

STAFF REPORT
PROPOSED AMENDMENTS TO RULE 74.2, ARCHITECTURAL COATINGS

Ventura County Air Pollution Control District

**669 County Square Drive
Ventura, California 93003**

August 2017



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DISCLAIMER

This report contains references to company and product names to illustrate product availability. Mention of these names is not to be considered an endorsement by the Ventura County Air Pollution Control District.

EXECUTIVE SUMMARY

Staff is proposing to adopt amendments to Rule 74.2, Architectural Coatings, to reduce the reactive organic compound (ROC) emissions from the coating of structures and their appurtenances. This rule development is based on the current ROC limits on coatings and colorants applied in the South Coast AQMD Rule 1113. Since the South Coast AQMD removed their averaging provisions in Rule 1113, their ROC limits are now directly transferable to Rule 74.2 without the need for complicated recordkeeping and emissions tracking systems. A survey of architectural coatings in the county indicates that available coatings now meet current Rule 1113 ROC limits.

At this time, staff is not proposing to eliminate the small container exemption from rule requirements that allows the sale of 1 liter or smaller coating containers (1.057 quarts) without regard to ROC content. South Coast AQMD has eliminated this exemption in Rule 1113 for wood and concrete coatings and delayed eliminating this exemption for other major coating categories, including rust preventative coatings, until 2018, 2019, or 2020. Staff may consider eliminating these exemptions in the future once they are fully implemented in the South Coast district. According to emission inventory in the South Coast district, small coating containers are only one percent of the sales volume, but emit almost 20 percent of the ROC emissions from architectural coatings.

Ventura County is designated as a serious nonattainment area for the federal ozone standard and as a severe nonattainment area for the state ozone standard. The California Clean Air Act requires areas designated as severe nonattainment for ozone to adopt control measures required in Sections 40913, 40914, and 40919 of the California Health and Safety Code (H & SC):

- Section 40913 requires districts to develop a plan to achieve California's ambient air quality standard by the earliest practicable date. Control Measure R-333-2017 in the District's 2016 Air Quality Management Plan references the architectural coatings rule. Rule 74.2 is being amended to implement this measure.
- Section 40914 requires each district plan to demonstrate that the plan includes "every feasible measure." Districts must adopt the most effective and feasible control measures to reduce ROC emissions from architectural coatings.

Amendments to Rule 74.2 are being proposed to meet this requirement.

Staff is proposing to reduce ROC emissions from architectural coating operations in Ventura County by reducing the ROC content of the following coating categories: flats; nonflats; nonflat – high gloss; bituminous roof; concrete curing; dry fog; faux finish clear coats; fire proof; floor; form release; graphic arts; industrial maintenance; metallic pigmented; aluminum roof coatings; mastic texture; primers, sealers and undercoaters; rust preventative coatings; waterproofing sealers; exterior stain coatings; and zinc primers.

Proposed amendments to Rule 74.2 will affect many architectural coatings used on new structures and their appurtenances and used to maintain existing structures and appurtenances. This rule impacts field-applied architectural coatings rather than those applied in a spray booth.

The estimated ROC emission reductions from the proposed amendments are approximately 0.4 tons per day emission reductions, or about 25 percent reduction from the current inventory.

Ventura County APCD staff estimated the cost-effectiveness of proposed amendments to Rule 74.2 based on published price comparisons between oil-based high-ROC coatings and their low-ROC counterparts. The cost-effectiveness ranged from \$1 per pound of ROC reduced when switching to a specialty waterborne coating such as a stain blocker and sealer to over \$5 per pound of ROC reduced when switching to an exempt solvent-based coating for specialty rust preventative situations. These cost increases only apply to one and five gallon specialty coating containers since one quart containers would continue to be exempt from rule requirements. Also, there will be no additional costs from proposed amendments for your typical flat and nonflat house paints, since these water-reducible coatings have been widely used for many years.

