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Rule 1168

Adhesive and Sealant Applications

(A) General

- (1) The purpose of this rule is to reduce emissions of Volatile Organic Compounds (VOCs) and to eliminate emissions of chloroform, ethylene dichloride, methylene chloride, perchlorethylene, and trichlorethylene from the application of Adhesives, Adhesive Primers, Sealants, Sealant Primers or any other Primers.
- (2) This rule shall apply to all commercial and industrial sales and applications of Adhesives, Adhesive Primers, Sealants, Sealant Primers, or any other Primers, unless otherwise specifically exempted by this rule.

(B) Definitions

For the purpose of this rule, the following definitions shall apply:

- (1) Acrylonitrile-Butadiene-Styrene (ABS) - A Plastic made by reacting monomers of acrylonitrile, butadiene, and styrene and is normally identified with an ABS marking.
- (2) Adhesive - Any substance that is used to bond one surface to another surface by attachment. Adhesives include, Adhesive Bonding Primers, Adhesive Primers, Adhesive Primers for Plastics and any other Primer used with Adhesives.
- (3) Adhesive Bonding Primer - An Adhesive applied to a surface to improve the bond of subsequent Adhesives and sometimes to inhibit corrosion.
- (4) Adhesive Primer - A coating applied to a substrate, prior to the application of an Adhesive, to provide a bonding surface.
- (5) Adhesive Primer for Plastic - A material applied to a Plastic substrate alone or before applying an Adhesive in order to obtain better adhesion.
- (6) Adhesive Solid - The nonvolatile portion of an Adhesive that remains after heating a sample of the material at 110°C for one hour.
- (7) Aerosol Adhesive - Any Adhesive packaged as an aerosol product in which the spray mechanism is permanently housed in a non-refillable can designed for hand-held application without the need for ancillary hoses or spray equipment. Aerosol Adhesives include special purpose spray Adhesives, mist spray Adhesives, and web spray Adhesives as defined by 17 Cal. Code Regs. §§94507 et seq.

- (8) Aerosol Spray Can - A hand held, pressurized, non-refillable container which expels Adhesives from the container in a finely divided spray when a valve on the container is depressed.
- (9) Aerospace Component - The fabricated part, assembly of parts, or completed unit of any Aircraft or Space Vehicle (excluding tires), and includes models, mock-ups, prototypes, and test coupons.
- (10) Aircraft - Any machine designed to travel through the air, without leaving the Earth's atmosphere, whether heavier or lighter than air, including airplanes, balloons, dirigibles, helicopters, and missiles.
- (11) Aircraft Tire Repair - The repair and retreading of used tires used on Aircraft. This includes the repair of damage to the tire casing, removal of old tread Rubber and tread reinforcing materials, and application of new tread and tread reinforcing materials.
- (12) Air Pollution Control Officer (APCO) - The person appointed to the position of Air Pollution Control Officer of the District pursuant to the provisions of California Health & Safety Code §40750 and his or her designee.
- (13) Architectural - Pertaining to stationary structures including buildings, houses, and mobile homes, and their appurtenances.
- (14) Architectural Application - The use of an Adhesive, Sealant, Adhesive Primer, or Sealant Primer on 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 downspouts and windows.
- (15) Architectural Sealant or Sealant Primer - Any Sealant or Sealant Primer 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 downspouts and windows.
- (16) California Air Resources Board (CARB) - The California State Air Resources Board the powers and duties of which are described in Part 2 of Division 26 of the California Health & Safety Code (commencing with §39500).
- (17) Carpet Pad Adhesive - An Adhesive used for the installation of carpet pad (or cushion) beneath a carpet.
- (18) Ceramic Tile Adhesive - An Adhesive used in the installation of Ceramic Tile products.
- (19) Ceramic Tiles - A ceramic surfacing unit made from clay or a mixture of clay and other materials.

