

**AIR POLLUTION CONTROL DISTRICT  
SAN DIEGO COUNTY**

**NEW RULE 67.21 - ADHESIVE MATERIAL APPLICATION OPERATIONS**

**WORKSHOP REPORT**

A workshop notice was mailed to all companies and government agencies in San Diego County that may be subject to the proposed new Rule 67.21 - Adhesive Material Application Operations. Notices were also mailed to all Economic Development Corporations and Chambers of Commerce in San Diego County, the U.S. Environmental Protection Agency (EPA), the California Air Resources Board (ARB), and other interested parties.

The workshop was held on April 29, 1998, and was attended by 18 people. Written comments were also received. The comments and District responses are provided below:

**1. WORKSHOP COMMENT**

Subsection (b)(1)(i) exempts "single or multi-unit packages having an aggregate net weight of one pound or less, or containing an aggregate of 16 fluid ounces or less." The phrase "multi-unit package" should be clarified.

**DISTRICT RESPONSE**

The District agrees. A definition of a multi-unit package has been added to Section (c).

**2. WORKSHOP COMMENT**

Subsection (b)(3) provides an exemption for stationary sources using small quantities of adhesive materials. The exemption limit of 55 gallons should also include the use of any associated surface preparation, stripping and cleanup materials.

**DISTRICT RESPONSE**

The District disagrees. The 55-gallon limit specified in Subsection (b)(3) only applies to adhesive material usage. It is not necessary to include surface preparation, stripping and cleaning materials in this limit because any small facility using this exemption is already exempt from rule requirements related to such materials. Therefore, the facility is not precluded from using necessary amounts of non-compliant surface preparation, stripping or cleaning materials.

**3. WORKSHOP COMMENT**

Subsection (b)(3) provides an exemption for adhesive material usage below 55 gallons per consecutive 12-month period. Were all facilities subject to proposed Rule 67.21 provided notice of this workshop?

**DISTRICT RESPONSE**

Yes. All facilities holding District permits for adhesive application operations were mailed a workshop notice for proposed Rule 67.21. District permit requirements apply to all sources with adhesive material use of 20 gallons or more per year.

**4. WORKSHOP COMMENT**

If a facility claims an exemption under Subsection (b)(3), will it be subject to the recordkeeping requirements of Section (f)?

**DISTRICT RESPONSE**

No. As stated in Subsection (b)(3), such a facility is only required to keep records of monthly purchase and monthly or daily usage of adhesive materials.

**5. WORKSHOP COMMENT**

The District should add recordkeeping requirements to Subsection (b)(4) - Exemption for Non-Compliant Adhesive Material Usage.

**DISTRICT RESPONSE**

The District agrees. A recordkeeping requirement has been added to Subsection (b)(4).

**6. WORKSHOP COMMENT**

The exemption provided in Subsection (b)(4) should be revised to allow the 55-gallon limit per each consecutive 12-month period to include both non-compliant adhesive and cleanup materials.

**DISTRICT RESPONSE**

The District agrees. Subsection (b)(4) has been revised to include non-compliant adhesive, surface preparation, stripping and cleanup materials, and adhesive bonding agents.

**7. WORKSHOP COMMENT**

Section (c) should include a formula for the calculation of total vapor pressure of materials containing Volatile Organic Compounds (VOCs).

**DISTRICT RESPONSE**

The District disagrees. A method for calculating the total vapor pressure of materials containing VOCs is already provided in the Test Method section of the rule (see Subsection (g)(4)).

**8. WORKSHOP COMMENT**

The definition provided in Subsection (c)(12) for Contact Adhesive - Special, is not consistent with the definition provided in the Proposed Determination of Reasonable Available Control Technology and Best Available Retrofit Control Technology for Adhesives and Sealants (RACT/BARCT Guidance). The District should modify the definition to include the bonding of decorative laminate in postforming applications or curved surfaces.

**DISTRICT RESPONSE**

The District agrees. The definition for Contact Adhesive - Special has been revised as suggested.

**9. WORKSHOP COMMENT**

The exemptions provided in Subsections (b)(3) and (b)(4), for small usage of adhesive materials and non-compliant adhesive material usage, respectively, do not apply to the requirements of Subsection (d)(1)(i) - Standards for General Adhesive Materials. Please explain this exclusion.

**DISTRICT RESPONSE**

Adhesive materials subject to the VOC standards of Subsection (d)(1)(i) are typically used in architectural and plastic welding activities. The sale of architectural and plastic welding adhesive materials exceeding the standards of Subsection (d)(1)(i) is prohibited by Subsection (d)(6). Therefore, non-complying architectural and plastic welding products will not be available for purchase or subsequent use in San Diego County and are not allowed to be used by sources subject to the exemptions in Subsections (b)(3) and (b)(4).

