SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Preliminary Draft Staff Report for

PROPOSED AMENDED RULE 1107 – COATING OF METAL PARTS AND PRODUCTS

Dated: July 2012

Deputy Executive Officer
Planning, Rule Development, and Area Sources
Elaine Chang, Dr.PH

Assistant Deputy Executive Officer
Planning, Rule Development, and Area Sources
Laki Tisopulos, Ph.D., P.E.

Planning and Rules Manager
Area Sources and VOC Rules
Naveen Berry

Author:	Mike Morris	Air Quality Specialist
Reviewed by:	David Ono	Program Supervisor
	Lauren Nevitt	Deputy District Counsel II
Contributors	Don Hopps	Air Quality Specialist
	James Koizumi	Air Quality Specialist
	Heather Farr	Air Quality Specialist

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
GOVERNING BOARD

Chairman: DR. WILLIAM A. BURKE
Speaker of the Assembly Appointee

Vice Chairman: DENNIS YATES
Mayor, Chino
Cities of San Bernardino County

MEMBERS:

MICHAEL D. ANTONOVICH
Supervisor, Fifth District
County of Los Angeles

JOHN J. BENOIT
Supervisor, Fourth District
County of Riverside

MICHAEL A. CACCIOTTI
Mayor, South Pasadena
Cities of Los Angeles County/Eastern Region

JOSIE GONZALES
Supervisor, Fifth District
County of San Bernardino

RONALD O. LOVERIDGE
Mayor, Riverside
Cities of Riverside County

JOSEPH K. LYOU, Ph. D.
Governor's Appointee

JUDITH MITCHELL
Councilmember, Rolling Hills Estates
Cities of Los Angeles County/Western Region

SHAWN NELSON
Supervisor, Fourth District
County of Orange

CLARK E. PARKER
Senate Rules Appointee

JAN PERRY
Councilwoman, Ninth District
City of Los Angeles

MIGUEL A. PULIDO
Mayor, Santa Ana
Cities of Orange County

EXECUTIVE OFFICER:

BARRY R. WALLERSTEIN, D.Env.

TABLE OF CONTENTS

EXECUTIVE SUMMARY

Rule 1107 was adopted in June 1979 to control VOC emissions from metal coating operations. Rule 1107 sets VOC limits for twenty-two categories of coatings classified as air-dried (cured below 194 degrees F) or baked (cured above 194 degrees F). The rule establishes limits for metal coatings in general and includes multiple specialty categories. The broadest of the specialty categories include prefabricated one- and two- component coatings and extreme high-gloss coatings. The remainder of the coating categories encompasses mostly niche operations.

The rule has been amended 17 times since 1979, four times in the last 13 years. However, in those last 13 years there has only been one coating limit reduction – Air-Dried Extreme High Gloss and Prefabricated Architectural coatings in 2005. The General Metal coating category limit has not changed in more than twelve years despite significant technology advancements.

The 2007 Air Quality Management Plan (AQMP), specifically Control Measure CM#2007 MCS-07 – Application of All Feasible Measures, explicitly lists coating and solvent rules to achieve additional VOC reductions. PAR 1107 will partially implement CM#2007 MCS-07.

Rule 1107 applies to all metal coatings operations except those performed on aerospace assembly, magnet wire, marine craft, motor vehicle, metal container, and coil coating operations. Typical facilities include metal furniture manufacturers, fabricated metal product manufacturers, small and large appliance manufacturers, metal finishers, and the paint and coating manufacturers that supply products to the metal manufacturing shops.

The current baseline emissions are estimated to be 3.9 tons per day of VOC and are derived from reported inventory data and supplemented with additional sales data and site visits to non-permitted coating facilities.

The purpose of Proposed Amended Rule (PAR) 1107 is to further reduce VOC emissions from metal coatings by relying on improvements in coating technology during the last 13 years. Staff proposes the following requirements for PAR 1107:

- Amend VOC limits for certain metal coating categories.
- Establish new coating categories and VOC content limits.
- Expand the applicability of the rule to include certain metal stripping operations.
- Expand and clarify the definition and requirements for Extreme Performance coatings.
- Consider limited use exemptions for coatings containing tertiary-butyl acetate (T-BAc) and dimethyl carbonate (DMC).
- Include a prohibition of sales and specifications for metal coatings that exceed applicable VOC content limits, contain DMC or T-BAc, or contain Group II Exempt Solvents, with certain exceptions.
- Include recordkeeping and reporting provisions for users of coatings containing DMC or T-BAc.

- Add provisions for filing notification with the District for use of metal coatings containing DMC or T-BAc below the specified threshold in conjunction with an approved permit to operate and in lieu of modifying the permit to operate.
- Consider a limited exemption for high viscosity metal coatings.
- Prohibit the use of Group II Exempt Solvents in metal coatings or strippers.
- Remove and limit existing exemptions.
- Include streamline recordkeeping options for Super Compliant coatings.
- Include additional administrative requirements and corrections to clarify rule language and remove obsolete provisions.

As proposed, the rule would reduce emissions by 2.21 tons per day with an estimated annual cost of $8.7 million dollars. The maximum overall cost-effectiveness of the proposed amendment would be $10,785 per ton of VOC emissions reduced.

BACKGROUND

Rule 1107 was adopted in June 1979 to control VOC emissions from metal coating operations. The rule has been amended 17 times since, including four times in the last 13 years. However, in those last 13 years there has only been one coating limit reduction – Air-Dried Extreme High Gloss and Prefabricated Architectural coatings in 2005. During that time frame there have been technological advances in coating resin systems, both waterborne and solvent-based, including the use of exempt solvents, that have significantly lowered the volatile organic content while maintaining, and in some cases, improving performance properties compared to conventional formulations.

Rule 1107 sets VOC limits for twenty-two categories of coatings classified as air-dried (cured below 194 degrees F) or baked (cured above 194 degrees F). The rule establishes limits for metal coatings in general and includes multiple specialty categories. The broadest of the specialty categories include prefabricated one- and two- component coatings and extreme high-gloss coatings. The remainder of the coating categories encompasses mostly niche operations.

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)
- 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)

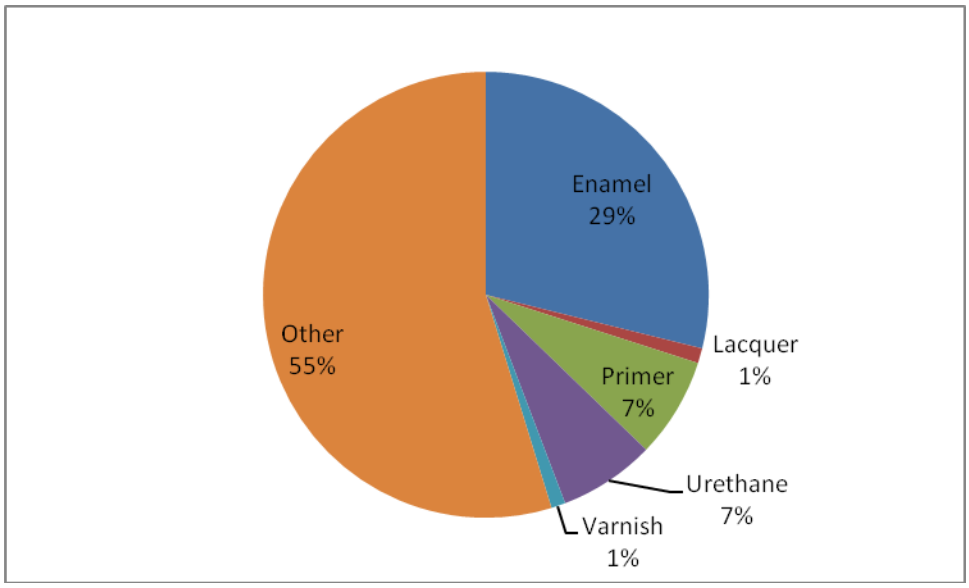
According to the 2007 AQMP, the total emissions inventory for PAR 1107 is 2.82 tons per day. The inventory includes emissions from small sources with permits, facilities that report as part of the Annual Emissions Reporting (AER) Program, and an estimate of emissions from small sources that do not have permits. Inclusion in the AER Program is limited to larger facilities that emit at least four tons per year of a criteria pollutant. While larger facilities represent a significant portion of the overall inventory of Rule 1107, the bulk of the emissions come from the large number of smaller facilities. In 2006-7, 377 companies reported 1.4 tons of VOC emissions from metal coating operations through the AER program, approximately a 27 percent decrease from 2002-3 reported emissions. However, the emission decrease was primarily (more than 70 percent) due to the reduction of VOC content in Extreme High Gloss and Prefabricated Architectural coatings. The remaining decrease came from increased use of low-VOC products in other coating categories. The share of emissions from small facilities rose during that time period due to an increase in the overall number of small facilities and a reliance on older, solvent-based alkyd technology. Additionally, research from a number of site visits and manufacturer sales data showed that the contribution from smaller facilities operating without permits has been underestimated.

TECHNOLOGY ASSESSMENT

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.

Of the metal coating usage reported to the District in 2006-7, nine percent were powder coatings. Nearly two-thirds of the liquid coating emissions were vented to a control device. The remaining uncontrolled liquid coatings were reported as the following:

Chart 1: Uncontrolled liquid metal coating usage by volume



The Other category comprises a wide range of coatings including many that could be classified in one of the already specified categories. One of the few generalizations that can be made about the 'Other' category is that nearly all of the Prefabricated Architectural Component coatings are reported in this category. The Varnish and Lacquer categories are relatively minor contributors and generally represent niche applications.

From a review of reported emissions, the sales weighted average (SWA) material VOC content and SWA coating VOC content (less water and exempt solvents) were determined. The review was conducted on facilities that reported more than 100 gallons of annual usage and the coating VOC content was determined by reviewing inspector reports and associated material safety data sheets or technical data sheets. The results of the review are presented in Table 1 below.

Table 1: SWA VOC Content

Coating Type	SWA Material VOC Content (g/L)	SWA VOC Content (g/L)
Enamel	136	158
Primer	141	187
Urethane	227	272
Other	91	114
Overall	96	144

There are two primary limitations from the reported data. The first is a lack of correlation between Coating Type and the applicable Rule 1107 category. For example, a niche use of a military specified urethane primer could be reported in either the Primer, Urethane or Other categories. Notwithstanding that limitation, the main uses of metal coatings - General, Architectural and Extreme High-Gloss - can fall into any of the above coating types. The second limitation is a lack of information available from small sources that are not required to report into the AER system. Staff conducted numerous site visits at these small sources to determine the

practices, coating choices, and potential emissions. The site visits indicated that smaller facilities overwhelmingly rely on high solids solvent-based alkyd coatings formulated to meet the VOC limits (~ 275 g/L) and are often substantially thinned with high VOC solvents. The SWA VOC content figures in Table 1 above do not apply to the smaller metal coating shops.

Coating Technology

Air-dried coatings are typically single-component systems such as an alkyd or acrylic that do not cure by chemical reaction and do not need to be baked. Single-component coatings are available as acrylics, alkyds, polyurethanes, silicones, and blends. They are available in both waterborne and solvent-based formulations. Some facilities utilize heat to accelerate the cure time of air-dried coatings. Baked coatings are similar but require temperatures greater than 194 degrees F to fully cure. Examples include thermoset coatings and ultra-violet curable coatings that utilize heat and light, respectively, to initiate curing. Multi-component coatings require the addition of an activator or catalyst to crosslink coating molecules. Most multi-component coatings are epoxies and polyurethanes.

Low-VOC metal coating formulations can be broadly described as powder, ultra-violet curable, waterborne, high solids, and solvent-based using exempt solvents.

Powder Coatings

Powder coatings are 100 percent dry solids materials formulated as thermosetting and thermoplastic coatings. Thermoplastic powders are applied to heated parts and are immediately fused to the metal substrate. Thermoset powders are applied to parts electrostatically and then the part is cured in an oven. Although powder coatings are generally more expensive per pound than liquid baked coatings, more coverage is gained due to their 100 percent solids content, which often results in a cost savings. Additionally, VOC emissions are nearly non-existent. Challenges for powder coating technology include difficulty coating parts with corners where the powder may not adhere, multi-color applications, and metal parts that cannot be cured at high temperatures.

UV Curable Coatings

UV curable coatings are another extremely low-VOC content technology available to metal coating facilities. UV coatings consist of monomers, oligomers, photoinitiators, and additives that are activated and cured using UV light. Curing time can be minimal with simple (usually flat) geometries and therefore provide facilities the opportunity to increase production. Polymerization is more challenging with coatings applied to variable geometries. In general, the cost of UV coatings on a per gallon basis is more expensive than conventional coatings but a greater surface area can be coated since the coatings are essentially 100% solids. There is also infrastructure cost for the lights and systems to cure the coatings. But the technology becomes more cost competitive for high speed and high volume applications.

High Solids Coatings

High solids coatings are viscous and contain greater than 60% by volume of solids. In-line heaters, high pressure spray equipment, or extensive thinning may be necessary to make them more sprayable. High-solids coatings may be a two-component coating that rapidly cures, requiring special plural spray systems. High-solids coatings are typically applied in higher film

builds and are more desirable where the protective properties are more important than the decorative properties of the coating.

Waterborne

Waterborne technologies represent significant reductions in emissions simply because the major solvent is water. Almost all waterborne coatings contain small amounts of organic solvents as additives or co-solvents. Heating or baking provides improved curing times and durability because of molecular polymerization through heat. Most of the low-VOC alternative coatings currently in use are waterborne acrylic, water reducible alkyds and polyurethanes. In addition to low coating VOC (less water and exempt solvents), waterborne metal coatings have very low material (actual) VOC contents. In the past, waterborne coatings were limited because of slow drying times, particularly in cool and humid weather. The drying times are now comparable under most weather conditions, though drying times remain an challenge in cool, humid conditions.

Exempt Solvent Coatings

Traditional coatings are made with VOC containing solvents. Exempt solvent coatings replace some or all of the VOC containing solvents with exempt solvents such as acetone or parachlorobenzotrifluoride (PCBTF). The coatings function similarly but may have different characteristics, particularly drying times, depending on the physical properties of the exempt solvents. Price, objectionable odor and overly fast cure times have generally limited the use of exempt solvent coatings. Both T-BAc and DMC are proposed for limited exemption and may provide additional opportunities for exempt solvent coatings. Both proposed exempt solvents have physical properties similar to traditional coating solvents, such as xylene or methyl ethyl ketone, and may be more easily adaptable to reformulation, while retaining the solvent-based resin systems traditionally used by the industry. Similar exemptions for T-BAc in Rule 1113 – Architectural Coatings and Rule 1151 – Motor Vehicle and Mobile Equipment Non-Assembly Line Coating Operations have provided flexibility to manufacturers for formulating coatings with traditional solvent-based resins and to facilities desirous of certain performance properties.

A list of currently available coatings that comply with the proposed limits is provided in Appendix A. The list is not exhaustive but does represent a wide range of coating types available for general, architectural, primer and high gloss applications. This list will continue to be regularly updated throughout the rule development period. The list does not include powder or ultra-violet (UV) curable coatings that have long been established as very-low VOC metal coatings. Of the liquid coatings provided, these low-VOC technologies fall mainly into the following coating types:

- Waterborne acrylics
- Water reducible alkyds
- Waterborne urethane acrylic polymers
- Waterborne polyurethanes
- Two component epoxies
- Two component waterborne acrylic polyurethanes
- Exempt solvent polyurethanes

The coatings provided in Appendix A have a wide range of characteristics (pot life, cure times, etc.) that allow them, as a whole, to be used over many different types of applications. However, an individual coating may have characteristics that make it ideal in a particular application but completely unsuitable in another type of application. As is true with even higher-VOC metal coatings, shops must determine the desirable characteristics and choose accordingly.

The proposed rule also includes a prohibition of use for Group II exempt solvents. While this will have little impact on coating formulations, it may have some impact on paint stripping formulations. Methylene chloride, a Group II exempt solvent, is commonly used in traditional stripping formulations because of its aggressive, fast-acting properties. However, because of its toxicity and regulation as a Hazardous Air Pollutant, non-methylene chloride based strippers are currently available and used. Alternatives to methylene chloride based stripping formulations include inorganic liquid strippers and abrasive blasting (plastic media and wheat starch among others). The inorganic liquid strippers may be alkaline, acidic, or contain hydroxytoluene. The VOC content limit for metal strippers is 200 g/L which allows for inclusion of some formic acid/benzyl alcohol formulations as well. Another alternative to methylene chloride based strippers is to use high temperatures to burn off metal coatings.

PROPOSED AMENDED RULE

Staff proposes the following for PAR 1107:

Purpose and Applicability (a)

The purpose and applicability of the rule will be expanded to include metal stripping operations not necessarily associated with an on-site coating operation. Clarification is provided to note that the rule applies to persons who use metal coatings and manufacturers, distributors and suppliers who supply, sell or offer for sale or specify metal coatings.

Definitions (b)

The definition for Extreme High-Gloss coating has been modified to require a higher reflectance, 85 instead of 75 or more on a 60° meter. This limits high-VOC glossy coatings to only those with very high gloss.

To provide greater flexibility and direction, the definition for Extreme Performance Coating has been expanded to include fused metal and carbon composite surfaces and other operations approved by the Executive Officer. A standard for heavy abrasion has been included. The requirement for facilities to apply for approval to utilize this provision has been moved to the definition section to avoid confusion.

A definition has been included for Graphic Arts coatings to allow artists to hand paint signs. Previously, signs had to be hand-painted while attached to buildings to qualify for a higher VOC limit, requiring scaffolding, cranes and safety equipment. To protect the safety of the artists doing the painting, the proposed rule will have the same VOC content limit included in Rule 1113 – Architectural Coatings.

A definition for Lacquer has been included to distinguish this type of metal coating from the General metal coating category. The proposed VOC content limit for General coatings is not suitable for lacquers, necessitating a separate limit and definition to describe this type of product.

The definitions for Metal Coating, Person, and Stripping have been included to clarify the applicability of the rule.

