

**AIR POLLUTION CONTROL DISTRICT  
COUNTY OF SAN DIEGO**

**WORKSHOP REPORT**

**PROPOSED AMENDED RULE 67.9—AEROSPACE COATING OPERATIONS**

A workshop notice was mailed to all businesses and government operations in San Diego County that are involved in aerospace coating operations. In addition, notices were mailed to all local Chambers of Commerce, all local Economic Development Corporations, the U.S. Environmental Protection Agency (EPA), the California Air Resources Board (ARB), and other interested parties.

The workshop was held on July 23, 1996, and was attended by 15 people. Written comments were also received. The workshop comments and District responses are as follows:

**1. WORKSHOP COMMENT**

Subsection (b)(1)(iii) exempts up to 50 gallons per year of coatings from the volatile organic compound (VOC) content limits provided that usage of any one exempted coating at a facility does not exceed 20 gallons per year. Do the formulation of the coatings covered by this exemption need to be different from any other (aerospace) coatings used at a facility?

**DISTRICT RESPONSE**

No. The coating must only have a separate formulation from other coatings that are being used under this exemption. However, see also the response to Comment #2.

**2. WORKSHOP COMMENT**

The District should include a provision allowing averaging of coating VOC contents in separate coating categories to show compliance with the rule's VOC content limits. This would accommodate use of a small amount of coatings with special engineering properties. The 50 gallon per year exemption limit for coatings is often not sufficient to cover usage of these coatings at large aerospace operations, especially since the exemption limit is only 20 gallons per year for a single coating. For example, there are special operations requiring critical use maskants that can not meet the VOC content limits in the rule.

**DISTRICT RESPONSE**

EPA policy on averaging VOC contents in Reasonably Available Control Technology (RACT) rules such as Rule 67.9 requires that general averaging provisions provide at least a 10% emission reduction (an environmental discount) in comparison to separate VOC limits. The District does not believe that VOC content averaging including a 10% discount would provide significant benefit to industry. It would also greatly complicate enforcement of the rule. In addition, inclusion of such averaging might delay or jeopardize EPA approval of the rule. The proposed amended rule allows averaging in the special case of Type I or chemical processing multi-stage maskants. In this case, the coatings being averaged function together as a single maskant and the District does not believe an environmental discount is required since enforceability is much easier in this case.

The District recognizes the need to allow limited usage of coatings that require special engineering properties and are not covered by the rule's existing coating categories. Because of the rapidly changing technology in the aerospace industry, it is not reasonable to assume that coating categories can be devised to cover all current and future needs for such coatings. Therefore, Subsec-

tion (b)(1)(iii) has been revised to exempt up to 200 gallons per year of coatings from VOC content standards at any facility. This exemption limit is consistent with similar exemptions in other air districts. In addition, the District does not believe that a separate smaller exemption limit for coatings with separate formulations serves any useful purpose because very small changes in coating formulation could be used to comply with this requirement. Therefore, the District is removing the requirement in Subsection (b)(1)(iii) that usage of exempt coatings with separate formulations not exceed 20 gallons per year.

It should be noted that facilities wishing to use general VOC content averaging to comply with the rule can file an alternative emission control plan (AECp) pursuant to Rule 67.1. However, this rule requires a 20% environmental discount in accordance with EPA's AECp policy at the time of adoption.

### **3. WORKSHOP COMMENT**

There is a need for an adhesive bonding maskant category. These maskants are used prior to adhesive bonding operations and there are no maskants available for this use that can comply with the existing rule's maskant VOC content limits. This is a critical maskant use since successful adhesive bonding may be essential to ensure structural integrity of aerospace components.

#### **DISTRICT RESPONSE**

The District agrees. A bonding maskant category with a VOC content limit of 600 grams per liter that is applicable to maskants used during bonding processes has been added to the rule's VOC content standards. The bonding process includes all operations on an aerospace component prior to and during the adhesive bonding of that component to another component.

### **4. WORKSHOP COMMENT**

In some cases, when repairing imperfections in a maskant coating, a small amount of maskant is removed before the area is recoated. Are coatings used during this process considered touch-up coatings?

#### **DISTRICT RESPONSE**

Yes. The District would consider this a touch-up operation as long as it is incidental to the main coating process.

### **5. WORKSHOP COMMENT**

How is the amount of coating used in dip coating operations normally determined?

#### **DISTRICT RESPONSE**

The amount of coating used in dip coating operations is normally determined by measuring the amount of coating added to the dip tank over a specified period of time.

**6. WORKSHOP COMMENT**

The rule requires monthly recordkeeping. However, in many cases, the amount of maskant and thinner solvents used in dip coating operations can not be determined accurately on a monthly basis. In dip coating operations, the amount of maskant used is determined by tracking the amount of maskant and thinner added to a dip tank. The amount of maskant and thinner added may vary widely on a monthly basis leading to inaccurate calculations of the amount of maskant actually used.

**DISTRICT RESPONSE**

See the response to Comment #27.

**7. WORKSHOP COMMENT**

When do the revised coating VOC content limits become effective?

**DISTRICT RESPONSE**

Any revised VOC limits will be effective on the date the Board adopts the amended rule. The VOC content limits in existing Rule 67.9 will remain in effect until that time.

**8. WORKSHOP COMMENT**

Does an emission control system used to comply with the rule standards pursuant to Section (e) need to capture emissions of surface preparation and application equipment cleaning operations associated with a coating application operation?

**DISTRICT RESPONSE**

An emission control system used pursuant to Section (e) must attain an overall control efficiency (capture efficiency times control efficiency) of at least 85% for all noncompliant materials. Subsection (e)(1)(ii) requires that an emission control system capture emissions only from those operations that are not in compliance with the rule standards. For example, the emissions from a coating operation using coatings not complying with the VOC content limits of Section (d) would need to be captured but the emissions from associated surface preparation or equipment cleaning operations using compliant materials or methods would not need to be captured. However, surface preparation and equipment cleaning operations not complying with Subsections (d)(4) or (d)(5) would need to be captured and controlled if this was necessary to achieve an 85% overall control efficiency for the noncompliant operations.

**9. WORKSHOP COMMENT**

Would an external sign that identified the bottom of a collection trough as the maximum level for coatings in a dip tank satisfy the requirement in Subsection (d)(7)(ii) for a permanent mark indicating the maximum allowable coating level?

**DISTRICT RESPONSE**

Yes. See also the response to Comment #32.

## **10. WORKSHOP COMMENT**

Is the District's engineering staff prepared to evaluate alternative application equipment cleaning methods to ensure that they comply with new Subsection (d)(5)(vii)?

### **DISTRICT RESPONSE**

Subsection (d)(5)(vii) is intended to cover alternative application equipment cleaning methods not specifically addressed in the rule. The language in Subsection (d)(5)(vii) is consistent with language of other coating rules (for example, Rule 67.3—Metal Parts and Products Coating Operations). The District engineering staff has had no problems evaluating application equipment cleaning operations addressed by this provision for other source categories. In addition, a provision defining the test method to be used to determine the effectiveness of alternative application equipment cleaning methods has been added to Subsection (g).

## **11. WORKSHOP COMMENT**

The rule should make clear that the boiling point of application equipment cleaning and surface preparation materials is measured at atmospheric pressure to determine compliance.

### **DISTRICT RESPONSE**

The District agrees. The rule has been clarified to indicate that boiling point of surface preparation and application equipment cleaning material is to be measured at 760 mm Hg total pressure. A test method for determining boiling points has been added to Section (g) of the rule.

## **12. WORKSHOP COMMENT**

It may be impractical to apply the requirements for dip coating application equipment in Subsection (d)(6) to small dip coating tanks.

### **DISTRICT RESPONSE**

The District agrees. The District is aware of only one large dip tank that is currently used to apply nonaqueous coatings. This dip tank is used to apply Type I and chemical processing maskants. Therefore, the District has revised Subsection (d)(6) to apply only to dip tanks used to apply Type I or chemical processing maskants. Small dip tanks applying other types of coatings will not be subject to Subsection (d)(6). In addition, dip coating operations using less than 20 gallons per year of coatings are exempt from the dip coating application equipment requirements as are dip coating operations using aqueous coatings with less than 10% by weight VOCs.

## **13. WORKSHOP COMMENT**

Are submerged fill pipes required to comply with the requirement of Subsection (d)(6)(v)?

### **DISTRICT RESPONSE**

The District interprets the term submerged filling as used in Subsection (d)(6)(v) to mean that material must be introduced below the surface of the liquid in a manner that minimizes splashing. Permanent submerged fill pipes may be used but are not required.

#### **14. WORKSHOP COMMENT**

Subsection (f)(1)(iv) requires that records of VOC content per volume of material, total vapor pressure, or initial boiling point be kept for all strippers, surface preparation material, and application equipment cleaning material. Which of these three items must be recorded for each material?