This report contains five additional sections: (1) Background, (2) Proposed Rule Requirements, (3) Comparison of Proposed Rule Requirements with Other Air Pollution Control Requirements, (4) Impact of the Proposed Rule, and (5) Environmental Impacts and Methods of Compliance. The first section provides background information including regulatory history, latest air pollution control

technology and source description. The second section explains the key features of proposed amendments to Rule 74.2. The third section compares the proposed requirements with existing federal requirements and Best Available Control Technology (BACT). The fourth section is an

analysis of the effect of the proposed rule on ROC emissions and socioeconomic impacts. The last section examines the environmental impacts of compliance methods and the mitigation of those impacts.

BACKGROUND

Introduction

Architectural Coatings are defined as any coating applied to a stationary structure and their appurtenances, to mobile homes, to portable buildings, to pavements, or to curbs. Architectural coatings are formulated with a variety of components including pigments, resins, solvents, and different additives such as driers, anti-skinning agents, anti-sag agents, dispersing agents, defoaming agents, preservatives and fungicides. The primary source of air emissions from architectural coatings is the solvent component in solvent-based coatings and the co-solvents from waterborne coatings.

Currently, architectural coatings in Ventura County are regulated by Rule 74.2, which was first adopted on June 19, 1979, and was based on the ARB's 1977 Model Rule. ARB and the air districts subsequently revised this model rule in 1985, 1989, 2000, and 2007. The 2007 Suggested Control Measure (SCM) was the basis for the last major revisions to this rule in 2010.

The need to revisit Rule 74.2 has arisen because of: (i) advances in coatings technology over the past seven years, and (ii) the need for emission reductions to attain health-based air quality standards in Ventura County. The proposed amendments to Rule 74.2 are based on work performed by the South Coast AQMD in developing new architectural coating standards in SCAQMD Rule 1113 over the past 40 years with the most recent amendment on February 5, 2016.

As a neighboring air district, Ventura County is part of the Southern California distribution network for architectural coatings. A recent survey of architectural coatings being sold in the county indicates that almost all of them were manufactured to meet the current ROC coating content limits required by SCAQMD Rule 1113. Thus, the proposed amendments to Rule 74.2 to adopt the

South Coast limits should not impact the ability of coating retailers to provide compliant coatings. Currently, there are no paint manufacturing companies in the county.

Another important factor that allows Ventura County to adopt the South Coast ROC limits is that Rule 1113 no longer contains averaging provisions that were used for compliance purposes. These averaging provisions allowed paint manufacturers to average the ROC content of their product lines using a sales-weighted average so that equivalent or greater emission reductions were achieved. The use of these provisions required detailed reporting and recordkeeping requirements for industry, and intensive AQMD staff resources to review and approve these compliance plans. Today, coatings sold or applied in the South Coast district are required to meet their respective individual coating category ROC limit. Thus, these ROC coating limits may be feasibly adopted in Ventura County without the need for resource-intensive averaging provisions that favor larger coating manufacturers with broad product lines necessary to take advantage of averaging allowances.

EPA promulgated the National Volatile Organic Compound Emission Standards for Architectural Coatings (National Architectural Coatings Rule) in 1998. Existing Rule 74.2 is more stringent than the national rule for all coating categories.

Emission Inventory

The quantity of ROC emissions from the use of architectural coatings has been estimated at 1.6 tons of ROC per day. The emissions reductions from proposed amendments to Rule 74.2 are about 25 percent of the inventory or 0.4 tons ROC per day.