**10. WORKSHOP COMMENT**

The District should consider adding South Coast Air Quality Management District (SCAQMD) Method 316A to measure the VOC content of any plastic welding cement adhesive material subject to the VOC limits of Subsection (d)(1)(i)(B).

**DISTRICT RESPONSE**

The rule currently specifies SCAQMD Method 316A in Subsection (g)(3).

**11. WORKSHOP COMMENT**

Subsection (d)(1)(ii), Standards for Specialty Adhesive Materials, provides a future compliance date for using contact adhesives with a lower VOC limit. Will the District provide a future compliance date and a lower VOC limit for any adhesive specified in Subsection (d)(1)(i)?

**DISTRICT RESPONSE**

The District does not plan on adding any future compliance dates or limits to the adhesives listed under Subsection (d)(1)(i). If, in the future, adhesive materials with a lower VOC limit than those specified in Subsection (d)(1)(i) become available, the District will consider amending Rule 67.21 to require such lower limits.

**12. WORKSHOP COMMENT**

The future implementation dates for contact adhesive VOC limits in Rule 67.21 are inconsistent with the dates proposed in the RACT/BARCT Guidance. The District should adopt the same implementation dates as the state guidance.

**DISTRICT RESPONSE**

The District disagrees. The present state of low VOC adhesive technology does not allow an exact prediction of the time when contact adhesives complying with the future limits will be available for all applications. This has been a problem with other District rules having future effective dates for technology forcing limits. Therefore, the implementation dates in Rule 67.21, one year after those in the proposed RACT/BARCT Guidance, will provide sufficient time for the District to evaluate any problems connected with the use of compliant materials that may be encountered elsewhere in the state.

**13. WORKSHOP COMMENT**

The District should consider providing some flexibility to facilities using adhesives that belong to either the general or special contact adhesive categories in proposed Rule 67.21. If a facility uses mostly special adhesive (80% or more) it should be allowed to use the same adhesive for the rest of its operations. This will prevent the facility from having to use two separate contact adhesives in a production line.

**DISTRICT RESPONSE**

This flexibility is not presently prohibited by the rule because the proposed VOC limits for both contact adhesive categories are the same. Before the different VOC limits for general and special contact adhesives become effective, the District will evaluate the performance of low VOC content adhesives and will determine the need for possible rule amendments.

**14. WORKSHOP COMMENT**

If a facility is bonding metal ductwork to fiberglass, what VOC limit would apply?

**DISTRICT RESPONSE**

Such work will be subject to the requirements of Subsection (d)(1)(iii). If an adhesive material is used to bond together two or more of the substrates listed in Subsection (d)(1)(iii), the highest applicable substrate-specific VOC limit will apply. In the case of metal ductwork being bonded to fiberglass, the appropriate VOC limit would be 200 grams per liter.

**15. WORKSHOP COMMENT**

Does Subsection (d)(1)(iii), Substrate-Specific Adhesives, apply only to adhesives or does it also apply to adhesive materials (i.e., sealants, primers, etc.)?

**DISTRICT RESPONSE**

Subsection (d)(1)(iii) applies only to adhesives being used with any of the three substrates listed. Subsection (d)(1)(iv) applies to all other adhesive materials not listed elsewhere, including adhesive primers, sealants and sealant primers.

**16. WORKSHOP COMMENT**

If an adhesive material is not listed under Section (d), would this material be subject to Rule 67.21?

**DISTRICT RESPONSE**

Yes. If an adhesive material is not listed in Subsections (d)(1)(i) or (d)(1)(ii), the substrate-specific VOC limits specified in Subsection (d)(1)(iii) should be reviewed. If the substrate being bonded is not listed in Subsection (d)(1)(iii), then the adhesive material is subject to the VOC limits specified in Subsection (d)(1)(iv) - All Other Adhesive Materials.

**17. WORKSHOP COMMENT**

The District has stated that if adhesive materials with lower VOC content become available in the future, the VOC limits in Rule 67.21 may be amended to reflect this. What criteria will the District use when evaluating new lower VOC adhesive materials prior to amending Rule 67.21?

**DISTRICT RESPONSE**

Prior to making any amendments to Rule 67.21, the District will conduct a thorough analysis of information related to any new adhesive materials with a lower VOC content. Applicable rules of other air districts will be reviewed, facilities using the adhesive material will be contacted, manufacturers' technical data will be evaluated and a public workshop will be held to discuss any comments or concerns from industry. Consideration will be given to any technical limitations and implementation issues or costs associated with new lower VOC content adhesive materials.

