TEHAMA COUNTY AIR POLLUTION CONTROL DISTRICT
Rule 4:40 Adhesives and Sealants
Adopted 4/1/03

1 General

2 Purpose: To limit the emission of volatile organic compounds (VOCs) from adhesives and sealants and associated primers, and from related surface preparation solvents, cleanup solvents, and strippers.

3 Applicability: This rule applies to any person who:

3.1 Manufactures, sells, offers for sale, or supplies an adhesive or sealant product for use in the District; or

3.2 Uses an adhesive or sealant product; or

3.3 Uses a surface preparation solvent, a cleanup solvent, or a stripper; or

3.4 Solicits, requires the use of, or specifies the application of an adhesive or sealant product, surface preparation solvent, cleanup solvent, or stripper that does not comply with this rule.

4 Severability: If any section, subsection, sentence, clause, phrase, or portion of this rule is, for any reason, held invalid, unconstitutional, or unenforceable by any court of competent jurisdiction that portion shall be deemed as a separate, distinct, and independent provision, and the holding shall not affect the validity of the remaining portions of the rule.

5 Exemptions

5.1 Consumer Product Adhesives: The requirements of this rule shall not apply to adhesives that are regulated by the State of California and that are defined in section 6.15.

5.2 Medical Equipment Manufacturing: The requirements of this rule shall not apply to solvent welding operations used in the manufacturing of medical devices, including, but not limited to, catheters, heart valves, blood cardioplegia machines, tracheotomy tubes, blood oxygenators, and cardiatory reservoirs.

5.3 Tire Repair: The requirements of this rule shall not apply to materials used for tire repair if such products are labeled by the manufacturer: “For Tire Repair Only.”

5.4 Undersea Weapons: The requirements of this rule shall not apply to the manufacture, maintenance, or repair of undersea-based weapon systems.

5.5 Low-voc Materials: The requirements of this rule shall not apply to materials containing 20 grams or less per liter (0.17 lbs/gal) of VOCs, less water and exempt compounds, as applied.

5.6 Small Container: The requirements of this rule shall not apply to materials sold or supplied in non–reusable containers that are designed to hold no more than 8 fluid ounces. This exemption does not apply to plastic cement welding adhesives.

5.7 Research and Development Operations: sections 7.1, 7.2, and 7.3 shall not apply to the testing and evaluation of materials in research and development laboratories, quality assurance laboratories, or analytical laboratories, provided that these sources maintain records that comply with section 9.1.

5.8 Contact Adhesives: The requirements of section 7.1 shall not apply to contact adhesives subject to the Consumer Product Safety Commission regulations in 16 Code of Federal Regulations, Part 1302, provided that adhesives are sold in packages of 128 fluid ounces or less.

5.9 Exemption -Aerosol Cleaning Solvents: The requirements of section 7.2 shall not apply to the use of aerosol cleaning solvents at the stationary source provided that the total usage of the aerosol cleaning solvents does not exceed 160 fluid ounces per day.

5.10 Equipment Cleanup: The VOC requirements in section 7.2 shall not apply to ethyl acetate used to clean adhesive application equipment when:

5.10.1 The equipment is used in the manufacturing of transdermal drug delivery products, and

5.10.2 Fewer than 3 gallons per day of ethyl acetate, averaged over a calendar month, are used.

5.11 Low Usage: The requirements of sections 7.1 and 7.2 shall not apply to the materials used by the stationary source if the total combined volume of these materials used at the stationary source does not exceed 55 gallons during any calendar year. Commercial and industrial operations that use such materials and that are exempted pursuant to this section shall comply with section 9.1. This exemption cannot be used by any person using the alternative record keeping method pursuant to section 9.7.

5.12 The requirements of this rule shall not apply to cyanoacrylate adhesives and other reactive adhesives as defined in sections 6.20 and 6.51 of this rule.

5.13 The requirements of this rule shall not apply to reactive adhesives that are cured through the application of ultraviolet light, electron beam, visible light, radio frequency, or microwaves.

6 Definitions

6.1 Acrylonitrile-butadiene-styrene (ABS) Welding Adhesive: Any adhesive intended by the manufacturer for use to weld acrylonitrile-butadiene-styrene (ABS) pipe. ABS pipe is made by reacting monomers of acrylonitrile, butadiene, and styrene and is normally identified with an ABS marking.

6.2 Adhesive: Any material that is used to bond one surface to another surface by attachment.

6.3 Adhesive Primer: A coating applied to a substrate, prior to the application of an adhesive, to provide a bonding surface.

6.4 Aerospace Component: The fabricated part, assembly of parts, or completed unit of any aircraft or space vehicle, excluding tires, and including models, mock-ups, prototypes, and test coupons.

6.5 Aerosol Cleaning Solvent: A material used as a surface preparation solvent, a cleanup solvent, or a stripper and consisting of liquid and/or gaseous solvent and propellants packaged in a hand-held, pressurized, non-refillable container. The container expels pressurized aerosol materials when a valve on the container is depressed.

6.6 Application Equipment: A device such as a spray gun, pot, hose, brush, roller, electrostatic sprayer, non-propellant spray bottle, or squeegee used to apply an adhesive or sealant product, a surface preparation solvent, a cleanup solvent, or a stripper.