#### **DISTRICT RESPONSE**

Subsection (f)(1) requires that all information necessary to determine compliance be recorded. For strippers, surface preparation material, and application equipment cleaning material, the compliance determination can be based on any one of three physical parameters: total vapor pressure, VOC content, or initial boiling point. Information must be recorded only for the single parameter used to determine compliance.

#### **15. WORKSHOP COMMENT**

If a facility keeps monthly records and inadvertently uses a noncompliant coating, how many potential violations could the facility incur? If daily recordkeeping were required for noncompliant coatings, would the facility be fined just once for not having daily records or for every day that a company does not have daily records. This would be equivalent to a double fine for the same violation?

#### **DISTRICT RESPONSE**

Generally, District policy is to issue one violation listing the days that the District can document the use of a noncompliant coatings (but see the discussion on averaging for multi-stage maskants below). If monthly records indicate use of noncompliant coatings, the District would issue one violation listing each day during the month that such use could be documented. Because the rule has been revised to require the keeping of daily records for noncompliant coatings (see the response to Comment #40), the District would also issue a violation for failure to keep daily records of the noncompliant coating use.

However, persons subject to Rule 67.9 should be aware that EPA has different policies concerning violations at facilities that choose to keep monthly records. The District's understanding is that EPA would, upon finding a noncompliant coating, issue a violation for every day during the month, except for days the facility could document that it did not use the noncompliant coating. EPA would also issue a violation for each day during the month for failure to keep daily records of noncompliant coating use unless the facility could document nonusage on certain days.

To make the rule approvable by EPA, it has been revised to comply with EPA policy on issuance of violations when averaging is used to determine compliance of multi-stage maskants with VOC limits (see added Subsection (d)(1)(iv)). In this case, if a violation is found during the averaging period, the District would issue one violation listing every day during the averaging period except for days the source demonstrates that compliant coatings were used.

The District has expressed its concern to EPA that the complexity of coating rules may result in inadvertent use of noncompliant coatings and EPA's policy would result in unwarranted potential penalties in such cases. If a source is concerned about the potential for large fines resulting from an EPA enforcement action in this situation, the source should consider keeping daily records.

## **16. WORKSHOP COMMENT**

If the rule does not provide options like averaging, then major sources that are subject to the aerospace National Emission Standards for Hazardous Air Pollutants (NESHAP), which does allow averaging for topcoats, primers, and maskants, will be at a disadvantage compared to companies in other states.

### **DISTRICT RESPONSE**

Rule 67.9 is a VOC control measure and does not require control of hazardous air pollutants (HAPs) as do federal NESHAPs. EPA has proposed a Control Techniques Guideline (CTG) for aerospace coating operations which will be presumptive RACT for controlling VOCs from aerospace coating operations. If the final promulgated CTG contains VOC content averaging provisions, then the District will consider whether to include such provisions in Rule 67.9 at a later date (also see the response to Comment #22).

## **17. WORKSHOP COMMENT**

If general VOC content averaging provisions are added after EPA approves the rule, EPA may consider such averaging to be a State Implementation Plan (SIP) relaxation and would not approve the revision. Therefore, general averaging should be added now.

### **DISTRICT RESPONSE**

Based on the best information available, the District believes that all facilities will be able to comply with amended Rule 67.9. Inclusion of general coating VOC content averaging would complicate EPA approval of the rule and would not provide any significant benefits to affected sources (see the response to Comment #2). In addition, The District does not believe that general VOC content averaging for coatings would necessarily be considered a SIP relaxation, especially if it provides for a 10% environmental discount. EPA approval of such a revision would depend primarily on the agency's policy towards VOC content averaging at the time the rule was submitted for approval.

## **18. WORKSHOP COMMENT**

Is the 10% environmental discount required by EPA for using VOC content averaging arbitrary?

### **DISTRICT RESPONSE**

EPA believes the 10% environmental discount is necessary to compensate for enforcement uncertainties when averaging is used to determine compliance.

## **19. WORKSHOP COMMENT**

Is there language that can be put into the rule stating that alternate recordkeeping is allowed if approved in advance by the Air Pollution Control Officer (APCO)?

### **DISTRICT RESPONSE**

Rule 67.9 must be approved for inclusion in the SIP by EPA. Such language is not approvable by EPA and can not be included.

## **20. WORKSHOP COMMENT**

How are chemical milling and chemical processing maskants distinguished?

### **DISTRICT RESPONSE**

Chemical milling maskants are coatings used to protect a portion of an aerospace component's surface area when the only chemical surface operation employed on that component is a chemical milling operation. Chemical processing maskants are coatings used to protect portions of a component's surface area during other chemical surface operations such as anodizing or plating, but not during chemical milling unless the chemical milling operation is part of a series of chemical surface operations performed on the component.

## **21. WORKSHOP COMMENT**

The version of Rule 67.9 that is in the SIP was adopted in 1983 and does not reflect technologically feasible VOC limits for most coating categories. At this time, this SIP version of Rule 67.9 would be the applicable federal requirement under the federal Title V operating permits program. Existing Rule 67.9, adopted in 1993, also does not reflect technologically feasible VOC limits for a few coating categories. Facilities that are subject to Title V need rapid adoption and EPA approval of proposed amended Rule 67.9 so that the applicable federal requirements reflect technological feasibility.

### **DISTRICT RESPONSE**

The District is aware of the Title V implications for Rule 67.9 for some sources and plans to proceed with the rule adoption process as expeditiously as possible while considering the concerns of all affected parties. The proposed amended rule is also subject to review under the California Environmental Quality Act which may slow the adoption process.

## **22. WRITTEN COMMENT**

The elements of proposed amended Rule 67.9 should be neither more or less stringent than the Maximum Achievable Control Technology (MACT) standards in the federal aerospace coating NESHAP. The District should also consider the proposed CTG for aerospace coatings. The District should raise Rule 67.9's coating VOC limits to be consistent with these federal regulations if Rule 67.9's limits are more stringent.

### **DISTRICT RESPONSE**

The District disagrees. San Diego County is classified as a serious ozone nonattainment area by both EPA and the state Air Resources Board (ARB). The District is required by the state Health and Safety Code to adopt Best Available Retrofit Control Technology (BARCT) and all feasible measures to control ozone precursors including VOCs. The District is also required to adopt rules reflecting RACT for VOCs by the federal Clean Air Act. Rule 67.9 has been in effect for several years and, for the most part, is feasible since there have been few problems complying with the rule's coating VOC limits. The proposed amendments to Rule 67.9 include increases in VOC content limits where necessary to reflect technological feasibility. Multi-stage Type I and chemical processing maskants that comply with the rule's VOC limits have been developed and provisions have been added to the rule allowing the use of these coatings.

The proposed CTG (and MACT) applies nationwide and does not satisfy BARCT or "all feasible measures" requirements in California. To increase Rule 67.9's VOC limits to correspond to the proposed CTG limits would result in an unacceptable and unnecessary increase in VOC emissions. In addition, it would jeopardize approval of the amended rule by EPA. If this rule is not approved by EPA, the federally enforceable rule for San Diego County will remain Rule 67.9 as adopted in 1983. The 1983 rule contains VOC limits that are not technologically feasible for most coating categories included in existing Rule 67.9 and would present many problems for industry compliance.

### **23. WRITTEN COMMENT**

Maskant repair coatings should be exempted from coating VOC limits.

#### **DISTRICT RESPONSE**

The District believes that maskant repair coatings meet the definition of touch-up coatings and, hence, are already exempt. Nevertheless, the definition of line sealer maskant has been revised to include maskant repair.

### **24. WRITTEN COMMENT**

The definition of line sealer maskant should be clarified to indicate that line sealer maskant covers scribe lines to protect against chemical milling and/or chemical processing solutions.

#### **DISTRICT RESPONSE**

The District agrees. The definition of line sealer maskant has been clarified.

### **25. WRITTEN COMMENT**

The definition of two stage maskant system should be expanded to include multi-stage maskant systems.

#### **DISTRICT RESPONSE**

The District agrees. The definition of two-stage maskants has been changed to a definition for multi-stage maskants. In addition, the definition has been clarified to make clear that multi-stage maskants are only to be used as Type I chemical milling maskants or chemical processing maskants since single stage maskants that can comply with the Type II chemical milling maskant VOC limit are reasonably available. However, the District would consider multi-stage Type II chemical milling maskants compliant if every stage of the multi-stage system complies with the VOC content limit for Type II maskants.

### **26. WRITTEN COMMENT**

The formula used to calculate the average VOC content of a two-stage maskant system should be expanded to include multistage maskants and should only use the VOC content of coatings less water and exempt compounds and the maskant usages less water and exempt compounds.