**18. WORKSHOP COMMENT**

Subsection (d)(6), Prohibition of Sale, prohibits anyone from supplying, selling or offering for sale any adhesive material listed under Subsection (d)(1)(i), which exceeds the VOC limits listed. Would a facility be in violation if it uses a non-compliant material subject to the prohibition of sale?

**DISTRICT RESPONSE**

Yes. As stated in Subsection (d)(1), "A person shall not apply any adhesive material specified below with a VOC content in excess of the following limits:" It is the responsibility of the facility to use ("apply") compliant adhesive materials unless they are specifically exempted by the rule.

**19. WORKSHOP COMMENT**

Subsection (d)(6), Prohibition of Sale, prohibits anyone from supplying, selling, or offering for sale any adhesive material listed under Subsection (d)(1)(i), which exceeds the VOC limits listed. How will the District regulate those adhesive materials that are shipped from out-of-state and don't comply with the VOC limits listed in the rule?

**DISTRICT RESPONSE**

The District intends to enforce the sales prohibition at the point of sale by periodically inspecting local suppliers and distributors. The use of prohibited materials will be considered a violation of Rule 67.21. Persons selling or supplying these materials, including those shipped from out-of state, will also be in violation of Rule 67.21 and are not immune from enforcement action.

**20. WORKSHOP COMMENT**

The District should provide small businesses with a list of compliant adhesive materials.

**DISTRICT RESPONSE**

The District will develop a list of commonly used compliant adhesive materials. In addition, the District's Small Business Assistance Program Specialist can assist small businesses with Rule 67.21 and other compliance issues.

**21. WORKSHOP COMMENT**

The recordkeeping requirements provided in Subsection (f)(1)(ii) state that a facility must maintain daily or monthly records of the amount of adhesive material used. The District should allow the use of purchase records to comply with this requirement.

**DISTRICT RESPONSE**

The District disagrees. Purchase records alone do not reflect the actual usage of adhesive materials. Facilities will need purchase, disposal and inventory records in order to compile the required monthly usage records or may keep records of actual material usage for each operating day.

**22. WORKSHOP COMMENT**

Does the District have any specific requirements for container labeling?

**DISTRICT RESPONSE**

No. Rule 67.21 does not require container labeling.

**23. WORKSHOP COMMENT**

The District should require only annual recordkeeping since the rule will not be submitted to EPA for inclusion into the State Implementation Plan (SIP).

**DISTRICT RESPONSE**

The District disagrees. The monthly recordkeeping requirements of Rule 67.21 is consistent with the statewide RACT/BARCT Guidance and with other District rules regulating the use of VOC containing materials.

**24. WORKSHOP COMMENT**

Will the cost of additional recordkeeping be considered when calculating the cost-effectiveness of Rule 67.21?

**DISTRICT RESPONSE**

Yes. A Socioeconomic Impact Assessment (SIA) is being conducted by a consultant for the District. It will take into consideration all costs associated with rule compliance.

**25. WORKSHOP COMMENT**

When will proposed Rule 67.21 be adopted?

**DISTRICT RESPONSE**

The District is planning to submit Rule 67.21 to the Air Pollution Control Board for adoption in late 1998 or early 1999.

**26. WORKSHOP COMMENT**

Once the workshop report is final and Rule 67.21 is revised, will the District hold another public workshop?

**DISTRICT RESPONSE**

The District does not intend to hold another public workshop unless significant changes are made to the proposed rule. If affected sources have specific issues, the District may hold an informal meeting to discuss them. The District will also mail affected sources an Advisory after rule adoption explaining the rule requirements.

**27. WORKSHOP COMMENT:**

What is the quantity of VOC emission reductions expected from the implementation of this rule?

**DISTRICT RESPONSE**

Emission reductions will come primarily from adhesive materials used in permitted sources and non-permitted architectural applications, including installation of floors, roofs, and multipurpose construction. It is estimated that the emissions reductions will be approximately 23 tons per year for permitted sources. It is more difficult to estimate emissions for architectural applications not subject to District permit requirements. A consultant is preparing an SIA and will estimate the VOC emissions and emission reductions from non-permitted sources based on currently available information on sales and usage of adhesives in San Diego County.

**28. WORKSHOP COMMENT**

Will the District coordinate the adoption of proposed Rule 67.21 with the approval of the ARB RACT/BARCT Guidance?