6.7 Architectural Sealant/primer: Any sealant or sealant primer intended by the manufacturer to be applied to stationary structures, including mobile homes, and their appurtenances. Appurtenances

to an architectural structure include, but are not limited to: hand railings, cabinets, bathroom and kitchen fixtures, fences, rain gutters and downpours, and windows.

6.8 Automotive Glass Adhesive Primer: An adhesive primer labeled by the manufacturer to be applied to automotive glass prior to installation of the glass using an adhesive/sealant. This primer improves the adhesion to pinch weld and blocks ultraviolet light.

6.9 Ceramic Tile Installation Adhesive: An adhesive intended by the manufacturer for ceramic tile installation.

6.10 Chlorinated Polyvinyl Chloride (CPVC) Welding Adhesive: An adhesive labeled by the manufacturer to weld CPVC plastic pipe.

6.11 Chlorinated Polyvinyl Chloride (CPVC) Plastic: CPVC plastic is a polymer of the monomer that contains 67 percent chlorine and is normally identified with a CPVC marking.

6.12 Cleanup Solvent: A VOC-containing material used to:

6.12.1 Remove a loosely held uncured (i.e., not dry to the touch) adhesive or sealant from a substrate, or

6.12.2 Clean equipment used in applying a material.

6.13 Closed Container: A container which has a cover that meets with the main body of the container without any visible gaps between the cover and the main body of the container.

6.14 Computer Diskette Jacket Manufacturing Adhesive: An adhesive intended by the manufacturer to bond fold-over flaps to the body of a vinyl computer diskette jacket.

6.15 Consumer Product Adhesive: An adhesive subject to Title 17, California Code of Regulations, sections 94507-94517 (Consumer Products).

6.16 Contact Adhesive: An adhesive that forms an instantaneous bond that cannot be repositioned when substrates, on which the adhesive is applied and allowed to dry, are brought together using momentary pressure.

6.17 Contact Adhesives – Specialty Substrates: An adhesive that is intended by the manufacturer to be used for:

6.17.1 the bonding of two nonporous substrates;

6.17.2 the bonding of decorative laminate in post forming application;

6.17.3 the bonding of decorative laminate to metal, melamine-covered board, or curved surfaces; or

6.17.4 the bonding of any substrate to metal, rubber, rigid plastic, or wood veneer not exceeding 1/16” in thickness.

6.18 Cove Base Installation Adhesive: An adhesive intended by the manufacturer for the installation of cove base (or wall base), which is generally made of vinyl or rubber, onto a wall or vertical surface at floor level.

6.19 Cured: Dry to the touch.

6.20 Cyanoacrylate Adhesive: An adhesive with a cyanoacrylate content of at least 90 percent by weight and emits less than 20 grams per liter of VOC as determined pursuant to section 10.9.

6.21 Drywall Installation: The installation of gypsum drywall to studs or solid surfaces.

6.22 Enclosed Gun Cleaner:

6.22.1 A device used to clean spray guns, pots, cups, and hoses, that has a closed solvent container, is not open to the ambient air when in use, and has a mechanism to force cleanup material through the gun while the cleaner is in operation; or

6.22.2 A device used to clean spray guns, pots, cups, and hoses that has a closed solvent container, uses non-atomized solvent flow to flush the spray equipment, and collects and returns the discharged solvent to the closed container.

6.23 Exempt Compound: For the purposes of this rule, "exempt compound" has the same meaning as used in District Rule 4:39-Architectural Coatings.

6.24 Fiberglass: A fiber made of fine filaments of glass and that is similar in appearance to wool or cotton fiber.

6.25 Flexible Vinyl: A nonrigid polyvinyl chloride plastic with at least five percent, by weight, of plasticizer content.

6.26 Hand Application: The application of a material by manual equipment. Manual equipment includes paint brushes, hand rollers, trowels, spatulas, daubers, rags, sponges, as well as mechanically or pneumatically driven syringes that do not atomize the applied products.

6.27 High Pressure Laminate: Sheets of materials, consisting of paper, fabric, or other core material, that have been laminated at temperatures exceeding 265˚ F, and at pressures between 1,000 and 1,400 pounds per square inch.

6.28 High-Volume Low-Pressure (HVLP) Application Equipment: Equipment used to apply coating by means of a spray gun which is designed to be operated, and which is operated between 0.1 and 10.0 pounds per square inch gauge (psig) air pressure, measured dynamically at the center of the air cap and at the air horns.

6.29 Indoor Floor Covering Installation Adhesive: An adhesive intended by the manufacturer for the installation - in an enclosed area not exposed to ambient weather conditions during normal use - of wood flooring, carpet, carpet pads, rubber flooring, resilient tile, vinyl tile, vinyl backed carpet, resilient sheet and roll, or artificial grass. Indoor floor covering installation does not include ceramic tile installation, the installation of perimeter bonded sheet flooring with vinyl backing onto a non-porous substrate, such as flexible vinyl, or subfloor installation.