PROPOSED RULE REQUIREMENTS

This section summarizes the major proposed requirements of proposed amendments to Rule 74.2. The proposed new ROC limits are listed in Table 1. In all cases, products are available today that comply with proposed new limits. The major changes are listed below:

1. Lowered the ROC limit for 24 coating categories including: Flats; Nonflats; Nonflats-High Gloss; Basement Specialty; Building Envelope, Concrete Curing Compounds; Concrete Surface Retarders; Dry Fog Coatings; Clear Topcoat Faux Finish Coatings; Trowel-Applied Faux Finish Coatings; Fire Proofing; Floor Coatings; Form-Release Compounds; Graphic Art- Sign Paints; Industrial Maintenance; Non-Sacrificial Anti-Graffiti; Metallic Pigmented; Aluminum Roof Coatings; Rust Preventatives; Exterior Stains; Tile and Stone Sealers; Wood Conditioners; and Zinc-Rich Industrial Maintenance Primers. The limits will go into effect January 1, 2019.
2. Replaced both Fire-Resistant and Fire-Retardant coating categories with one category called Fire-Proofing.
3. Deleted the Specialty Primer, Sealer, and Undercoater Category, and these coatings are now regulated as just Primer, Sealers and Undercoaters. Also deleted was the Waterproofing Membrane Coating Category, and these coatings now are covered by the Waterproofing Sealer Category.
4. Added the following new specialty coating categories: Building Envelope Coatings, Color Indicating Safety Coatings, Concrete Surface Retarders, Interior Stains, Non-Sacrificial and Sacrificial Anti-Graffiti Coatings, Tile and Stone Sealers, Waterproofing Sealers, and Wood Conditioners.
5. A new Default Coating Category is any specialty coating that is not defined by a specified definition in the rule.

6. In addition, the proposed amendments would include lower ROC content limits for colorants based on the same limits from SCAQMD Rule 1113. Colorant are defined as a concentrated pigment dispersion in water, solvent, and/or binder, that is added to an architectural coating after packaging in sale units to produce a desired color.

In order to more easily understand the applicability of the new coating categories, the important characteristics are summarized as follows:

Building Envelope Coating: This is a new category that was not previously defined, but was determined by the South Coast AQMD to be needed in light of the more restrictive ROC content coating limits.

Color Indicating Safety Coating: This new category is needed to allow higher ROC content for a very specialized and limited use coating.

Concrete Curing Compounds: The new proposed lower ROC content limit at 100 grams per liter for this category does not apply to bridge and roadways applications, which retain the existing ROC content limit.

Concrete Surface Retarder: This new coating category has been regulated by the South Coast AQMD Rule 1113 for many years at an ROC content of 50 grams per liter.

Interior Stains: Although exterior stains can comply with the proposed ROC content limit of 100 grams per liter, interior stains will continue to be regulated at the current ROC content limit of 250 grams per liter. This is an example of creating a new specialty subcategory subject to existing ROC content limits because of the difficulty in complying with proposed new lower limits for the parent coating category (stains).

Tile and Stone Sealers: This new category has the same ROC content limit as the existing limit for concrete/masonry sealers. This additional category is included for clarification purposes.

Waterproofing Sealers: The following sealer categories have the same 100 grams per liter ROC content limits:

- Concrete/Masonry Sealers;
- Primers, Sealers and Undercoaters;
- Tile and Stone Sealers; and
- Waterproofing Sealers

The following sealer categories have different ROC Content limits:

- Driveway Sealers at 50 grams per liter

- Reactive Penetrating Sealers at 350 grams per liter

Wood Conditioners: This is a new coating subcategory that can meet a more restrictive ROC limit at 100 grams per liter than the parent wood coating category at 275 grams per liter.