The definition for Prefabricated Architectural Component coatings has been modified to be consistent with the definition of Architectural Component included in Rule 1113 – Architectural Coatings.

The definition for Reactive Diluent now includes the calculation for determining VOC content which was previously located elsewhere in the rule.

To clarify the intent of Repair Coating, the definition has been modified to allow the recoat of previously painted metal parts or products, even if the subject part or product is not being manufactured for sale. Only a small portion of the part may be recoated, limited to the area that has sustained mechanical damage.

Super-Compliant Material has been included in the definitions to facilitate streamlined recordkeeping provisions. Super-Compliant Material will apply to metal coatings with a material VOC content of 50 g/L or less to be eligible for limited recordkeeping.

The Touch-Up definition has been clarified to allow covering of minor imperfections after the original coating is fully cured.

A definition for Ultraviolet Thin-Film Coating has been included to recognize this emerging technology and provide manufacturers a test method, ASTM D 7767-11, to calculate VOC content for these types of coatings. Manufacturers will be able to use the new method to more accurately determine VOC content for recordkeeping and reporting. The method relies upon testing the coating prior to admixing with known interferences such as pigments and sunblockers. Manufacturers then may use Method 24 to determine the VOC content of the known interferences separately and calculate the overall VOC content. The separation aspect limits the utility of the method for enforcement 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 ASTM D 7767. However, until the field sample issue is resolved, enforcement sample testing will continue to be conducted using Method 24.

Finally, a definition for Waterborne Coating is included to allow the General coating category to be sub-divided. Similar to the guidance used in Rule 314, coatings would be considered waterborne if the volatile portion of the coating is primarily water. Thus, only coatings with water representing 50 percent or more of the volatile content by volume will be defined as waterborne.

Requirements (c)

Transfer Efficiency (c)(1)
The options available for coating application equipment will be expanded for high viscosity coatings. Flexibility will be provided for shops that are able to document that alternative application equipment would reduce emissions beyond HVLP spray technology. Some coating properties such as high solids content may make HVLP spray application impractical without additional thinning. Facilities may submit a plan providing for the District to review and allow other spray techniques where the use of HVLP equipment would result in greater emissions. Additionally, an exemption will be included for high viscosity coatings.

VOC Limits (c)(2)
The proposed rule will establish lower VOC limits for General and Prefabricated Architectural coatings. The General coatings category encompasses all metal coating operations not specifically listed in a specialty coating category. Currently, the rule recognizes two types of general coatings: One-component and Multi-component. Multi-component coatings are defined as coatings that require the addition of a separate chemically reactive resin to form an acceptable dry film. The baked limits for the General One-Component and General Multi-Component limits are the same. The air-dried limit for General Multi-Component is currently 340 g/L while the General One-Component limit is 275 g/L. Effective January 1, 2015, the General category will combine the existing General One-Component and General Multi-Component categories as well as the Prefabricated Architectural One-Component and Prefabricated Architectural Multi-Component categories. The General category limit will be reduced to 150 g/L in 2015 and further reduced to 100 g/L effective 2018.

A subset of the General category, General (waterborne), will be created to address concerns that the proposed lower limits would effectively eliminate waterborne technologies. Waterborne coatings are penalized when determining coating (or regulatory) VOC content because the water is removed from the calculation. Even if a coating is mostly water, because there are VOC-containing co-solvents, the coating may have a high regulatory VOC content. The EPA derived the calculation for the regulatory VOC to prevent manufacturers from simply adding water or an exempt solvent to a coating to meet the VOC limit which would effectively require additional coats of paint to achieve the same coverage and eliminate the emission reduction potential. However, diluting coatings in order to achieve VOC compliance has not proven to be a valid concern as consumers have come to expect a certain level of coverage that today's coatings can achieve; the marketplace will not accept coatings with poor coverage. Regulating coatings based on either the actual VOC (also referred to as the VOC of material) or the weight percent VOC would eliminate this calculation penalty. Additionally, the calculation of the regulatory VOC magnifies any measurement error in the water or exempt compound content, making the overall value unreliable for low-VOC coatings. Finally, further emission reductions occur from the use of waterborne coatings because there are no added emissions from thinning (because water is used to thin) or from application equipment cleaning (again because water is used). To continue to achieve emission reductions while recognizing the penalty from removing the water from waterborne coatings, a higher coating (or regulatory) VOC content is proposed but with a lower material VOC content.

A similar approach has been taken for SIP-approved regulations that have material VOC limits for low-solids coatings. The lower material VOC content is consistent with the emission reductions realized from traditional coatings. The proposed limit for General (waterborne) is 275 g/L coating VOC and 150 g/L material VOC, effective 2015. That limit will be further reduced in 2018 to 200 g/L coating VOC and 100 g/L material VOC. The change in coating VOC is meant to ensure that solids content for waterborne coatings remain in similar ranges.

In 2018, the proposed limit for all General coatings is lowered to 100 g/L. Excluding Lacquers and Varnishes, currently almost 60 percent of the coatings reported have VOC contents within 20 percent of the proposed limit. This figure excludes coatings vented to a control device but does include specialty coatings with higher VOC content limits (e.g. Extreme-High Gloss coatings). Table 2 below illustrates the breakdown by coating type reported.

Table 2: Reported Low-VOC Coatings

Coating Type	Volume (thousands of gallons)	Reported below 100 g/L (percent)
Enamel	94.0	79.7
Primer	58.0	15
Urethane	55.8	10.9
Other	437.1	58.3
Overall	**644.9**	**53.4**

Staff has identified 36 General coatings that currently have a VOC (coating and material) content that will comply with the proposed limit. Additionally, 48 primers have been identified that will comply with the proposed limits. While the identified coatings provide low-VOC alternatives for a range of applications, additional time has been provided to allow for the full range of coatings to be completely developed and used. Additionally, the Extreme Performance coating category has been broadened to allow added flexibility to facilities provided that they are able to demonstrate the need for higher-VOC coatings.

The proposed rule will also consolidate the Prefabricated Architectural categories into the General category thereby establishing a VOC limit of 150 g/L for Prefabricated Architectural coatings effective 2015, with a further reduction to 100 g/L effective 2018. In many cases, the Prefabricated Architectural coatings are very similar to products subject to Rule 1113 – Architectural Coatings except that they are painted within a factory setting rather than painted in the field. Intuitively, painting within a controlled factory setting appears less challenging than painting outside. Within the shop, temperature, air flow and dust is much more manageable. However, shop coating operations may be more constrained with respect to time and space as completed parts must cure quickly enough to allow for stacking and shipping in a reasonable amount of time. In a shop setting, this is sometimes accomplished by optimizing heat and humidity. Staff has identified 49 Prefabricated Architectural coatings that will meet the VOC content (coating and material) limits. Most of the coatings are usable in both a field setting and a shop setting. Nearly all of the coatings have been successfully used for several years in the field because of the low-VOC requirements for industrial maintenance and rust preventative coatings in Rule 1113.

The Extreme High-Gloss category will be redefined to require a gloss rating of 85 or higher, rather than the current requirement of 70 or higher. The intent of the specialized category was to recognize coatings with extreme gloss requirements. Nearly all coatings that designate themselves as Gloss (as opposed to Semi-Gloss or Flat) meet or exceed a gloss rating of 70. The current "soft" gloss rating requirement of 70 has created a loophole allowing excessively high VOC coatings to be used in situations where they may not be necessary (i.e. refuse bins). Alternatively, the District has considered retaining the current gloss rating requirement but lowering the VOC content limit. As virtually all "Gloss" coatings meet the gloss rating of 70, numerous products are available. However, those operations where extreme high gloss is truly needed would be unduly hamstrung. By establishing a gloss rating requirement of 85 or higher, the Extreme High-Gloss category is retained as a specialized category.

Lacquer coatings will be distinguished from General coatings but will retain the current limits. Unlike the other categories recommended for limit reductions, there are few coatings that would meet a lower limit and little (less than two percent) reported usage. The overall usage is also very small (one percent of volume reported) and any emission reductions would be minimal at this time.

A new specialty category, Graphic Arts, will be included in the proposed rule as discussed above. The current and proposed VOC limit, 500 g/L and 150 g/L, and definition are consistent with Rule 1113. The volume of hand-applied Graphic Arts coating is expected to be negligible.

A summary of the proposed limits is provided in Table 3 below.

Table 3 – Summary of Proposed Limits

	Air-Dried	Baked	Proposed (Air-Dried & Baked)	
	gm/L	gm/L	gm/L	
Coating Category	Current	Current	1/1/2015	1/1/2018
General One-Component*	275	275	150	100
General Multi-Component*	340	275	150	100
General (Waterborne)	N/A	N/A	275**	200***
Lacquer	N/A	N/A	275	275
Prefabricated Architectural One-Component*	275	275	150	100
Prefabricated Architectural Multi-Component*	340	275	150	100
Graphic Arts****	500	500	150	150

* Combined into "General" category
**Must have Material VOC < 150 g/L
*** Must have Material VOC < 100 g/L
**** Effective upon rule adoption

Exempt Solvents

A limited exemption will be included for the use of T-BAc and DMC. The District modeled emissions from two facilities from four volume usage categories (less than 100 gallons per year,

less than 1,000 gallons per year, less than 2,000 gallons per year and greater than 2,000 gallons per year) to estimate the potential health risks from a limited exemption. Real facility parameters were used including building configurations, stack location, receptor distance, and meteorological data. The estimates indicate that some facilities using T-BAc may pose an unacceptably high risk to nearby receptors in certain high volume situations where residents or offsite workers may be nearby. In some high volume scenarios involving DMC, offsite worker exposure risk is high enough to warrant including DMC as an exempt chemical of concern.

Further modeling was conducted based on Rule 1401 - New Source Review of Toxic Air Contaminants modeling techniques to determine the volumes necessary to create a risk of 10 in one million to nearby receptors[*]. While neither T-BAc nor DMC is officially listed as a Toxic Air Contaminant, the Office of Environmental Health Hazard Assessment (OEHHA) has provided interim cancer potency and reference exposure limit values. These interim values represent the best available science from OEHHA, the state agency with the expertise to make these determinations.

For T-BAc, the inhalation cancer potency is 2.0E-03 and the acute reference exposure limit (REL) is 10,000 microgram/meter^3. For DMC, the acute REL is 18,000 microgram/meter^3 and the chronic REL is 5,500 microgram/meter^3. Using these cancer potency and REL values and following the Risk Assessment Procedures for Rules 1401 and 212, it was determined that up to 560 pounds of T-BAc and 180,000 pounds of DMC could be used by a facility without creating a risk of 10 in one million or increasing the hazard risk by 1.0 to nearby receptors. For facilities using amounts less than the threshold on an annual basis, facilities would only need to file with the District to be able to utilize the VOC content exemption. Facilities that currently do not have a permit to spray coatings (non-permitted facilities) would need to obtain a permit for the use T-BAc and DMC containing coatings, thinners and/or cleaning solvents and they will need to be used within the permitted spray booth or enclosure and daily usage records will need to be maintained.

For facilities wishing to use quantities exceeding the threshold of T-BAc and DMC listed above, the operator must apply for and receive a permit to operate or modified permit to use one of these exempt solvents with a concurrent commitment that the coating will be used within a paint spray booth or a fully enclosed area where an exhaust fan discharges the exhaust air from the enclosure outside of the building. PAR 1107 would parallel the current permit application requirement that allows the District to conduct a site-specific Health Risk Assessment to ensure that the use of an exempted solvent will not pose an undue risk to sensitive receptors or offsite workers. Following the same procedures required by Rule 1401, if the carcinogenic risk exceeds ten in one million or the hazard index exceeds 1.0, as calculated by the District, the application must consider limiting daily usage to maintain the health protective thresholds established in Rules 1401 and 1402, or may be rejected, and the solvent content will be included when determining VOC content. Requiring the coating to be used within a paint spray booth or enclosed area, combined with the prohibition of sale, will reduce emissions within the facility.

[*]The parameters include: 25 m or less to nearest receptor, Residential/sensitive receptor 24 hour/day exposure, OEHHA cancer potency factors and RELs, worst case assumed for multi-pathway factor, Upland/Redlands MET.

Facilities using either T-BAc and DMC will be required to maintain usage records. In the case of T-BAc, it will continue to be considered a VOC for emission reporting, modeling and inventory requirements. This is consistent with U.S. EPA's limitations placed on the exemption of T-BAc which are unique to T-BAc, as opposed to other solvents exempted by the U.S EPA. San Joaquin Valley Air Pollution Control District has established a similar health protective approach and the coatings industry, including the American Coating Association, supports this approach for PAR 1107.

Other Requirements (c)(7)

VOC containing coatings will be required to be stored in non-absorbent, non-leaking containers that are to be kept closed except while in use. This will reduce fugitive emissions from open paint cans and limit the emissions for added thinners needed to restore the coating to a usable condition. This provision will also eliminate the practice of allowing unused paint to dry in the container for disposal as municipal solid waste rather than properly handled as a potentially hazardous waste.

Prohibition of Specifications and Sales (d)

The prohibition section of the rule has been expanded to include language that limits manufacturers, suppliers and distributors from selling or supplying non-compliant coatings. Similar prohibition of sale provisions have been included in nine of the District's coating rules, including Rule 1113 – Architectural Coatings, Rule 1145 – Plastic, Rubber and Glass Coatings, Rule 1151 - Motor Vehicle and Mobile Equipment Non-Assembly Line Coating Operations. The prohibition of sale encourages manufacturers and suppliers of metal coatings to provide compliant materials to the facilities that use their products in the District. This is particularly helpful for small shops that may have a limited understanding of applicable VOC limits.

However, manufacturers and suppliers are concerned that, despite a good-faith effort, they will be held responsible for the improper use of their coatings when they have little control over the product once it is in the hands of the end-user. To address these concerns, exceptions are included in the prohibition of sale for the following:

- Coatings for use outside the District
- Coatings vented to a control device
- Coatings that are labeled for use on metal substrates not subject to Rule 1107 or labeled for use on multiple substrates provided they meet other applicable District rules
- Coatings that contain T-BAc or DMC and are sold after verification of a permit and/or filing
- Coatings sold to an independent distributor where the supplier has informed the distributor in writing that the coatings are non-compliant for use in the District
- Coatings sold as an architectural coating that complies with Rule 1113 – Architectural Coatings
- Coatings sold to a purchaser who agrees in writing to comply with all applicable District rules

General Prohibition (d)(3)

An additional prohibition is included that limits the use of Group II exempt compounds in metal coatings or metal strippers to less than 0.1 percent by weight. This will prevent the unlimited use of exempt compounds where sufficient concern has been identified to designate the compound as either toxic, potentially toxic, upper-atmosphere ozone depleters, or cause other environmental impacts. Group II exempt compounds may have limited use in coatings. However, one Group II exempt compound, methylene chloride, is used in metal stripping operations, where viable alternatives are available and can be used.

Methods of Analysis (e)

Test methods, ASTM D 1200-10 Standard Test Method for Viscosity by Ford Viscosity Cup, ASTM D 523-80 Standard Test Method for Specular Gloss, and ASTM D 4060 Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser have been included for determining viscosity and heavy abrasion, respectively.

Exemptions (f)

The exemption 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. As mentioned earlier, the only facility that qualified under the existing High-Performance Architectural coating category already vents emissions to a control device. The Vacuum-Metalizing and Pretreatment categories already are allowed specialty VOC content coating limits of 420 g/L. Previous rule amendments have eliminated the far smaller one gallon per day exemption. Additionally, the expansion of the Extreme Performance coating definition will allow companies to request approval if the normal 420 g/L VOC content limit is insufficient for some reason.

Essential public service coatings will be limited to products with VOC contents of 500 g/L or less.

The high volume (66 gallon per month) exemption for electrocoating (or E-coat) will be eliminated. Advances in electrocoating technology provide low-VOC, non-Hazardous Air Pollutant (HAP) as an extension of the electroplating line. In fact, the electrocoating process is now a low-VOC alternative to traditional VOC-containing metal painting.

Coatings with a viscosity greater than 650 centipoise have poor flow characteristics and will be exempted from the transfer efficiency requirements. To spray such thick fluids, special plural type application equipment or very high pressures (greater than 1,000 psi) are necessary. Without the proposed exemption, shops forced to use HVLP equipment would otherwise have to thin the high solids coatings with VOC solvents to allow them to be sprayed, thus eliminating the benefit of the low-VOC high solids coatings.

A recordkeeping exemption has been included for Super-Compliant Materials as an incentive for their use. Super-Compliant Materials are coatings with a material VOC content less than 50 g/L. The exemption will streamline recordkeeping provisions. For facilities that are able to demonstrate that total permitted and non-permitted emissions are below four tons per year, those facilities will not be required to keep daily records of their Super-Compliant Material usage.

Because of U.S. EPA recordkeeping requirements, coatings containing T-BAc are not eligible to be considered as a Super-Compliant Material.

Qualification for Classification as Extreme-Performance Coating (i)
To facilitate the use of the Extreme-Performance coating classification, language has been included analyzing the information that facilities must provide to the District for evaluation. The requirement to provide this information has been limited to facilities seeking Executive Officer approval for specialty applications.

Recordkeeping and Reporting
Specific recordkeeping and reporting requirements for T-BAc and DMC have been included in the proposed rule.

Sell-Through and Use-Through Provision
The proposed rule includes a one year sell- and use-through provision for metal coaters to utilize existing inventory of coatings, removing concerns of 'stranded' coatings. Without sell- and use-through provisions, coating manufacturers and users may be forced to dispose of coatings as rule limits become effective if not given sufficient time to finish using coating stock on-hand.

Filing Process
A mechanism has been included in the proposed rule for facilities wanting to use T-BAc and DMC in volumes that remain below the thresholds included in paragraph (c)(3) of the proposed rule.

Fees
The proposed rule includes the fees associated with the filing mechanism above.