- (20) Chlorinated Polyvinyl Chloride (CPVC) - Plastic which is a polymer of the chlorinated polyvinyl monomer that contains 67 percent chlorine and is normally identified with a CPVC marking.
- (21) Coating Solid - The nonvolatile portion of a coating that remains after heating a sample of the material at 110°C for one hour.
- (22) Computer Diskette Manufacturing - The process where the fold-over flaps are glued to the body of a vinyl jacket.
- (23) Contact Adhesive - An Adhesive applied to two (2) separate surfaces, allowed to dry, and brought together for adhesion and bonding with subsequent pressure.
- (24) Cove Base Installation Adhesive - An Adhesive used during the installation of cove base (or wall base), which is generally made of vinyl or Rubber, on a wall or vertical surface at floor level.
- (25) Cyanoacrylate Adhesive - A single-component Reactive Diluent Adhesive that contains at least 85 percent by weight ethyl, methyl, methoxymethyl or other functional groupings of cyanoacrylate.
- (26) District - The Antelope Valley Air Quality Management District the geographical area of which is described in District Rule 103.
- (27) Drywall Adhesive - An Adhesive used during the installation of gypsum dry wall to studs or solid surfaces.
- (28) Exempt Compounds - A compound identified as exempt in 40 CFR 51.100(s).
- (29) Facility - Any permit unit or grouping of permit units or other air contaminant-emitting activities which are located on one or more contiguous properties within the District, in actual physical contact or separated solely by a public roadway or other public right-of-way, and are owned or operated by the same Person (or by Persons under common control). Such above-described groupings, if not contiguous, but connected only by land carrying a pipeline, shall not be considered one Facility.
- (30) Fiberglass - Fine filaments of glass.
- (31) Flexible Vinyl - Non-rigid polyvinyl chloride Plastic with a five (5) percent by weight plasticizer content.
- (32) Floor Covering Installation Adhesive (Indoor) - Any Adhesive intended by the manufacturer for use in the installation of vinyl backed carpet, resilient sheet and roll or artificial grass. Adhesives used to install ceramic tile, perimeter bonded Sheet Vinyl, Flexible Vinyl, indoor carpet, Rubber Floor, Subfloor. VCT and Asphalt Tile and wood flooring are excluded from this category.
- (33) Floor Covering Installation Adhesive (Outdoor) - Any Adhesive intended by the manufacturer for use in the installation of floor covering that is not in an

enclosure and that is exposed to ambient weather conditions during normal use. Outdoor Carpet is excluded from this category.

- (34) Foam - A rigid or spongy cellular mass with gas bubbles dispersed throughout.
- (35) Glue - A hard gelatin obtained from hides, tendons, cartilage, bones, etc., of animals.
- (36) Grams of VOC Per Liter of Adhesive, Less Water and Less Exempt Compounds - The weight of VOC per combined volume of VOC and Adhesive or Sealant solids, and can be calculated by the following equation:

$$\text{Grams of VOC per Liter of Adhesive, Less Water and Less Exempt Compounds} = \frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

- Where:
- W_s = weight of volatile compounds, in grams
 - W_w = weight of water, in grams
 - W_{es} = weight of exempt compounds, in grams
 - V_m = volume of material, in liters
 - V_w = volume of water, in liters
 - V_{es} = volume of exempt compounds, in liters

For Adhesives or Sealants that contain Reactive Diluents, the VOC content of the Adhesive or Sealant is determined after curing. The grams of VOC per liter of Adhesive or Sealant (except a Low-Solids Adhesive or Sealant) shall be calculated by the following equation:

$$\text{Grams of VOC per Liter of Adhesive, Less Water and Less Exempt Compounds} = \frac{W_{rs} - W_{rw} - W_{res}}{V_{rm} - V_{rw} - V_{res}}$$

- Where:
- W_{rs} = weight of volatile compounds not consumed during curing, in grams
 - W_{rw} = weight of water not consumed during curing, in grams
 - W_{res} = weight of exempt compounds not consumed during curing, in grams
 - V_{rm} = volume of material prior to reaction, in liters
 - V_{rw} = volume of water not consumed during curing, in liters
 - V_{res} = volume of exempt compounds not consumed during curing, in liters

- (37) Grams of VOC Per Liter of Material - The weight of VOC per volume of material calculated by the following equation:

$$\text{Grams of VOC per Liter of Material} = \frac{W_s - W_w - W_{es}}{V_m}$$

Where: W_s = weight of volatile compounds, in grams
 W_w = weight of water, in grams
 W_{es} = weight of exempt compounds, in grams
 V_m = volume of material, in liters