6.30 Key System Operating Parameter:

6.30.1 A variable that is critical to the operation of an emission control system and that ensures:

6.30.1.1 Operation of the system within the system manufacturer's specifications, and

6.30.1.2 Compliance with the overall system efficiency standard required by section 7.3.

6.30.2 Such variables may include, but are not limited to:

6.30.2.1 Hours of operation

6.30.2.2 Temperature

6.30.2.3 Flow rate

6.30.2.4 Pressure

6.31 Leak: A visible liquid solvent leak from a container or a visible liquid mist.

6.32 Low-solids Material: A material containing 120 grams or less of solids per liter of product.

6.33 Low-Volume Low-Pressure (LVLP) Application Equipment: Spray coating application equipment with air pressure between 0.1 and 10.0 pounds per square inch gauge (psig) and air volume less than 15.5 cubic feet per minute (cfm) per spray gun and that operates at a maximum fluid delivery pressure of 50 psig.

6.34 Marine Deck Sealant/Sealant Primer: A sealant or sealant primer labeled by the manufacturer to seal gaps on wooden marine decks.

6.35 Material: Any material containing VOC including but not limited to an adhesive, adhesive primer, sealant, sealant primer, catalyst, colorant, stripper, or solvents used in cleaning.

6.36 Metal to Urethane/Rubber Molding or Casting Adhesive: An adhesive intended by the manufacturer to bond metal to high-density or elastomeric urethane or to molded rubber materials, using heater molding or casting processes, in order to fabricate products such as rollers for computer printers or other paper handling equipment.

6.37 Multipurpose Construction Adhesive: An adhesive intended by the manufacturer for the installation or repair of various construction materials, including, but not limited to, drywall, subfloor, panel, fiberglass reinforced plastic, ceiling tile, and acoustical tile.

6.38 Noncompliant Material: A material that:

6.38.1 Exceeds the VOC content limits specified in sections 7.1 and 7.2, and is not exempt pursuant to section 5, and the user of the material does not use emission control equipment pursuant to section 7.3; or

6.38.2 Exceeds the VOC content limit and/or composite vapor pressure limit, as applicable, in section 7.2, and user of the material does not use emission control equipment pursuant to section 7.3.

6.39 Non-membrane Roof Installation/repair Adhesive/sealant: An adhesive or sealant intended by the manufacturer for the installation or repair of non-membrane roofs, but is not intended for the installation of prefabricated single-ply roof membrane. This category includes plastic or asphalt roof cement, asphalt roof coatings, and cold application cement.

6.40 Non-Porous Material: A material which does not have tiny openings, often microscopic, to allow the absorption or discharge of fluids.

6.41 Outdoor Floor Covering Installation Adhesive: An adhesive intended by the manufacturer for the installation of floor covering that is not in an enclosure and is exposed to ambient weather conditions during normal use.

6.42 Panel Installation: The installation of plywood, pre-decorated hardboard, tile board, fiberglass reinforced plastic, and similar predecorated or nondecorated panels on studs or solid surfaces.

6.43 Perimeter Bonded Sheet Vinyl Flooring Installation: The installation of sheet flooring with vinyl backing onto a nonporous substrate using an adhesive design to be applied only to a strip up to four inches wide around the perimeter of the sheet flooring.

6.44 Plastic: A synthetic material chemically formed by the polymerization of organic (carbon-based) substances.

6.45 Plastic Cement Welding Adhesive: An adhesive made of resins and solvents that is formulated to dissolve the surfaces of plastic and to form a bond between mating surfaces.

6.46 Plastic Cement Welding Adhesive Primer: A primer intended by the manufacturer to prepare plastic substrates prior to bonding or welding.

6.47 Plasticizer: A material, such as a high boiling point organic solvent, that is incorporated into a vinyl to increase its flexibility, workability, or distensibility, as determined by ASTM Method E−260-96.

6.48 Polyvinyl Chloride (PVC) Welding Adhesive: An adhesive intended by the manufacturer to weld PVC plastic pipe.

6.49 Porous Material: A material whose surface is permeable to liquids including, but not limited to foam, paper, corrugated paperboard, stone, and wood.

6.50 Propellant: A fluid under pressure that expels the contents of a container when a valve is opened.

6.51 Reactive Adhesive: An adhesive containing 20 grams or less per liter (0.17 lbs/gal) of VOCs, less water and exempt compounds, as applied, that cures upon exposure to ultraviolet light, electron beam, visible light, radio frequency, or microwave.

6.52 Roadway Sealant: A sealant intended by the manufacturer to be applied to public streets, highways, and related surfaces including curbs, berms, driveways, and parking lots.

6.53 Rubber: A natural or manmade rubber substrate, including, but not limited to: styrene-butadiene rubber, polychloroprene (neoprene), butyl rubber, nitrile rubber, chlorosulfonated polyethylene, and ethylene propylene diene terpolymer.

6.54 Rubber Flooring: A flooring material in which both the back and the top surface are made of synthetic rubber, and that may be in sheet or tile form.

6.55 Sealant: A material with adhesive properties that is applied as a rope or bead and that is formulated for use primarily to fill, seal, waterproof, or weatherproof gaps or joints between two surfaces. Sealants include sealant primers and caulks.

6.56 Sealant Primer: A material intended by the manufacturer for application to a substrate, prior to the application of a sealant, to enhance the bonding surface.

6.57 Single-ply Roof Membrane: A single sheet of rubber, normally ethylene-propylene diene monomer, that is applied in a single layer to a building roof (normally a flat roof).

6.58 Solid Material: The nonvolatile portion of a material that remains after heating a sample of the product at 110°C for one hour.