EMISSION INVENTORY

The emission inventory for the proposed rule was determined by reviewing the 2007 AQMP inventory emissions for metal coatings, reviewing reported emissions for 2006-7 as part of the Annual Emissions Reporting (AER) program, by compiling sales data from coating manufacturers, and from site visits to metal coating facilities. In the 2006-7 time period, 377 companies submitted information to the District's AER Program. There are 949 other facilities in the Clean Air Support System (CLASS) with permits for spraying coatings subject to Rule 1107. There are also smaller facilities that do not have permits with the District. During the 1998 amendments to Rule 1107 that number was estimated to be 425 facilities using non-permitted (Rule 219 qualified) diptanks and open spray equipment. As a fraction of the total number of AER and CLASS facilities, this represented 16 percent of the total of 212 non-permitted facilities. However, sales data, site visits and a review of on-line facility databases indicate that the number of small facilities using metal coatings was greatly underestimated and has significantly increased over the past decade.

The VOC emissions reported through the AER program in the 2006-7 time period totals 1.36 tons per day, with 64 percent or 0.87 tons per day from uncontrolled liquid coatings. The remainder of the AER reported VOC emissions are from sources using control devices (32

percent or 0.43 tons per day) and powder coatings (4 percent or 0.06 tons per day). VOC emissions from the CLASS facilities, using the 2007 AQMD inventory, are 1.42 tons per day. Emissions from non-permitted sources are determined using sales data and technical data sheets of the most widely used coatings. Site visits were conducted to assess coating use and thinning practices. The SWA VOC coating content of the metal coatings observed at non-permitted facilities is 527 g/L or 4.4 lb VOC/gal which reflects the use of thinner added to the coating as supplied by the manufacturer. Total daily VOC emissions from non-permitted sources in the 2006-7 time period are estimated to be 1.16 tons per day. Complete daily VOC emissions from all sources are 3.94 tons per day as detailed below in Table 4.

Table 4 – VOC Emission Inventory

Emission Source	Emissions (tons per day)
AER (liquid, uncontrolled)	0.87
AER (liquid, controlled)	0.43
AER (powder)	0.06
CLASS	1.42
Non-permitted	1.16
Total	**3.94**

EMISSION REDUCTIONS

The proposed rule will reduce the VOC content limit for General coatings, and by extension the limits for Prefabricated Architectural coatings and coatings that no longer qualify as Extreme High-Gloss, to 150 g/L in 2015, with further reductions to 100 g/L in 2018. The changes to the rule limits will only impact facilities that apply liquid coatings, and will not have an impact on the emission inventory for facilities with control devices and those using powder coatings. The emission reductions are calculated using the information from the uncontrolled AER sources and then applied in the same ratios to the CLASS facilities. For non-permitted facilities, emission reductions are calculated using the current volume and sales weighted material VOC content and then reducing the material VOC content to the proposed limit. The volume of Prefabricated Architectural and Extreme High-Gloss coatings was taken from the 2005 Rule 1107 Amendment Staff Report. To determine the ratio of coatings that currently qualify as Extreme High-Gloss but will no longer qualify because of the definition change, the General coatings list in Appendix A was reviewed. Ten of 21 coatings (or 48 percent) of coatings will no longer qualify because of the change. Finally, it is assumed that General coatings represent 90 percent of the remaining coatings after Prefabricated Architectural and Extreme High-Gloss are excluded.

To determine the impacted emissions, the coatings at or below the proposed limits were reviewed to determine the volume and SWA material VOC content (See Table 1). The SWA material VOC content and volume of the remaining coatings was determined. The emissions reductions are calculated by assuming that the material VOC content of those above the proposed limit will be reduced to the same SWA material VOC content of the products that already meet the proposed limit. It is assumed that coating users will choose the lowest cost option to meet the proposed limits (see Cost and Cost-Effectiveness for further explanation). The coatings impacted by the proposed rule will likely replace VOC solvents for exempt solvents, primarily

T-BAc, DMC, PCBTF and acetone. For CLASS and AER facilities it is assumed that there will be no change in solids content.

The emission reductions, for AER Uncontrolled Liquid coatings only, by coating type are presented in Table 5 below.

Table 5 – Emission Reductions (AER Uncontrolled Liquid Coatings Only)

Coating Category	Total Volume (1,000 gallons)	Volume above proposed limit (1,000 gallons)	SWA Mat'l VOC current	SWA Mat'l VOC content after 2015	Emission Reductions 2015 (tons per day)	SWA Mat'l VOC content after 2018	Emission Reductions 2018 (tons per day)
Prefabricated Architectural	61.9	23.5	223	75	0.04	57	0.00
General	499.2	206.1	234	127	0.25	75	0.12
High-Gloss*	16.1	13.5	311	137	0.03	75	0.01
Extreme High-Gloss	14.8	N/A	N/A	N/A	N/A	N/A	N/A
Lacquer	8.7	N/A	N/A	N/A	N/A	N/A	N/A
Varnish	8.2	N/A	N/A	N/A	N/A	N/A	N/A
Specialty (17 categories)	189.1	N/A	N/A	N/A	N/A	N/A	N/A
Total	**798.0**	**243.1**			**0.32**		**0.13**

*Will be considered as a General coating after definition change

For AER uncontrolled liquid coatings, the proposed limits will result in a reduction of 0.46 tons per day or a 53% reduction in VOC emissions. Using the same ratio of emission reductions for the CLASS sources impacted by the proposed rule limits, the total VOC reduction (excluding non-permitted sources) will be 1.21 tons per day of VOC emissions as seen in Table 6 below.

Table 6 – Emission Reductions (AER and CLASS Sources)

Emission Source	Emission Inventory (tons per day)	Emission Reductions (tons per day
AER (liquid, uncontrolled)	0.87	0.46
AER (liquid, controlled)	0.43	N/A
AER (powder)	0.06	N/A
CLASS	1.42	0.75
Total	2.82	1.21

Based on site visits and coating sales data, non-permitted sources are almost exclusively using high solids, solvent-based alkyd coatings with VOC contents very near the current limit. In most cases, the coatings are being thinned with high-VOC solvents at or beyond the current VOC limit, reducing the solids content by weight from 69 percent to an estimated average of 35 percent. It is assumed that non-permitted sources will switch to waterborne coatings in 2015 as the waterborne coatings are the most cost-effective option available (see Cost and Cost-Effectiveness for further explanation). The solids content of waterborne coatings for similar uses is approximately 40 percent by weight. Assuming that shops will continue to apply the same

amount of solids, there will a small (13 percent) decrease in the volume of coatings used by non-permitted sources. The SWA material VOC content of the waterborne coatings is 129 g/L. As discussed earlier, the 2018 emissions reductions are calculated by assuming that the material VOC content of those above the proposed limit will be reduced to the same SWA material VOC content of the products that already meet the proposed limit.

Table 7 – Emission Reductions (Non-Permitted Sources Only)

Coating Category	Total Volume (1,000 gallons)	Volume above proposed limit (1,000 gallons)	SWA Mat'l VOC current	Volume after 2015 (1,000 gallons)	SWA Mat'l VOC content after 2015	Emission Reductions 2015 (tons per day)	SWA Mat'l VOC content after 2018	Emission Reductions 2018 (tons per day)
Non-permitted sources	193.8	193.8	527	169.6	129	0.91	75	0.10

The emission reductions from the proposed amendments will be 1.75 tons per day in 2015 and another 0.47 tons per day in 2018 for an overall reduction of 2.2 tons per day

Table 8 – Emission Reductions (All Sources)

Emission Source	Emission Inventory (tons per day)	Emission Reductions in 2015 (tons per day)	Emission Reductions in 2018 (tons per day)	Total Emission Reductions (tons per day)
AER (liquid, uncontrolled)	0.87	0.32	0.13	0.46
AER (liquid, controlled)	0.43	N/A	N/A	N/A
AER (powder)	0.06	N/A	N/A	N/A
CLASS	1.42	0.52	0.23	0.75
Non-Permitted	1.16	0.91	0.10	1.01
Total	3.94	1.75	0.46	2.2

PAR 1107 will partially implement CM#2007 MCS-07.

COST AND COST-EFFECTIVENESS

Non-permitted sources are likely to choose waterborne coatings to comply with the proposed limits because it is an overall lower cost option and they will not have to acquire a permit to utilize the more expensive exempt solvent coatings that contain T-BAc or DMC. The per gallon cost of waterborne coatings are the same as traditional solvent-alkyd coatings. However, because of the thinning practices of non-permitted sources, the cost of the currently used solvent-based coatings are lower because the thinner costs less than the coating. This is somewhat offset

by the higher solids content of the waterborne which will result in an estimated 13 percent lower coating volume use.

Solvent-based paint cost = 96,900 gal/year x $20/gal = $1.9 million.

Thinner cost = 96,900 gal/year x $13/gal = $1.3 million.

Solvent-based coating (paint and thinner) cost = $1.9 million + $1.3 million = $3.2 million

The volume of coating purchased annually would decrease by 13 percent from 193,800 gallons per year to 169,600 gallons. At an average cost of $20 per gallon, this would be a cost decrease of $0.2 million annually.

Waterborne paint cost = 169,600 gal/year x $20/gal = $3.4 million

Additionally, there are added costs for surface preparation for waterborne coatings. For non-permitted facilities, the purchase of equipment would not be justified because of the small volumes of parts processed. Instead, those shops will utilize manual labor to wipe clean parts prior to coating. The manual labor involved in cleaning prior to coating is estimated to be 0.5 hours for every gallon of coating used.[1] There are 193,800 gallons of coating and thinner used annually at non-permitted shops equating to 96,900 hours of surface preparation labor. At $12 per hour, the annual manual labor cost would be $1.2 million.

193,800 gallons/year x 0.5 hours/gallon = 96,900 hours/year

96,900 hours/year x $12/hour = $1.2 million/year

In addition to labor, a small amount of exempt solvent (acetone) would be needed for cleaning. It is estimated that approximately one pint of solvent would be used for cleaning for each gallon of coating applied. That would equate to 24,200 gallons of solvent annually. At $18 per gallon, the annual cost of solvent used during manual cleaning would be $0.4 million.

0.125 gal of thinner/gal of coating x 193,800 gal/year of coating = 24,200 gal/year of thinner

24,200 gal/year of thinner x $18 per gallon = $0.4 million/year

The total annual cost to comply with the 2015 limits would be $1.6 million.

Table 9 –Annual Cost Increase for Non-Permitted Sources (2015 Limits) switching to Waterborne

Emission Source	Labor Cost	Cleaning Solvent	Coating Cost	Total Annual Cost
Non-Permitted	$1.2 million	$0.4 million	$0.2 million	$1.8 million

Waterborne coatings have drying times that are as short or shorter under normal conditions as conventional coatings. However, during cold, humid weather, shops may need to use heat or forced air to accelerate cure times. Fans or heaters could be used at non-permitted facilities.

[1] Another possible way to estimate labor would be by reviewing the labor per facility. However, the number of non-permitted facilities is very difficult to estimate while the volume of coating used is a more reliable figure.

However, there is unlikely to be much impact because 1) most small shops can accommodate longer drying times due to less frequent coating applications; and 2) small shops tend to use smaller equipment that are exempt from permitting.

To meet the limits proposed for 2018, there would be an increased cost per gallon of coating in addition to the labor costs for waterborne coating users. The cost increase, $8.50 per gallon, is based on a range of industry provided estimates for research and reformulation costs. The estimates are based on laboratory testing of extremely low-VOC "alkyd only" resins and the need for extended field testing.

$8.5 per gallon x 169,600 gallons/year = $1.4 million/year

The cost for non-permitted sources to meet the proposed 2018 limits using waterborne coatings would be an increase of $1.4 million over the previous $1.4 million. The total increase in annual cost to meet the proposed limits for non-permitted sources would be $2.8 million.

Table 10 –Annual Cost Increase for Non-Permitted Sources (2018 Limits) switching to Waterborne

Emission Source	Cost to Meet 2015 Limits	Costs to Meet 2018 Limits	Total Cost Increase
Non-Permitted	$1.8 million	$1.4 million	$3.2 million

CLASS and AER facilities are much more concerned about coating performance and are regularly inspected and thus excessively (legally or illegally) thinning coatings is not a viable option for these facilities. The solids content of solvent-based paint is significantly higher (69 percent versus 40 percent) than waterborne coatings. To continue applying the same amount of solids, CLASS and AER facilities would need to apply 73 percent more waterborne coating. Additionally, waterborne coatings would require automated equipment for improved surface preparation. These two drawbacks make the use of waterborne coatings cost prohibitive for most CLASS and AER facilities.

The CLASS and AER facilities will more than likely use exempt solvent (acetone/PCBTF and T-BAc/PCBTF) coatings to comply with the proposed limits. Unlike the non-permitted shops, the average cost of coatings is currently $50 to $55 per gallon. Using cost information provided by industry, the cost increase for an acetone/PCBTF coating would be $8.75 per gallon to meet the 2015 limits and another $2.00 per gallon to meet the 2018 limits. The cost increase for T-BAc/PCBTF coatings is estimated to be $5.27 per gallon to meet the 2015 limits and another $3.00 to meet the 2018 limits. These estimates are based upon the current prices of traditional coatings that contain exempt solvents, such as acetone, PCBTF, and T-BAc. The replacement quantities and percentages were provided by formulators with existing, similar or experimental products utilizing the exempt solvents. Costs for coatings containing DMC are not available at this time because few coating formulations currently contain DMC.

CLASS and AER facilities would likely need to modify existing permits in order to meet the permitting requirements of the proposed rule. Assuming each of the 1,326 facilities requires two spray booths to modify their permit at a cost of $2,174.89 each, there will be a one-time cost of $5.8 million for permit fees. Annualized over 10 years, the annual cost of modifying the permits is $0.7 million.

Table 11 – Increase cost by Coating Choice for 2015 limits (CLASS and AER)

Coating Choice	Volume Impacted (gallons)	Increased cost per gallon	Permit Fees	Total Annual Cost
Acetone/PCBTF	652,100	$8.45	$0	$5.5 million
T-BAc/PCBTF	652,100	$5.49	$0.7 million	$4.3 million

Table 12 – Increase cost by Coating Choice for 2018 limits (CLASS and AER)

Coating Choice	Volume Impacted (gallons)	Increased cost per gallon	Total Annual Cost
Acetone/PCBTF	652,100	$2.81	$1.8 million
T-BAc/PCBTF	652,100	$1.84	$1.2 million

The cost effectiveness is determined by comparing the increase in costs compared to the emission reductions. The overall cost-effectiveness includes the combined cost-effectiveness determination for the CLASS, AER, and non-permitted shops.

Table 13 - Overall Cost and Cost Effectiveness

Emission Source	Cost Increase (2015 Limits)	Emission Reductions 2015 (tons per day)	Cost-Effectiveness (2015 Limits Only)	Incremental Cost Increase (2018 Limits)	Emission Reductions 2018 (tons per day)	Overall Cost Effectiveness
Non-Permitted	$1.8 million	0.91	$5,419	$1.4 million	0.10	$8,680
Class and AER	$4.3 million	0.84	$14,025	$1.2 million	0.36	$12,557
All Sources	$6.1 million	1.75	$9,950	$2.6 million	0.46	$10,785

INCREMENTAL COST-EFFECTIVENESS

The AQMD is required to perform an incremental cost analysis when adopting a Best Available Retrofit Control Technology (BARCT) rule or feasible measure required by the California Clean Air Act. To perform this analysis, the AQMD must (1) identify one or more control options achieving the emission reduction objectives for the proposed rule, (2) determine the cost effectiveness for each option, and (3) calculate the incremental cost effectiveness for each option. To determine incremental costs, the AQMD must "calculate the difference in the dollar costs divided by the difference in the emission reduction potentials between each progressively more stringent potential control option as compared to the next less expensive control option." Health and Safety Code Section 40920.6 (a)(3).

Proposed Amended Rule 1107 implements Control Measure MCS-07 from the 2007 Air Quality Management Plan. Because Control Measure MCS-07 is intended to meet feasible measure

requirements under the California Clean Air Act, an incremental cost analysis is required and is presented in this section.

Several scenarios were examined to review incremental cost-effectiveness. The least stringent scenario is to discard the VOC limit reductions in 2018. The General category VOC limit would be 150 g/L but all other changes, including the exemption of T-BAc and DMC, would remain. That scenario would be compared to project as proposed. Additionally, the least stringent scenario (150 g/L General limit) would be compared to the project as proposed but with no exemption for T-BAc and DMC. Finally, the most stringent scenario, reducing the General category VOC limit to 50 g/L would be compared to the project as proposed.

In the 50 g/L scenario, all of the metal coating facilities would utilize an exempt solvent coating. The cost for the CLASS and AER shops would increase by another $1.86 per gallon. However, for the non-permitted shops, the increase would be $26.78 per gallon because the waterborne and traditional solvent alkyd coatings would no longer be available.

The incremental cost analysis indicates that the incremental cost-effectiveness of the proposed rule is comparable to other adopted VOC regulations. However, the incremental benefit gained by lowering the limits to 50 g/l is not cost-effective ($36,530) because of the high costs to non-permitted shops. The analysis also shows that the removal of the exemption for T-BAc and DMC increases the incremental cost by 23 percent.

Table 14 – Incremental Costs

General VOC Limit	Additional Emission Reductions (tons per day)	Additional Annualized Cost (million)	Incremental Cost ($ per additional ton reduction)
Least stringent scenario: 150 g/L (2015 limits only)	1.75	$6.1	N/A
Proposed Rule scenario: 100 g/L	0.46	$2.6	$15,485
No T-BAc/DMC exemption scenario: 100 g/L *	0.46	$3.2	$19,059
Most stringent scenario: 50 g/L	0.48	$6.4	$36,530

*Compared to 150 g/L (2015 limit)

COMPARATIVE ANALYSIS

Health and Safety Code Section 40727.2 requires a written analysis comparing the proposed rule with existing federal and AQMD regulations. There are no other existing or proposed AQMD rules that directly apply to the same source type (metal parts and products coating operations). The following Federal regulations apply to some or all sources regulated by Rule 1107.