**DISTRICT RESPONSE**

The RACT/BARCT Guidance is expected to be reviewed by the Engineering Managers Committee of the California Air Pollution Control Officers Association in September, 1998. Proposed Rule 67.21 is scheduled to be adopted by the District Board in late 1998 or early 1999. Any changes to the RACT/BARCT Guidance will be considered by the District for proposed Rule 67.21 prior to the Board approval.

**29. WRITTEN COMMENT**

The District should add adhesive materials used to protect underground pipe lines to the specialty adhesive material category with a VOC limit of 850 g/liter. The higher VOC limit would ensure compliance with specific federal law requirements for corrosion control of gas pipelines.

**DISTRICT RESPONSE**

The District agrees. A new specialty adhesive category with a VOC limit of 600 g/liter for pipe wrap adhesives has been added to the proposed rule. This limit reflects the VOC content of the adhesive material presently used.

### **30. ARB COMMENT**

Subsection (b)(1)(i) exempts adhesive materials in single or multi-unit packages having a net volume of 16 fluid ounces or less. The draft ARB RACT/BARCT Guidance for Adhesives and Sealants (dated April 1998) is proposing an exemption level of 8 fluid ounces. The District may wish to consider this lower level in order to gain additional emission reductions and consistency with the Guidance.

#### **DISTRICT RESPONSE**

The District disagrees. The proposed exemption in the RACT/BARCT Guidance for adhesives sold in containers of 8 fluid ounces or less will create a confusing overlap with the requirements of the statewide Consumer Products Regulation for some adhesives sold in containers between 8 and 16 fluid ounces. The District has provided comments to ARB indicating that the additional emission reduction potential from exempting containers of 8 fluid ounces or less is negligible. As a result, the latest draft of the RACT/BARCT Guidance is now recommending the same exemption level as proposed Rule 67.21.

### **31. ARB COMMENT**

The standard for "Contact Adhesive - General" and "Contact Adhesive - Special" is 540 grams per liter. The standards are reduced three years following the rule adoption date to 250 and 400 grams per liter, respectively. The District should consider adopting similar limits and time tables as those in the proposed RACT/BARCT Guidance.

#### **DISTRICT RESPONSE**

The District disagrees. The future implementation dates and limits proposed in Rule 67.21 will provide sufficient time for the District to evaluate the availability and performance of contact adhesives complying with the lower VOC limits. (See also the response to Workshop Comment #12.)

### **32. ARB COMMENT**

Subsection (d)(6) only applies to products that are supplied to or sold to persons for application within San Diego County. There is no provision in the rule to verify compliance with this requirement. Unless the District can provide a means of verifying compliance, this section of the rule will be difficult to enforce. To ensure the enforceability of the rule, ARB suggests that the statement, "This provision only applies to products that are supplied to or sold to persons for application within San Diego County," be deleted from Subsection (d)(6). As an alternative, the District may retain the current language, but include a requirement for tracking sales by distributors and suppliers. This requirement could ensure that non-compliant adhesives are sold and supplied only to persons conducting business outside San Diego County.

#### **DISTRICT RESPONSE**

The District disagrees. This requirement is consistent with the RACT/BARCT Guidance. In addition, Rule 67.0 (Architectural Coatings) approved by ARB and EPA and adopted into the SIP has had a similar provision since 1990. The District has not experienced any significant enforcement problems with this requirement.



**33. EPA COMMENT**

The exemption for adhesive products sold in containers of 16 ounces or less is greater than ARB's suggested 8 ounce cutoff (Subsection (b)(1)(i)). While EPA understands that rule applicability determinations may be more difficult if the 8 ounce cutoff were adopted, many adhesives are sold in containers of 8 ounces or more but 16 ounces or less do not fall under the scope of ARB's consumer products regulation. As written, neither Rule 67.21 nor the consumer products rule would regulate these products.

**DISTRICT RESPONSE**

The District disagrees. See the District response to ARB Comment #30.

**34. EPA COMMENT**

Recordkeeping requirements suggested by ARB for sources exempted by Subsection (b)(2)(iii) should be included.

**DISTRICT RESPONSE**

The exemption provided in Subsection (b)(2)(iii) applies to small quantities of adhesive materials used in Research and Development applications. Any recordkeeping requirements would be burdensome for the affected sources because of the wide variety and small quantities of adhesive materials used.

**35. EPA COMMENT**

Recordkeeping requirements suggested by ARB for sources exempted by Subsection (b)(4) should be included.

**DISTRICT RESPONSE**

The District agrees. A recordkeeping requirement has been added to Subsection (b)(4).