6.59 Solvent Welding: The softening of the surfaces of two substrates by wetting them with a solvent and/or adhesive, and joining them together using a chemical and/or physical reaction(s) to form a fused union.

6.60 Stationary Source: A building, structure, facility, or emissions unit which emits or may emit any affected pollutant directly or as a fugitive emission.

6.60.1 Building, structure, facility, or emissions unit includes all pollutant-emitting activities which:

6.60.1.1 Belong to the same industrial grouping, and

6.60.1.2 Are located on one property or on two or more contiguous properties, and

6.60.1.3 Are under the same or common ownership, operation, or control or which are owned or operated by entities which are under common control.

6.60.2 Pollutant-emitting activities shall be considered as part of the same industrial grouping if:

6.60.2.1 They belong to the same two-digit standard industrial classification code, or

6.60.2.2 They are part of a common production process. (Common production process includes industrial processes, manufacturing processes and any connected processes involving a common material.)

6.61 Stripper: A liquid used to remove cured adhesives and/or cured sealants.

6.62 Structural Glazing Adhesive: An adhesive intended by the manufacturer to adhere glass, ceramic, metal, stone, or composite panels to exterior building frames.

6.63 Subfloor Installation: The installation of subflooring material, typically plywood, over flooring joists. Subfloor installation includes the construction of any load bearing joints in joists or trusses. Subflooring is covered by a finished surface material.

6.64 Surface Preparation Solvent: A VOC-containing material used to remove contaminants such as dust, soil, oil, grease, etc., from a substrate prior to the application of an adhesive or sealant product.

6.65 Thin Metal Laminating Adhesive: An adhesive intended by the manufacturer to bond multiple layers of metal to metal or metal to plastic in which the thickness of the bond line(s) is less than 0.25 mils.

6.66 Tire Repair: The expanding of a hole, tear, fissure, or blemish in a tire casing by grinding or gouging, applying adhesive, and filling the hole or crevice with rubber.

6.67 Tire Retread Adhesive: An adhesive applied to the back of precured tread rubber and to the casing and cushion rubber. Tire retread adhesive may also be used to seal buffed tire casings to prevent oxidation while the tire is being prepared for a new tread.

6.68 Traffic Marking Tape Adhesive Primer: An adhesive primer intended by the manufacturer to be applied to surfaces prior to the installation of traffic marking tape.

6.68.1 Traffic marking tape adhesive primer is not one of the coatings included in the definition of “traffic marking coating” in Rule 4:39-Architectural Coatings.

6.68.2 Traffic marking tape is a preformed reflective film intended by the manufacturer to be applied to public streets, highways, and other surfaces including, but not limited to, curbs, berms, driveways, and parking lots.

6.69 Volatile Organic Compound (VOC): For the purpose of this rule “volatile organic compound” has the same meaning as in District Rule 1:2- Definitions.

6.70 Volatile Organic Compound (VOC) as Applied: A VOC as applied means the VOC content of the material as applied including thinners, reducers, hardeners, retarders, catalysts and additives calculated pursuant to section 10.1.

6.71 Volatile Organic Compound (VOC) As Supplied: A VOC as supplied means the VOC content of the original material as supplied by the manufacturer calculated pursuant to section 10.1.

6.72 Waterproof Resorcinol Glue: A two-part resorcinol resin-based adhesive designed for applications where the bond line must be resistant to conditions of continuous immersion in fresh or salt water.

6.73 Wipe Cleaning: The method of cleaning a surface by physically rubbing it with a material such as a rag, paper, abrasive pad, brush, or a cotton swab moistened with a solvent.

6.74 Wood Flooring: A wood floor surface, which may be in the form of parquet tiles, planks, or strip-wood.

7 Standards

7.1 VOC Content - Adhesives/Adhesive Primers: A person shall not apply a material that has a VOC content, as applied (as determined per section 10.1) in excess of the limits listed in this section. For a low solids material, the VOC content shall be calculated based on grams per liter of material or pounds per gallon of material including water and exempt compounds. For all other materials, the VOC content shall be calculated in grams per liter or pounds per gallon, less water and exempt compounds.

TABLE 1 VOC CONTENT FOR MISCELLANEOUS ADHESIVES		
Type of Adhesive	**VOC Content g/l (lbs/gal)**	
	Effective Date	
	37802	**37986**
ABS Welding Adhesive	400 (3.3)	
Ceramic Tile Installation Adhesive	130 (1.1)	
Computer Diskette Jacket Manufacturing Adhesive	850 (6.9)	
Cove Base Installation Adhesive	150 (1.2)	
CPVC Welding Adhesive	490 (4.0)	
Indoor Floor Covering Installation Adhesive	150 (1.2)	
Metal to Urethane/Rubber Molding or Casting Adhesive	250 (2.0)	
Multipurpose Construction Adhesive	200 (1.6)	
Non-Membrane Roof Installation/Repair Adhesive	300 (2.5)	
Outdoor Floor Covering Installation Adhesive	250 (2.0)	
PVC Welding Adhesive	510 (4.2)	
Single-Ply Roof Membrane Installation/Repair Adhesive	250 (2.0)	
Structural Glazing Adhesive	100 (0.8)	
Thin Metal Laminating Adhesive	780 (6.4)	
Tire Retread Adhesive	100 (0.8)	
Perimeter Bonded Sheet Vinyl Flooring Installation Adhesive	-	660 (5.4)
Waterproof Resorcinol Glue	170 (1.4)	
Other Plastic Cement Welding Adhesive	450 (3.7)	