The National Emission Standards for Hazardous Air Pollutants (NESHAP); Area Source Standards for Nine Metal Fabrication and Finishing Source Categories requires the control of particulates from applicable area source metal coating operations by 98 percent in a paint spray booth with dry filters or water curtain. HVLP spray equipment or other spray equipment with equal or better transfer efficiency as approved by AQMD must be utilized to improve transfer efficiency. Finally, painters must complete training that addresses paint selection, mixing and application to minimize emissions. The AQMD addresses particulate capture in Rule 481 – Spray Coating Operations and Rule 1402 - Control of Toxic Air Contaminants from Existing Sources. Rule 1107 is the source and guidelines for the transfer efficiency requirements. The SCAQMD rules do not contain painter training requirements.

The NESHAP: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources requires methods to reduce or eliminate methylene chloride stripper usage, requires proper storage and disposal, optimizes application conditions, reduces exposure and requires additional recordkeeping. Proposed Rule 1107 will prohibit the usage of methylene chloride and other Group II Exempt Solvents for paint stripping.

The NESHAP: Surface Coating of Metal Furniture establishes a standard of 0.1 kg organic HAP per liter of solids (0.83 lb/gal) of metal coating for new and reconstructed sources and includes recordkeeping provisions. 1401 - New Source Review of Toxic Air Contaminants likewise regulates HAP emissions from new and relocated facilities.

The NESHAP: Surface Coating of Miscellaneous Metal Parts and Products establishes limits of 0.31 kg organic HAP per liter of solids (2.6 lb/gal) for general existing operations and 0.23 kg organic HAP per liter of solids (1.9 lb/gal) for new operations. Other limits are included for specialty categories including High Performance (3.3 kg/L), Magnet Wire (0.12 kg/L), Rubber-to-Metal (4.5 kg/L) and Extreme Performance Fluorpolymer (1.5). The NESHAP also contains administrative, notification, reporting and recordkeeping requirements. AQMD Rule 1401 - New Source Review of Toxic Air Contaminants and Rule 1402 - Control of Toxic Air Contaminants from Existing Sources limit HAP emissions from new and existing metal coating sources.

The Control Techniques Guidelines (CTG) for Miscellaneous Metal and Plastic Parts Coatings limit the VOC content of miscellaneous metal coatings to limits similar those in Rule 1107 prior to the 2005 amendment. Additional options allow for facilities that utilize control equipment. In addition to the VOC content limits, the CTG provides work practice requirements for storage and use of metal coatings and cleaning solvents. The proposed limits in Rule 1107 are more stringent than those in the CTG. The proposed rule includes work practice requirements for the storage and use of metal coatings. Rule 1171 – Solvent Cleaning Operations contains work practice requirements for solvents used in miscellaneous metal coating operations that are equivalent or more stringent than the CTG.

The CTG for Metal Furniture Coatings recommends VOC content limits similar to those contained in the current version of Rule 1107 and includes options for averaging and the use control devices. The CTG requires the use of HVLP or equivalent spray gun use to improve transfer efficiency. Finally, the CTG includes work practice requirements for the storage and use of metal coatings and solvents. The current version of Rule 1107 includes both the VOC limits

and transfer efficiency requirements of the CTG. The proposed rule will include the work practice requirements for the storage and use of metal coatings. Rule 1171 – Solvent Cleaning Operations contains work practice requirements for solvents used in miscellaneous metal coating operations.

The CTG for Large Appliance Coatings is nearly identical to the CTG for Metal Furniture Coatings except that it does not contain provisions for high transfer efficiency spray equipment.

COMMENTS AND RESPONSES

July 5, 2011

Mr. Mike Morris
Office of Planning, Rule Development, and Area Sources
South Coast Air Quality Management District (SCAQMD)
21865 Copley Drive
Diamond Bar, CA 91765

RE: SCAQMD June 15, 2011 Rule 1107 (Miscellaneous Metal) Public Workshop Meeting; ACA Comments

Dear Mr. Morris:

The American Coatings Association (ACA) submits the following comments on the proposed amendments to Rule 1107:

Lower Rule 1107 Limits May Cause Metal Shops to Leave the District

Stationary structures in the SCAQMD are a "captured market" in that they have to be coated with whatever products are available. However, shops are under constant competitive pressure, if they can't efficiently and cost effectively coat their products and if the coatings do not perform and they lose business – they will leave the District and move operations to other areas, countries etc. As such, the District needs to be very careful when lowering limits in Rule 1107 so as not to force shops out of the District.

Here are specific statements from the June 15th Rule 1107 Workshop:

- In the last 10 years, not one new permit for manufacturing has been applied for in South El Monte and it has one of the highest unemployment rates in CA.
- TBAC permitting process is burdensome c(3)(a) – places businesses in the District at economic disadvantages to companies outside the District.
- There used to be 6 coating applicators on our street – all are gone except one.
- Look at where our marketing offices are located, major accounts have moved out of CA and are moving to other states, Mexico and China.
- This rule will force business to move coating operations out of the District.

1-1

1500 RHODE ISLAND AVENUE N.W. • WASHINGTON, DC 20005 • T 202.462.6272 • F 202.462.8549 • www.paint.org

- Applicators are sending jobs overseas – out of 10 shops – 7 are gone, these rules place an unfair disadvantage on coaters – they move operations elsewhere. For example, Magnesium Plate – could not use powder coat – needed liquid – moved to MN – others have moved to Texas.

- Holland Industries, Steelcase, Harper Furniture – all gone.

- I had 120 employees – down to 65 – like with plastics limit – have one coating to use – harder to use – longer dry times – under certain climate conditions the coating takes days to dry. I am concerned about costs – I lost customers with the plastics rule and it cost $100,000 in burner changes.

1-1(Cont.)

Number of Facilities – page 3 of the Staff Report – The District mentioned 377 facilities in 2006-7. Given concerns expressed over the loss of metal coating shops, the District should include a chart or graph detailing the number of facilities over time.

1-2

Cost to Implement – page 14-15 of Staff Report – The District just looked at the cost per gallon increase but did not consider reformulation, added cost of using exempt solvents, testing, new equipment or modification to existing equipment (spray guns, modified lines, drying equipment and drying areas) and consultants. These costs result in coaters paying higher costs in the District and becoming less competitive. In addition, the District should do more outreach to coaters to make the increased costs of this Rule more apparent.

1-3

District is Moving Too Fast – given the major impacts this rule may have on District metal coating companies, the District should not rush this rulemaking. For example the District left 3 days to review comments prior to the set hearing on July 8th – not sufficient time.

1-4

Use of 100 g/l Architectural Coatings for Miscellaneous Metal Shop Application - The District is assuming that Architectural and Industrial Maintenance Coatings (100 g/l) can be used in shops for the coating of miscellaneous metal products, however, SCAQMD is not accounting for the fact that shop application coatings need to have different attributes than Architectural and Industrial Maintenance (AIM) coatings. Shops are under pressure to require products to be coated, dried immediately, stacked and shipped in quick succession to maximize production rates to the extent possible, whereas AIM coatings can be left to dry for days. Further, it is generally understood that low VOC AIM products tend to have blocking issues and that adequate drying times are needed for the coatings to dry thoroughly and harden. A miscellaneous metal products shop does not have the time or drying space to dry products for several days, and products with blocking issues would be rejected.

1-5

2

On page 9 of Staff Report the District claims that it identified 43 (note ACA comments) Prefabricated Architectural coatings near or below the proposed VOC limit and that since they have been used for several years in the field and because of this extensive experience, the effective date for the proposed limits is 1/1/2013. The District has disregarded industry concerns about using AIM coatings in a shop setting – yes these coatings may have been used successfully in the field to coat stationary structures – however, shop application coatings must have certain attributes to be successfully used in a shop setting. Most importantly, coated metal products need to be handled after a couple hours of dry time – this may not be the case with filed applied architectural coatings. The District has not analyzed nor adequately responded to this concern.

1-5 (Cont.)

"Minor adjustments to formula to further decrease VOC content" – page 8 of Staff Report - The district included several coatings with coating "VOC contents slightly above the limit since there may be only minor adjustments to the formulation, including the addition of new exempted solvents, that will further decrease their VOC content". ACA disagrees - for example to get to 100 g/l of IM - formulators could not just use any exempt solvent - it was TBAc for example that resulted in the superior coating formulations. Formulators have to spend time and resources to develop the formula, test it and then their customers have to use it and it has to perform – if the coating does not work the business may move out of the District. In addition, as mentioned at the June 15th Public Workshop, PCBTF – 2.5 times more expensive than TBAc and DCC, Acetone twice as expensive – PCBTF and Acetone could increase formulation costs by as much as 35%.

1-6

Very Long Implementation Times are Needed – as proposed, the District is only giving the industry two years to comply with the 100 g/l Architectural limits, and 4 years to comply with the High Gloss and General Coatings limits. The movement from solvent based products above 275 g/l to waterborne coatings at 100 g/l is a significant change and the proposed 2-4 years for implementation is not adequate.

The District is also lowering the limits for General, Primers, and High Gloss in two stages – but this is likely to be confusing and manufacturers will have to reformulate twice, and coaters change twice. Further, without a sell through provision, more products will be stranded over a two-step process. Finally, since the District is likely not taking reductions until final limit change – ACA suggest not having two steps but a longer implementation time for the lower limit.

Lowering the limits to 100 g/l is huge challenge. If the District really wants to continue to have businesses in the District, instead of 2013/2015 deadline, the District should push the limits to 2020 to give the industry adequate time to formulate, test and implement these coatings.

1-7

Prohibition of Sale - Categories are defined by use, and when sold, manufacturers don't know how the products are to be used (wood, plastic, metal or all of these); if controls are being used; whether the facility has a permit, spray booth or fully enclosed area so that TBAC or DMC can be used. Manufacturers can't guarantee how the user is using the coating – especially with regards to touch-up and repair, and high performance coatings. Coatings manufacturers cannot

1-8

3

be held responsible for how end-users might use their products, since a single coating might be used on multiple substrates. Nor should manufacturers be expected to be "agents" by cross-examining or inspecting their customers operations. As proposed, coatings manufacturers will likely have to have their customers sign a statement like "Manufacturer XYZ assumes customer is complying with all applicable regulations" – ACA is not sure what this statement accomplishes.

As such, ACA does not support the prohibition of sale since it would make coatings suppliers liable for choices made by shop applicators. Products that coatings manufacturers formulate, label, recommend and sell for one purpose (e.g., architectural coatings) may be used by a purchaser for other applications (e.g., shop application to metal parts and products) - coatings manufacturers should not be held responsible for this practice. A company may also have industrial surface coatings that are sold for more than one substrate, however each substrate and some uses within the substrate "group" have their own rules with their own limits. For example, a polyurethane industrial surface coating might be used on metal, wood, plastic, aluminum, polystyrene, polycarbonate – there is a separate surface coating rule for each of these (over 11 separate SCAQMD surface coatings rules). It would be impossible for the sales person to know the substrate and use of each product sold. In addition, many surface coating operations are "job" shops which will apply coatings to more than one substrate, even if the salesperson worked out the specific use details, and once purchased, the coating could be used on multiple substrates and the salesperson would have no idea. Thus, neither the "store" nor the manufacturer will be aware of this change. The critical issue is the lack of control: the District cannot hold the manufacturer or "seller" responsible for the actions of the customer.

1-8 (Cont.)

Suggested Primer Limit – ACA recommends the District set a Primer limit of 200 g/l, since the District has identified just a few Primers that may be intended and may be effective for metal parts shop application (see Appendix A comments).

Primers are extremely important functional coatings that must perform well in adhering to metal substrates. Of course, when a primer fails, not only the primer must be replaced – new topcoats are necessary, too. This causes increased emissions and excess consumption of energy and material resources. It is important to note that the District acknowledged in Rule 1113 the fact that lower VOC Primers needed greater surface preparation, have less tolerance, and painters need to follow instructions. That's why they included a long implementation timeframe. Combined with lower Rule 1107 topcoats, lowering the Primer limit as well is very problematic.

Water based primers have performance limitations that make them inadequate as substitutes for higher VOC, better performing products. Consequently, such substitutions lead to higher rates of coating system failure or reduced longevity, or necessitate multiple primer coats that would otherwise be unnecessary. To the extent that better performing, lower VOC primers might be formulated with new technologies just becoming available, the lab work and field tests, especially on rule 1107 Metal Parts substrates needs to be completed.

1-9

4

Graphic Arts Limit – As requested at the Public Workshop, the Graphic Arts limit should be effective immediately upon adoption. 1-10

Repair/Touchup Definition – the proposed definition needs to be expanded to include repair/touch-up that occurs after shipment of coated metal products, as proposed the definition seems to relate only to manufacturing of the metal product. 1-11

Transitional Language is Needed – as written, the effective date means that categories and limits are effective immediately. It is not fair that industry – manufacturers and shops – have no time to figure out compliance status, test products, etc. New definitions like Primers, High Gloss, and Lacquers have no current limits, products need to comply instantaneously with new limits. 1-12

Sell Through Provision is Needed - there is no sell through provision so manufacturers have to instantly stop selling old product and sell new products. In addition, products on store shelves or located at coaters shops would be immediately noncompliant. ACA suggests a 3 year sell through consistent with Rule 1113. 1-13

Extreme High Gloss Definition - ACA is concerned that as written the proposed definition of reflectance of 95 or more on a 60 degree meter would exclude waterborne coatings. 1-14

List of Compliant Coatings Concerns - The District provided ACA with a list of compliant coatings. On June 7, 2011, ACA provided the district an excel spreadsheet that included comments on the various coatings that SCAQMD identified as being compliant with the proposed amended limits. The District identified 46 General and Primers, of these ACA found 38 of these either had VOC contents above the 100 g/l limit; included TBAc in the coating formulation; had pot life's of less than 10 minutes; or dry to hard times of greater than 6 hours. The District also identified 46 Architectural Coatings category, of these ACA found that 42 of these either had VOC contents above the 100 g/l limit; included TBAc in the formulation; were elastomerics; had pot life's less than 10 minutes; and dry to hard times of greater than 6 hours.

Appendix A of the preliminary draft staff report includes a list of compiled coatings that the District believes meets the proposed 100 g/l limits for the General, Architectural and Primer categories. In general, while it appears the intent of District staff was to show that numerous coatings meet the proposed limits, the list is mainly comprised of different colors of the same coating. 1-15

General Coatings – Problems include:

- 43 of the 50 coatings are just different colors
- Several of the coatings are only available in limited colors (black, white, tan) or sheen (flat) etc.
- 2 have VOC contents above 100 g/l

- 2 coatings (representing 36 colors) rely on TBAc, yet were not identified as such
- Pot life was not listed (several have very short pot life)
- 3 coatings were listed without dry to handle times

Architectural Coatings – Problems include:

- 35 of the 84 coatings are just different colors
- 9 have VOC contents above 100 g/l
- 3 coatings rely on TBAc, yet were not identified as such
- Pot life was not listed (several have very short pot life)
- Several coatings were elastomerics or mastics with very high build (one coating has a build of ½ inch)
- Several of the coatings are only available in limited colors (black, white, tan) or sheen (flat for example)
- 3 are specifically military specification paints resistant to chemical warfare agents
- 3 are specifically listed as being primers

Primers – Problems include:

- 4 of the 19 coatings are just different colors
- 10 of the 19 coatings have VOC contents above 100 g/l
- Pot life was not listed (several have very short pot life)
- One product is only sold in on the east coast
- Several coatings were listed without dry to handle times

1-15 (Cont.)

Overlap with Rule 1143 (Consumer Paint Thinners and Multipurpose Solvents) – ACA has been contacted by several coatings manufacturers that District inspectors and Staff claim that solvents used to thin Rule 1107 coatings must comply with Rule 1143. District staff have recently confirmed that this is not the case. ACA request the District address this issue in the Staff Report and compliance guidance.

1-16

Spray Gun Efficiency – Rule 1113 Architectural and Industrial Maintenance plurals and high solids coatings cannot and should not be required to meet the high efficiency spray equipment requirements of Rule 1107. ACA recommends that all Architectural and Industrial Maintenance coatings be exempted from the spray equipment efficiency requirements in Rule 1107.

1-17

High-Performance Architectural coating – page 8 of Staff Report - one coating in the District meets the Aluminum Manufacturers Association standard and the facility uses a VOC control device. It makes no sense to lower the limit to 100 g/l if there are currently no certified coatings, and the only facility meeting the standards utilizes a control device.

1-18

6

Exemption of TBAC and DMC

ACA supports the exemption of TBAC and DMC for the coating of metal parts and products for facilities where the operator applies and receives a permit (or a simple modification to existing permits) to operate and the coating is used in a spray booth or in a fully enclosed area where an exhaust fan discharges directly from the equipment outside of the building. However, it is important to note that the TBAc permitting process be as simple as possible to minimize burden to the extent possible since this places companies in the District at an economic disadvantage compared with companies outside the District. This is especially true for facilities that obtain a permit and find that TBAc products cannot be used, since these facilities have few alternative compliant products to choose from.

1-19

Performance Testing and Research and Development Exemption

ACA suggests that "performance testing" and "research and development testing" need to be exempted, regardless where this occurs. Both need to be exempt, since a research facility needs to be able to apply the coatings under development to determine whether the performance meets the project goals, while the coatings in production need to be tested to determine whether they meet the product specification. Consistent with other surface coating rules, ACA recommends adding a research and development exemption to the rule as well as retaining all current exemptions (including the performance testing exemption).

1-20

Suggested Specific Changes to Rule Language

(a) Applicability

"This rule is applicable to any person who performs metal coatings or stripping operations in the District, and to any person who supplies, sells, offers for sale, or specifies any metal coating or stripper for use in the District, excluding any metal coatings or strippers for use in aerospace assembly, magnet wire, marine craft, motor vehicle, metal container, and coil coating operations. This rule also 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 architectural components."

1-21

(19) Extreme Performance Coatings

"EXTREME-PERFORMANCE COATING is a coating used on a metal surface where the coated surface is, in its intended use, subject to the following:
(A) Chronic exposure to corrosive, caustic or acidic agents, chemicals, chemical fumes, chemical mixtures or solution; or
(B) Repeated exposure to temperatures in excess of 250° F; or

1-22

7

(C) Repeated heavy abrasion including mechanical wear and repeated scrubbing with industrial grade solvents, cleansers or scouring agents; or…"

1-22 (Cont.)