**36. EPA COMMENT**

The recordkeeping requirements described in Subsection (f)(1)(i) should be extended to those persons subject to Subsection (d)(1)(i).

**DISTRICT RESPONSE**

The District disagrees. Adhesive materials listed under Subsection (d)(1)(i) are used almost exclusively by non-permitted sources in construction related activities. Thus, enforcement of recordkeeping requirements would be impossible. Adhesive materials listed under Subsection (d)(1)(i) are prohibited for sale by Subsection (d)(6). This prohibition will be enforced primarily at the point of sale.

### **37. EPA COMMENT**

The definition for Contact Adhesive - Special is less restrictive than that recommended by ARB. It should not include flexible vinyl, bonding of melamine-covered board to substrates other than decorative laminate, or bonding of wood veneers greater than 1/16" thick.

#### **DISTRICT RESPONSE**

The definition for Contact Adhesive - Special has been revised to be more consistent with the RACT/BARCT Guidance.

### **38. EPA COMMENT**

A number of terms referred to in the rule are not defined. Rule 67.21 should include definitions for the following terms: "stationary source," referenced in Subsections (b)(3) and (b)(4); "percent VOC by weight," referenced in Subsection (d)(2); and "sealer," referenced in Subsection (c)(33).

#### **DISTRICT RESPONSE**

The definition for the term "stationary source" is provided in District Rule 2, Definitions, which is approved into the SIP. The term "percent VOC by weight" is self-explanatory. A definition of "sealer" has been added to proposed Rule 67.21.

### **39. EPA COMMENT**

The requirements for materials used for surface preparation and cleanup and for application equipment cleaning include limits for the boiling point or vapor pressure of the materials. EPA believes it is generally not appropriate to use these characteristics as determinants for the suitability of materials. The VOC content is preferred for its consistency across various samples and for its stability to better indicate air pollution effects.

#### **DISTRICT RESPONSE**

The District disagrees. The VOC content does not necessarily reflect air pollution effect of organic solvents used as surface preparation and cleaning materials. For example, organic solvents including those boiling at temperatures higher than 190°C have a high VOC content by definition. However, these materials also have low volatility and evaporation rates resulting in lower usage and greater emission reductions.

The requirements for surface preparation and cleanup, and for application equipment cleaning in Rule 67.21 are consistent with other District coating rules that have been approved by EPA and are included in the SIP (Rule 67.3 - Metal Parts and Products Coating Operation; Rule 67.4 - Metal Container, Metal Closure and Metal Coil Coating Operations; Rule 67.16 - Graphic Arts Operations; Rule 67.18 - Marine Coating Operations).

### **40. EPA COMMENT**

Subsection (e)(1) allows for the use of control equipment in lieu of meeting the standards of the rule. EPA suggests the District also encourage pollution prevention by revising Subsection (e)(1) to read "In lieu of or in addition to complying with the provisions..."

**DISTRICT RESPONSE**

The District agrees that pollution prevention should be encouraged but disagrees with the proposed suggestion. Rule 67.21 requires the use of low VOC content materials and therefore encourages pollution prevention. Add-on control equipment is an option for those facilities that are unable to use adhesives complying with the VOC limits. The rule does not prevent these facilities from using complying materials in combination with add-on control equipment.

**41. EPA COMMENT**

A number of ASTM test methods are cited in the rule. Some of these ASTM methods have not been reviewed and approved for use in SIP approved rules by the EPA. EPA is currently reviewing its policy on the extent of EPA review required for test methods developed by the ASTM. Certain test methods developed by the ASTM may need to be separately submitted to EPA for approval before incorporation of the rule into the SIP.

**DISTRICT RESPONSE**

At this time, the District does not plan on submitting Rule 67.21 for inclusion into the SIP.

**42. EPA COMMENT**

It is EPA's policy to not include the dates of adoption for test methods cited in rules since the versions referenced may not always be the latest version of the test method approved for use by the EPA. Rule 67.21 references the dates of adoption for test methods cited in Section (g).

**DISTRICT RESPONSE**

It is the District's policy to include the dates of adoption for test methods cited in District rules. ASTM test methods will reference the most recent version. District, ARB and EPA test methods will include the date of adoption. Should the District, ARB or EPA make amendments to a test method, the District will then amend the applicable District rule. At this time, the District does not plan on submitting Rule 67.21 for inclusion into the SIP.

**43. EPA COMMENT**

ARB Method 310 cited in Subsection (g)(2) has not yet been approved by EPA. This approval is needed before Rule 67.21 will be included in the SIP.