Table 1. Proposed ROC Limits

COATING CATEGORY	CURRENT LIMIT ^{1,2}	EFFECTIVE 1/1/2019
Flat Coatings	100	50
Nonflat Coatings	100	50
Nonflat-High Gloss	150	50
SPECIALTY COATINGS		
Basement Specialty Coatings	400	100
Bituminous Roof	50	
Bituminous Roof Primer	350	
Bond Breaker	350	
Building Envelope Coating		100
Concrete Curing Compounds	350	100
Concrete Curing for Roadways/Bridges	350	
Concrete/Masonry Sealers	100	
Concrete Surface Retarders		50
Driveway Sealers	50	
Dry Fog Coatings	150	50
Faux Finishing Coatings:	350	
Clear Topcoat (over Faux Finish)		100
Decorative Coatings		350
Glazes		350
Trowel-Applied Coatings		50
Fire Proofing Coatings	350	150
Floor Coatings	100	50
Form-Release Compounds	250	100
Graphic Arts-Sign Paints	500	200
High Temperature Coatings	420	
Industrial Maintenance Coatings:	250	100
Color Indicating Safety Coatings		480
Non-Sacrificial Anti-Graffiti		100
Low Solids Coatings ³	120	
Magnesite Cement Coatings	450	
Mastic Coatings	100	
Metallic Pigmented Coatings	500	150
Multi-Color Coatings	250	

¹ The specified limits remain in effect unless revised limits are listed in subsequent columns in the table.

² Conversion factor: one pound ROC per gallon (U.S.) = 119.95 grams ROC per liter.

³ Units for low-solid coatings are grams of ROC per liter (pounds of ROC per gallon) of coating, including water and exempt compounds.

Table 1 (continued) Proposed ROC Limits

COATING CATEGORY	CURRENT LIMIT	LIMIT EFFECTIVE 1/1/2019
Pretreatment Wash Primers	420	
Primers, Sealer & Undercoaters	100	
Reactive Penetrating Sealers	350	
Recycled Coatings	250	
Roof Coatings	50	
Roof Coatings, Aluminum	400	100
Rust Preventative Coatings	250	100
Shellacs - Clear	730	
Shellacs - Opaque	550	
Stains:	250	100
Interior Stains		250
Stone Consolidants	450	
Swimming Pool Coatings	340	
Tile and Stone Sealers		100
Traffic Marking Coatings	100	
Tub & Tile Refinish	420	
Waterproofing Sealers	250	100
Wood Coatings	275	
Wood Conditioners		100
Wood Preservatives	350	
Zinc-Rich Industrial Maintenance Primers	340	100

COMPARISON OF PROPOSED RULE REQUIREMENTS WITH OTHER AIR POLLUTION CONTROL REQUIREMENTS

H & SC Section 40727.2 requires districts to compare the requirements of a proposed revised rule with other air pollution control requirements. These other air pollution control requirements include federal regulations, Best Available Control Technology (BACT), and any other District rule applying to the same equipment or process. Proposed amendments to Rule 74.2 is more stringent than those in the United States Environmental Protection Agency's national rule and are based on a modified version of SCAQMD Rule 1113.

No other District rules have air pollution control requirements that would conflict with Rule 74.2 requirements. Wood coatings applied in a shop or wood product fabrication facility are subject to VCAPCD Rule 74.30, Wood Coatings, instead of Rule 74.2. Similarly, metal products coated in a shop are subject to Rule 74.12, Metal Parts and Products.

Comparison with National Rule

There are many differences between proposed amendments to Rule 74.2 and the national architectural coatings rule, which became effective on September 13, 1999. The national rule only applies to manufacturers and importers of architectural coatings while Rule 74.2 applies to manufacturers, distributors, retailers, and users of architectural coatings. The national rule also has generally higher (less restrictive) ROC limits than Rule 74.2. For example, the proposed ROC limits in the national rule for the three largest categories (flats, non-flats, and industrial maintenance coatings) are 250, 380, and 450 grams per liter, respectively. This compares with the ROC limits of 50 grams per liter for flats and nonflats, and 100 grams per liter for industrial maintenance coatings in proposed amendments to Rule 74.2. The national rule also includes 30 additional specialty categories not included in proposed amendments to Rule 74.2. The

“national” categories are regulated by one of the existing coating categories in Rule 74.2. Air Resources Board (ARB) staff analyzed these additional national categories and found it was not necessary to add most of them to the 2007 SCM because: there are complying products that may be regulated under other coating categories in existing district rules; they are not architectural coatings; or they are not sold in California. Staff has also analyzed the additional coating categories in the national rule and concluded that for all of the categories except one coating category (Calcime Recoater Coating), they are not needed because they would be subject to another coating category in the proposed rule or to another district coating rule. Staff has also determined that the Calcimine Recoater Coating is unique to the New England area and, therefore, this category is not necessary for the proposed rule.