- (38) Hand Application Methods - The application of Adhesive or Sealant by manually held equipment. Such equipment includes paint brush, hand roller, trowel, spatula, dauber, rag, sponges, and mechanically- and/or pneumatic-driven syringes without atomization of the materials.
- (39) High-Volume, Low-Pressure (HVL) Spray - Spray equipment permanently labeled as such and which is designed and operated between 0.1 and 10 pounds per square inch, gauge (psig) air atomizing pressure measured dynamically at the center of the air cap and at the air horns.
- (40) Indoor Carpet Adhesive - An Adhesive used during the installation of a carpet that is in an enclosure and is not exposed to ambient weather conditions during normal use.
- (41) Light Curable Adhesives and Sealants - Single-component reactive Adhesives and Sealants that cure upon exposure to visible-light, ultra-violet light, or to an electron beam.
- (42) Low-Solids Adhesive - An Adhesive which has less than one (1) pound (120 grams) of solids per gallon of material.
- (43) Low-Solids Adhesive Primer - An Adhesive Primer which has less than one (1) pound (120 grams) of solids per gallon of material.
- (44) Marine Deck Sealant - A Sealant intended by the manufacturer to be applied to wooden marine decks.
- (45) Marine Deck Sealant Primer - Any Sealant Primer intended by the manufacturer to be applied to wooden marine decks.
- (46) Metal to Urethane/Rubber Molding or Casting Adhesive - Any Adhesive intended by the manufacturer to bond metal to high density or elastomeric urethane or molded Rubber materials, in heater molding or casting processes, to fabricate products such as rollers for computer printers or other paper handling equipment.
- (47) Modified Bituminous Materials - Materials obtained from natural deposits of asphalt or residues from the distillation of crude oil petroleum or coal which consist mainly of hydrocarbons, and include, but are not limited to, asphalt, tar, pitch and asphalt tile that are soluble in carbon disulfide.

- (48) Modified Bituminous Sealant Primer - Primer consisting of bituminous materials and a high flash solvent used to prepare a surface by (1) improving the adhesion and (2) absorbing dust from the surface for Adhesive or flashing cement bitumen membrane.
- (49) Motor Vehicle Adhesive - An Adhesive, including glass bonding Adhesive, used at a Facility that is not an automobile or light-duty truck assembly coating Facility, applied for the purpose of bonding two (2) vehicle surfaces together without regard for the substrates involved.
- (50) Motor Vehicle Glass Bonding Adhesive Primer - A Primer, used at a Facility that is not an automobile or light-duty truck assembly coating Facility, applied to windshield or other glass, or to body openings, to prepare the glass or body opening for the application of glass bonding Adhesives or the installation of Adhesive bonded glass. Motor vehicle glass bonding Primer includes glass bonding/cleaning Primers that perform both functions (cleaning and priming of the windshield or other glass, or body openings) prior to the application of the Adhesive or the installation of Adhesive bonded glass.
- (51) Motor Vehicle Weatherstrip Adhesive - An Adhesive, used at a Facility that is not an automobile or light-duty truck assembly coating Facility, applied to weatherstripping materials for the purpose of bonding the weatherstrip material to the surface of the vehicle.
- (52) Multipurpose Construction Adhesive - Any Adhesive to be used for the installation or repair of various construction materials, including but not limited to: Drywall, Subfloor, Panel, Fiberglass Reinforced Plastic (FRP), ceiling tile and acoustical tile.
- (53) Nonmembrane Roof Sealant - Any Sealant to be used for installation or repair of nonmembrane roofs. This category includes Plastic or asphalt roof cement, asphalt roof coatings, and cold application cement.
- (54) Orthotics and Prosthetics - Medical devices designed and fabricated to address human neuromuscular and structural skeletal problems in order to activate, supplement, or replace weakened, atrophied or missing limbs.
- (55) Outdoor Carpet Adhesive - An Adhesive used during the installation of carpet that is not in an enclosure and is exposed to ambient weather conditions during normal use.
- (56) Panel Adhesive - An Adhesive used for the installation of plywood, pre-decorated hardboard (or tileboard), Fiberglass reinforced plastic (FRP), and similar pre-decorated or non-decorated panels to studs or solid surfaces.
- (57) Percent VOC by Weight - The ratio of the weight of the VOC to the weight of the material, expressed as a percentage of VOC by weight. The percent VOC by weight can be calculated as follows:

$$\text{Percent VOC by Weight} = \frac{W_v}{W} \times 100$$

Where: W_v = weight of the VOCs, in grams
 W = weight of material in grams

- (58) Perimeter Bonded Sheet Flooring Installation - Installation of sheet flooring with vinyl backing onto a nonporous substrate using an adhesive designed to be applied only to a strip of up to four (4) inches wide around the perimeter of the sheet flooring.
- (59) Person - Any individual, firm, association, organization, partnership, business, trust, corporation, company, contractor, supplier, installer, user or owner, or any state or local governmental agency or public district or any other officer or employee thereof. Person also means the United States or its agencies to the extent authorized by federal law.
- (60) Plastic Foam - Foam constructed of Plastics.
- (61) Plastics - Synthetic materials chemically formed by the polymerization of organic (carbon-based) substances. Plastics are usually compounded with modifiers, extenders, and/or reinforcers. They are used to produce pipe, solid sheet, film, or bulk products.
- (62) Plastic Solvent Welding Adhesive - The use of Adhesives made of resins and solvents which are used to dissolve the surfaces of Plastic, except ABS, CPVC, and PVC Plastic, to form a bond between mating surfaces.
- (63) Plastic Solvent Welding Adhesive (ABS) - An Adhesive that is intended by the manufacturer to weld ABS plastic.
- (64) Plastic Solvent Welding Adhesive (CPVC) - An Adhesive intended by the manufacturer for welding of chlorinated polyvinyl chloride plastic, and labeled as such.
- (65) Plastic Solvent Welding Adhesive Primer - Any Primer intended by the manufacturer for use to prepare Plastic substrates prior to bonding or welding.
- (66) Plastic Solvent Welding Adhesive (PVC) - An Adhesive intended by the manufacturer for use in the welding of Polyvinyl Chloride Plastic pipe.
- (67) Polyvinyl Chloride (PVC) - Plastic which is a polymer of the chlorinated vinyl monomer that contains 57 percent chlorine and is normally identified with a PVC marking.
- (68) Porous Material - A substance which has tiny openings, often microscopic, in which fluids may be absorbed or discharged.
- (69) Primer - A material applied to a substrate to improve adhesion of subsequently applied Adhesive.

- (70) Reactive Diluent - A liquid which is a VOC during application and one in which, through chemical and/or physical reactions, such as polymerization, 20 percent or more of the VOC becomes an integral part of a finished material.
- (71) Reinforced Plastic Composite - Composite material consisting of Plastic reinforced with fibers.
- (72) Roadway Sealant - Any Sealant to be applied to public streets, highways, and other surfaces, including but not limited to curbs, berms, driveways, and parking lots.
- (73) Roll Coater - A series of mechanical rollers that form a thin coating or Adhesive film on the surface roller, which is applied to a substrate by moving the substrate underneath the roller.
- (74) Rubber - Any 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.
- (75) Rubber Floor Adhesive - The installation of flooring material in which both the back and the top surface are made of synthetic Rubber, and which may be in sheet or tile form.
- (76) Sealant - Any material with Adhesive properties that is formulated primarily to fill, seal, or waterproof gaps or joints between two (2) surfaces. Sealants include Sealant Primers and caulks.
- (77) Sealant Primer - Any product applied to a substrate, prior to the application of a Sealant, to enhance the bonding surface.
- (78) Sheet Rubber Lining Installation Adhesive - The hand application of sheet Rubber lining to metal or Plastic substrates in order to protect the underlying substrate from corrosion or abrasion. These operations also include laminating sheet Rubber to fabric.
- (79) Shoe Repair, Luggage and Handbag Adhesive - An Adhesive used to repair worn, torn or otherwise damaged uppers, soles, and heels of shoes, or for making repairs to luggage and handbags.
- (80) Single-Ply Roof Membrane Adhesive Primer - Any Primer labeled for use to clean and promote adhesion of the single-ply roof membrane seams or splices prior to bonding.
- (81) Single-Ply Roof Membrane Installation/Repair Adhesive - Any Adhesive Sealant to be used for the installation or repair of single-ply roof membrane. Installation includes, but is not limited to attaching the edge of the membrane to the edge of the roof and applying flashings to vents, pipes, or ducts that protrude through the membrane.