**DISTRICT RESPONSE**

At this time, the District does not plan on submitting Rule 67.21 for inclusion into the SIP.

**44. EPA COMMENT**

Subsection (g)(6) should state that the key system operating parameters may only be used as "indirect" verification that the capture efficiency has not diminished.

**DISTRICT RESPONSE**

The District disagrees. The language proposed in Rule 67.21 is consistent with the language in other District coating rules that have been approved by EPA and are included in the SIP.

**45. EPA COMMENT**

Subsection (h)(2) should explicitly require that any person installing new control equipment submit an application and obtain an Authority to Construct and a Permit to Operate the control equipment prior to startup.

**DISTRICT RESPONSE**

The District disagrees. This requirement is already specified in Section (e) - Control Equipment. Section (h)(2) requires a person installing add-on controls on new equipment to comply with the requirements of Section (e). This Section specifies that control equipment must be installed in accordance with an Authority to Construct. In addition, all persons installing new equipment in San Diego County are required to obtain Authority to Construct and a Permit to Operate under District Rule 10 (Permits Required).

09/04/98  
NZ:AD:ls













(45) **"Thin Metal Laminating Adhesive"** means an adhesive specified by the manufacturer to bond multiple layers of metal to metal, or metal to plastic, in the production of electronic or magnetic components in which the thickness of the bond line(s) is less than 0.25 mils.

(46) **"Tire Retread Adhesive"** means an adhesive specified by the manufacturer to be applied to the back of pre-cured tread rubber and to the casing and cushion rubber in the assembly of retread tires. It may also be used to seal buffed tire casings to prevent oxidation while the tire is being prepared for a new tread.

(47) **"Traffic Marking Tape"** means a pre-formed reflective film specified by the manufacturer to be applied to public streets, highways, and other surfaces, including but not limited to curbs, berms, driveways, and parking lots.

(48) **"Traffic Marking Tape Adhesive Primer"** means any adhesive primer specified by the manufacturer to be applied to surfaces prior to the installation of traffic marking tape.

(49) **"Volatile Organic Compound (VOC)"** means the same as in Rule 2.

(50) **"VOC Content Per Volume of Adhesive Material, Less Water and Exempt Compounds"** means the weight of VOC per combined volume of VOC and adhesive material solids and is calculated by the following equation:

$$C_{Cvoc} = (W_s - W_w - W_{es}) / (V_m - V_w - V_{es})$$

where:

$C_{Cvoc}$  = VOC content per volume of adhesive material, less water and exempt compounds  
 $W_s$  = weight of volatile compounds including water and exempt compounds  
 $W_w$  = weight of water  
 $W_{es}$  = weight of exempt compounds  
 $V_m$  = volume of adhesive material including water and exempt compounds  
 $V_w$  = volume of water  
 $V_{es}$  = volume of exempt compounds

(51) **"VOC Content Per Volume of Material"** means the weight of VOC per volume of material and is calculated by the following equation:

$$C_{Mvoc} = (W_s - W_w - W_{es}) / (V_m)$$

where:

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

(52) **"Waterproof Resorcinol Glue"** means a two-part, resorcinol-resin-based adhesive specified by the manufacturer for applications where the bond line must be resistant to continuous immersion in fresh or salt water.

(d) **STANDARDS**

The VOC content of low-solids adhesive materials shall be calculated per volume of adhesive material, as applied. The VOC content of all other adhesive materials, except for aerosol adhesives, shall be calculated per volume of adhesive material, as applied, less water and exempt compounds.

(1) A person shall not apply any adhesive material specified below with a VOC content in excess of the following limits:

(i) GENERAL ADHESIVE MATERIALS

(A) Architectural Products	<u>VOC LIMITS</u> <u>(grams/liter)</u>
Architectural sealant	250
Architectural sealant primer for:	
-Non-porous materials	250
-Porous materials	775
Ceramic tile installation adhesive	130
Cove base installation adhesive	150
Indoor floor covering installation/repair adhesive	150
Multipurpose construction installation/repair adhesive	200
Non-membrane roof installation/repair adhesive/sealant	300
Outdoor floor covering installation/repair adhesive	250
Perimeter bonding adhesive	660
<u>Roadway sealant</u>	<u>250</u>
Single-ply roof membrane installation/repair adhesive/ primer	250
Single-ply roof membrane sealant	450
Structural glazing adhesive	100
<u>Traffic marking tape adhesive primer</u>	<u>150</u>

(B) Plastic Welding Products

ABS welding adhesive	400
CPVC welding adhesive	490
PVC welding adhesive	510
Plastic cement welding adhesive primer	650
Other plastic cement welding adhesives	510