### **DISTRICT RESPONSE**

The District agrees. A formula has been included in added Subsection (d)(1)(iii) for calculating the average VOC content of a multi-stage maskant for determining compliance. The formula uses only the VOC content of the multi-stage maskant component coatings less water and exempt compounds and the volume of coatings used or added to a dip tank over a specified averaging period. Also, the table of VOC limits in Subsection (d)(1)(i) has been clarified to indicate that Type I and chemical processing maskant VOC limits are applicable to multi-stage maskants.

### **27. WRITTEN COMMENT**

For dip tank operations with multistage maskant systems, keeping accurate monthly coating usage records is not feasible. This is because fugitive solvent evaporation and the small amount of coating typically used per month make accurate direct measurement of maskant usage impossible. The only method of calculating maskant usage is by recording maskant additions to the dip tank which may occur less than once per month. Furthermore, in the case of multi-stage maskants, nonconcurrent additions of different component maskants to different dip tanks may result in erroneous calculation of the multi-stage maskant VOC content. The rule should allow the option of determining maskant usage based on the amount of material added to a dip tank on a quarterly rather than monthly basis. By using a quarterly averaging time, errors due to non-concurrent maskant addition will be limited.

### **DISTRICT RESPONSE**

The District agrees. Because of the unique nature of this process EPA has stated that quarterly averaging is acceptable to determine maskant usage. For Type I or chemical processing multi-stage maskants using dip tank application, Subsection (d)(1)(ii) has been added to Rule 67.9 allowing determination of average VOC content each month based on the coating's VOC content and volume usage over a consecutive (rolling) three month period.

### **28. WRITTEN COMMENT**

For dip tank operations with multistage maskants, an approximate calendar quarter should be used as the averaging time for determining maskant usage.

### **DISTRICT RESPONSE**

The District disagrees. An approximate quarter is not defined well enough to be used to as an averaging period and ensure rule enforceability. The District is proposing to use a consecutive (rolling) three month averaging period.

### **29. WRITTEN COMMENT**

For maskants applied by dip coating, a monthly average maskant usage determined from the previous three month maskant usage should be used to calculate average VOC content of multistage maskant systems.

### **DISTRICT RESPONSE**

This method produces the same result as the one the District is now proposing (see the response to Comment #27) but requires an additional calculation step that the District does not believe is needed. Therefore, the District will not revise its proposal to incorporate this suggestion.

### **30. WRITTEN COMMENT**

Adhesive bonding can require application of bonding maskants for which no technologically feasible low VOC coatings exist. A coating category for bonding maskant with a VOC limit of 1,230 grams per liter should be included in the rule.

### **DISTRICT RESPONSE**

The District has added a bonding maskant coating category to the rule (see the response to Comment #3). However, the VOC limit for this category has been set at 600 grams per liter since reasonably available coatings exist that can comply with this limit.

### **31. WRITTEN COMMENT**

The VOC limit for Type I chemical milling maskant should correspond with the 622 grams per liter limit in the proposed CTG for aerospace coating.

### **DISTRICT RESPONSE**

The District disagrees. Multi-stage maskants that can comply with the existing rule's VOC limit of 250 grams per liter for Type I maskants have been developed for use in San Diego County.

### **32. WRITTEN COMMENT**

Because an interior mark can be covered with coating, the district should concur that the term "permanent mark" in Subsection (d)(6)(ii) includes exterior as well as interior marks for indicating the maximum level of coatings in dip tanks.

### **DISTRICT RESPONSE**

The District concurs that an exterior mark can be used for indicating maximum dip tank coating level.

### **33. WRITTEN COMMENT**

The rule should include an option allowing a source to voluntarily use a freeboard chiller in addition to a freeboard ratio of 0.5 to further limit dip tank emissions.

### **DISTRICT RESPONSE**

There is no need to add such an option. A source is free to voluntarily add a freeboard chiller to a coating application dip tank provided it complies with all applicable District rules. The District would encourage any facility that wants to add a freeboard chiller to do so.

### **34. WRITTEN COMMENT**

The recordkeeping requirements should be amended to require facilities to provide "information" on coatings rather than a "list" with information. Comprehensive lists of all coatings used at a facility are supplied as part of the annual emission inventory report. Maintaining a separate list is wasteful.

#### **DISTRICT RESPONSE**

The District disagrees. Many sites use many different coatings types and an aerospace coating list is needed to help ensure uniform enforcement. In addition, smaller facilities are not required to provide an annual emission inventory statement.

### **35. WRITTEN COMMENT**

The method for determining compliance with VOC limits for two-stage maskants should indicate that if both coating components individually comply with the applicable VOC limits then no averaging is required to determine compliance.

#### **DISTRICT RESPONSE**

The District agrees. Added Subsection (d)(1)(ii) states that if all components of a multi-stage maskant individually comply with the applicable maskant VOC limit then the multi-stage maskant is compliant.

### **36. ARB COMMENT**

ARB recommends that the District track perchloroethylene usage to determine if exempting it as a VOC will lead to a significant increase in emissions.

#### **DISTRICT RESPONSE**

The District will track perchloroethylene use through the normal emission inventory process and the AB2588 program. In addition, significant increases in perchloroethylene use that require new or modified equipment will require evaluation under District Rule 1200—Toxic Air Contaminants—New Source Review.

### **37. ARB COMMENT**

The method for determining compliance with VOC limits for two-stage maskants needs to be clarified.

#### **DISTRICT RESPONSE**

The District agrees. See the response to Comment 27.

### **38. ARB COMMENT**

ARB recommends that the District provide clarification and guidance to aerospace sources on how to comply with the federal NESHAP for aerospace coating operations, the federal aerospace coating CTG (when it is promulgated), and District Rule 67.9.

#### **DISTRICT RESPONSE**

At this time, the District expects to seek delegation to implement the federal NESHAP for aerospace coating operations. The District will provide compliance guidance to affected sources for both District Rule 67.9 and the aerospace coating NESHAP at a later date. The federal aerospace coating CTG only provides guidance for determining reasonably available control technology (RACT). Rule 67.9 will implement RACT and BARCT for San Diego County. Depending on the final CTG guidance, compliance with amended Rule 67.9, once approved by EPA, is likely to ensure compliance with the CTG.

### **39. ARB COMMENT**

ARB recommends that the District review the aerospace coating NESHAP and forthcoming federal aerospace coating CTG for consistency with Rule 67.9.

#### **DISTRICT RESPONSE**

Rule 67.9's VOC content limits are at least as stringent as the volatile organic HAP content standards in the current federal aerospace NESHAP. The District will review Rule 67.9 for consistency with the federal aerospace CTG when this CTG is promulgated by EPA. In addition, the District will review Rule 67.9 for consistency with any amendments to the federal aerospace NESHAPs that may affect the Rule 67.9's VOC limits.

### **40. EPA COMMENT**

Rule 67.9 provides the option of using daily or monthly recordkeeping. For prohibitory rules, EPA recordkeeping policy requires daily recordkeeping as the default. Rule 67.9 should be revised to indicate that monthly recordkeeping are allowed only when a source uses compliant coatings and daily recordkeeping is required for noncompliant coatings. The federal approvability of Rule 67.9 may be jeopardized if the recordkeeping provisions of Rule 67.9 do not reflect EPA recordkeeping policy.

#### **DISTRICT RESPONSE**

The District has revised the recordkeeping provisions of Rule 67.9 to indicate that daily records must be kept if noncompliant coatings are used by a source.

### **41. EPA COMMENT**

Rule 67.9 requires sources claiming exemptions from the rule under subsections (b)(1), (b)(3), and (b)(4) to keep calendar year records. Records should be kept throughout the year to verify compliance. In addition, exemptions based on usage should have a compliance timeframe of each

consecutive 12-month period rather than a calendar year. The federal approvability of Rule 67.9 may be jeopardized if the recordkeeping provisions of Rule 67.9 do not reflect EPA recordkeeping policy.

**DISTRICT RESPONSE**

The rule has been revised to require that the exemptions of Subsections (b)(1)(ii), (b)(1)(iii), (b)(1)(iv) be based on usage limitations in every consecutive 12-month period. Also, the recordkeeping requirements for Subsections (b)(1), (b)(3), and (b)(4) have been revised to require calendar monthly records.

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**AIR POLLUTION CONTROL DISTRICT  
COUNTY OF SAN DIEGO**

**PROPOSED AMENDMENTS TO RULE 67.9**

Proposed amendments to Rule 67.9 are to read as follows:

**RULE 67.9. AEROSPACE COATING OPERATIONS**

**(a) APPLICABILITY**

(1) This rule is applicable to the coating, masking, bonding, and paint stripping of aerospace components in operations where aerospace coatings are used, to surface cleaning related to these aerospace coating operations, and to the cleanup of application equipment associated with these operations.