TABLE 2 VOC CONTENT FOR ADHESIVE PRIMERS		
Type of Adhesive Primer	**VOC Content g/l (lbs/gal)**	
	Effective Date	
	37802	**37986**
Automotive Glass	700 (5.7)	
Plastic Cement Welding	650 (5.3)	400 (3.3)
Single-Ply Roof Membrane	250 (2.0)	
Traffic Marking Tape	150 (1.2)	
Other	250 (2.0)	

TABLE 3 VOC CONTENT FOR CONTACT ADHESIVES			
Type of Contact Adhesive	**VOC Content g/l (lbs/gal) Effective Date**		
	37802	**37986**	**38352**
Contact Adhesive	250 (2.0)		250 (2.0)
Contact Adhesive Specialty Substrate		400 (3.3)	250 (2.0)
Top & Trim Adhesive	540 (4.4)		540 (4.4)

TABLE 4 VOC CONTENT FOR SEALANTS		
Type of Sealant	**VOC Content g/l (lbs/gal)**	
	Effective Date	
	37802	**37986**
Architectural	250 (2.0)	250 (2.0)
Marine Deck	760 (6.2)	760 (6.2)
Nonmembrane Roof Installation/Repair	300 (2.5)	300 (2.5)
Roadway Sealant	250 (2.0)	250 (2.0)
Single-Ply Roof Membrane Sealant	450 (3.7)	450 (3.7)
Other	420 (3.4)	420 (3.4)

TABLE 5 VOC CONTENT FOR SEALANT PRIMERS		
Type of Sealant Primer	**VOC Content g/l (lbs/gal)**	
	Effective Date	
	37802	**37986**
Architectural Nonporous Porous	 250 (2.0) 775 (6.3)	 250 (2.0) 775 (6.3)
Marine Deck	760 (6.2)	760 (6.2)
Other	750 (6.1)	750 (6.1)

TABLE 6 VOC CONTENT FOR ADHESIVE APPLICATIONS ONTO SUBSTRATES	
The standards in this table apply to applications not specifically identified in Tables 1, 2, 3, 4 or 5. In this table if an adhesive is used to bond two different types of substrates with different VOC limits then higher of the two VOC limits shall apply.	
Adhesive Applications Onto Substrates	**VOC Content g/l (lbs/gal)**
	Effective Date
	37802
Flexible Vinyl	250 (2.0)
Fiberglass	200 (1.6)
Metal	30 (0.2)
Porous Material	120 (1.0)
Rubber	250 (2.0)
Other	250 (2.0)

7.2 Solvent Cleanup and Storage Requirements: A person shall comply with the following requirements:

7.2.1 Materials used for surface preparation, cleaning, or stripping shall not exceed the VOC content and the VOC composite vapor pressure limits specified in the table below. The VOC content of the material as applied shall be determined pursuant to section 10.1. The composite partial pressure shall be determined using section 10.7.

TABLE 7 VOC CONTENT OF SOLVENTS USED FOR SURFACE PREPARATION CLEANUP AND STRIPPING

Solvent Use	VOC Content g/l (lbs/gal) including water and exempt compounds	VOC Composite Partial Pressure Millimeters of Mercury at 20°C (68°F)
	Effective Date	
	37802	37802
SUBSTRATE PREPARATION: Single-Ply Roof Membrane Installation/Repair	-	≤45
SUBSTRATE PREPARATION: Electronic Components	≤900 (≤7.3)	≤33
SUBSTRATE PREPARATION: Medical Devices	≤900 (≤7.3)	≤33
SUBSTRATE PREPARATION: Other Substrates	≤70 (≤0.6)	-
CLEANUP: Cleaning a Spray Gun in an Enclosed Gun Cleaner	-	<45
CLEANUP: Soaking of Application Equipment in a Closed Container	-	≤9.5
CLEANUP: Cleaning of Application Equipment-No Closed Container, No Enclosed Gun Cleaner	≤70 (≤0.6)	-
CLEANUP: Cleaning of Equipment Other Than Adhesive or Sealant Product Application Equipment	-	<45
STRIPPING: Adhesive or Sealant Products on Wood	<350	≤2
STRIPPING: Adhesive or Sealant Products on Substrates	-	≤9.5

7.2.2 A person applying any surface preparation solvent, cleanup solvent, or any stripper must use one of the following methods:

7.2.2.1 Wipe cleaning.

7.2.2.2 Non-propellant spray bottles or containers.

7.2.2.3 An enclosed gun cleaner as defined by section 6.22.

7.2.2.4 Soaking application equipment parts in a closed container provided that the container does not exceed five gallons in size and the container is kept tightly covered at all times except when accessing the container.

7.2.3 Closed containers shall be used for the disposal of all VOC-containing cloth, sponges, papers, or other materials used for solvent cleaning.