(34) Metal Coatings

"METAL COATINGS are coatings intended to be applied to metal parts or products."

ACA suggests deleting the Prefabricated Architectural Component Coatings and subsuming these coatings under General in Table 2 since it is unfair to have a "specialty" category coating with a VOC content lower than the General default category, given the proposed prohibition of sale. This would resolve ambiguity in categorizing products. Since some categories are defined by actual end use, while others are defined by composition or performance characteristics. Lacquers, for example are defined by their compositions and performance – a lacquer is still a lacquer no matter how it's used. What kind of coatings is it if you apply a lacquer to a prefabricated architectural coating, according to the rule it's both – so which limit applies? ACA suggests eliminating the Prefabricated Architectural Component coatings and subsumed this under the General category.

1-23

(2)(A) VOC Content of Coatings

"Until December 31, 2012: Except as provided in subdivision (F), a person subject to this rule shall not apply any metal coating that contains VOC is excess of the applicable limit specific in Table 1 below:"

(2)(B)

"Effective January 1, 2013: Except as provided in Subdivision (F), a person subject to this rule shall not apply any metal coating that contains VOC in excess of the applicable limit specified in Table 2 below:"

1-24

(D) Prohibition of Specification or sale

"(1) Except as provided in paragraphs (d)(2), (d)(3), (d)(4), and (d)(5), a person shall not supply, sell, offer for sale, or specify (whether orally or in writing), for use in the District, any metal coating that, at the time of manufacture, contains VOC in excess of the applicable limit specified in paragraph (c)(2).
(2) The prohibition of specification and sale shall not apply to any metal coating, sold, offered for sale, or specific for use outside the District or for use at a facility that certifies having air pollution control equipment in compliance with the requirements of paragraph (c)(8).
(3) The prohibition of sale shall not apply to any metal coating supplied, sold or offered for sale to an independent distributor or another manufacturer for repackaging.

1-25

8

(4) The prohibition of sale shall not apply to any metal coating that is labeled for use on multiple substrates. Provided the coating complies with applicable requirements of another Regulation XI rule for coatings. Information regarding use on multiple substrates may be given on a data sheet in lieu of labeling.
(5) The prohibition of sale shall not apply to any metal coating that is labeled and supplied, sold, or offered for sale as an architectural coating in compliance with Rule 1113.
(6) A person shall not supply, sell, offer for sale, specify, or apply any metal coating or stripper subject to this rule that contains in the excess of 0.1% by weight any Group II exempt compound listed in Rule 102. Cyclic, branched, or linear, completely methylated siloxanes (VMS) are not subject to this prohibition."

1-25 Cont.)

(f) Exemptions

"(1) The provisions of paragraphs (c)(1), (c)(2), (d)(1) and d(6) of this rule shall not apply to:
(A) Stencil coatings;
(B) Safety-indicating coatings;
(C) Magnetic data storage disk coatings;
(D) Solid-film lubricants;
(E) Electric-insulating and thermal-conducting coatings.

(2) The provisions of paragraph (c)(1), (d)(1), and (d)(6) of this rule shall not apply to the application of touch-up coatings, repair coatings, and textured finishes.

(3) The provisions of paragraphs (c)(1), (c)(2), (c)(3), (d)(1) and (d)(6) of this rule do not apply to the application of coatings and use of cleaning solvents while conducting performance tests on the coatings at paint manufacturing facilities.

(4) The provisions of paragraph (c)(2), (d)(1) and (d)(6) of this rule shall not apply to aerosol coating products.

(5) The provisions of paragraph (c)(2), (d)(1) and (d)(6) of this rule shall not apply to the use of essential public service coatings with VOC contents of 500 g/l or less provided such aggregate use does not exceed 55 gallons in any one calendar year per facility.

(6) The provisions of paragraph (c)(2), (d)(1) and (d)(6) of this rule shall not apply to the use of optical anti-reflective coatings provided such aggregate use does not exceed 10 gallons in any one calendar year, per facility.

(7) The provisions of paragraph (c)(2), (d)(1) and (d)(6) shall not apply to photoresist operations applying liquid photoresist coating used for photofabrication of metal substrates with a thickness not exceeding 0.060 inches provided the annual usage per facility is 10 gallons or less.

1-26

9

(8) The provisions of subdivision (j) shall not apply to any Super Compliant Material(s). This exemption shall only apply to facilities that demonstrate that total permitted and non-permitted facility VOC emissions do not exceed 4 tons in any calendar year, including emissions from the Super Compliant Material, as demonstrated by annual purchase records."

1-26 (Cont.)

(F)(3)

"The provisions of paragraphs (c)(1), (c)(2) of this rule do not apply to the application of coatings and use of cleaning solvents while conducting research and development and performance testing."

1-27

Thank you for the opportunity to comment. If you have any questions or need any further information on the issues discussed here, please feel free to contact me at (202) 462-6272.

Sincerely,

/s/

David Darling, P.E.
Director, Environmental Affairs

** Sent via email **

10

1-1: Proposed Rule 1107 has been developed with a keen awareness of the need to balance the concerns of industry to be able to cost effectively coat their products and to provide clean air to the people who live and work in the District. The limits and implementation dates have been set so that the coatings that meet the proposed limits reflect currently available and used low-VOC metal coatings, that perform acceptably and remain cost competitive. Details of the compliant coatings and their performance characteristics are provided in Appendix A. Details of the costs and cost-effectiveness are provided in the Staff Report. A full analysis of the impacts on the local economy will be detailed in the Socio-Economic report.

1-2: A chart is included below comparing the number of facilities over time. As noted earlier, there are fewer large shops and more small facilities, including non-permitted facilities. Like the figure provided for the number of Non-permitted facilities subject to Rule 1107 in 1993, the number of Non-permitted facilities is estimated. Please see Note 1 in the cost-effectiveness discussion on page 19.

Table 14 – Facilities Subject to Rule 1107

Facility Type	2007	1993
AER	377	1,500
CLASS	949	1,075
Non-permitted	1,000	212
Total	2,326	2,787

1-3: The cost of reformulating and exempt solvents is included in the estimated per-gallon cost, since it relies upon the cost of the coatings to the end-user. The cost of permitting is also included in the cost analysis. Furthermore, in addition to the material cost increase, the cost analysis considers any increase in labor costs. As a result of this rulemaking, it is not anticipated that facilities will need to purchase equipment such as spray guns, booths, dryers or control devices. The coating options (waterborne, high-solids, and traditional solvent-based resins formulated with exempt solvents) will continue to be available to metal coaters with performance characteristics similar to conventional higher-VOC metal coatings. Lastly, as part of the rule development process, the District has conducted extensive outreach to metal coating manufacturers and users.

1-4: The rule development process was extended based on the comment and has continued for more than 18 months. The effective dates of the proposed limits have been extended until 2015 and 2018. This extended time period has provided adequate time for the manufacturers and other stakeholders to thoroughly evaluate the implications of the proposal and also provided additional time for manufacturers to reformulate, test and implement the new coatings. However, staff notes that numerous compliant metal coatings are available and in use currently, as summarized in Appendix A of this report.

1-5: Appendix A provides dozens of alternative coatings that span a range of properties. Some coatings have short dry times while others are open longer. While some shops have the need for quick dry times where parts are stacked and shipped in quick succession, other users may desire other properties. Gloss, hardness, chemical resistance and many other coating characteristics are included to demonstrate the range of options available. The appendix demonstrates a wide range of available coatings with diverse properties which should be sufficient to meet most of the coating needs of the industry. In previous coating studies (e.g., National Technical Systems, 1998/1999), especially comparing waterborne and solvent-based coatings previously categorized as 'quick-dry', staff found that waterborne coatings generally dry as fast as their solvent-based counterparts in average climatic conditions. Moreover, based on local warmer and drier climatic conditions in the District, drying time is not expected to be an issue for local shop coaters. Lastly, considering the availability of conventional solvent-based resin systems formulated with existing and proposed exempt solvents (e.g., acetone, PCBTF, T-BAc, and DMC) to comply with the proposed limits, local metal coaters will continue to have options for coating technologies with performance characteristics best suited to their operations.

1-6: The statement was included with the understanding that T-BAc and DMC would be available as exempt solvents for manufacturers to reformulate. As was pointed out, T-BAc has been shown to provide additional lower cost exempt solvent options for superior coating characteristics, especially long-term durability. It is believed that DMC may have similar benefits as more coating research is conducted with that chemistry. Staff also notes that solvent-based resin chemistry using acetone and/or PCBTF are currently available and in-use by local metal coaters; however, T-BAc and DMC is expected to lower the cost of those coating systems, as noted in the Cost-Effectiveness section of this staff report.

1-7: The District acknowledges the need for additional time to formulate, test and implement alternative coatings for manufacturers that do not offer coatings that meet the proposed future limits of 150 g/l and 100 g/l. Based on comments received, the effective dates have been extended to 2015 and 2018 for the interim and final limits providing a three- and six-year time frame, respectively. Further, the proposed rule includes a one year sell- and use-through provision for metal coaters to utilize existing inventory of coatings, removing concerns of 'stranded' coatings. The District will continue to have an interim limit to provide smaller non-permitted shops a low-cost waterborne option that can meet the proposed limits with existing technology and limited additional costs, as well as provide near-term air quality benefits. As summarized in Tables 1 and 2 of the staff report, a large number of CLASS and AER facilities are already using coatings that comply with the interim limit and will not require any changes to their operations until 2018. The remainder will have more than 3 years for a complete transition to the 150 g/l limits.

1-8: A prohibition of sale is included to limit the availability of non-compliant coatings to metal coating shops. In response to comments received, the prohibition of sale includes a number of provisions to protect manufacturers and distributors who are making a good-faith effort to limit non-compliant sales. The intention is not to make formulators responsible for the choices of the end-users, but to eliminate the sale of metal coatings that are not in compliance with the rule. Staff recognizes that a particular coating may be used for more than one substrate, including

numerous substrates for architectural uses, and thus is proposing to align the VOC limits and other requirements, including the sales prohibition.

1-9: The District initially proposed an alternative limit for primers but found that low-VOC solvent-based primers were available. However, waterborne primers would be eliminated by the 100 g/L proposed Coating (Regulatory) VOC limit. Therefore, the District is proposing to bifurcate the General category, which includes primers, to allow waterborne coatings to meet Material (Actual) VOC limits. This will ensure that waterborne primers remain available while still achieving the emission reduction goals. Furthermore, other commentators have provided feedback indicating that they already have commercial waterborne and solvent-based coatings, including primers, with VOC content of less than 100 g/l.

1-10: An immediate effective date for Graphic Arts coatings has been included in the proposal.

1-11: The Repair/Touchup definition has been expanded in the proposal.

1-12: Transitional language has been included as requested.

1-13: A sell- and use-through provision of one year has been included in the proposal. One year is sufficient time for industrial users to transition through stock and allow manufacturers and retailers to transition to compliant coatings.

1-14: Based on comments received, the initial proposed reflectance of 95 or more for Extreme High Gloss coatings has been revised to 85 or more on a 60 degree meter so as to allow the continued use of waterborne Extreme High Gloss coatings.

1-15: Appendix A has been revised and now includes more than one hundred different coatings, many with complete color palates. The appendix includes information, where available, about the coating chemistry, physical properties and coating characteristics. The characteristics include dry time, stack time, gloss and hardness among others. The appendix demonstrates a wide range of available coatings with diverse properties which should be sufficient to meet most of the coating needs of the industry.

1-16: Only paint thinners sold in retail outlets are subject to Rule 1143. Non-retail solvents sold directly to industrial users, including metal coating operations subject to Rule 1107 are not subject to Rule 1143. However, when determining compliance with the VOC limits in Rule 1107, the VOC of the coating is measured as applied, which would include both any solvent added to the coating as supplied by the manufacturer and any subsequently added by the user.

1-17: Proposed Rule 1107 includes added flexibility to allow other spray equipment options where high viscosity coatings are used. Additionally, facilities may request to use other types of spray equipment if they can demonstrate that they would emit more VOC under the proposed amendment. This situation may arise for very high solids coatings that would otherwise need to be thinned in order to be sprayed with HVLP guns.

1-18: The District agrees and has reinstated the High Performance Architectural coating category.

1-19: The proposed rule includes a limited exemption for T-BAc and DMC. Those solvents will be allowed in permitted spray booths or permitted control enclosures. For shops using below the thresholds stated in the proposed rule, the process is a simple filing. For those seeking to use the exempted solvents in quantities exceeding the thresholds, the proposed process is to submit an application to modify the associated permit. This allows a risk assessment to be conducted to ensure that nearby residents and workers are protected.

1-20: Research and development activities conducted at coating formulator sites remain exempt. However, the extended effective dates should be sufficient time to allow end-users to conduct performance testing without the need for an exemption to allow testing of non-compliant coatings.

1-21: The suggested language has been incorporated into the proposed rule.

1-22: The Extreme Performance Coating category has been expanded to allow fused metal/carbon substrates (Metallicacarbonification) as well as allowing an option for end-users to apply for other situations to be considered as Extreme Performance. Guidance has been included in the rule as to the supplemental information needed to make the determination.

1-23: The recommended language has been incorporated into the proposed rule.

1-24: The suggested language, with updated VOC limit effective dates, has been incorporated into the proposed rule.

1-25: See Response to Comment 1-8.

1-26: The inclusion of exemptions for some or all of the prohibition of sales provisions has been included in the rule as appropriate. In all cases, the prohibition of sale does not apply to the VOC content of exempted categories. However, in many cases, the prohibition of sale for Group II exempt compounds remains in effect for more exempted categories.

1-27: See Response to Comment 1-20.

lyondellbasell

Mr. Mike Morris
Office of Planning, Rule Development, and Area Sources
South Coast Air Quality Management District (SCAQMD)
21865 Copley Drive
Diamond Bar, CA 91765
(909) 396-3282

July 5, 2011

RE: Proposed Amended Rule 1107 (Metal Coating Operations) and May 28th Public Workshop

Dear Mr. Morris:

As the developer and leading producer of TBAC (tert-butyl acetate), Lyondell Chemical submits the following comments on the May 19, 2011, public workshop and proposed amended rule 1107.

We support the SCAQMD proposal to exempt TBAC from VOC content limit requirements for metal coatings affected by rule 1107. This proposal is consistent with the federal definition of a VOC, the definition in 49 other states, 36 other California counties, and two SCAQMD rules (1113 and 1151). TBAC was exempted by the US EPA in 2004 based on its negligible photochemical reactivity (MIR = 0.17 g ozone/g).

Exempting TBAC will provide formulators and metal coaters an essential tool to comply with the low VOC content limits being proposed in PAR 1107. Current VOC exempt solvents acetone and PCBTF (para-chlorobenzotrifluoride) alone do not have the properties required to manufacture the broad range of high performance coatings applied to metal substrates. Before the SCAQMD exempted TBAC for Industrial Maintenance Coatings in rule 1113 in 2006, the Metropolitan Water District conducted its own internal testing of low-VOC coatings that met its own stringent performance requirements and the 100g/L VOC content limit. The MWD testified that TBAC-based coatings were among the few 100g/L VOC coatings that met their performance and long-term durability requirements. Several coating manufacturers and industry associations also requested the exemption of TBAC in varnishes, lacquers, floor, and pool coatings, among others, for similar reasons.[1] On behalf of its members, the American Coating Association and Cardinal Paint, a local manufacturer of paint for metal coatings, also requested the exemption of TBAC on similar grounds at the May 19th public workshop.

2-1

Lyondell Chemical is also not opposed to a permitting requirement, provided it is: 1) consistent with SCAQMD, OEHHA, CARB, and EPA rules and regulations, 2) simple and inexpensive, 3) subject to a

2-2

[1] SCAQMD Final Staff Report for Proposed Amended Rule 1113, June 2, 2006. pp 12-13, 33.

Lyondell Chemical
3801 West Chester Pike
Newtown Square, PA 19073
USA
dan.pourreau@lyondellbasell.com

Tel +1 610-359-2411
Cell +1 610-212-9592
Fax +1-610-359-2328
lyondellbasell.com

minimum reporting threshold, and 4) based on an official acute or chronic risk factor that has been reviewed and endorsed by California's Scientific Review Panel. So far, no such risk factor exists for TBAC or its metabolite TBA. TBAC is not a listed Toxic Air (TAC) Contaminants or Proposition 65-listed carcinogen or reproductive toxin so it is not subject to permitting requirements under rules 1401 or 1402. OEHHA has also not released official acute or chronic risk factors for TBA or TBAC. So it is unclear how SCAQMD staff would estimate a health risk for TBAC for permitting purposes and what procedures applicants should follow to obtain a permit. This aspect of the rule should be clarified as soon as possible.

2-2 (Cont.)

In 2008, OEHHA did add TBAC to the Hot Spots list of "substances whose emissions must be quantified" to comply with the federal reporting requirement for TBAC. So it is appropriate to require that operations that use TBAC report their emissions to the District or the State. For the purpose of this rule, we recommend that the SCAQMD outline a specific procedure for metal coating facilities interested in using TBAC since any permitting for TBAC would fall outside the requirements outlined in rules 1401 and 1402.

2-3

In previous rules, the SCAQMD has limited the exemption of TBAC based on a speculative cancer risk factor derived by OEHHA from its TBA metabolite. This risk factor was published in 2004 in a toxicology journal but it was never reviewed by California's Scientific Review Panel, which is the official body that sanctions risk factors for California. Therefore, we request that the health risk factor that SCQAMD proposes to use for permitting purposes be reviewed and sanctioned by the Scientific Review Panel and Lyondell Chemical be given to the opportunity to present the new toxicological information and expert opinions that have been published since 2004. We also ask that this permitting requirement be waived for facilities that emit less TBAC than the CEQA level of significance as determined by staff's preliminary risk assessment for rule 1107.