(2) Any coating, surface cleaning or equipment cleaning operation which is exempt from all or a portion of this rule pursuant to Section (b), shall comply with the provisions of Rule 66, 67.6 and/or Rule 67.12 as applicable.

**(b) EXEMPTIONS**

(1) The provisions of Subsections (d)(1) through (d)(6), (d)~~(9)(7)~~, (f)(2), ~~(f)(3)~~, and (f)~~(4)(3)~~ shall not apply to the following:

(i) Touch-up coatings and stencil coatings.

(ii) A stationary source where not more than 50 gallons of aerospace coating are used per consecutive 12-month period year . This amount does not include coatings specified in Subsections (b)(1)(i), (b)(1)(v) and (b)(1)(vi).

(iii) Coatings with separate formulations that are used in volumes of less than 200 gallons per consecutive 12-month period year provided a total of not more than 20050 gallons of all such non-compliant coatings are used at any the stationary source per consecutive 12-month period year . This amount shall does not include coatings specified in Subsections (b)(1)(i), (b)(1)(iv), (b)(1)(v) and (b)(1)(vi).

(iv) Coatings used exclusively for purposes of research and development, including coatings applied to mock-ups and prototypes, provided not more than 50 gallons of all such non-compliant coatings are used at the stationary source per consecutive 12-month period year .

(v) Coatings applied using non-refillable aerosol spray containers.

(vi) Prepreg composite materials.

It shall be the responsibility of any person claiming any of the above exemptions to maintain calendar month year records of coating usage. Such records shall show the amount of each coating used in accordance with information required by Subsection (f)(1) of this rule. These records shall be retained on site for at least three years and shall be made available to the District upon request.

(2) The provisions of Subsection (d)(2) shall not apply to the use of air brushes with a capacity of three ounces (188.6 ml) or less.

(3) The provisions of Subsections (d)(~~9~~)(7), (f)(2), and (f)(~~4~~)(3) shall not apply to adhesives, sealants and caulking and smoothing compounds, which have a VOC content, as applied, of less than 250 grams of VOC per liter of coating, less water and less exempt compounds.

(4) The provisions of Subsections (d)(~~9~~)(7), (f)(2), and (f)(~~4~~)(3) shall not apply to adhesives and sealants which are applied outside application stations required to have a District Permit to Operate.

It shall be the responsibility of any person claiming exemptions (b)(3) or (b)(4) above to maintain calendar month year usage records. Such records shall show the amount of each adhesive and sealant used in accordance with information required by Subsection (f)(1) of this rule. These records shall be retained on site for at least three years and shall be made available to the District upon request.

(5) Provisions of Subsection (d)(2) shall not apply to a stationary source where not more than one gallon per day of aerospace coating is used. It shall be the responsibility of any person claiming this exemption to maintain daily records of coating usage according to Section (f) of this rule. These records shall be retained on site for at least three years and shall be made available to the District upon request.

(6) The provisions of Subsections (d)(6)(ii), (iii), and (v) shall not apply to any maskant coating application dip tank where 20 gallons or less of coating are used per consecutive 12-month period.

(7) The provisions of Subsections (d)(6)(i), (ii), (iii), and (v) shall not apply to any maskant coating application dip tank that contains an aqueous coating with a volatile organic compound (VOC) content of 10% by weight or less.

(8) The provisions of Subsections (d)(3) and (d)(4) shall not apply to surface cleaning or stripping of aerospace components in equipment that is subject to the requirements of Rule 67.6.

(c) **DEFINITIONS**

For the purposes of this rule the following definitions shall apply:

- (1) **"Adhesive"** ~~is~~ means a material that is used to bond one surface to another surface by attachment.
- (2) **"Adhesive Bonding Primer"** ~~is~~ means a coating applied in a very thin film to aerospace adhesive bond detail components for corrosion inhibition and adhesion of the subsequently applied adhesive.
- (3) **"Adhesive Bonding Primer, Structural"** ~~is~~ means an adhesive bonding primer used in conjunction with structural adhesives to form load carrying aircraft components.
- (4) **"Adhesive Bonding Primer for Elastomers and Elastomeric Adherends"** ~~is~~ means an adhesive bonding primer applied to elastomers or nonmetallic substrates for adhesion of the subsequently applied adhesive.
- (5) **"Aerospace Coatings"** ~~are~~ means materials including but not limited to those specified in the table in Subsection (d)(1)(i) of this rule, which contain more than 20 grams of VOC per liter of coating, as applied, less water and less exempt compounds. Preservative oils and compounds, form release agents not containing solids, and greases and waxes are not aerospace coatings.
- (6) **"Aerospace Component"** ~~is~~ means any raw material, partial or completed fabricated part, assembly of parts or completed unit of any aircraft, helicopter, missile or space vehicle, including mockups, test panels and prototypes.
- (7) **"Antichafe Coating"** ~~is~~ means a coating applied to aerospace components' moving surfaces which may rub other aerospace components' surfaces during normal operation. A material shall not be classified as an antichafe coating if it can also be classified as a dry lubricative material or a solid film lubricant.
- (8) **"Application Equipment"** ~~is~~ means equipment used for applying coatings to a substrate. Application equipment includes coating distribution lines, coating hoses, equipment used in hand application methods, and equipment used in mechanically operated application methods, including but not limited to spray guns, spinning disks, and pressure pots.
- (9) **"Bearing Coating"** ~~is~~ means a coating applied to an anti-friction bearing, a bearing housing or the area adjacent to such a bearing in order to facilitate bearing function or to protect base material from excessive wear. A material shall not be classified as a bearing coating if it can also be classified as a dry lubricative material or a solid film lubricant.
- (10) **"Caulking and Smoothing Compounds"** ~~are~~ means semi-solid materials which are applied by hand application methods and are used to aerodynamically smooth



exterior vehicle surfaces or fill cavities such as bolt hole accesses. A material shall not be classified as a caulking and smoothing compound if it can also be classified as a sealant.

(11) **"Chemical Surface Operation"** means formation or removal of a metallic or metallic oxide film by chemical or electrochemical means including, but not limited to, aging, anodizing, conversion coating, electroplating, electropolishing, etching, and chemical milling.

(12)(11) **"Conformal Coating"** is means a coating applied to electrical conductors and circuit boards to protect them against electrical discharge damage and/or corrosion.

(13)(12) **"Dry Lubricative Material"** is means a coating consisting of lauric acid, cetyl alcohol, waxes, or other non-cross linked or resin-bound materials which act as a dry lubricant.

(14)(13) **"Elastomeric Adhesive"** is means a rubber or silicone based adhesive used to bond elastomeric materials to metal substrates or to provide a flexibility to the bond formed.

(15)(14) **"Electromagnetic Radiation Effect Coatings"** are means coatings primarily applied to prevent radar detection; detection by ultraviolet, visible, or infrared reflectance or emittance; and electromagnetic interference.

(16)(15) **"Exempt Compound"** means the same as defined in Rule 2. is any of the following compounds or classes of compounds: ~~methylene chloride, 1,1,1-trichloroethane, trichlorofluoromethane (CFC 11), dichlorodifluoromethane (CFC 12), chlorodifluoromethane (HCFC 22), trifluoromethane (HFC 23), trichlorotrifluoroethane (CFC 113), dichlorotetrafluoroethane (CFC 114), chloropentafluoroethane (CFC 115), dichlorotrifluoroethane (HCFC 123), tetrafluoroethane (HFC 134a), dichlorofluoroethane (HCFC 141b), chlorodifluoroethane (HCFC 142b), 2-chloro-1,1,1,2-tetrafluoroethane (HCFC 124), pentafluoroethane (HFC 125), 1,1,2,2-tetrafluoroethane (HFC 134), 1,1,1-trifluoroethane (HFC 143a), 1,1-difluoroethane (HFC 152a); and the following four classes of perfluorocarbon (PFC) compounds:~~

- (i) ~~cyclic, branched, or linear, completely fluorinated alkanes;~~
- (ii) ~~cyclic, branched, or linear, completely fluorinated ethers with no unsaturations;~~
- (iii) ~~cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and~~
- (iv) ~~sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine.~~

~~(17)(16)~~ **"Flight Test Coating"** is means a coating applied to an aircraft prior to flight testing to protect the aircraft from corrosion and to provide the required markings during flight test evaluation.

~~(18)(17)~~ **"Form or Mold Release Agent"** is means a coating applied to ~~metal sheets, or metal/composite~~ molds to prevent galling and/or to keep the ~~metal or composite~~ parts from being held by a mold or die during forming or molding.

~~(19)(18)~~ **"Freeboard Height"** means the distance from the maximum coating level to the top of a coating application dip tank.