7.2.4 All VOC-materials shall be stored in closed containers when not in use.

7.3 Emission Control Equipment: As an alternative to utilizing materials that comply with the VOC content standards identified in sections 7.1 through 7.2, a person may use air pollution control equipment provided the equipment satisfies the following requirements:

7.3.1 The air pollution control equipment is designed and operated with:

7.3.1.1 A control device efficiency of at least 95 percent on a mass basis, as determined pursuant to sections 8.4 and 10.3, and

7.3.1.2 An emission collection efficiency of at least 90 percent on a mass basis, as determined pursuant to section 10.4.

7.4 Material Application Methods: Effective July 1, 2003: A person shall not apply any adhesive or sealant product except as follows:

7.4.1 Hand application.

7.4.2 Dip coat.

7.4.3 Flow coat.

7.4.4 Brush or roll coat.

7.4.5 Electrodeposition.

7.4.6 Electrostatic spray

7.4.7 High-volume low-pressure (HVLP) application equipment.

7.4.8 Low-volume low-pressure (LVLP) application equipment.

7.4.9 Aerosol cans.

7.4.10 For contact adhesives only: airless sprayers, air-assisted airless sprayers, and air-atomized sprayers.

7.4.11 Any other equivalent method approved in writing by the Air Pollution Control Officer.

7.5 Prohibition of Sale: A person shall not supply, sell, solicit, or offer for sale, any noncompliant materials as defined in section 6.38, except that a non-compliant adhesive manufactured before July 1, 2003, may be sold, supplied, or offered for sale until January 1, 2005, so long as the product container or package displays the date on which the product was manufactured, or a code indicating such date. The prohibition in this section shall apply to any material which will be applied at any physical location within the District. The sales prohibition shall not apply to any manufacturer of any adhesive, sealant, or adhesive or sealant primer if the manufacturer has provided the maximum VOC content per subsection 8.7 and if:

7.5.1 the product was not sold directly to a user or a sales outlet located in the District, or

7.5.2 the product was sold to an independent distributor that is not a subsidiary of, or under the direct control of, the manufacturer.

7.6 Prohibition of Specification: No person shall solicit, require the use of, or specify the application of any material subject to this rule, if the use or application would violate this rule. The prohibition in this section shall also apply to all written or oral contracts under the terms of which any such product or solvent is to be applied within the District.

8 Administrative Requirements

8.1 Calculation for Determining VOC Content of Material Excluding Water and Exempt Compounds: For the VOC content as applied, the volume of material is defined as the volume of the original material plus any material (e.g., thinners, reducers, or catalysts) added to the original material. The weight of VOC per combined volume of VOC and material solids shall be calculated using the following equation:

$$G1 = \frac{W_y - W_w - W_{ec}}{V_m - V_w - V_{ec}}$$

Where:
- G_1 = Weight of VOC per volume of material less water and exempt compounds in grams per liter
- W_v = Weight of all volatile compounds including any volatile materials added to the original material supplied by the manufacturer when calculating the VOC content as applied in grams
- W_w = Weight of water in grams
- W_{ec} = Weight of exempt compounds in grams
- V_m = Volume of material in liters
- V_w = Volume of water in liters
- V_{ec} = Volume of exempt compounds in liters

8.2 Calculation for Determining VOC Content of Material Including Water and Exempt Compounds: For the VOC content as applied, the volume of material is defined as the volume of the original material, plus any material added to the original material (e.g., thinners or reducers). For the VOC content as supplied, the volume of material is defined as the volume of the original material. The weight of VOC per total volume of material shall be calculated by the following equation:

$$G2 = \frac{W_v - W_w - W_{ec}}{V_m}$$

Where:
- G_2 = Weight of VOC per total volume of material, in grams per liter
- W_v = Weight of all volatile compounds, in grams
- W_w = Weight of water, in grams
- W_{ec} = Weight of exempt compounds, in grams
- V_m = Volume of material, in liters

8.3 Calculation of Percent of VOC by Weight: The percent of VOC by weight is the ratio of the weight of the VOC to the weight of the adhesive or adhesive primer as supplied by the

manufacturer, expressed as a percent of VOC by weight. The percent of VOC by weight shall be calculated as follows:

$$PercentofVOCbyWeight = \frac{W_{vocx}\,100}{W_p}$$

Where: W_{voc} = Weight of VOCs in grams

W_p = Weight of the adhesive or adhesive primer, as supplied by the manufacturer, in grams.

8.4 Calculation for Determining Percent Control Efficiency and VOC Mass Emission Rate: The VOC mass emission rate shall be calculated both upstream and downstream of the emissions control device and shall be based on the VOC mass concentration and volumetric flowrate, pursuant to section 10.4 and the following equations:

8.4.1 VOC Mass Emission Rate:

M = (Q) * (C) * (60 min/hr.) (Calculated upstream and downstream)

Where: M = VOC mass emission rate (upstream/downstream), in lb/hr.

Q = the volumetric flowrate at the inlet (upstream) or exhaust stack outlet (downstream), in standard cubic feet per minute as determined by Section 10.4.

C = the VOC mass concentration at the inlet (upstream) or outlet (downstream), in pounds per standard cubic feet, as determined pursuant to Section 10.4.

8.4.2 The percent control efficiency is calculated as follows:

$$\%\ CE = \left[\frac{M_u - M_d}{M_u}\right] * 100\ Mu$$

Where: CE = control efficiency.

Mu = the upstream VOC mass emission rate, in lb/hr.