- (82) Single-Ply Roof Membrane Sealant - Any Sealant to be used for the installation or repair of single-ply roof membrane to the edge of the roof and applying flashings to vents, pipes, or ducts that protrude through the membrane.
- (83) Solvent Welding - The softening of the surfaces of two substrates by wetting them with solvents and/or Adhesives, and joining them together with a chemical and/or physical reaction(s) to form a fused union.
- (84) South Coast Air Quality Management District (SCAQMD) - The air quality district created pursuant to Division 26, Part 3, Chapter 5.5 of the California Health & Safety Code (commencing with §40400).
- (85) Space Vehicle - A vehicle designed to travel beyond Earth's atmosphere.
- (86) Special Purpose Contact Adhesive - A Contact Adhesive that is used to bond all of the following substrates to any surface: melamine covered board, metal, unsupported vinyl, Teflon, ultra-high molecular weight polyethylene, Rubber and wood veneer 1/16 inch or less in thickness.
- (87) Structural Glazing Adhesive - Any Adhesive to be used to adhere glass, ceramic, metal, stone, or composite panels to exterior building frames.
- (88) Structural Wood Member Adhesive - An Adhesive used for the construction of any load bearing joints in wooden joists, trusses, or beams.
- (89) Subfloor Adhesive - An Adhesive used in the installation of subflooring material over floor joists.
- (90) Thin Metal Laminating Adhesive - A process of bonding 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 mil.
- (91) Tire Repair Adhesive - 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.
- (92) Tire Retread Adhesive - Any Adhesive to be applied to the back of pre-cured tread Rubber and to the casing and cushion Rubber, or to be used to seal buffed tire casings to prevent oxidation while the tire is being prepared for a new tread.
- (93) Top and Trim Adhesive - An Adhesive used during the installation of automotive and marine trim, including, but not limited to, headliners, vinyl tops, vinyl trim, sunroofs, dash covering, door covering, floor covering, panel covering and upholstery.
- (94) Traffic Marking Tape - Preformed reflective tape to be applied to public streets, highways, and other surfaces, including but not limited to curbs, berms, driveways, and parking lots.

- (95) Traffic Marking Tape Adhesive Primer - Any Adhesive Primer intended by the manufacturer to be applied to surfaces prior to installation of Traffic Marking Tape.
- (96) Transfer Efficiency - The ratio of the weight or volume of Coating Solids adhering to an object to the total weight or volume, respectively, of Coating Solids used in the application process, expressed as a percentage.
- (97) United States Environmental Protection Agency (USEPA) - The United States Environmental Protection Agency, the Administrator of the USEPA and his or her authorized representative.
- (98) Vinyl Composition Tile (VCT) and Asphalt Tile Adhesive - An Adhesive intended by the manufacturer for the installation of vinyl composite tile or asphalt tile flooring made from thermoplastic resins, fillers and pigments.
- (99) Viscosity - The internal friction of a liquid that makes it resistant to flow.
- (100) Volatile Organic Compound (VOC) - Any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions and those compounds listed in 40 CFR 51.100(s).
- (101) Waterproof Resorcinol Glue - A two-part resorcinol-resin-based Adhesive designed for applications where the bond line must be resistant to continuous immersion in fresh or salt water.
- (102) Wood Flooring Adhesive - An Adhesive used to install a wood floor surface, which may be in the form of Parquet tiles, Planks, or strip-wood.
- (103) Wood Parquet Flooring - Wood flooring in tile form constructed of smaller pieces of wood which are joined together in a pattern by the maker to form the tile.
- (104) Wood Plank Flooring - Solid or laminated wood in plank form.