(ii) SPECIALTY ADHESIVE MATERIALS

	<u>VOC LIMITS</u> <u>(grams/liter)</u>
Automotive glass adhesive primer	700
Computer diskette jacket manufacturing adhesive	850
Contact adhesive	
-General	540
-Special	540
-General - Effective (3 years after date of adoption)	250
-Special - Effective (3 years after date of adoption)	400
Elastomeric adhesive	750
Marine deck sealant/primer	760
Metal to elastomer molding or casting adhesive	850

Roadway sealant	250
Sheet rubber lining installation adhesive	850
Thin metal laminating adhesive	780
Tire retread adhesive	100
Traffic marking tape adhesive primer	150
Waterproof resorcinol glue	170

If more than one VOC limit provided in Subsections (d)(1)(i) or (d)(1)(ii) is applicable, the most stringent VOC limit shall apply.

(iii) SUBSTRATE-SPECIFIC ADHESIVES

If an adhesive is not listed in Subsection (d)(1)(i) or (d)(1)(ii), the following VOC limits are applicable on a substrate-specific basis.

Adhesives applied onto:	<u>VOC LIMITS</u> (grams/liter)
Fiberglass	200
Metal	30
Porous material	120
<u>Other substrates</u>	<u>250</u>

If an adhesive is used to bond together two or more substrates listed above in (d)(1)(iii), the highest applicable substrate-specific VOC limit shall apply.

(iv) ALL OTHER ADHESIVE MATERIALS

If an adhesive material or specific substrate is not listed in Subsections (d)(1)(i) through (d)(1)(iii) above, the following VOC limits are applicable.

	<u>VOC LIMITS</u> (grams/liter)
Adhesives	250
Adhesive primers	250
Sealants	420
Sealant primers	750

(2) Aerosol Adhesives

A person shall not use any aerosol adhesive with a VOC content greater than 75 percent by weight, including the propellant.

(3) Surface Preparation, Stripping, and Cleanup Materials, and Adhesive Bonding Agents

A person shall not use VOC containing materials for surface preparation, stripping, or cleanup or as an adhesive bonding agent unless:

- (i) The material contains 70 grams or less of VOC per liter of material; or
- (ii) The material has an initial boiling point of 190°C (374°F) or greater; or
- (iii) The material has a total VOC vapor pressure of 45 mm Hg or less, at 20°C (68°F).

(4) Cleaning of Application Equipment

A person shall not use VOC containing materials for the cleaning of application equipment used in operations subject to this rule unless:

- (i) The material contains 70 grams or less of VOC per liter of material; or
- (ii) The material has an initial boiling point of 190°C (374 °F) or greater; or
- (iii) The material has a total VOC vapor pressure of 45 mm Hg or less, at 20°C (68 °F); 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 the washing, rinsing, and draining processes; or
- (vii) Other application equipment cleaning methods are used that are demonstrated to be as effective as any of the equipment described above in minimizing the VOC emissions to the atmosphere, provided that the method has been tested and approved in writing by the Air Pollution Control Officer prior to use.

(5) Prohibition of Specification

A person shall not specify the application of an adhesive material subject to this rule for any 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 adhesive material is applied to any component within San Diego County.

(6) Prohibition of Sale

A person shall not supply, sell or offer for sale any adhesive material listed under Subsection (d)(1)(i) which, at the time of sale, exceeds the VOC limits listed. This provision only applies to products that are supplied to or sold to persons for application within San Diego County.

(e) **CONTROL EQUIPMENT**

(1) In lieu of complying with the provisions of Subsections (d)(1), (d)(2), (d)(3) or (d)(4) of this rule, a person may use an air pollution control system which:

(i) 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 adhesive material application, equipment cleaning, and surface preparation operations, and transports the captured emissions to an air pollution control device; and

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

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

(i) Identify all key system operating parameters. Key system operating parameters are those necessary to ensure compliance with Subsection (e)(1)(iii) 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.

**(f) RECORDKEEPING**

All records required by this rule shall be retained onsite for at least three years and shall be made available to the District upon request.