Comparison with BACT

SCAQMD Rule 1113 ROC Limits could be Best Available Control Technology (BACT) because it would be the most effective emission control device, emission limit, or technique that has been required or used for this type of equipment. Although the proposed ROC Content Limits in proposed Rule 74.2 are the same as SCAQMD Rule 1113(except for Recycled Coatings), the proposed amendments to VCAPCD Rule 74.2 do not include SCAQMD provisions to eliminate the small container exemption. Although small architectural coating containers (1 quart or smaller) represent only one percent of the sales, they represent 20 percent of the ROC emission inventory. For this reason, SCAQMD Rule 1113 may still represent Best Available Control Technology.

Comparison of Air Pollution Control Requirement Elements

Health and Safety Code Section 40727.2.(c) requires the district review the following elements in the comparative analysis between proposed amendments to Rule 74.2 and federal and BACT rules:

- Operating parameters and work practice requirements.
- Monitoring, reporting and recordkeeping requirements, including test methods, format, content and frequency.
- Any other element the district determines warrants review.

The coating (emission) limits in proposed amendments to Rule 74.2 are stated as grams of ROC per liter of coating less water and less exempt organic compounds. These units are identical to the units in both the national rule and SCAQMD Rule 1113.

There are no air pollution control requirements involving operating parameters in any of the rules subject to this analysis. Proposed amendments to Rule 74.2 include a work practice requirement that calls for closing coating and solvent containers when not in use. Similar requirements are found in the national rule and SCAQMD Rule 1113.

There are no monitoring or recordkeeping requirements in proposed amendments to Rule 74.2. Test Methods that have been included in proposed Rule 74.2 are needed to determine ROC content and other coating characteristics. These test methods do not conflict with test methods cited in the national rule or SCAQMD Rule 1113. District staff has determined there are no other air pollution control requirement elements that warrant review in this comparative analysis.

IMPACT OF THE PROPOSED RULE REVISIONS

ROC Emissions Impacts

The emission reduction potential of proposed amendments to Rule 74.2 is estimated at 0.4 tons of ROC per day, or about 25 percent ROC emission reductions from the current emission inventory. This estimate is based on the impact from the ROC content limit reductions for all the affected coating categories and reduction in ROC content for colorants.

Socioeconomic Impacts Analysis

H & SC Section 40728.5 requires a district to perform an assessment of the socioeconomic impacts before adopting, amending, or repealing a rule that will significantly affect air quality or emission limitations. The district board is required to actively consider the socioeconomic impact of the proposal and make a good faith effort to minimize adverse socioeconomic impacts.

H & SC Section 40728.5 defines “socioeconomic impact” as the following:

1. The type of industry or business, including small business, affected by the rule.
2. The impact of the rule on employment and the economy of the region.
3. The range of probable costs, including costs to industry or business, including small business.
4. The availability and cost-effectiveness of alternatives to the proposed rule.
5. The emission reduction potential of the rule.
6. The necessity of adopting the rule to attain state and federal ambient air standards.

The South Coast Air Quality Management District (SCAQMD) amended their architectural coating Rule 1113 in 1996, 1999, 2001, 2002, 2003, 2004, 2006, 2007, 2011, 2013 and 2016. SCAQMD routinely runs regional economic models to determine socioeconomic impacts of their rule adoptions and did so for their Rule 1113 adoptions.

Traditionally, Ventura County APCD has not used regional economic models in their socioeconomic analyses and is not proposing to do so in this rule development. ARB staff has indicated that it is not necessary for the districts to use a regional economic model to perform the economic analysis for the purpose of adopting amendments to Rule 74.2 because the cost increase associated with the proposed amendments are small in comparison with the regional economy.