~~(20)(19)~~ **"Freeboard Ratio"** means the freeboard height divided by the smaller of the interior length or width of a coating application dip tank.

~~(21)(20)(18)~~ **"Fuel Tank Adhesive"** is means an adhesive used in conjunction with a fuel tank coating to bond aerospace components exposed to fuel and must be compatible with fuel tank coatings.

~~(22)(21)(19)~~ **"Fuel Tank Coating"** is means a coating applied to the interior of a fuel tank, fuel fill and drainage tracks, or surfaces frequently wetted by fuel of an aircraft or space vehicle to protect them from corrosion, including corrosion due to acidic by-products of bacterial growth.

~~(23)(22)(20)~~ **"Hand Application Method"** is means the application of coatings by manually held non-mechanically operated equipment. Such equipment includes paint brushes, hand rollers, caulking guns, trowels, spatulas, syringe daubers, rags and sponges.

~~(24)(23)(21)~~ **"High Temperature Coating"** is means a coating that must withstand temperatures higher than 350° F (177° C).

~~(25)(24)(22)~~ **"High Temperature Resistant, Thermal Flash Resistant, Rain Erosion Resistant Coating"** is means a fluoroelastomeric coating that is designed specifically to protect aerospace vehicles from thermonuclear flash, erosion from airborne particles such as rain, ice, sand, etc., and temperatures above 450° F (232° C).

~~(26)(25)(23)~~ **"High-Volume Low-Pressure (HVLP) Spray"** is means a coating application method using a spray applicator and pressurized air which is designed and operated with ~~at~~ a permanent atomizing pressure between 0.1 and 10.0 psig, ~~not to exceed 10.0 psig~~ measured dynamically at the center of the applicator's at the air cap and at the applicator's air horns ~~of the coating application system.~~

~~(27)(26)(24)~~ **"Heat Treatment Scale Inhibitor"** is means a coating that is applied to the surface of a part prior to thermal processing to inhibit the formation of scale.

~~(28)(27)(25)~~ **"Hot Melt Sealant"** is means a solid sealant that is liquefied in a heat gun prior to application to a joint.

~~(29)(28)(26)~~ **"Impact Resistant Coating"** ~~is~~ means a flexible coating that protects aerospace components, such as aircraft landing gear, landing gear compartments and other under fuselage surfaces, subject to abrasion from impact from runway debris.

~~(30)(29)(27)~~ **"Line Sealer Maskant"** ~~is~~ means a maskant used to cover scribe lines in maskant, or repair damage to a maskant, in order to protect against chemical milling or chemical processing solutions etchant in multi-step etching processes.

(31) **"Maskant for Bonding"** means a temporary coating applied directly to aerospace components during bonding processes to protect surface areas during chemical surface operations.

~~(32)(30)(28)~~ **"Maskant for Chemical Milling"** ~~is~~ means a coating or a ~~two~~ multi-stage maskant ~~system~~ applied directly to a metal aerospace components to protect a portion of the component's surface areas only during chemical milling operations. Chemical milling maskants do not include line sealer maskants or maskants for bonding.

~~(33)(31)(29)~~ **"Maskant for Chemical Processing"** ~~is~~ means a coating or a ~~two~~ multi-stage maskant ~~system~~ applied directly to an aero-space components to protect a portion of the component's surface areas during a single chemical surface operation, not including chemical milling, or during multiple chemical surface operations that include chemical milling anodizing, aging, bonding, plating, etching, or other chemical surface operations. Chemical processing maskants do not include line sealer maskants or maskants for bonding.

(34) **"Multi-Stage Maskant"** means a system employing two or more component coatings that together function as a Type I chemical milling maskant or a maskant for chemical processing.-

~~(35)(32)(30)~~ **"Optical Anti-Reflective Coating"** ~~is~~ means a coating with a low reflectance in the infrared and visible wavelength range used for anti-reflection on or near optical laser hardware.

~~(36)(33)(31)~~ **"Prepreg Composite Material"** ~~is~~ means a reinforcing material impregnated with partially polymerized organic resins and ready for application.

~~(37)(34)(32)~~ **"Preservative Oils and Compounds"** ~~are~~ means coatings which are applied on areas that are not intended to be painted such as cables and exterior surfaces to prevent corrosion and/or to provide lubrication.

~~(38)(35)(33)~~ **"Pretreatment Coating"** is means a coating which contains at least one-half percent by weight of acid to provide surface etching, and is applied directly to metal surfaces to provide corrosion resistance, adhesion and ease of stripping.

~~(39)(36)(34)~~ **"Primer"** is means a coating usually applied for purposes of corrosion prevention, protection from the environment, functional fluid resistance and adhesion of subsequent coatings. A primer would include a coating which is formulated to be used as a primer but which, in a specific application, is used as an initial and final coating on interior areas without subsequent application of a topcoat.

~~(40)(37)(35)~~ **"Rain Erosion Resistant Coating"** is means a coating that protects leading edges of an aircraft from erosion due to rain, dust and other particles during flight, take-off or landing.

~~(41)(38)(36)~~ **"Research and Development"** means aerospace coating operations, including operations performed for purposes of testing and quality control, which are not used for production purposes to directly produce a deliverable product or service, other than the first-article product or service.

~~(42)(39)(37)~~ **"Sealant"** is means a viscous semisolid material that fills voids in order to seal out water, fuel, other liquids, solids, or in some cases air currents, and is applied with brushes, syringes, caulking guns, spray guns or spatulas or is applied by fill and drain method.

~~(43)(40)(38)~~ **"Solid-Film Lubricant"** is means a very thin coating consisting of a binder system containing as its chief pigment material one or more of the following: molybdenum disulfide ~~disulfate~~, graphite, polytetrafluoroethylene, or other solids that act as a dry lubricant between tightly fitting surfaces.

~~(44)(41)(39)~~ **"Space Vehicle Coating"** is means a coating applied to vehicles designed for use beyond the earth's atmosphere.

~~(45)(42)(40)~~ **"Stationary Source"** means the same as defined in Rule 20.1.

~~(46)(43)(41)~~ **"Stencil Coating"** is means an ink or coating which is rolled, sprayed with an airbrush or a touch-up gun with capacity of 8 ounces (236.4 ml) or less, or brushed using a template to add identifying letters and/or numbers to aerospace components.

~~(47)(44)(42)~~ **"Stripper"** is means a volatile liquid applied to remove a maskant, paint, paint residue or temporary protective coating.

~~(48)(45)(43)~~ **"Structural Adhesive - Autoclavable"** is means an adhesive used to bond load-carrying aircraft components which is cured by heat and pressure in an autoclave or a press.

~~(49)(46)(44)~~ **"Structural Adhesive - Non-Autoclavable"** is means an adhesive not cured in an autoclave or a press which is used to bond load-carrying aircraft components or to perform other critical functions, such as bonding near engines.

~~(50)(47)(45)~~ **"Structural Adhesive - Epoxy"** is means a liquid or paste adhesive consisting of an epoxy resin and a curing agent used to bond aerospace components.

~~(51)(48)(46)~~ **"Temporary Protective Coating"** is means a pigmented coating applied to an aerospace component to protect it from mechanical and/or environmental damage during manufacturing or shipping.

~~(52)(49)(47)~~ **"Thermocontrol Coating"** is means a coating applied to space vehicle components to reflect heat and formulated to give specific heat reflectance, absorption and emissivity properties, or is a coating required for aerospace engine components to delay component failure due to fire.

~~(53)(50)(48)~~ **"Topcoat"** is means a coating applied over a primer as the final coat for purposes such as appearance, identification, or protection.

~~(54)(51)(49)~~ **"Touch-up Coating"** is means a coating that is used for that portion of the coating operation which is incidental to the main coating process but necessary to cover minor imperfections or to achieve coverage as required, or a coating operation which is necessary to repair minor mechanical damage prior to intended use. A touch-up coating may include small amounts of solvent, applied by hand, used to attach coating patches exhibiting inadequate adhesion.

~~(55)(52)(50)~~ **"Transfer Efficiency"** is means the ratio of the weight or volume of coating solids adhering to the part being coated to the weight or volume of coating solids used in the application process, expressed as a percentage.

~~(53) **"Two-Stage Maskant System"** means a system employing two coatings that together function as a chemical milling or chemical processing maskant where the total volume of first stage coating used per month does not exceed 65% of the total volume of second stage coating used per month. The first stage coating is applied directly to aerospace components, and the second stage coating is applied over the first stage coating. The average two-stage maskant system VOC content per volume of coating less water and exempt compounds shall be used to determine compliance with the VOC content standards in Subsection (d)(1). The average VOC content shall be calculated as follows:~~

$$\underline{\underline{C_{avg} = \frac{C_{e1} + 1.2 \times C_{e2}}{2.2}}}$$

where:

$C_{avg}$  = the average VOC content per volume of coating less water and exempt compounds, as applied, of a two-stage maskant system.