(C) Requirements

- (1) After January 1, 1993, a Person shall not apply any Adhesives, Sealants, Adhesive Bonding Primers, Adhesive Primers, Sealant Primers, or any other Primer which have a VOC content in excess of 250 g/L less water and less Exempt Compounds unless otherwise specified in subsection (C)(2).
- (2) After September 20, 2011, a Person shall not apply Adhesives, Adhesive Primers, Sealants, Sealant Primers, or any other Primer which have a VOC content in excess of the limits specified in Table 1:

Table 1

	VOC Emission Limit Less Water and Less Exempt Compounds	
	Proposed Limits in g/L	Proposed Limits in lb/gal
General Adhesive Application Processes*		
Fiberglass	80	0.7
Flexible Vinyl	250	2.1
Floor Covering Installation (Indoor)	150	1.3
Floor Covering Installation (Outdoor)	250	2.1
Metal	30	0.3
Plastic Foams	50	0.4
Porous Material (Except Wood)	50	0.4
Reinforced Plastic Composite	200	1.7
Rubber	250	2.1
Wood	30	0.3
Other Substrates	250	2.1
Specialty Adhesive Application Processes		
Carpet Pad	50	0.4
Ceramic Tile Installation	65	0.5
Computer Diskette Manufacturing	350	2.9
Contact Adhesive	80	0.7
Cove Base Installation	50	0.4
Drywall and Panel	50	0.4
Indoor Carpet	50	0.4
Metal to Urethane/Rubber Molding or Casting	850	7.1
Motor Vehicle	250	2.1
Motor Vehicle Weatherstrip	750	6.3
Multipurpose Construction	70	0.6
Outdoor Carpet	150	1.3
Perimeter Bonded Sheet Vinyl	660	5.5
Plastic Solvent Welding (except ABS, CPVC, and PVC)	250	2.1
Plastic Solvent Welding (ABS)	325	2.7
Plastic Solvent Welding (CPVC)	490	4.1
Plastic Solvent Welding (PVC)	510	4.3
Rubber Floor	60	0.5
Sheet Rubber Lining Installation	850	7.1
Single-Ply Roof Membrane Installation/Repair	250	2.1
Special Purpose Contact Adhesive	250	2.1
Structural Glazing	100	0.8
Structural Wood Member	140	1.7
Subfloor	50	0.4
Thin Metal Laminating	780	6.5
Tire Repair/Retread	100	0.8
Top and Trim	250	2.1
VCT and Asphalt Tile	50	0.4
Waterproof Resorcinol Glue	170	1.4
Wood Flooring	100	0.8
Adhesive Primer Application Processes		
Motor Vehicle Glass Bonding	900	7.5

Plastic Solvent Welding	550	4.6
Single-Ply Membrane	250	2.1
Traffic Marking Tape	150	1.3
Other Adhesive Primer	250	2.1
Sealant Primers		
Architectural - Non Porous	250	2.1
Architectural - Porous	775	6.5
Modified Bituminous	500	4.2
Marine Deck	760	6.3
Other Sealant Primer	750	6.3
Sealants		
Architectural	250	2.1
Marine Deck	760	6.3
Nonmembrane Roof	300	2.5
Roadway	250	2.1
Single-Ply Roof Membrane	450	3.8
Other Sealant	420	3.5

*General adhesive application processes are those not specifically identified in other categories listed below.

If an Adhesive is used to bond dissimilar substrates together the Adhesive with the highest VOC content shall be allowed.

- (3) Containers used to dispose of VOC-laden cloth or paper used in stripping cured Adhesives or Sealants shall be closed except when depositing or removing VOC-laden cloth or paper from the container.
- (4) Solvent Cleaning Operations: Storage and disposal of VOC-containing materials shall be conducted in accordance with the provisions of District Rule 1171 - *Solvent Cleaning Operations*.
- (5) Transfer Efficiency

A Person shall not apply Adhesives or Sealants unless the Adhesive or Sealant is applied with properly operating equipment in accordance with operating procedures specified by either the equipment manufacturer or the APCO. Application of Adhesives shall be accomplished only by the use of one (1) of the following methods:

- (a) Electrostatic application;
- (b) Flow coat;
- (c) Dip coat;
- (d) Roll Coater;