Types of Affected Business and Industry Including Small Business

Proposed amendments to Rule 74.2 would potentially impact: (i) industries engaged in manufacturing paint, varnishes, enamels and allied products (SIC 2851); (ii) end users of architectural coatings, including do-it-yourself consumers, painting contractors (SIC 1721) that may be small businesses, and maintenance personnel; and (iii) suppliers, sellers, and solicitors of architectural coatings (SIC 5198, 5231). New construction and maintenance of the following may be impacted by this proposal: buildings; transportation infrastructure; industrial structures such as aboveground tanks; and any stationary structure or appurtenance. At the current time, there are no coating manufacturers operating in the county.

Economic Impacts and Range of Probable Costs

Introduction: Since there are no coating manufacturers in the county, staff has focused on the

costs increases that are being passed on to the end user from switching from an oil-based paint to a waterborne or exempt solvent-based coating. This cost analysis does not take into account the many benefits of using waterborne coatings including more convenient, easy cleanup with water, lower odor, and less exposure to hazardous chemicals.

A survey of published prices comparing existing high-ROC oil-based coatings in areas subject to the national architectural coating rule to their low-ROC counterparts found in the South Coast district. This survey provides a range of cost-effectiveness (computed in dollars per pound of ROC reduced) depending upon the coating category and the type of solvent used for reformulation purposes.

The cost-effectiveness ranged from \$1 per pound of ROC reduced when switching to a specialty waterborne coating such as a stain blocker and sealer to over \$5 per pound of ROC reduced when switching to an exempt solvent-based coating (such as a siloxane) used for specialty rust preventative situations. These cost increases only apply to one and five gallon specialty coating containers since one quart containers would continue to be exempt from rule requirements, and this exemption would mitigate the cost for small users. Finally, there would be no additional costs from proposed amendments for your typical flat and nonflat house paints, since these water-reducible coatings have been widely used in Ventura County for many years.

On the basis of these limited cost increases, staff has determined that proposed amendments to Rule 74.2 will not have an unacceptable adverse impact on employment and the economy in Ventura County.

SCAQMD Analysis: Based on available information, South Coast AQMD staff estimated that the Rule 1113 ROC standards would result in maximum price increases for future complying coatings of up to 20 percent. The 1999 SCAQMD Socioeconomic Report for Rule 1113 projects a worst-case 20 percent increase across-the-board for all major categories. The SCAQMD price determinations for complying coatings were supported by information received by them from resin suppliers and coating manufacturers. The following sources were cited by SCAQMD to provide coating price estimates:

- A case study by Devoe & Reynolds Co. published in *Stirring Up Innovation* (1994) noted a 10 percent increase in costs for <250 g/l industrial maintenance, non-flat and wood stain coatings.

- A Superior Coating paper at the April 28, 1998, SCAQMD Architectural Coatings Technology Conference (*Superior Performance Coatings*) noted a 0 to 10 percent increase in the cost per gallon of zero-ROC non-flat, primer sealer and undercoater, rust preventative, industrial maintenance and stain coatings.
- Another paper at the 1998 Architectural Coating Technology Conference indicated examples of zero-ROC flats, non-flats, primer sealer and undercoaters, rust preventatives, quick-dry enamels, floor coatings, industrial maintenance coatings, wood sealers and wood stain coatings that have superior or matching coating performance while simultaneously reducing production and application costs (*ROC free Paints and Inks at No Extra Cost* by G. Sugerman of PPA Technologies, a resin supplier).
- Norman Mowrer of Ameron International also presented a paper at the 1998 Technology Conference that reported reduced costs for industrial maintenance coatings based on cost per performance characteristics.

Conclusion: Although the maximum expected price impacts on consumers are significant, the actual cost impacts are likely to be small because of competitive pricing pressures from existing complying coatings.