~~C<sub>e1</sub>~~ = ~~the VOC content per volume of coating less water and exempt compounds, as applied, of the first stage coating.~~

~~C<sub>e2</sub>~~ = ~~the VOC content per volume of coating less water and exempt compounds, as applied, of the second stage coating.~~

~~(56)~~(54) **"Type I Chemical Milling Maskant"** means a maskant used for a Type I chemical milling operation.

~~(57)~~(55) **"Type II Chemical Milling Maskant"** means a maskant used for a Type II chemical milling operation.

~~(58)~~(56) **"Type I Chemical Milling Operation"** means chemical milling of aluminum or aluminum alloys using milling solutions containing less than 0.1 weight % amines.

~~(59)~~(57) **"Type II Chemical Milling Operation"** means chemical milling of aluminum or aluminum alloys using milling solutions containing 0.1 weight % amines or more.

~~(60)~~(58)(51) **"Unicoat"** is means a coating which is applied directly to an aerospace component, to a chemically treated and unpainted aerospace component, or over an old coating system in lieu of stripping the old coating system, for purposes of corrosion protection, environmental protection and/or functional fluid resistance and which is not subsequently topcoated.

~~(61)~~(59)(52) **"Volatile Organic Compounds (VOC)"** for the purpose of this rule means the same as defined in Rule 2, for the purpose of this rule, any volatile compound of carbon, excluding methane, carbon monoxide, carbon dioxide, carbonic acid, ammonium carbonate, metallic carbides, metallic carbonates, and exempt compounds which may be emitted to the atmosphere during operations or activities subject to this rule.

~~(62)~~(60)(53) **"VOC Content Per Volume Liter of Coating, Less Water and Exempt Compounds"** means the same as defined in Rule 2.

weight of VOC per combined volume of VOC and coating solids and is calculated by the following equation:

$$C_{eVOC} = \frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

where,

C <sub>eVOC</sub>	=	VOC content less water and exempt compounds
W <sub>s</sub>	=	weight of volatile compounds including water
W <sub>w</sub>	=	weight of water
W <sub>es</sub>	=	weight of exempt compounds
V <sub>m</sub>	=	volume of material
V <sub>w</sub>	=	volume of water
V <sub>es</sub>	=	volume of exempt compounds

~~(63)(61)(54)~~ **"VOC Content Per Volume Liter of Material"** means the same as defined in Rule 2, weight of VOC per volume of material and is calculated by the following equation:

$$C_{mVOC} = \frac{W_s - W_w - W_{es}}{V_m}$$

where

$C_{mVOC}$  = VOC content  
 $W_s$  = weight of volatile compounds including water  
 $W_w$  = weight of water  
 $W_{es}$  = weight of exempt compounds  
 $V_m$  = volume of material

~~(64)(62)(55)~~ **"Wet Fastener Installation Coating"** is means a primer or sealant applied by dipping, brushing, or daubing to fasteners which are installed before the coating is cured.

#### (d) STANDARDS

##### (1) VOC Limits.

(i) Except as provided in Subsection (b)(1), a person shall not use in aerospace coating operations any coating which contains VOC in excess of the following limits on and after the effective date specified:

<u>Coating Category</u>	<u>VOC content, grams per liter of coating as applied, less water and less exempt compounds</u>	
	<u>Effective Dates</u>	
	<u>5/21/91</u>	<u>7/1/94</u>
Adhesive Bonding Primers:		
Structural	850	250
For Elastomers and Elastomeric Adherends	850	
All Other Adhesive Bonding Primers	850	350
Adhesives:		
Structural Autoclavable	50	
Structural Epoxy	50	
Structural Non-Autoclavable	850 <u>250</u>	250
Elastomeric	850	
<u>Fuel Tank Adhesives</u>	<u>620</u>	
All Other Adhesives	250 <del>(7/1/92)</del>	
Antichafe Coatings	600	
	<u>VOC content, grams per liter of coating as</u>	

applied, less water and less exempt compounds

<u>Coating Category</u>	<u>Effective Dates</u>	
	<u>5/21/91</u>	<u>7/1/94</u>
Bearing Coatings	620	
Caulking and Smoothing Compounds	850	
Conformal Coatings	750	
Dry Lubricative Materials:		
Fasteners Lubrication	250 (7/1/92)	
Non-Fasteners Lubrication	880	
Electromagnetic Radiation Effect Coatings	800	
Flight Test Coatings:		
Use on Missiles, Targets	420	
All Others	840	
Form Release Agents	800	
<del>Fuel Tank Adhesives</del>	<del>620</del> (7/1/92)	
Fuel Tank Coatings	<del>650</del> <u>720</u>	420
Heat Treatment Scale Inhibitors	880	
High Temperature Coatings	850	
High Temperature Resistant, Thermal Flash Resistant, Rain Erosion Resistant Coatings	800	
Impact Resistant Coatings	<del>600</del> <u>420</u>	420
Line Sealer Maskants	650	
<u>Maskants for Bonding</u>	<u>600</u>	
<u>Maskants for Chemical Milling</u>		
<u>Type I including Multi-Stage Maskants</u>	<u>250</u>	
<u>Type II</u>	<u>160</u>	
<u>All Other Chemical Milling</u>	<u>250</u>	
<u>Maskants for Chemical Processing</u>	<u>250</u>	
<u>Chemical Processing including Multi-Stage Maskants</u>	<u>250</u>	
<del>Maskants (See also (d)(1)(ii), and (iii)) and (iv)) for:</del>		
<del>Chemical Milling</del>	<del>600</del>	250
<del>Chemical Processing</del>	<del>600</del>	250
Optical Anti-Reflective Coatings	700	
Pretreatment Coatings	780	
Primers	350	
Primers Compatible with Rain Erosion Resistant Coatings	850	
Rain Erosion Resistant Coatings	690	420



Sealants	600 <del>(7/1/92)</del>	
	<u>VOC content, grams per liter of coating as applied, less water and less exempt compounds</u>	
	<u>Effective Dates</u>	
<u>Coating Category</u>	<u>5/21/91</u>	<u>7/1/94</u>
Hot Melt Sealants	100	
Solid Film Lubricants:		
Fasteners Lubrication	<del>880</del> <u>250</u>	<u>250</u>
Non-Fasteners Lubrication	880	
Space Vehicle Coatings:		
Electrostatic Discharge Protection	800	
Other Space Vehicle Coatings	1000	
Adhesives	800	
Temporary Protective Coatings	250	
Thermocontrol Coatings	600	
Topcoats	420 <del>(7/1/92)</del>	
Unicoats	420 <del>(7/1/92)</del>	
Wet Fastener Installation Coatings	675	
All Other Coatings	420	

(ii) If each coating comprising a multi-stage maskant complies with the applicable VOC limit, then the multi-stage maskant is deemed compliant. Otherwise the compliance of a multi-stage maskant with the VOC limits in Subsection (d)(1)(i) shall be determined pursuant to Subsection (d)(1)(iii) in the following manner:

(A) For a multi-stage maskant for which all component coatings are applied by methods other than dip coating, the VOC content of the multi-stage coating shall be calculated either each day of operation using that calendar day as the averaging period or each calendar month using that calendar month as the averaging period; or

(B) For a multi-stage maskant for which some component coatings are applied by dip coating, the VOC content of the multi-stage coating shall be calculated each calendar month using that calendar month as the averaging period or that calendar month and the previous two consecutive calendar months as the averaging period.

(iii) The following formula shall be used to determine the VOC content per volume of coating less water and exempt compounds, as applied, of a multi-stage maskant over a given averaging period:

$$\text{VOC}_m = \frac{\sum_{i=1}^n \text{VOC}_i \times V_i}{\sum_{i=1}^n V_i}$$

where:

VOC<sub>m</sub> = the VOC content per volume of coating less water and exempt compounds, as applied, of a multi-stage maskant.

VOC<sub>i</sub> = the VOC content per volume of coating less water and exempt compounds, as applied, of the i'th component coating of the multi-stage maskant.

V<sub>i</sub> = the total coating volume of the i'th coating component less water and exempt compounds, as applied, used at an application station or added to a dip tank, as applicable, during the averaging period.

n = the total number of component coatings that comprise the multi-stage coating.

(iv) If a multi-stage maskant is determined to exceed the VOC limits of Subsection (d)(1)(i), then the owner or operator shall be deemed in violation of this rule for each day of the averaging period used to determine compliance pursuant to Subsection (d)(1)(iii) except for each day the owner or operator demonstrates that no such noncompliant coatings were used.