2-4

Lyondell Chemical also does not object to rule requirement 3) b) which calls for the coating to used in a spray booth or fully enclosed area where an exhaust fan discharges the exhaust air from the equipment outside the building. However, we ask that this be made a general requirement for all coatings, not just those containing TBAC. It is a good industrial hygiene practice to minimize worker exposure to all organic solvents, not just TBAC. We look forward to working with you and your colleagues to address these remaining issues in the coming weeks.

2-5

Sincerely,

Daniel B. Pourreau, Ph.D.
Technical Advisor

Dave Roznowski
Manager, State Government Affairs

2-1: The proposed rule includes a limited exemption for T-BAc as requested.

2-2: A permitting requirement is included in the proposed rule in a manner similar to the suggestion. Staff has calculated the risk to nearby residents and offsite workers utilizing the inhalation cancer potency, acute reference exposure limit, and chronic reference exposure limit provided by OEHHA. These interim values represent the best available science from OEHHA, the state agency with the expertise to make these determinations. The estimates indicate that some facilities using T-BAc may pose an unacceptably high risk to nearby receptors in certain high volume situations where residents or offsite workers may be nearby. Thresholds have been determined where the volume of T-BAc used would be below a cancer risk of 10 in one million or increasing the hazard risk by 1.0 to nearby receptors. For those facilities using quantities lower than the threshold, a low-cost filing option is available. For those facilities wishing to use quantities above the threshold, a permit modification is required. While it is true that T-BAc has not been listed as a Toxic Air Contaminant or on Proposition 65, health concerns remain about its use.

2-3: Specific reporting requirements for T-BAc have been included in the proposed rule. EPA has obliged all states to report T-BAc use and therefore sources using T-BAc must report annually to the District thus providing the necessary information to comply with the EPA requirement.

2-4: The District defers to OEHHA on determinations of the cancer potency risk factor as this is outside of the District's expertise. Any further review of this factor for T-BAc must be conducted by OEHHA. The District has requested updates on the progress of reviewing T-BAc but no further update has been provided. The District's methodology is conservative to ensure that it is protective of public health.

2-5: The additional provision requiring the use of a spray booth or fully enclosed area recognizes and offsets the increase in usage of T-BAc and DMC. It provides the District a mechanism to ensure that the exempted solvents with potential health concerns are used in a way that are regularly inspected. Additionally, the spray booth requirement is likely to provide protection to workers using the solvent and coatings formulated with the solvent. In general, the requirements for the necessity of a spray booth are contained in Rule 481 – Spray Coating Operations, although the provisions included in that rule are for air quality purposes, not for the protection of workers. The District cannot directly regulate worker safety measures, as those are overseen by other state and local agencies, including CAL-OSHA.

CARDINAL
INDUSTRIAL FINISHES

South Coast Air Quality Management District
Office of Panning, Rule Development, and Area Sources
21865 Copley Drive
Diamond Bar, CA 91765
Attn: Mike Morris

July 5, 2011
By E-mail & US Mail

Dear Mr. Morris,

The following comments reflect the concerns of Cardinal Paint and Powder (Cardinal) regarding proposed changes to South Coast Air Quality Management District (SCAQMD) rule 1107. Cardinal's main concern is that certain provisions of the proposed rule create an inequitable competitive advantage in favor of applicators outside SCAQMD. That the volatile organic content (VOC) for primers is unnecessarily low and will operate to impair the performance of these coatings. Finally that changes in the definition of Extreme High Gloss will operate to impede the use and development of waterborne technologies.

Cardinal first concern relates to the provisions found in 1107 (c)(3)(a) which states "TBA... shall be considered exempt as a VOC in subparagraphs (c)(2)(A) for VOC content requirements provided:

a. The operator applies and receives a permit to operate; and
b. The coating is used in a spray booth or in a fully enclosed area where an exhaust fan discharges the exhaust air from the equipment outside of the building".

It is Cardinals position that to require applicators of coatings to apply for permit revision in order to use coatings which contain Tert Butyl Acetate (TBAC) imposes an undue burden on SCAQMD applicators. This solvent was delisted by the United States Environmental Protection Agency (USEPA) in November 2004. TBAC is not listed as a Toxic Air Contaminant (TAC) or a Proposition 65 listed carcinogen or reproductive toxin. It is allowed in every state and a number of air districts within California. To require SCAQMD applicators to add special conditions to their permits to allow the use of TBAC is clearly inequitable. The cost of a permit change of this type can reach $5000.00 per device. This fact is not clear in the language of the proposed change but will become evident when applicators want to use TBAC. These hidden costs are one of the major contributors to the loss of jobs in SCAQMD.

3-1

www.cardinalpaint.com

Southern California Corporate Headquarters
1329 Potrero Avenue
South El Monte, CA 91733
tel 626.444.9274 *fax* 626.444.0382

Powder Coating Manufacturing
tel 626.937.6767

Arizona
tel 602.437.2401

Northern California
tel 408.452.8522

Colorado
tel 303.286.1876

Minnesota
tel 952.469.6021

Missouri
tel 314.878.3010

North Carolina
tel 336.882.9493

Pennsylvania
tel 814.723.0721

Texas
tel 214.333.9801

Washington State
tel 425.483.5665

Hong Kong
tel 852.2410.8200

Cardinal is equally concerned that the proposed limit of 100 grams per liter for primers is too low. Primers are functional coatings designed to increase performance, promote adhesion, and build coating thickness. SCAQMD is forcing manufactures of primers to utilize lower molecular weight polymers to achieve this 100 gram per liter limit. This will be detrimental to the performance of the coating. Lower performance will lead to coating failure thereby requiring removal and repainting. This is contrary to the larger goal of waste minimization and the effective use of available resources. Cardinal suggests a limit of 275 grams per liter for primers in order to maintain the quality of these coatings. If SCAQMD strongly disagrees with our position Cardinal proposes a breakdown of single component and two component systems with the two components remaining at 275 grams per liter in order to allow applicators the opportunity to achieve higher performance.

3-2

The proposed changes to 1107 (b)(18) are also of major concern. This language raises the requirement for Extreme High Gloss Coatings from 75° to 95°. Although this may seem insignificant it will have a major impact on users of waterborne technologies. Effectively it will eliminate this type of chemistry from use in the high gloss category as a manufactures will not be able to meet this requirement with general metal finishes. To impede the development of waterborne coatings is short sighted. These coatings provide a safe and practical alternative to applicators that do not use powder coating for general metal finishing. Their development and use has slowed down the past decade, however, given their numerous environmental advantages they are worthy of consideration. If the proposed limit could be adjusted to 80° gloss instead of 95° waterborne technologies would be allowed continued research and development that would result in progress for SCAQMD and the rest of the world as well.

3-3

Cardinal has attempted to provide SCAQMD with meaningful written comments in order to assist in a clear understanding of the impact these changes will create. They are generally an oversimplication of each particular issue. Cardinal is willing to provide more exact scientific evidence of each statement that has been made in this correspondence. We have worked with SCAQMD staff and are available to assist further in any reasonable attempt to achieve a successful compromise. Cardinal has refrained from comments regarding prohibition of sale in order to emphasize our concern for those issues which will directly affect applicators within SCAQMD. These facilities provide the much needed jobs we all here so much about, but which too little effort is devoted to maintaining. Please consider the dramatic effect these proposed changes will have on the users of coatings in SCAQMD and take the opportunity to provide them with a more equal playing field.

Sincerely,

Lawrence C. Felix
Director of Corporate Affairs

Jonathan Mitchinson
Technical Director Liquid Products

3-1: The added restrictions are intended to provide protection to residents and workers in the surrounding community and ensure that the facility is regularly inspected. While there will be additional costs to file or modify permits, those costs are one-time costs. In addition, the filing provision was included as a very low cost option for T-BAc and DMC users who stay below the respective thresholds. See also Response to Comment 2-2.

3-2: See Response to Comment 1-9.

3-3: See Response to Comment 1-14

Good afternoon, Mike. Thank you for keeping me in the Rule 1107 loop. However, I must say that I'm disappointed in the proposal to prohibit the use of Group II exempt solvents in metal parts strippers. In lab testing, I personally found dimethyl carbonate and especially TBAc to be fairly ineffective in reasonable concentrations—those amounts which don't significantly raise the raw material cost of a finished good—when compared to methylene chloride on enamel and powder-coated finishes. Moreover, I believer there are no domestic US manufacturers of dimethyl carbonate, which could make regular supply somewhat tenuous.

4-1

I understand there are health considerations with methylene chloride, but, like most solvents, it is reasonably safe when handled responsibly. Furthermore, the link between methylene chloride and increased incidence of cancer in mice is not thought to be relevant to humans. If the SCAQMD proceeds with banning the Group IIs in this product class, I believe it will be the only regulation of its kind in the US. As such—and I realize this is probably of no consequence to the District—it would be senseless for us to reformulate (or introduce a new) product and we would be forced to prohibit the sale of our product into the District.

I would like to formally request that the rule makers reconsider the allowance of Group IIs, specifically methylene chloride, for use in metal parts strippers. I've attached a product safety assessment from Dow Chemical for your review. I hope you will find it helpful. Please call or reply with any questions or comments you may have. Thanks again for your time and consideration.

4-2

Best regards,

Dan Nowlan
Chemist
Berryman Products, Inc.
(817) 640-2376, ext. 147

4-1: The proposed exempted solvents, T-BAc and DMC were not expected to be utilized as replacements for methylene chloride in strippers. Instead it is thought that inorganic and non-solvent alternatives such as caustic, acidic, heat, abrasion and other technologies would be more suitable alternatives to methylene chloride because of the metal substrate from which the coating would be removed.

4-2: Methylene chloride and other Group II exempt compounds have been classified as such because of evidence that they pose an undue toxicity risk or are ozone depleting substances. The U.S. EPA considers methylene chloride to be a probable human carcinogen. The International Agency for Research on Cancer has determined that there is sufficient evidence that in experimental animals for the carcinogenicity of methylene chloride and is possibly carcinogenic to humans. Until convincing evidence is provided to the contrary, the District intends to continue to minimize the toxicity risk as much as is technologically feasible.

RADTECH INTERNATIONAL NORTH AMERICA

July 5, 2011

Mr. Mike Morris
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765

Re: Public comments to Proposed Amended Rule 1107—Metal Coatings

Dear Mike:

RadTech International is pleased to comment on the proposed amendments to Rule 1107. RadTech supports the district's efforts to improve air quality in the Basin without sacrificing a healthy business climate and believes that the implementation of UV/EB technology can accomplish both goals.

We commend district staff for providing incentives to companies who reduce their emissions, in the form of reduced recordkeeping for supercompliant materials and urge the district to base the 4 ton per year threshold in exemption (f)(8) on the usage of supercompliant materials. Many facilities have a combination of supercompliant and solvent borne processes. Thus, including the emissions of the solvent borne processes for purposes of determining exemption eligibility will unfairly penalize the facility's supercompliant operation and have the unintended consequence of excluding some facilities who may be in the process of converting the entire facility to supercompliant processes, from enjoying the benefits of an exemption for the supercompliant portion of their operations.

5-1

The issue of appropriate test methodology remains of concern to our industry. While ASTM D5403 is allowed for non-thin film UV/EB materials, EPA Method 24 is silent about suitable methods for thin film materials. Our industry is working with ASTM to obtain endorsement of the RadTech test method for thin film UV/EB materials. However, the process may not be finalized prior to the adoption of Rule 1107. Thus, there will be no clear guidance to endusers and suppliers as to the type of test the district would allow.

RadTech embarked on the effort to develop a method for thin film materials at the request of district staff and the district board in 2007. The association invested time and resources to collaborate with the district's request. Since the district only uses ASTM approval as guidance and it is free to approve a test method; we urge your consideration of the RadTech proposed method for thin film UV/EB materials.

5-2

RadTech also requests that Section (e)(5) of the rule be replaced with language similar to that of Rule 1144 subdivision (h) [attached for quick reference]. This change would clarify test method requirements for businesses and allay fears that the district may take adverse enforcement action due to inconsistencies of test methods.

5-3

Additionally, we suggest that language in the "UV Coatings" portion of the staff report be modified from:
"In general, the cost of UV coatings and the infrastructure to cure the coatings is more expensive than conventional coating but become more cost competitive for high speed and high volume applications."

To:

"In general, the cost of UV coatings on a per gallon basis is more expensive than conventional coatings but a greater surface area can be coated since the coatings are essentially 100% solids. There is also infrastructure cost to cure the coatings. But the technology becomes more cost competitive for high speed and high volume applications. "

5-4

We appreciate your attention to these issues and look forward to a productive rulemaking effort.

Sincerely

Rita M. Loof
Director, Environmental Affairs

5-1: We hope to further incentivize the use of Super-Compliant coatings as you suggest. However, Rule 109 requires daily record keeping for all coating operations at facilities that emit more than four tons per year of VOC. Until Rule 109 is modified, Proposed Rule 1107 is limited in the record-keeping flexibility that can be provided for Super-Compliant coatings.

5-2: The District is encouraged to see ASTM approval of Method 7767 and believes it is a suitable method for coating manufacturers to determine the VOC content of Thin Film UV coatings, and thus the proposed rule includes a reference for the test method in the definition section. Because the method requires known UV interferences to be removed prior to testing, its use for field compliance determination is limited. The District consulted U.S. EPA who concurred. Staff will continue to work with interested parties to see if a procedure can be developed which will allow its use as a field compliance method. However, until the procedure is developed, Method 24 will remain the VOC content determination method. This should not pose a problem for Rule 1107 compliance as Thin Film UV coatings will undoubtedly meet the proposed limits when tested using Method 24.

5-3: The language stating that where there are multiple test methods, any violation by one of the methods constitutes a violation of the rule is standard language included in other coating rules such as Rule 1113 – Architectural Coatings, Rule 1124 – Aerospace Assembly and Component Manufacturing Operations, and Rule 1151 – Motor Vehicle and Mobile Equipment Non-Assembly Line Coating Operations. The language is intended to avoid having to test under all possible methods in order to determine compliance. In the case of Rule 1107, particularly for UV coatings, there is little chance that the different test methods will result in a different compliance outcome for the VOC content limits contained in the rule.

5-4: The suggested language has been included in the staff report.

Kowa American Corp.

Telephone
(212) 303-7800

Importers and Exporters
55 EAST 59th STREET
19th FLOOR
NEW YORK, NY 10022

Facsimile
(212) 310-0101

June 20, 2011

Mr. Mike Morris
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

RE: Comments on proposed amendment to rule 1107, coating of metal parts & products

Dear Mr. Morris,

Kowa American wholeheartedly endorses the inclusion of Dimethyl Carbonate (DMC) in the upcoming rule as a VOC exempt solvent. DMC has proven to be a very useful solvent in coatings applications and would greatly assist users in the SCAQMD in meeting the more stringent VOC limits this rule is proposing.

Although Kowa American would like to see the use of DMC for metal coating applications without permit restrictions as the rest of the country basically has today, we realize that SCAQMD has some concerns about the unregulated use of DMC possibly having worker exposure concerns or fenceline exposure concerns to neighboring facilities. Because of SCAQMD's concerns, we would propose that SCAQMD continue with permit requirement for using Dimethyl Carbonate in this rule, however we feel limiting DMC's use to only spray booth applications is unnecessarily restrictive. We feel the intent of the rule should recommend spray booth use where it is use is practical and that permit requestors be allowed to show in the absence of a spray booth that they can satisfactorily limit worker exposure and fenceline exposure to levels to similar levels that would be encountered in a spray booth environment. The professionals within the SCAQMD reviewing permits will have to investigate each permit application individually and can certainly be effective arbiters of exposure risks for the workers and neighboring facilities. Many facilities that may use DMC in SCAQMD are so large or located far enough away from neighboring facilities that fenceline exposure would not be a concern, and the requirement on the use of personal protective respiratory equipment would satisfactorily address worker exposure.

6-1

We know that some people in your district are fearful of users of DMC not wearing protective equipment, but having these protective equipment requirements in each permit application and approval puts the onus on the permit holders to comply these restrictions. The potential for fines or removal of the permit would insure that the permit operating conditions are strictly adhered to by permit holders. As stated in your proposed rule the "permit application and approval" is a tool for specialized risk assessment, which can be implemented by the permit requestor and SCAQMD without any additional restrictions incorporated into the formal rule.

6-2

We hope that SCAQMD can revise your proposed rule accordingly to not include use in a spray booth as a formal requirement for obtaining a permit, and allow SCAQMD the flexibility of assessing each permit application on its individual and unique conditions of proposed use and protective measures.

Sincerely,

Mark K. Smith

Sales Manager

6-1: The limited exemption of T-BAc and DMC has been expanded beyond spray booths to include permitted enclosures. However, open spray would change the modeling scenarios and would not remove the vapors from the workplace area which is critical to limiting exposure to workers within the facility. The requirement to apply T-BAc and DMC in an appropriately designed and permitted enclosure will minimize exposure in the workplace. The District is utilizing the acute reference exposure limit and chronic reference exposure limit provided by OEHHA for determining risks to nearby residents and offsite workers. These interim values represent the best available science from OEHHA, the state agency with the expertise to make these determinations. The estimates indicate that some facilities using a large volume of DMC may pose an unacceptably high risk to offsite workers. Thresholds have been determined where the volume of DMC used would be below a cancer risk of 10 in one million or increasing the hazard risk by 1.0 to nearby receptors, including offsite workers. For those facilities using quantities lower than the threshold, a low-cost filing option is available. For those facilities wishing to use quantities above the threshold, a permit modification is required. The proposed permit review process does account for site specific fenceline exposure parameters which allows additional flexibility when conditions warrant.

6-2: The inclusion of the permit process allows a health risk assessment to be conducted to ensure that the risks to nearby residents and offsite workers are minimized. Requiring the use of T-BAc and DMC in permitted equipment ensures that these operations are conducted in regularly inspected facilities. The requirement of use in a permitted spray booth or control enclosure removes the vapors from the workplace area and is consistent with the risk model assumptions used to determine offsite exposures.