(1) Any person subject to the provisions of Subsections (d)(1)(ii) through (d)(1)(iv), (d)(2), (d)(3) or (d)(4) of this rule shall maintain the following records:

(i) Maintain a current list of each adhesive material, adhesive bonding agent, stripping, surface preparation and cleaning material used which provides all of the data necessary to evaluate compliance, including but not limited to:

(A) the category of adhesive material as specified in Subsection (d)(1);

(B) manufacturer name and identification for each adhesive material or its components, adhesive bonding agent, stripping, surface preparation and cleaning material;

(C) mix ratio of components; and

(D) VOC content, vapor pressure and/or initial boiling point, as applicable, for each adhesive material, adhesive bonding agent, stripping, surface preparation and cleaning material; and

(ii) ~~Maintain daily or monthly records of the amount of each adhesive material, adhesive bonding agent, and stripping, surface preparation and cleaning material used;~~ and

(iii) Maintain monthly inventory (dispensing) records for each solvent used as an adhesive bonding agent, or for stripping, surface preparation or cleaning.

(2) Any person using control equipment pursuant to Section (e) of this rule shall:

(i) Maintain records in accordance with Subsection (f)(1); and

(ii) Maintain daily records of key system operating parameters 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.

(g) **TEST METHODS**

(1) Measurement of the VOC content of all non-aerosol adhesive materials, adhesive bonding agent, surface preparation, stripping, and cleaning materials subject to Subsections (d)(1), (d)(3) and/or (d)(4) of this rule, shall be conducted in accordance with EPA Test Method 24 (40 CFR Part 60, Appendix A).

(2) Measurement of the VOC content of aerosol adhesives subject to Subsection (d)(2) shall be determined using ARB Method 310, as it exists on (*date of adoption*).

(3) Measurement of the VOC content of any plastic welding cement adhesive material subject to Subsection (d)(1)(i)(B) shall be determined using South Coast Air Quality Management District's Method 316A, as it exists on (*date of adoption*).

(4) Calculation of total VOC vapor pressure for materials subject to Subsections (d)(3)(iii) and/or (d)(4)(iii) of this rule shall be conducted in accordance with the District's "Procedures for Estimating the Vapor Pressure of VOC Mixtures". If the vapor pressure of the liquid mixture, as calculated by this procedure, exceeds the limits specified in Subsections (d)(3)(iii) and/or (d)(4)(iii), the vapor pressure shall be determined in accordance with ASTM Standard Test Method D2879-96, or its most current version. The solvent composition shall be determined using ASTM Standard Practice E260-96, or its most current version. The fraction of water and exempt compounds in the liquid phase shall be determined by using ASTM Standard Test Methods D3792-91 and D4457-85, or their most current versions and shall be used to calculate the partial pressure of water and exempt compounds. The results of vapor pressure measurements obtained using ASTM Test Method D2879-96, or its most current version shall be corrected for partial pressure of water and exempt compounds.

(5) Measurement of the initial boiling point for materials subject to Subsection (d)(3)(ii) and/or (d)(4)(ii) of this rule shall be conducted in accordance with ASTM Standard Test Method D1078-95, or its most current version.

(6) Measurement of the emission collection system capture efficiency subject to Subsection (e)(1)(iii) of this rule shall be determined according to EPA's technical document, "Guidelines for Determining Capture Efficiency," dated January 9, 1995, using a protocol approved by the Air Pollution Control Officer. Subsequent to the initial compliance demonstration period, applicable key system operating parameters, as approved by the Air Pollution Control Officer, may be used as verification that capture efficiency has not diminished.

(7) Measurement of control device efficiency subject to Subsection (e)(1)(iii) of this rule shall be conducted with EPA Methods 18 and/or 25A (40 CFR 60) and in accordance with a protocol approved by the Air Pollution Control Officer.

(8) Measurement of solvent losses from alternative application cleaning equipment subject to Subsection (d)(4)(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", as it exists on (*date of adoption*).

(9) Measurement of the solids content of adhesive materials pursuant to Subsection (c)(20) shall be conducted in accordance with EPA Test Method 24 (40 CFR 60, Appendix A).

(10) Measurement of the VOC content of adhesive materials pursuant to Subsection (c)(39) shall be conducted in accordance with South Coast Air Quality Management District's Method 316B, as it exists on (*date of adoption*).

(h) **COMPLIANCE SCHEDULE**

(1) Any person operating existing equipment and electing to use control equipment to comply with one or more of Subsections (d)(1) through (d)(4) requirements of this rule shall meet the following increments of progress:

(i) By (~~12~~6 *months after date of adoption*), submit to the Air Pollution Control Officer an application for Authority to Construct and Permit to Operate an air pollution control system meeting the requirements of Section (e).

(ii) By (*18 months after date of adoption*), demonstrate compliance with Section (e).

(2) Any person installing new equipment who is electing to use control equipment to comply with one or more of Subsections (d)(1) through (d)(4) requirements of this rule shall comply with the provisions of Section (e) at startup.