~~(ii) Before July 1, 1994, a person shall not use maskants for chemical-milling or chemical processing which have a VOC content of greater than 600 grams per liter of coating, less perchloroethylene, less water and less exempt compounds as applied, nor which have a perchloroethylene content greater than 1200 grams per liter of coating as applied, less water and less exempt compounds.~~

~~(iii) After July 1, 1994, a person shall not use maskants for chemical processing which have a VOC content of greater than 250 grams per liter of coating, less water, less perchloroethylene and less exempt compounds as applied, nor which~~

~~have a perchloroethylene content greater than 1200 grams per liter of coating as applied, less water and less exempt compounds.~~

~~(iv) After July 1, 1994, a person shall not use maskants for chemical milling which have a VOC content greater than 250 grams per liter of coating as applied, less water and less exempt compounds.~~

The requirements of Subsection (d)(1) may be met using an Alternative Emission Control Plan (AECPP) that has been approved pursuant to Rule 67.1. ~~The AECPP shall not include credit for reductions in the emissions of perchloroethylene nor credit for use of perchloroethylene.~~

(2) Application Methods ~~Equipment~~.

Except as provided in Subsections (b)(1), (b)(2), and (b)(5), a person shall not apply aerospace coatings ~~containing more than 20 grams of VOC per liter of coating in~~ aerospace coating operations subject to this rule except by means of the following application methods:

- (i) Electrostatic spray application, or
- (ii) Flow coat application, or
- (iii) Dip coat application, or
- (iv) Hand application methods, or
- (v) Airless spray application for use with maskants and temporary protective coatings only, or
- (vi) High-volume low-pressure (HVLP) spray application, or
- (vii) Other coating application methods that are demonstrated to have transfer efficiency at least equal to one of the above application methods, and which are used in such a manner that parameters under which they were tested are permanent features of the method. Such coating application methods shall be approved in writing prior to use by the Air Pollution Control Officer.

(3) ~~Coating Strippers~~ Stripping Operations.

Except as provided in Subsections (b)(1) and (b)(8), a ~~A~~ person shall not use a stripper in aerospace coating operations unless the stripper:

- (i) Contains 400 grams of VOC per liter of material or less as applied, or
- (ii) Has a total vapor pressure of VOC of 9.5 mm Hg or less at 68°F (20° C).

(4) Materials for Surface Cleaning Operations.

Except as provided in Subsections (b)(1) and (b)(8), a ~~A~~ person shall not use a material for surface cleaning or surface preparation of an aerospace component unless:

- (i) The material contains 200 grams of VOC per liter of material or less as applied, or
- (ii) The material has a total vapor pressure of VOC of 45 mm Hg or less at 68°F (20° C), or
- (iii) The material has an initial boiling point of 190° C (374° F) or greater at 760 mm Hg total pressure; or

~~(iv)(iii)~~ The aerospace component is cleaned in an enclosed cleaning material container which is only opened when accessing parts or adding surface cleaning materials.

(5) Cleaningup Solvents for of Application Equipment.

Except as provided in Subsection (b)(1), a ~~A~~ person shall not clean aerospace coating application equipment unless:

- (i) The cleaning materialsolvent contains 200 grams or less of VOC per liter of material; or
- (ii) Has a total vapor pressure of VOC of 20 mm Hg or less at 68°F (20° C); or
- (iii) An initial boiling point of 190° C (374° F) or greater at 760 mm Hg total pressure; or
- (iv) The cleaning material is flushed or rinsed through the application equipment in a contained manner that will minimize evaporation into the atmosphere; or
- (v) The application equipment or equipment parts are cleaned in a container which is open only when being accessed for adding, cleaning, or removing application equipment or when cleaning material is being added, provided the cleaned equipment or equipment parts are drained to the container until dripping ceases; or
- (vi) A system is used that totally encloses the component parts being cleaned during washing, rinsing and draining; or
- (vii) Other application equipment cleaning methods that are demonstrated to be as effective as any of the equipment described above in minimizing the emissions of VOC to the atmosphere, provided that the device has been tested and approved prior to use by the Air Pollution Control Officer.

~~(i) The equipment is cleaned in a solvent container which is covered when not being accessed, which has a facility for draining cleaned parts and the drained solvent is returned to a closed container; or~~

~~(ii) The equipment is cleaned in a device which totally encloses the application component parts during washing, rinsing and draining; or~~

~~(iii) The cleaning solvent is transferred through the application equipment, without exposure to air, into a container that has in place an apparatus or cover which completely covers the container and has no visible holes, breaks, openings or separations between adjoining components of the container or container cover (the container may be equipped with vents provided that such vents are necessary to comply with applicable fire and safety codes); or~~

~~(iv) The cleaning solvent contains 200 grams or less of VOC per liter of material or has a total vapor pressure of VOC of 20 mm Hg or less at 68°F (20° C); or~~

~~(v) The equipment or equipment parts are cleaned in a container which is open only when being accessed or when cleaning material is being added, and clean equipment and/or equipment parts are drained to the container until dripping ceases; or~~

~~(vi) The equipment is cleaned in a device where liquid solvent is pumped from a solvent container to a sink like work area and which uses non-atomized solvent flow to flush the spray equipment and collects and returns the discharged solvent to the enclosed container; or~~

~~(vii) The equipment is cleaned in any other manner which minimizes evaporation of VOC's to the atmosphere, clean equipment and/or equipment parts are drained to the container until dripping ceases, and the cleaning material is returned to a closed container.~~

(6) Maskant Dip Coating Application Equipment.

Except as provided in Subsections (b)(1), (b)(6), and (b)(7), a person shall not use a dip tank to apply coatings Type I chemical milling maskants or maskants for chemical processing or component coatings of a multi-stage maskants to aerospace parts unless:

(i) The dip tank is covered except when being accessed to add or remove materials; take samples; visually inspect the maskant level; clean, maintain or repair the tank; or apply maskant coating; and

(ii) The dip tank has a readily visible, permanent mark or line indicating the maximum allowable coating maskant level; and

(iii) The dip tank has a freeboard ratio greater than or equal to 0.5; and

(iv) ~~Coating~~ Maskant agitation is achieved by means other than gas agitation; and

(v) Material is added to the dip tank by means of submerged filling; and

(vi) Any dip tank lip exhaust ventilation system with an inlet located below the cover of the ~~coating~~ maskant application dip tank is turned off and the ventilation duct closed when the maskant application dip tank is covered.

(7) Disposal of Waste Materials into the Air.

A person shall not use spray application equipment or any other means to dispose of waste coatings, coating components, surface preparation materials, or cleaning materials into the air, except when momentarily purging coating material from a spray applicator cap immediately before or after applying the coating material.

(8)(6) Prohibition of Specification.

A person shall not specify the application of a coating subject to this rule for any aerospace coating operation in San Diego County if such application results in a violation of any provision of this rule. This prohibition is applicable to any written or oral contract under the terms of which any coating is applied to any aerospace component within San Diego County.

(9)(7) Coating Lists.

Except as provided in Subsections (b)(1), (b)(3), and (b)(4), a A person using aerospace coatings subject to this rule shall provide to the Air Pollution Control Officer a list of all coatings applied in each affected facility. Such list shall contain all information required by Subsection (f)(1). The list shall also identify, for each aerospace coating, all applicable coating category uses, including allowable VOC content, specified in Subsection (d)(1)(i). The list shall be revised before any aerospace coating is used for purposes other than those previously identified on the list. The revised list shall be retained on site and provided to the Air Pollution Control Officer upon request. Information necessary to demonstrate that the intended use of a coating is consistent with the applicable definition of the coating use contained in Section (c) shall be provided to the District upon request.

A person shall not use any aerospace coating unless the coating is included on such list and is used only as the coating category specified on the list for that specific coating. If the intended use of a coating has been determined in writing by the Air Pollution Control Officer to be inconsistent with the applicable definition of the coating use contained in Section (c) or if the VOC content of a coating does not comply with the applicable limits specified in Subsection (d)(1), the coating shall be deleted from the list and shall not be used. Such determinations by the Air Pollution Control Officer shall not relieve the person using any aerospace coating from complying with the applicable definitions and VOC content limits of this rule.