TNEMEC COMPANY INCORPORATED
123 WEST 23RD AVENUE NORTH KANSAS CITY, MO 64116-3094 TEL: 816-474-3400 FAX: 816-326-4374 WWW.TNEMEC.COM

June 30, 2011

Mike Morris
Air Quality Specialist
Planning, Rule Development and Area Sources
South Coast Air Quality Management District
21865 Copley Drive
Diamond Barr, CA 91765

Re: June 15, 2011 Rule 1107 Public Workshop Comments

Dear Mike,

Thank you for the opportunity to submit comments on the proposed amended rule 1113. Unfortunately I was unable to hear anything on the public workshop conference call due to technical issues. Tnemec Company recognizes the need for environmental stewardship and VOC reductions in California. We support VOC limits for architectural and industrial maintenance coatings based on technically feasible field proven coatings technology. We offer the following comments regarding the proposed amended Rule 1107:

Prohibition of Sale

Tnemec Company has concerns about inclusion of the prohibition of sale language. There are issues with knowing exactly how shop coating facilities are using the coatings as they may be used for multiple applications. Many times coating shops may order coatings for shop stock without knowledge of the specific job and hence the specific category for which the coating is intended. In this situation it the manufacturer cannot determine compliance at the time of sale. Rule 1107 is comprised of professional applicators that are also required by state and local authorities to report on their emissions which require a degree of awareness and expertise on their behalf in dealing with regulations. The inclusion of the prohibition of sale language places an unreasonable burden and unwarranted liability on coating manufacturers. In this case the burden of compliance should rest only with the shop coating facility. The seller should not be held liable for actions of the customer.

7-1

Exemption of TBAc and DMC

Tnemec requests the exemption of tertiary butyl acetate, TBAc, and dimethyl carbonate, DMC. TBAc and DMC have been exempted in essentially every other state in the US. We need to have flexibility in our choice of solvents to develop coatings with lower VOC. In addition the exemption of TBAc by the SCAQMD for Industrial

7-2

maintenance coatings in Rule 1113 and automotive refinish coatings in Rule 1151 sets a precedent for the exemption in other rules where the coatings are being applied by professional applicators and/or in controlled environments.

7-2 (Cont.)

The risk assessment and issues related to the assessment assumptions need to be resolved prior to the rule adoption. Industry has requested the risk assessment from the first working group meeting and the rule adoption should not proceed without a risk assessment based on reasonable modeling assumptions.

7-3

Worker exposure and health falls under the jurisdiction of the California Division of Occupational Safety and Health which establishes regulations to control worker exposure to solvents in a number of different ways including PPE and engineering controls. Since coating shops are located at a permanent address the enforcement of health and safety standards are well within the reach of the appropriate authorities. We recognize the need to protect worker health when using chemical substances and fully support these efforts by the authorities who are responsible for these efforts. It is beyond the scope of Rule 1107 to regulate worker health effects of chemical substances.

7-4

Thank you for your consideration of these comments. Please don't hesitate to contact me if you have any questions or if you need any additional information.

Warm regards,

Tnemec Co. Inc.

Kyle Frakes
Manager Environmental, Health, and Safety

CC: Naveen Berry, SCAQMD
Gary Jones

7-1: See Response to Comment 1-8.

7-2: See Response to Comments 1-19, 2-2, and 3-1.

7-3: The risk from the use of T-BAc and DMC are modeled using the Rule 1401 and Rule 212 risk assessment procedures and OEHHA's inhalation cancer potency, acute reference exposure limit and chronic reference exposure limit. The threshold was established at quantities where the use would create a risk less than 10 in one million or increase the hazard risk less than 1.0 to nearby receptors. This procedure ensures that the use of T-BAc and DMC will not pose an undue risk to sensitive receptors or offsite workers.

7-4: See Response to Comment 6-2.

Hi,

The Metropolitan Water District of Southern California (Metropolitan) appreciates the opportunity to participate in the rulemaking process to amend the South Coast Air Quality Management District (SCAQMD) Rule 1107, Coating of Metal Parts and Products. Metropolitan distributes wholesale water obtained from the Colorado River and Northern California through 26 member agencies in a 5,200 square mile service area covering six counties and approximately 19 million people. To maintain Metropolitan's extensive system of water conveyances, reservoirs, and water treatment plants, our coating operations are performed both in the field and at shop type environments located at our various facilities. The latter operations will be affected by the proposed changes to Rule 1107.

Metropolitan has an on-going effort to reduce VOC emissions from our coating operations and to utilize the lowest VOC coatings available that are shown to perform to our standards. As Rule 1107 moves towards the lower 100 g/L VOC coatings, it is important that the compliant application methods be compatible with these coatings to support product performance. Due to their physical properties (e.g., high viscosity, need for higher temperatures to apply), the traditional HVLP spray equipment may not be adequate for proper application of these lower VOC coatings. Table 1 provides a summary of example products with their viscosity and VOC information.

The need for proper application equipment is recognized in the proposed language appearing in the latest June 10, 2011 version of PAR 1107, (c) Requirements (1) Operating Equipment, (G). However, given the physical properties of some of the candidate coatings, we have additional suggestions for the provision as indicated in red below:

"(c) Requirements

(1) Operating Equipment

A person shall not apply VOC-containing coatings to metal parts and products subject to the provisions of this rule unless the coating is applied with equipment operated according to the equipment manufacturer specifications, and by the use of one of the following methods:

(A) Electrostatic application, or

(B) Flow coat, or

(C) Dip coat, or

(D) Roll coat, or

(E) High-Volume, Low-Pressure (HVLP) Spray, or

(F) Hand Application Methods, or

8-1

(G) Airless, air-assisted airless, air-assisted HVLP spray, heated plural component pump, or cartridge guns may also be used for metal coatings that meet the following: ~~with a viscosity of 15,000 centipoise or greater, as applied, or~~

1. A viscosity of 10,000 centipoise or greater at ambient temperature (21 ° C); or

2. A viscosity of less than 10,000 centipoise at ambient temperature (21 ° C), AND the coating is a Super-Compliant material

(~~G~~H) Such other coating application methods as are demonstrated to the Executive Officer to be capable of achieving a transfer efficiency equivalent or better to the method listed in subparagraph (c)(1)(E) or new application method developed for future 100 g/l or less VOC formulations, and for which written approval of the Executive Officer has been obtained."

8-1 (Cont.)

Additionally we are gathering more information regarding specific products such as zinc primers that may fall below the 10,000 centipoise viscosity threshold, that are less than 100 g/l VOC but are not Super Compliant materials, that cannot be applied by HVLP. These types of products also need to be adequately addressed in the rule. We would like to pursue this with you further once we obtain the pertinent information from the manufacturers.

Thank you for your consideration of Metropolitan's comments. We look forward to working with you further to craft the appropriate rule language to allow compliant application methods for these ultra low solids coatings.

Sincerely,

Carol Kaufman

Air Quality Program Manager

Metropolitan Water District of Southern California

700 North Alameda Street

8-1: See Response to Comment 1-17.

Mr. Mike Morris
Office of Planning, Rule Development and Area Sources
South Coast Air Quality Management District (SCAQMD)
21865 Copley Drive
Diamond Bar, CA 91765

Mr. Mike Morris.

Rush Painting respectfully submits the following comments regarding the proposed changes to South Coast Air Quality Management District SCAQMD rule 1107.

There are certain provisions of the proposed changes that provide minimal reduction of emissions, yet impose extreme hardship on the applicators of these coatings. These changes will result in lost work and a loss of jobs in SCAQMD.

In particular, the proposed limits for Military Specification and Primer are unreasonably low. These coatings are functional and must conform to certain performance standards. If replacements are made available they will be expensive and difficult to use. A limit of 2.3 pounds per gallon is far more reasonable. This would allow SCAQMD applicators to achieve some reductions without imposing a competitive advantage to those outside the district.

9-1

The same thing is true for 1107 b 18. To define an Extreme High Gloss coating as only those above ninety degrees, when the standard everywhere else in the world is seventy five degrees, is unfair, will not achieve significant reductions, and will drive work out of SCAQMD resulting in greater job loss. SCAQMD is requiring a car paint standard for general metal finishing in order to achieve a slight reduction in emissions. The standard should not be raised above eighty degrees for general metal finishing.

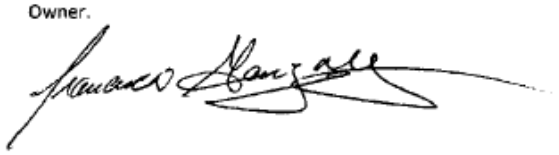
9-2

Finally, the requirements of 1107 c 3 are extremely unfair. The entire country is allowed to use this solvent. USEPA delisted it almost ten years ago. No adverse effects have been reported in areas where it is in use. To impose a change of permit conditions for use in SCAQMD creates an inequity in favor of applicators outside the district. The cost of change will be in excess of $5,000.00 per device. Is your intention to force paint applicators out of the SCAQMD? This new requirement will certainly help you if this is your goal. Why is the SCAQMD overriding the USEPA? Why are you allowing some people to use these solvents if they pay you more money, but not those who perhaps cannot afford the fee? Your shortsighted approach to this issue is designed to make you look good to those who oppose the use of these solvents and to raise revenue for the district. The result to those that must conform to these regulations is increased costs and completive disadvantage. Every political representative talks about saving jobs and creating opportunities, however when it comes to doing something to make this happen, they are lost. You have a chance to slow the trend of job loss and unfair competitive advantage. Please seriously consider what you are doing and the long term effects this will have on our community.

9-3

Sincerely,

Francisco Gonzalez
Owner.



9-1: See Response to Comment 1-9.

9-2: See Response to Comment 1-14.

9-3: See Response to Comments 1-19, 2-2 and 3-1.

June 17, 2011

Michael Morris
SCAQMD – PRDAS
21865 Copley Drive
Diamond Bar, California 91765

RE: Rule 1107

Dear Mike:

We would like to inform you that we are in full support of the proposed amendment of Rule 1107 dated 6/10/2011.

Currently, we sell lower than 100 gms/l VOC coatings in many categories, including:

- General
- Primer
- High Gloss
- Extreme Performance
- Pre-fabricated Architectural
- Touch-up
- Repair

Attached, please see Product Profile sheets and labels for some of the products listed above. Stated on the labels, you can see that most of these products are at a lower than 50 gms/l. material VOC.

We strongly feel that the effective date of 1/1/2015 for the lowest VOC limits is too generous and would support an earlier implementation date.

10-1

Thank you.

Regards,

Joseph Tashjian
Vice President/General Manager
Ellis Paint Company

JT:ab

Enclosed: 8 PPs, 8 Labels

Cc: Naveen Berry
SCAQMD - PRDAS

ELLIS PAINT COMPANY
3150 East Pico Blvd.
Los Angeles, CA 90023
www.ellispaint.com, Main Phone: (323) 261 8114, Fax: (323) 264 2579

10-1: The coatings categories and their VOC comments clearly comply with the proposed VOC limits, and indeed exceed the proposal by including numerous products with VOC content of less than 50 g/l. Staff has included these in Appendix A as examples of coatings that will meet the proposed limits. The physical properties, coating chemistry and coating properties are listed. However, staff is proposing extended compliance dates (2015 and 2018) for other manufacturers to reformulate or develop compliant products, as well as for metal coaters to incorporate those new coatings into their varied processes.

Institute for Research and Technical Assistance
a nonprofit organization

IRTA

June 28

Mike Morris
South Coast Air Quality
Management District
21865 Copley Drive
Diamond Bar, CA 91765

Dear Mr. Morris:

I am writing with comments on the proposed amendments to SCAQMD Rule 1107 "Coating of Metal Parts and Products." I am Director of the Institute for Research and Technical Assistance (IRTA), a nonprofit technical environmental organization. IRTA's mission is to identify, develop, test and demonstrate safer alternatives in a range of different industrial and consumer product applications.

Most of my comments on the rule focus on the proposal to exempt two chemicals, tert-butyl acetate (TBAC) and dimethyl carbonate (DMC), from VOC regulations. I am opposed to any such exemption no matter how limited. When chemicals are exempted in the South Coast Basin, suppliers believe the District is telling them to use the chemicals in an unrestrained way and this strongly promotes their use. Suppliers have told me, when chemicals are exempt, that they assume the District not only wants them to use the chemicals but that they are safe. This is clearly not the case with TBAC and DMC. It is likely that most, if not all, formulators will use one or both of the chemicals in their coating formulations. In addition, the two chemicals will also be sold as thinners and will be used for thinning and cleanup.

11-1

TBAC forms a metabolite, tert-butyl alcohol, that is a carcinogen. DMC animal toxicity tests have shown the chemical causes developmental toxicity. DMC forms methanol as a metabolite. EPA has released a draft report indicating that methanol is a carcinogen and a developmental toxin. In the preliminary risk assessment performed for various sizes of facility, the District did not evaluate either the cancer or developmental toxicity endpoint for DMC. The District performed calculations for the two chemicals based on the risk they pose to the surrounding community and an offsite worker but completely ignored the risk to the worker applying the paint or using the solvent for cleanup or thinning.

11-2

The restrictions the District is proposing for the exemptions are not adequate. The District would require the coating operations to take place in a spray booth and would require companies to obtain or modify a permit if they intended to use formulations containing TBAC or DMC. Many companies will ignore these requirements and use the chemicals in their coatings deliberately or inadvertently. Numerous facilities do not apply coatings in spray booths and do not have permits with the District. The District has no way to enforce the proposed provisions in the rule because they do not know the identity of these facilities. Worker exposure in these instances will be very high. Companies commonly use the same solvents for thinning and cleanup as the solvents in their coatings. Both chemicals will be used for thinning and cleanup outside spray booths where exposure is likely to be very high.

11-3

8579 Skyline Drive
Los Angeles, CA 90046
Phone (323) 656-1121 Fax (323) 656-1122

IRTA provided a calculation of worker exposure performed for TBAC by the Hazard Evaluation System & Information Service (HESIS) to the District. Using the OEHHA's cancer unit risk factor and assuming the current PEL for TBAC of 200 ppm, HESIS calculated a lifetime cancer risk to the worker ranging from 74,000 to 380,000 in a million, depending on the assumptions. This is obviously very high and is an unacceptable risk.

11-4

The District's mission is to protect public health. The District, in its policies and regulations, cannot protect the public health of the community surrounding facilities and the offsite worker and not protect the public health of the worker actually working with the material. This does not make sense.

In summary then, IRTA opposes the exemption of TBAC and DMC from VOC regulations in Rule 1107. It is not good public policy to promote the use of hazardous chemicals in situations where worker exposure will be very high.

I appreciate the opportunity to comment. If you have questions about my comments or would like to discuss issues raised here, please call me at (323) 656-1121.

Sincerely,

Katy Wolf, Ph.D.
Director

2

11-1: The proposed rule provides a limited use exemption that will allow the use of T-BAc and DMC in permitted equipment at facilities that are regularly inspected. This conditional approval in no way implies or promotes unrestrained use. While the commenter highlights the possibility that T-BAc and DMC may be used as thinners, the use of these two solvents for clean-up would violate Rule 1171 and would therefore be in violation of District rules.

11-2: The District recognizes the potential risks of these two solvents and has provided a limited use exemption that includes provisions to protect the surrounding community. The purpose of the prohibition of sale in the proposed rule is to further restrict its use to properly permitted facilities. The use in a permitted spray booth or control enclosure will ensure that coating material containing these two solvents are applied in properly designed enclosures that minimize exposure in the workplace and that those sites are regularly inspected to ensure that the amount of vapors in the workplace are limited. However, the District cannot directly regulate worker safety measures, as those are overseen by other state and local agencies, including CAL-OSHA. The District will evaluate all environmental impacts in its environmental analysis as required by the California Environmental Quality Act. Also, see Responses to Comments 1-19, 2-2, 3-1, 6-1, and 6-2.

11-3: The limited exemption does not allow the use of T-BAc or DMC in facilities that do not file or modify permits. This notification, in conjunction with the prohibition of sale, will deter manufacturers and distributors from selling T-BAc and DMC containing coatings to unauthorized users and provide an enforcement mechanism to prevent unauthorized use. Staff believes that these provisions will limit the inappropriate use of T-BAc and DMC.

11-4: As noted earlier, while the requirement to use T-BAc and DMC in permitted spray booths or control enclosures may limit the amount of vapors in the workplace, the District cannot directly regulate worker safety measures as noted by other commenters.

SHERWIN-WILLIAMS.

Environmental, Occupational Health & Regulatory Services
101 Prospect Avenue NW
Cleveland, Ohio 44115-1075
Facsimile: (216) 566-2730

July 8, 2011

Mr. Mike Morris
Office of Planning, Rule Development, and Area Sources
South Coast Air Quality Management District (SCAQMD)
21865 Copley Drive
Diamond Bar, CA 91765

RE: SCAQMD July 15, 2011 Workshop of PAR 1107 – Coating of Metal Parts and Products

Dear Mr. Morris,

The Sherwin-Williams Company is one of largest paint manufacturers in the world, with sales of almost $8 billion annually. In addition to our well known architectural coatings, we provide industrial coatings to a significant number of factories, plants, and shops applying coatings to metal parts. Our products are distributed directly to these customers, as well as through a large network of company owned stores, of which over 30 are located within the District. In addition, we have production facilities throughout the world, including the State of California.