Cost to Small Business

The costs of the proposal to small businesses including painting contractors were evaluated based on studies performed by SCAQMD. Staff believes that these studies are applicable to Ventura County because the economic factors affecting architectural coating wholesalers, retailers and painting contractors are similar to other areas of California.

SCAQMD staff analyzed the cost impacts to painting contractors in their analysis of amendments to their Rule 1113. Based on data from industry sources, the estimated average annual cost of their ROC limits in the South Coast district was \$32 million dollars to consumers and \$26.3 million dollars to painting contractors (SIC 1721) from 2002 through 2015. According to SCAQMD staff, painting contractors and consumers could incur additional costs beyond these amounts. For the painting contractor, it could be the cost of training, learning, and testing the new reformulated coatings, and litigation costs. These additional costs are based on claims made by some

coating manufacturers and some paint contractors and not on any empirical studies. These costs assume coating manufacturers pass through all reformulation costs to end-users.

Conclusion: An estimate of cost impacts to painting contractors in Ventura County was made by assuming that the cost breakdown (consumer vs. painting contractor) is similar to that found in the South Coast AQMD. This is a reasonable assumption because the type and quantity of work performed by painting contractors is expected to be similar in both regions **on a per capita basis**. SCAQMD staff estimates that 45 percent of the cost impact is experienced by painting contractors. Thus, the maximum cost impact to Ventura County area painting contractors would be 45 percent of \$505,000, which is \$227,000.

Emission Reduction Potential of the Rule

The emission reduction potential of proposed amendments to Rule 74.2 is estimated at 0.4 tons of ROC per day. This estimate is based on an analysis of current coating emission inventories reduced by approximately 25 percent, which is the estimate of the impact of proposed changes to ROC coating content limits.

Cost-Effectiveness

SCAQMD staff reported cost-effectiveness calculations for Rule 1113 standards in their staff report. This report includes cost-effectiveness values for each of the major coating categories that are proposed for amendment.

SCAQMD staff estimated 1999 projection of \$6.65 per pound of ROC reduced for SCAQMD Rule 1113 over the years 2002-2015 (based on 1998 Dollars).

Conclusion: The cost-effectiveness of proposed amendments to Rule 74.2 was calculated based on cost surveys comparing oil-based coating costs to their low-ROC counterparts, either waterborne or exempt solvent-based. The ROC emission reductions are anticipated to be 0.4 tons per day or 292,000 pounds per year. The cost-effectiveness ranges from \$1 to \$5 per pound of ROC reduced depending upon the coating category and the coating container size. This is much less than the \$9 per pound of ROC reduced that is required for Best Available Control Technology for new stationary sources in the county. Furthermore, small one quart containers will continue to be exempt from this

proposal, which will means no cost increases from this proposal for small projects.

Incremental Cost-Effectiveness Analysis

H & SC Section 40920.6(a) requires 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. The only alternative that achieves at least the same benefit is the adoption of final ROC limits from South Coast AQMD Rule 1113 including elimination of the small container exemption. Proposed amendments to Rule

74.2 are based strictly on the ROC limits from SCAQMD Rule 1113 without the new requirements for small container coatings. The cost-effectiveness of the ROC limits in Rule 1113 plus the new requirements for small containers per pound adopted in 2016 was estimated at \$5.44 per pound of ROC reduced. The incremental cost-effectiveness is calculated by dividing the incremental annualized costs in the district by the incremental annual emission reductions in the district. The incremental cost-effectiveness for this control option is \$16.19 per pound of ROC reduced. These calculations are summarized in Table 2.