Md = the downstream VOC mass emission rate, in lb/hr.

8.5 Calculation for VOC Composite Partial Pressure: The VOC composite partial pressure is the sum of the partial pressures of the compounds defined as VOCs, and shall be calculated by the following equation:

$$PP_c = \frac{\sum_{i=1}^{n} \frac{(W_i)(VP_i)}{MW_i}}{\frac{W_w}{MW_w} + \sum_{e=1}^{n} \frac{W_e}{MW_e} + \sum_{i=1}^{n} \frac{W_i}{MW_i}}$$

Where: Pp_c = VOC composite partial pressure at 20°C, in mm Hg.

W_i = Weight of the "i"th VOC compound, in grams, as determined by ASTM E 260-96

W_w = Weight of water, in grams as determined by ASTM D 3792-99.

W_e = Weight of the "e"th exempt compound, in grams, as determined by ASTM E 260-96.

MW_i = Molecular weight of the "i"th VOC compound, in grams per g-mole, as given in chemical reference literature.

MW_w = Molecular weight of water, 18 grams per g-mole.

MW_e = Molecular weight of the "e"th exempt compound, in grams per g–mole, as given in chemical reference literature.

VP_i = Vapor pressure of the "i"th VOC compound at 20°C, in mm Hg, asdetermined by Section 10.8 of this rule.

8.6 Operation and Maintenance Plan: Any person using an approved emission control device pursuant to section 7.3 must submit an Operation and Maintenance Plan for the emissions control device to the Air Pollution Control Officer for approval. This Plan shall specify operation and maintenance procedures that demonstrate continuous operation and compliance of the emissions control equipment during periods of emissions-producing operations. This Plan shall specify key system operating parameters necessary to determine compliance with this rule and describe in detail procedures to maintain the approved control device. The plan shall specify which records must be kept to document these operations and maintenance procedures. The records shall comply with the requirements of section 9.1. This Plan shall be implemented upon approval by the Air Pollution Control Officer.

8.7 Product Information Requirements for Sellers: Any person who sells any material subject to this rule shall make available to the purchaser at the time of sale the following information:

8.7.1 The material type by name/code/manufacturer;

8.7.2 For materials subject to section 7.1: The maximum VOC content of the material as applied. The VOC content shall be displayed as grams of VOC per liter of material (or pounds of VOC per gallon), excluding water and exempt compounds. For low solids materials, the VOC content shall be displayed as grams of VOC per liter of material (or pounds of VOC per gallon), including water and exempt compounds;

8.7.3 For materials subject to section 7.2.1: The maximum VOC content and the total VOC composite partial pressure of the material as applied. The VOC content shall be displayed as grams of VOC per liter of material (or pounds of VOC per gallon), including water and exempt compounds as determined pursuant to section 10.1. The composite vapor pressure shall be displayed in millimeters of mercury at 20°C (68°F) as determinedpursuant to section 10.8; and for all materials subject to sections 7.1 and 7.2.1: Recommendations regarding thinning, reducing, or mixing with any material.

9 Monitoring and Records

9.1 Record Keeping: In addition to any existing permit conditions issued pursuant to District Rule 2:2 Permits Required section 1 and 2, any person subject to this rule, including operations exempt pursuant to sections 5.10, 5.11, 5.12, and 5.13, shall comply with the following requirements:

9.1.1 List of Materials: A list shall be maintained of all materials currently used and/or stored at the site. The list shall include the following information:

9.1.1.1 The material type by name/code/manufacturer and the appropriate category as designated by the material categories in sections 7.1 and 7.2.

9.1.1.2 The actual VOC content of the materials listed in section 7.1 as applied excluding water and exempt compounds or including water and exempt compounds for a low solids material.

9.1.1.3 The actual VOC content of the cleaning material listed in section 7.2 as applied including water and exempt compounds.

9.1.1.4 The VOC composite partial pressure for materials listed in section 7.2.1 if applicable. The VOC composite partial pressure shall be calculated pursuant to sections 8.5 and 10.8.

9.1.1.5 The actual mixing ratio for the material as applied.

9.2 Product Information: The information listed under section 8.7.1 through 8.7.3 shall be maintained and made available to the Air Pollution Control Officer upon request.

9.3 Record of Usage: Any person using materials regulated by this rule shall update and maintain the records as required by this rule as follows:

9.3.1 Daily:

9.3.1.1 For Noncompliant Materials: Records regarding the use of each material type by name/code/manufacturer and the total applied volume in gallons;

9.3.1.2 Records of usage of aerosol cleaning solvents exempt pursuant to section 5.9 in ounces.

9.3.2 Monthly:

9.3.2.1 Records of total applied volume in gallons for each material (including thinners, reducers, hardeners, retarders, catalysts, and cleaning materials), specified by material type as listed in sections 7.1 and 7.2.1;

9.3.2.2 For stationary sources exempt pursuant to section 5.11, record of all materials used (including thinners, reducers, hardeners, retarders, and catalysts) used in gallons. The annual usage in gallons per year shall also be calculated from the monthly usage records in order to verify the exemption in section 5.11;

9.3.2.3 Records of total applied volume for each material exceeding the VOC limits specified in sections 7.1 and 7.2.1 by name/code/manufacturer and material type;

9.3.2.4 Records of usage of ethyl acetate cleaning solvent exempt pursuant to section 5.10 in gallons. The daily usage records shall be calculated based on the calendar month period by dividing the total number of gallons used per calendar month by the number of days in the calendar month.