Applicability to manufacture, sale, distribution, formulation, etc.
The Sherwin-Williams Company has serious reservations about the changes to Rule 1107 that are being considered by the District. As we discussed at every Work Group meeting and at the Workshop on June 15, 2011, we are particularly concerned with the introduction of prohibitions of sale, distribution and manufacture of such coatings unless they comply with the specified limits. Our concern encompasses multiple issues:

1. **Such prohibitions place a liability of the manufacturer [distributor and seller] for actions outside of their control**. There is no way for these entities to know if the end user will be using the products in a manner consistent with this rule. As a manufacturer or as a distributor or as a seller, we do not know if the purchaser has add on controls, or whether such controls are operational and or whether such controls meet the District requirements. As a manufacturer or as a distributor or as a seller, we do not know if the purchaser is applying the coating for touch up or repair. As a manufacturer or as a distributor or as a seller, we do not know if the purchaser will be applying a tBAC containing coating within a spray booth. As a manufacturer or distributor or as a as a seller, we do not know if the purchaser will use the product in a manner consistent with

12-1

1 | Page

the requirements of Extreme Performance. There are a multitude of specific exemptions and exceptions throughout the rule that neither the manufacturer nor the distributor nor the seller can know whether the purchaser will satisfy. **The District can not hold the manufacturer, distributor, and seller responsible for actions outside of their control.**

2. Products that coatings manufacturers formulate, label, recommend and sell for one purpose (e.g., architectural coatings) may be used by a purchaser for other applications (e.g., shop application to metal parts and products) - coatings manufacturers should not be held responsible for this practice. **The District can not hold the manufacturer, distributor, and seller responsible for actions outside of their control.**

3. A coating that is to be used on metal does not automatically mean that Rule 1107 applies to that operation. For example, use of a coating on metal does NOT define with which rule the coating must comply: in addition to Rule 1107, South Coast has the following rules which apply to coating of metal in various differing operations:

    a. Rule 1106 – Marine Coatings, including drilling rigs – with a limit of 340 g/l for an air dried general coatings

    b. Rule 1106.1 – Coatings for Pleasure Craft, including aluminum hulls – with a limit of 560 g/l for antifoulants for aluminum hulls

    c. Rule 1115 – Motor Vehicle Assembly Line Operations

    d. RULE 1124 -- AEROSPACE ASSEMBLY AND COMPONENT MANUFACTURING OPERATIONS – with a limit of 350 g/l for general primers and 420 g/l for topcoats

    e. RULE 1125 -- METAL CONTAINER, CLOSURE, AND COIL COATING OPERATIONS – with limits for can coatings equal or above 225 g/l, for drum coatings at or above 350 g/l, and for coil coatings at or above 200 g/l.

    f. RULE 1151 -- MOTOR VEHICLE AND MOBILE EQUIPMENT NONASSEMBLY LINE COATING OPERATIONS – with coating limits at or above 250 g/l

    Thus, it is not obvious what rule is applicable to the purchase of a "metal" coating. Again, the prohibition of sale, distribution, and manufacture of "noncompliant" "metal" coatings, places responsibility for the actions of the end user on the manufacturer, distributor, and seller. **The District can not hold the manufacturer, distributor, and seller responsible for actions outside of their control.**

4. We have a large number of industrial surface coatings that are sold for more than one substrate. For example, many of our polyurethane industrial surface coatings can be used

12-1 (Cont.)

on metal, wood, plastic, aluminum, polystyrene, and polycarbonate. There are separate surface coating rules for each of these (plus multiple rules for some, such as two rules for wood). It would be impossible for the sales person to know the substrate and use of each product sold. In addition, many surface coating operations are "job" shops which will apply coatings to more than one substrate. Thus, even if the salesperson determined the specific use details of a specific transaction, once purchased the coating could be used on other substrates. Thus, neither the "store" nor the manufacturer nor the distributor will be aware of such changes. **Again, the critical issue is the lack of control: the District cannot hold the manufacturer or "seller" or "distributor" responsible for the actions of the customer.**

5. If adopted, we would plan to implement compliance through a signature program whereby we would provide customers with a statement, such as "The Sherwin-Williams Company assumes customer is complying with all applicable regulations to the sale and use of this / these products." Such an exercise does not seem to produce any benefit to the District.

6. Most of the definitions in the rule are geared to the application of the coating, neither to the sale of the coating nor to the recommendations of the manufacturer. For example, the rule states a "primer is a coating applied……" A "baked coating is a coating that is cured at ……" A camouflage coating is a coating used to……." An "extreme performance coating is a coating ….." All of these phrases indicate that until the use of the coating, it can not meet the definition. Thus, no coating that we manufacture would be considered a primer, or a baked coating, or a camouflage coating or etc., until the end user applied the coating to meet the prescribed definition. **Not only can we not categorize our products, but the definition would depend on actions taken by the user. Again, this would mean that we would be liable for actions not under our control.**

12-1 (Cont.)

7. As proposed the Prohibition of Sale would go into effect immediately which would not allow sufficient time for companies to determine whether any of their ongoing sales were problematic or not. If the District continues to pursue such a prohibition, we recommend an effective date of January 1, 2014.

12-2

8. In addition, there is no sell through provision. There is insufficient time for us to determine the potential category within Rule 1107 and the appropriate limit for all of the industrial coatings which we manufacture.

12-3

Additional Issues with PAR 1107

Applicability:
Since 1979 the rule has been applicable to use of coatings on metal parts and products. The entire rule has been written with this context in mind. Even proposed amendments are still formatted with this context in mind. As discussed above, we believe this rule should not apply to

12-4

the manufacture, distribution, sale, offering for sale, supplying, or etc. of coatings that may be used in metal parts operations. We recommend Section (a) be revised to the following:

> The purpose of Rule 1107 is to reduce volatile organic compound (VOC) emissions from the coating of metal parts and products. This rule applies to all persons who use metal coatings or perform metal stripping 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.

12-4 (Cont.)

Definitions

The following comments apply to the proposed definitions:

1. The change in the definition for Extreme High Gloss Coating from a minimum gloss of 75 to a gloss of 95 when measured at 60° should not take effect until the final limit for high gloss takes effect. As proposed, operations using an Extreme High Gloss Coating would have to instantly meet a General Coating category since the new category for "High gloss" does not have a limit in the current table.

12-5

2. Section (C) of the definition for EXTREME-PERFORMANCE COATING does not make sense. As written it states that the abrasion gets tested by an ASTM method….obviously, this needs to be revised.

12-6

Limits

We find the proposed limits to be extremely aggressive. In the architectural coating industry, customers have no choice about compliance: if the architectural structure is located with the District, the coatings applied to it must be in compliance with District rules. However, in the coating of metal parts, customers have a wide range of opportunities. There is no requirement that the coating operation be performed within the District. The part can have coatings applied outside of the District, even without leaving the State of CA – as well as outside of the State or the country. This competition for the business makes it imperative upon staff to be sure that compliance will not cost the District all of the remaining jobs in this field. If compliant coatings do not perform up to standard – if the appearance is marred – if they do not dry properly – there is a high risk of the metal part operations moving out of the District. To have current air dried limits of 275 g/l go to 100 g/l by 1/1/2015, and the current baked limits of 340 g/l also to go to 100 g/l by 1/1/2015 is more than is extremely ambitious.

12-7

In retrospect it appears that the District provided more time for the implementation of the ultra low limits in the architectural coating rule! For the re-formulation of primers from a limit of 350 g/l to a limit of 100 g/l, the District provided over 6 years! Likewise, for industrial maintenance coatings the District provided over 6 years for reformulation.

12-8

We recommend an effective date for the new, very low limits to be no sooner than 1/1/2020. This will provide adequate time for the coatings manufacturers to develop high performing alternatives and for the users to gradually switch to the new technologies.

12-8 (Cont.)

In addition to the significant issue of the timing of the limit changes, we also oppose requiring two limit changes in a 3+ year period. It is expensive for a coating operation to change the product which they use. This expense is not included in any District calculations. In addition, reformulation by the manufacturer to meet the requirements of the customers, and to match the existing colors, is also a significant expense. This cost is also not included in the District cost calculations. We recommend only one set of limits be adopted with an effective date of 1/1/2020.

12-9

There is a new category and definition for high gloss – however, it needs a limit in the current table. Since it is replacing the current Extreme High Gloss Coating the current limit should be 340 g/l.

12-10

Section (d) – General Prohibitions

As we discussed at length above, we strongly recommend the prohibitions be limited to the application of coatings to metal parts and products in shop operations, and to not include the sale, distribution, manufacture, formulation, repackaging, or etc.

However, if the District continues to propose including such operations in the rule prohibitions, then the entire section (d) must be revised to include all of the terms…for example, sections (d)(3), (d)(4), and (d)(5) include provisions when the prohibition does not apply. However, these do not include all of the covered concepts – thus, section (d) (3) states the prohibition of specification and sale does not apply …" but this section does not include the distribution, manufacture, formulation, repackaging – thus, apparently, one could sell it, but not make it….or formulate it….

Throughout sections (d) (3), (d) (4), and (d) (5) these other concepts need to be included.

12-11

In addition, we recommend the addition of the following:
(7) Section (d) (2) will not apply to the manufacture, distribution, sale, formulation, or repackaging of coatings to a purchaser agreeing in writing to comply with all applicable District rules.

12-12

And we recommend the following revisions in section (d)

(d)(2)To include other section (d) subsections as exceptions as follows:

Except as provided in subdivision (f), (d)(3), (d)(4), (d)(5), and (d)(7) a person shall not apply, sell, distribute or offer for sale, manufacture, formulate, or repackage any metal coatings for the use in the SCAQMD that, at the time of sale, exceeds the applicable VOC content specified in paragraph (c)(2).

12-13

5 | Page

However, keep in mind that the user is regulated NOT by the VOC at the time of sale, but rather the VOC at the time of application. This provision will need to be revised still further to account for that.

12-13 (Cont.)

As proposed, (d)(5) would require data sheets be supplied with each sale and with each coating container. Most coatings sold for metal part operations use the same coatings over and over again. To be required to supply them with the same Product Data Sheet each time is a waste of natural resources and of **no environmental benefit**. It should be sufficient that the Product Data Sheet contains the needed information. We recommend the following revision:

The prohibition of sale shall not apply to metal coatings that clearly and correctly indicate on the container or ~~are supplied with the coating container~~ on the technical data sheet, that the coatings are intended for use on substrates other than metal, provided that the coating complies with the VOC limits in other Regulation XI rules. ~~This requirement may be satisfied by furnishing a data sheet or by affixing a sticker or label which sets forth this information on the container~~.

12-14

Section (d)(6) needs to include a future effective date. Otherwise, this provision will become instantly effective, with no time to determine what products are impacted and whether any of those products are sold in the South Coast for use on metal parts.

12-15

Exemptions

Section (f) needs to be revised to include the prohibitions included under (d) (1) and (d) (2) as also exempt. Specifically, we recommend the following:

(1) The provisions of paragraphs (c)(1), ~~and~~ (c)(2), and (d) (1) of this rule shall not apply to:
(A) Stencil coatings;
(B) Safety-indicating coatings;
(C) Magnetic data storage disk coatings;
(D) Solid-film lubricants;
(E) Electric-insulating and thermal-conducting coatings.

(2) The provisions of paragraph (c)(1) of this rule shall not apply to the application of touch-up coatings, repair coatings, and textured finishes.

(3) The provisions of paragraph (d)(1) of this rule shall not apply to the sale, manufacture, distribution, formulation, or repackaging of touch-up coatings, repair coatings, and textured finishes

(4) The provisions of paragraphs (c) (1) and (d)(1) of this rule do not apply to the sale, manufacture, distribution, formulation, or repackaging or use of coatings and of cleaning solvents while conducting performance tests on the coatings at paint manufacturing facilities.

(5)The provisions of paragraphs (c)(2) and (d)(1) of this rule shall not apply to aerosol coating products.

(6) The provisions of paragraph (c)(2) and (d)(1) of this rule shall not apply to the sale, manufacture, distribution, formulation, repackaging, or use of essential public service coatings with VOC contents

12-16

of 500 g/l or less provided such aggregate use does not exceed 55 gallons in any one calendar year per facility.

(7) The provisions of paragraph (c)(2) and (d)(1) of this rule shall not apply to the sale, manufacture, distribution, formulation, repackaging, or use of optical anti-reflective coatings provided such aggregate use does not exceed 10 gallons in any one calendar year, per facility.
It is apparent that there are considerable issues with the current proposal. We recommend a major overhaul of PAR 1107 with consideration of the significant issues raised if a prohibition of sale, distribution, manufacture, formulation, or repackaging is included.

12-16 (Cont.)

We appreciate the opportunity to comment on PAR 1107. If you have any questions or need any further information on the issues discussed here, please feel free to contact me at mkharding@sherwin.com or 216-566-2630.

In conclusion, we would like to thank the District for the one-week time extension granted to us for submittal of these comments due to a personal emergency.

Sincerely,

Madelyn K. Harding
Senior Corporate Manager
Regulatory Affairs

7 | Page

12-1: The commentor states that the District cannot hold the manufacturer, distributor, and seller responsible for actions outside of their contol. The prohibition of sale limits the availability of non-compliant coatings while providing adequate protection for manufacturers and distributers making good faith efforts. Included in the proposed rule are provisions that protect manufacturers and distributors who provide coatings that have multiple uses. Additionally, manufacturers may provide, in writing, directions to distributors to limit their liability. Also see Response to Comment 1-8.

12-2: Transitional language has been included to make the prohibition of sale effective January 1, 2015.

12-3: See Response to Comment 1-13.

12-4: The proposed rule remains applicable to the users of metal coatings. The proposed applicability has been expanded to users of metal stripping formulations and to any person who supplies, sells, offers for sale or specifies metal coatings or strippers. The expansion of the applicability will limit the availability of non-compliant coatings and is consistent with several other coating regulations that include prohibitions of sale. Other rules that includes similar prohibition of sale requirements include Rule 1145 - Plastic, Rubber, Leather, and Glass Coatings, Rule 1151 – Motor Vehicle and Mobile Equipment Non-Assembly Line Coating Operations, and Rule 1168 – Adhesive and Sealant Applications.

12-5: See Response to Comment 1-14.

12-6: See Response to Comment 1-22.

12-7: The VOC limits in the proposed rule have been revised since and the effective dates have been extended. See also Response to Comment 1-1.

12-8: See Response to Comment 1-7.

12-9: See Response to Comment 1-7.

12-10: The High Gloss category has been removed. The definition for Extreme High Gloss coatings is now proposed to be a reflectance of 85 or more on a 60 degree meter.

12-11: See Responses to Comment 1-8, 1-25, and 1-26.

12-12: The recommendation has been included in the proposed rule.

12-13: The prohibition of sale is limited to VOC content of the coating including thinning or dilution specifications. The prohibition of sale does not apply if the user modifies the coating outside of the specifications.

12-14: The recommendation has been included in the proposed rule.

12-15: An effective date has been included in the proposed rule.

12-16: See Response to Comment 1-8, 1-25, and 1-26.

SOCIOECONOMIC ASSESSMENT

A socioeconomic analysis of Proposed Amended Rule 1107 will be performed. A draft report will be released no later than 30 days prior to the AQMD Governing Board hearing.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Pursuant to the California Environmental Quality Act (CEQA) and AQMD Rule 110, appropriate documentation will be prepared to analyze any potential adverse environmental impacts associated with the Proposed Amended Rule 1107. Comments received at the public workshop and CEQA scoping meeting will be considered when preparing the CEQA document.

DRAFT FINDINGS UNDER THE CALIFORNIA HEALTH AND SAFETY CODE

Health and Safety Code Section 40727 requires that prior to adopting, amending or repealing a rule or regulation, the AQMD Governing Board shall make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the hearing. The draft findings are as follows:

Necessity – State and federal health-based ambient air quality standards for ozone are regularly and significantly exceeded in the AQMD. The reduction of VOC from Proposed Amended Rule 1107 is part of a comprehensive strategy to meet federal and state air quality standards.

Authority - The AQMD Governing Board obtains its authority to adopt, amend, or repeal rules and regulations from Health and Safety Code Sections 39002, 40000, 40001, 40440, 40441, 40702 and 41508.

Clarity - The AQMD Governing Board has determined that Proposed Amended Rule 1107 – Coating of Metal Parts and Products, is written and displayed so that the meaning can be easily understood by persons directly affected by them.

Consistency - The AQMD Governing Board has determined that Proposed Amended Rule 1107 – Coating of Metal Parts and Products, is in harmony with, and not in conflict with or contradictory to, existing statutes, court decisions, federal or state regulations.

Non-Duplication - The AQMD Governing Board has determined that Proposed Amended Rule 1107 – Coating of Metal Parts and Products, does 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 AQMD.

Reference - In adopting this regulation, the AQMD Governing Board references the following statutes which the AQMD hereby implements, interprets or makes specific: California Health and Safety Code sections 40001, 40440, and 40702.

REFERENCES

SCAQMD, (November 2005), Final Staff Report Proposed Amended Rule 1107 – Coating of Metal Parts and Products.

NAICS Association, (retrieved May 24, 2011) from http://www.naics.com/index.html.

ASTM International, (July 2010), ASTM D1200 - 10 Standard Test Method for Viscosity by Ford Viscosity Cup.

ASTM International, (June 2008), ASTM D523 - 08 Standard Test Method for Specular Gloss.

ASTM International, (February 2010), ASTM D4060 - 10 Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser.

Architectural Aluminum Manufacturer Association, (March 1, 2011), Verified Component List AAMA Certification Program.

U.S. Environmental Protection Agency, (November 29, 2004), Federal Register, 69FR69298, Revision to Definition of Volatile Organic Compounds—Exclusion of t-Butyl Acetate.

U.S. Environmental Protection Agency, (July 23, 2008), 73FR42978 Subpart XXXXXX - National Emission Standards for Hazardous Air Pollutants; Area Source Standards for Nine Metal Fabrication and Finishing Source Categories.

U.S. Environmental Protection Agency, (January 9, 2008), 73FR1737, Subpart HHHHHH - National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources.

U.S. Environmental Protection Agency, (May 23, 2003), 68FR28605, Subpart RRRR - National Emission Standards for Hazardous Air Pollutants: Surface Coating of Metal Furniture.

U.S. Environmental Protection Agency, (January 2, 2004), 69FR129, Subpart MMMM - National Emission Standards for Hazardous Air Pollutants: Surface Coating of Miscellaneous Metal Parts and Products.

U.S. Environmental Protection Agency, (September 2008), EPA-453/R-08-003, Control Techniques Guidelines for Miscellaneous Metal and Plastic Parts Coatings.

U.S. Environmental Protection Agency, (September 2007), EPA 453/R-07-005, Control Techniques Guidelines for Metal Furniture Coatings.

U.S. Environmental Protection Agency, (September 2007), EPA 453/R-07-004, Control Techniques Guidelines for Large Appliance Coatings.