~~(8) A person shall not sell, offer for sale, or supply any coating, stripping or cleaning solvent for use in aerospace coating operations in San Diego County that, after May 21, 1991, was newly formulated to contain or reformulated to increase the content of methylene chloride, 1,1,1-trichloroethane, trichlorofluoromethane (CFC-11), dichlorodifluoromethane (CFC-12), trichlorotrifluoroethane (CFC-113), dichlorotetrafluoroethane (CFC-114), or chloropentafluoroethane (CFC-115).~~

~~(9) A person shall not manufacture, sell, offer for sale, or supply any coating, stripping or cleaning material for use in aerospace coating operations in San Diego County unless the coating, stripping or cleaning material container displays the content of methylene chloride, 1,1,1-trichloroethane, trichlorofluoromethane (CFC-11), dichlorodifluoromethane (CFC-12), trichlorotrifluoroethane (CFC-113), dichlorotetrafluoroethane (CFC-114), or chloropentafluoroethane (CFC-115).~~

**(e) CONTROL EQUIPMENT**

(1) Any person subject to this rule may comply with the provisions of Subsections (d)(1) through (d)(~~6~~)(5) by using air pollution control equipment which has been approved in writing by the Air Pollution Control Officer provided that the air pollution control equipment:

(i) ~~The air pollution control equipment~~ h Has been installed in accordance with an Authority to Construct; and

(ii) Includes an emission collection system which captures organic gaseous emissions, including emissions associated with applicable coating, equipment cleaning, and surface preparation operations, and transports the captured emissions to an air pollution control device; and

(iii) ~~h~~ Has a combined emissions capture and control device efficiency of at least 85 percent by weight.

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

~~A person electing to comply with the provisions of Subsections (d)(1) through (d)(5) by using air pollution control equipment shall submit to the Air Pollution Control Officer for approval an Operation and Maintenance Plan for the air pollution control device and emission collection system. Such plan shall:~~

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

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

(3) Upon approval of the Air Pollution Control Officer, a person subject to the requirements of Section (e) shall implement the Operation and Maintenance plan and shall comply with the provisions of the approved plan thereafter. The Operation and Maintenance Plan must be submitted to the Air Pollution Control Officer and receive approval prior to operation of the air pollution control equipment. A person subject to the requirements of this section shall implement the plan on the approval of the Air Pollution Control Officer.

**(f) RECORDKEEPING**

Except as provided in Subsections (b)(1), (b)(3), and (b)(4), any ~~Any~~ person using coatings, strippers, thinners, surface cleaning materials or equipment cleaning materials in aerospace coating operations shall maintain records in accordance with the following requirements:

(1) Maintain a current list of coatings, strippers, thinners, surface cleaning and equipment cleaning materials in use. This list shall provide the data necessary to evaluate compliance, including, but not limited to:

(i) Type and/or applicable category specified in Subsections (d)(1), (d)(3), (d)(4), and d(5) of each coating, stripper, thinner, surface cleaning and equipment cleaning material used, including manufacturer identification; and

(ii) Mix ratio of components; and

(iii) VOC content per volume of coating less water and exempt compounds, as applied; and

(iv) VOC content per volume of material, total vapor pressure of VOC, or initial boiling point of each stripper, surface cleaning material, and equipment cleaning material, as applied; and

~~(iii) VOC content and/or total vapor pressure of VOC of each coating, thinner, stripper, surface cleaning and equipment cleaning material, as applied.~~

(v) For each two-multi-stage maskant system, the applicable maskant category specified in Subsection (d)(1), and the manufacturer identification of the component coatings that comprise the multi-stage maskantthe first and second stage coatings.



(2) At a minimum, for each material that is in compliance with Subsections (d)(1), (d)(3), (d)(4) or (d)(5), as applicable, maintain records for each calendar month that show:

(i) For any materials not applied by dip coating, the amount of each coating, stripper, and thinner used; and

(ii) Inventory (dispensing) records for solvents used for equipment cleaning and surface cleaning operations; and

(iii) Material additions to coating application dip tanks; and

(iv) For each two-stage maskant system, the volumes of the first stage coating and the second stage coating used during the calendar month.

~~((2) At a minimum, maintain records, each calendar month, showing the amount of each coating, stripper, and thinner used. At a minimum, maintain inventory (dispensing) records each calendar month of solvents used for equipment cleaning and surface cleaning operations. Maintain records of material additions to dip tanks used for dip coating applications.~~

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

(3) For each material that is not in compliance with Subsections (d)(1) maintain daily usage records for all coatings, thinners, and VOC containing materials.

~~(4)(3)~~ A person using control equipment specified in Section (e) of this rule shall:

(i) ~~m~~ Maintain records in accordance with Subsections (f)(1) and (f)(2);

(ii) ~~m~~ Maintain daily usage records for all coatings, strippers, cleaning and/or surface preparation materials not in compliance with Subsections (d)(1), (d)(3), (d)(4) or (d)(5) of this rule; and

(iii) ~~m~~ Maintain daily records of key system operating parameters ~~specified in Subsection (e)(2)(i)~~ as approved in the Operation and Maintenance plan. Such records shall be sufficient to document continuous compliance with Subsection (e)(1)(iii) during periods of emission producing activities.

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

**(g) TEST METHODS**

(1) Measurements of the VOC content of coatings, strippers and cleaning materials subject to Section (d) of this rule shall be conducted and reported in accordance with EPA Test Method 24 (40 CFR 60, Appendix A) ~~as it exists on November 2, 1993.~~

(2) Perfluorocarbon (PFC) compounds and cyclic, branched, or linear completely methylated siloxanes (VMS) shall be assumed to be absent from aerospace coatings, strippers and cleaning materials subject to this rule unless a manufacturer of the material or a facility operator identifies the specific individual compound(s) and the amount(s) present in the material and provides an approved test method which can be used to quantify the specific compounds.

(3) The overall control efficiency of air pollution control equipment operated pursuant to Subsection (e)(1)(iii) shall be determined by multiplying the capture efficiency of the emission collection system by the control efficiency of the air pollution control device. The control efficiency of the air pollution control device shall be determined using EPA Methods 18 and 25 or 25A (40 CFR 60, Appendix A) and in accordance with a protocol approved by the Air Pollution Control Officer. Capture efficiency shall be determined according to EPA's technical document, "Guidelines for Determining Capture Efficiency," January 9, 1995. Subsequent to the initial compliance demonstration period, appropriate key system operating parameters as determined by the Air Pollution Control Officer may be used as indicators of the performance of the emission collection system.

~~Measurements of VOC emissions subject to Section (e) of this rule shall be conducted in accordance with EPA Methods 18, 25, and/or 25A (40 CFR 60, Appendix A) as they exist on November 2, 1993 and in accordance with a protocol approved by the Air Pollution Control Officer.~~

(4) Measurements of transfer efficiency pursuant to Subsection (d)(2)(vii) of this rule shall be conducted in accordance with the South Coast Air Quality Management District's "Spray Equipment Transfer Efficiency Test Procedure for Equipment User" as it exists on November 2, 1993.

(5) Total vapor pressure of VOC containing materials ~~pursuant subject to~~ Subsections (d)(3)(ii), (d)(4)(ii) ~~(5)(iv)~~ and (d)(5)(4)(ii) of this rule shall be calculated by using the District's "Procedure for Estimating the Vapor Pressure of VOC ~~a solvent~~ Mixtures" ~~as it exists on November 2, 1993.~~ If the vapor pressure of the liquid mixture exceeds the limits specified in Subsections (d)(3)(ii), (d)(4)(ii) ~~(5)(iv)~~ and (d)(5)(4)(ii), as applicable, the vapor pressure shall be determined in accordance with ASTM Standard Test Method D2879-86 ~~3~~, Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope. The fraction of water and exempt compounds in the liquid phase shall be determined by using ASTM Standard Test Methods D 3792-91 ~~86~~ and D 4457-85 and shall be used to calculate the partial pressure of water and exempt compounds. The results of vapor pressure measurements obtained

using ASTM Standard Test Method D2879-86 ~~3~~ shall be corrected for the partial pressure of water and exempt compounds.

(6) Measurements of acid content of pretreatment coating as defined in ~~pursuant to Subsection (c)(38)(33)~~ of this rule shall be conducted in accordance with ASTM Standard Test Method D 1613-91 for Determination of Acidity in Volatile Solvents and Intermediates used in Paint, Varnish, Lacquer and Related Products or in accordance with the test procedure specified in MIL-C-8514C(ASG) ~~as it exists on November 2, 1993.~~

(7) Measurement of the initial boiling point of cleaning and surface preparation materials subject to Subsection (d)(4)(iii) and/or (d)(5)(iii) of this rule shall be conducted in accordance with ASTM Standard Test Method D1078-86 for distillation range of volatile organic liquids.

(8) Measurement of solvent losses from alternative application cleaning equipment subject to Subsection (d)(5)(vii) shall be conducted and reported in accordance with the South Coast Air Quality Management District's "General Test Method for Determining Solvent Losses from Spray Gun Cleaning Systems".

~~(7) Measurements of perchloroethylene content in maskants pursuant to Subsections (d)(1)(ii) and (d)(1)(iii) shall be conducted in accordance with the South Coast Air Quality Management District's Test Method 310-91 for Determination of Perchloroethylene as it exists on November 2, 1993.~~