomic impacts. The proposed amendments do not significantly affect air quality or emissions limitations since facilities are already using compliant coatings, and therefore, no socioeconomic analysis is required under California Health and Safety Code Sections 40440.8 and 40728.5.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Pursuant to the California Environmental Quality Act (CEQA), the South Coast AQMD, as Lead Agency, will prepare a Notice of Exemption pursuant to CEQA Guidelines Section 15062 - Notice of Exemption for the proposed project. Proposed Amended Rule 1107 has been reviewed pursuant to: 1) CEQA Guidelines Section 15002(k) – General Concepts, the three-step process for deciding which document to prepare for a project subject to CEQA; and 2) CEQA Guidelines Section 15061 – Review for Exemption, procedures for determining if a project is exempt from CEQA. Since Proposed Amended Rule 1107 does not contain any project elements requiring physical modifications that would cause an adverse effect on the environment, it can be seen with certainty that there is no possibility that the proposed project may have a significant adverse effect on the environment. Therefore, the project is exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) – Common Sense Exemption. If the project is approved, the Notice of Exemption will be filed with the county clerks of Los Angeles, Orange, Riverside and San Bernardino counties.

DRAFT FINDINGS UNDER CALIFORNIA HEALTH AND SAFETY CODE SECTION 40727

Requirements to Make Findings

California Health and Safety Code Section 40727 requires that prior to adopting, amending or repealing a rule or regulation, the South Coast AQMD Governing Board shall make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the public hearing and in the staff report.

Necessity

Proposed Amended Rule 1107 is needed to revise exemptions to be consistent with Reasonable Available Control Technology requirements as recommended in United States Environmental Protection Agency's *Control Techniques Guidelines for Miscellaneous Metal and Plastic Parts Coatings (September 2008)*. Other amendments address work practices for coating-related activities, update test methods, remove obsolete provisions, and add clarifications.

Authority

The South Coast AQMD Governing Board has authority to adopt Proposed Amended Rule 1107 pursuant to the California Health and Safety Code Sections 39002, 40000, 40001, 40440, 40702, 40725 through 40728, and 41508 and Title 40 of the Code of Federal Regulations (CFR) Section 51.912

Clarity

Proposed Amended Rule 1107 is written or displayed so that its meaning can be easily understood by the persons directly affected by it. The removal of obsolete provisions and clarifications will improve the clarity.

Consistency

Proposed Amended Rule 1107 is in harmony with and not in conflict with or contradictory to, existing statutes, court decisions, or state or federal regulations.

Non-Duplication

Proposed Amended Rule 1107 will not impose the same requirements as any existing state or federal regulations. The proposed amended rule is necessary and proper to execute the powers and duties granted to, and imposed upon, the South Coast AQMD.

Reference

By adopting Proposed Amended Rule 1107 the South Coast AQMD Governing Board will be implementing, interpreting or making specific the provisions of the Title 40 CFR 51.192.

COMPARATIVE ANALYSIS

Pursuant to Health and Safety Code 40727.2(g), the SCAQMD is electing to comply with subdivision (a) by finding that the proposed amended rules do not impose new or more stringent emission limit, monitoring, reporting, or recordkeeping requirements. Therefore, no comparative analysis is required.