- (e) HVLP spray;
 - (f) Hand Application Methods;
 - (g) Such other Adhesive application methods as are demonstrated to the APCO Officer to be capable of achieving no less efficiency than HVLP method and for which prior written approval of the APCO has been obtained; or
 - (h) For Adhesives with a Viscosity of 200 centipoise or greater, as applied, airless spray, air-assisted airless spray, and air-atomized spray may also be used.
- (6) A Person may comply with the provisions of subsections (C)(1), (C)(2), or (C)(5), or all three, by using approved air pollution control equipment, provided that the VOC emissions from such operations and/or materials are reduced by 85 percent overall, by weight.
 - (7) A Person may comply with the provisions of subsection (C)(1) and subsection (C)(2) by means of an Alternative Emission Control Plan pursuant to District Rule 108 - *Alternative Emission Control Plans*.
 - (8) If anywhere on the container of any Adhesive or Sealant, on any sticker or label affixed thereto, or in any sales or advertising literature, any representation is made that the Adhesive or Sealant may be used for any other source specific rule application, for which there is a lower VOC standard, the lowest VOC standard shall apply.
 - (9) The VOC content of Adhesives and Sealants that are applied with the use of refillable pressurized containers are subject to the VOC limits of this rule.

(D) Recordkeeping Requirements

Notwithstanding provisions of Section (I), records shall be maintained pursuant to District Rule 109 – *Recordkeeping for Volatile Organic Compound Emissions*.

(E) Methods of Analysis

- (1) The VOC content of cleaning materials and Adhesives or Sealants shall be determined by using USEPA Reference Method 24 (Determination of Volatile Matter Content, Water Content, Density Volume Solids, and Weight Solids of Surface Coating, 40 CFR Part 60, Appendix A, utilizing Procedure B of ASTM Method D2369), or the SCAQMD Method 304.
- (2) The Exempt Compound's content shall be determined by Methods 302 and 303 in SCAQMD's "Laboratory Methods of Analysis for Enforcement Samples" or ASTM Method D4475-85.

- (3) The VOC content of PVC, CPVC, and ABS pipe cements, Adhesive Primer for Plastic shall be determined by Method 316A in SCAQMD's "Laboratory Method of Analysis for Enforcement Samples."
- (4) The VOC content of cyanoacrylate Adhesives shall be determined by Method 316B in SCAQMD's "Laboratory Methods of Analysis for Enforcement Samples."

(F) Test Methods

- (1) The efficiency of the control device and the VOC content measured and calculated as carbon in the control device exhaust gases shall be determined by USEPA's Test Method 18, or CARB Method 422 for the determination of emissions of Exempt Compounds and USEPA's Test Methods 25, 25A; or SCAQMD's Method 25.1 or Method 25.3 (Determination of Total Gaseous Non-Methane Organic Emissions as Carbon) for the determination of total organic compound emissions. Emissions determined to exceed any limits established by this rule through the use of any of the above-referenced test methods shall constitute a violation of the rule.
- (2) Viscosity will be determined by ASTM D 1084-88.
- (3) The following classes of compounds: cyclic, branched, or linear, completely fluorinated alkanes; cyclic, branched, or linear, completely fluorinated ethers with no unsaturations; cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and sulfur-containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine, will be analyzed as Exempt Compounds for compliance with Section (C), only at such time as manufacturers specify which individual compounds are used in the coating formulations and identify the test methods, which, prior to such analysis, have been approved by the USEPA, that can be used to quantify the amounts of each Exempt Compound.

(G) Prohibition of Specifications

- (1) A Person shall not solicit or require any other Person to use, in the District, any Adhesives, Sealants or combination of Adhesives or Sealants in violation of the requirements of this rule.
- (2) The requirements of this Section shall apply to all written or oral agreements executed or entered into after July 1, 1989.

(H) Prohibition of Sales and Use

- (1) On and after September 20, 2011, except as provided in Section (J), or subsection (3) below, no Person shall use, supply, sell, or offer for sale an Adhesive, Sealant, or Adhesive or Sealant Primer for use in the District that at the time of sale exceeds the applicable VOC limits specified in subsections (C)(1) and (C)(2).