Table 2 Calculation of Incremental Cost-Effectiveness for SCAQMD Small Container Option

I. OPTION CONTROL EFFICIENCY = 33% AND COST-EFFECTIVENESS = \$5.44
II. Baseline Inventory = 1.6 tons/day for Ventura County Arch. Coatings
III. Annualized Cost for Proposal = 0.40 tons/day X \$2.0/lb X 365days/year= \$584,000
IV. Option Emission Reductions =1.6 tons/day X 33% X 365 days/year = 385,440 lbs/year
V. Option Annualized Cost = Cost-Effectiveness X Emis. Reductions = \$5.44 X 385,440 lbs/yr = \$2,096,794
VI. Incremental Annualized Cost = \$2,096,794 - \$584,000 = \$1,512,794
VII. Incremental Annual Emis. Reductions =385,440 - 292,000= 93,440 lbs/yr
VIII. Incremental Cost-Effectiveness = \$1,512,794 / 93,440 = \$16.19 per pound

ENVIRONMENTAL IMPACTS OF METHODS OF COMPLIANCE

California Public Resources Code Section 21159 requires the District to perform an environmental analysis of the reasonably foreseeable methods of compliance. The analysis must include the following information on proposed amendments to Rule 74.2:

- (1) *An analysis of the reasonably foreseeable environmental impacts of the methods of compliance.*
- (2) *An analysis of the reasonably foreseeable mitigation measures.*
- (3) *An analysis of the reasonably foreseeable alternative means of compliance with the rule or regulation.*

Table 3 lists some reasonably foreseeable compliance methods, the environmental impacts of those methods, and measures that could be used to mitigate the environmental impacts. A more detailed environmental analysis will be found in the staff environmental impact report for proposed amendments to Rule 74.2.

Table 3
Environmental Impacts and Mitigations of Methods of Compliance

Compliance Methods (including all reasonably foreseeable alternative means of compliance)	Reasonably Foreseeable Environmental Impacts	Reasonably Foreseeable Mitigation Measures
Reformulation of architectural coatings	Air Quality Impacts: Reformulation may result in the use of toxic materials.	Operators may use reformulated coatings with less or no toxic materials.
	Water Impacts: Improper disposal of coatings may cause water impacts.	Compliance with wastewater discharge standards and waste disposal requirements will mitigate these impacts.
	Human Health Impacts: Coatings may be replaced with products containing more toxic compounds.	Compliance with OSHA safety guidelines (e.g., personal protective equipment, prevention and response, emergency first aid procedures) reduces these impacts.

OTHER FACTORS

Technological Feasibility:

The ROC limits proposed in the amendments to Rule 74.2 are based on ROC limits fully analyzed for technological feasibility by the South Coast AQMD in its Rule 1113. Currently, coatings that meet the proposed ROC limits are being manufactured and sold in California.

- Coating price increases as a result of this proposal are not expected to be significant.
- Estimated profitability impacts on coating manufacturers are not expected to be significant.

Enforceability

Labeling requirements, reporting requirements, and testing procedures have been included in the proposed rule to increase its enforceability.

Public Acceptability

Staff is soliciting comments, but expects the rule and any associated costs to be acceptable to affected manufacturers and users for the following reasons:

- A three-year sell-through provision will allow suppliers, retailers, and users to deplete existing coating inventories without penalty and without creating a hazardous waste problem.
- High-performance coatings are available now from many companies that comply with the proposed ROC limits.

Environmental Compliance and Review

Proposed amendments to Rule 74.2 strengthen the ROC content limits for architectural coatings. The rule creates new lower standards for specified coating categories. The rule may have a potentially adverse environmental impact. Pursuant to county administrative supplement to state CEQA Guidelines, the District staff will propose reusing the 2009 Environmental Impact Report prepared for the 2010 amendments to Rule 74.2.

Future Technology Assessments

SCAQMD has published Rule 1113 status reports on their website (aqmd.gov) for the following years: 2000, 2001, 2002, 2003, 2004, 2005, 2007, 2011, 2013, and 2016. This annual review by SCAQMD staff showed all proposed limits are feasible. However, the District’s rulemaking process is flexible enough for staff to revisit the rule and to make any appropriate changes to the rule as needed in the future.

REFERENCES

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