9.4 Emission Control Equipment: Any person using an emission control device pursuant to section 7.3 as a means of complying with this rule shall maintain:

9.4.1 On a daily basis:

9.4.1.1 Such records as required by the Operation and Maintenance Plan in section 8.6; and

9.4.1.2 Records of total applied volume in gallons for each material.

9.4.2 Records of test reports conducted pursuant to section 10.

9.5 Duration of Records: All records required by section 9.1 shall be maintained for a continuous five-year period and made available to the Air Pollution Control Officer upon request.

9.6 Location of Records: All records required by section 9.1 shall be maintained on-site for a continuous five-year period unless alternative record keeping is used pursuant to section 9.7. The records shall be made available to the Air Pollution Control Officer upon request.

9.7 Alternative Record Keeping: A person with an operation that requires the application of adhesives and sealant materials at multiple locations throughout the District shall notify the Air Pollution Control Officer in writing prior to using an alternative record keeping option that tracks the total combined usage from all locations and maintains the usage information at one centralized location.

9.7.1 The notification shall include the following information:

9.7.1.1 A list of all materials used or proposed for use at all locations throughout the District. The list shall contain the information required under sections 9.1.1 and 9.2;

9.7.1.2 The location where records will be kept.

9.7.2 A person using an alternative record keeping option shall maintain all of the following at the centralized location:

9.7.2.1 A list of all materials currently used and/or stored that contain the information listed in section 9.1.1;

9.7.2.2 Product information as required by section 9.2;

9.7.2.3 Records of the total combined usage in gallons for each material (including thinners, reducers, hardeners, retarders, catalysts, and cleaning materials) specified by material type as listed in sections 7.1 and 7.2.1.

9.7.3 A person using an alternative record keeping option shall use (at all locations) only materials that comply with the applicable VOC standards listed in sections 7.1 and 7.2.

9.7.4 A person using the alternative record keeping option shall notify the Air Pollution Control Officer in writing prior to discontinuing the alternative record keeping option.

9.7.5 A person using the alternative record keeping option shall submit to the Air Pollution Control Officer an updated list if new materials are added to the list originally submitted pursuant to section 9.7.1.1.

9.7.6 A person using the alternative record keeping option will be prohibited from future use of the alternative record keeping provision if found in violation with section 9.7.3.

10 Test Methods:

10.1 Determination of VOC Content: Except as provided in section 10.2, VOC content of non-aerosol adhesive or sealant products, surface preparation solvents, cleanup solvents, or strippers shall be determined in accordance with United States Environmental Protection Agency Method 24 or United States Environmental Protection Agency Method 24A, and sections 8.1 and 8.2 of this rule.

10.2 Determination of VOC Content of Plastic Welding Cement Adhesive/primer: The VOC content of ABS, CPVC, PVC, or other plastic welding cement adhesive or any plastic welding cement primer shall be determined by using the South Coast Air Quality Management District's Determination of Volatile Organic Compounds (VOC) in Materials Used for Pipes and Fittings, Method 316a.

10.3 Determination of Control Efficiency: Control efficiency of the emissions control equipment shall be determined in accordance with United States Environmental Protection Agency Method 18, 25, or 25A; or United States Environmental Protection Agency Method 2 or 2C (whichever is applicable).

10.4 Determination of Collection Efficiency: Efficiency of the collection system shall be determined in accordance with the United States Environmental Protection Agency's Guidelines for Determining Capture Efficiency, January 9, 1995. Individual capture efficiency test runs subject to U.S. EPA technical guidelines shall be determined by:

10.4.1 Applicable EPA Methods 204, 204A, 204B, 204C, 204D, 204E, and/or 204F; or

10.4.2 Any other method approved by the Air Pollution Control Officer.

10.5 Determination of VOC Content of Emissions: The VOC content of emissions shall be determined by United States Environmental Protection Agency Method 18.

10.6 Determination of Plasticizer Content: The test method used to determine plasticizer content of flexible vinyls shall be ASTM Method E260-96, General Gas Chromatography Procedures.

10.7 Determination of VOC Composite Partial Pressure: VOC composite partial pressure shall be determined in accordance with ASTM E260-96 for organic compounds, and ASTM D 3792-91for water content as applicable, and sections 8.5 and 10.8 of this rule.

10.8 Determination of Vapor Pressure: Vapor pressure of a VOC shall be determined in accordance with ASTM Method D2879-96, or may be obtained from the most current edition of published sources listed below or other standard science or engineering reference text.

10.8.1 The Vapor Pressure of Pure Substances, Boublik, Fried, and Hala; Elsevier Scientific Publishing Company, New York.

10.8.2 Perry's Chemical Engineer's Handbook, McGraw-Hill Book Company.

10.8.3 CRC Handbook of Chemistry and Physics, Chemical Rubber Publishing Company.

10.8.4 Lange's Handbook of Chemistry, John Dean, editor, McGraw-Hill Book Company.

10.9 Determination of VOC Content Cyanoacrylate Adhesives: The VOC content of cyanoacrylate adhesives shall be determined by the South Coast Air Quality Management District's Method 316B.

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