- (2) On and after September 20, 2011, except as provided in subsection (3) below, no Person shall use, supply, sell, or offer for sale an Adhesive, Sealant, or Adhesive or Sealant Primer for use in the District that contains chloroform, ethylene dichloride, methylene chloride, perchloroethylene, or trichloroethylene.
- (3) The prohibition of sales and use as specified in subsections (H)(1) and (H)(2) shall not apply to the following:
 - (a) Adhesives and Sealants shipped, supplied or sold to Persons for use outside the District;
 - (b) Any manufacturer of Adhesives or Sealants, provided that the manufacturer has complied with the labeling requirements of District Rule 443.1 – *Labeling of Materials Containing Organic Solvents*, and the product is not sold directly to a user located in the District, or the product was sold to an independent distributor or a sales outlet located in the District that is not a subsidiary of, or under the control of the manufacturer, and was informed in writing by the manufacturer about the compliance status of the product with this rule; and
 - (c) Adhesives and Sealants that contain less than one (1) percent by weight of methylene chloride.

(I) Rule 442 Applicability

- (1) Any Adhesive, Sealant, Adhesive or Sealant application, operation, or Person which is exempt from all or a portion of this rule, shall comply with the applicable provisions of District Rule 442 – *Usage of Solvents*.

(J) Exemptions

- (1) The provisions of subsection (C)(1) and subsection (C)(2) shall not apply to the following:
 - (a) Adhesives used in Tire Repair; or
 - (b) Adhesives and/or Adhesive application processes that are subject to the provisions of District Rules 1104, 1124, 1128, 1130 and 1130.1.
- (2) The provisions of this rule shall not apply to Aerospace Components that are subject to the provisions of District Rule 1124.
- (3) The provisions of subsection (C)(5) and Section (D) shall not be applied to the application of Adhesives or Sealants that contain less than 20 g/L of VOC per liter of Adhesives or Sealants, less water and less Exempt Compounds.
- (4) The provisions of this rule shall not apply to any Facility that uses less than one (1) pint of Adhesives in any one (1) day so long as the products were purchased prior to September 20, 2011.

- (5) The provisions of Section (C) shall not apply to research and development programs and quality assurance labs provided that:
 - (a) A record is kept of:
 - (i) The date when the Adhesives are used, and the type of application(s);
 - (ii) The amount of Adhesives used and the VOC content of such Adhesives;
 - (iii) The amount of solvents used and VOC content of such solvents; and
 - (iv) The manufacturer/suppliers identification and type of material.
 - (b) Such records shall be retained in accordance with the provisions of Section (D) of this rule.
- (6) The provisions of subsection (C)(1) and subsection (C)(2) shall not apply to a Facility that demonstrates that the total volume of non-compliant Adhesives, Sealants, Adhesive Primers, Sealant Primers, and Adhesive Bonding Primers is less than 55 gallons per Facility per rolling 12 month period. On or after January 19, 2009, a Facility may not use this subsection to exclude non-compliant Adhesives used in Architectural Applications, Contact Adhesives, Special Purpose Contact Adhesives and Adhesives used on Porous substrates.
- (7) The provisions of Section (C) shall not apply to Solvent Welding operations used in the manufacturing of medical devices.
- (8) The provisions of this rule shall not apply to Aerosol Adhesives and Primers dispensed from Aerosol Spray Cans. These products must comply with the CARB consumer product regulation found in Title 17 of the California Code of Regulations, beginning at §94507.
- (9) The provisions of subsection (C)(1) and subsection (C)(2) shall not apply to any Adhesive used exclusively for Thin Metal Laminating operations, provided that the Adhesive contains less than 780 grams of VOC per liter of Adhesive, less water and less Exempt Compounds, as applied, and the Facility uses a total of three (3) gallons per day or less of these Adhesives.
- (10) The provisions of this rule, except subsection (H)(2) and Section (D), shall not apply to Light Curable Adhesives and Sealants with a VOC content no more than 50 grams per liter, less water and less Exempt Compounds.
- (11) The provisions of this rule, except subsection (H)(2), shall not apply to the use of Cyanoacrylate Adhesives.
- (12) The provisions of this rule shall not apply to Adhesives and Sealants subject to the CARB consumer products regulation found in Title 17 of the California Code of Regulations, beginning at §94507.

- (13) A Person may sell or apply a non-complying VOC-containing or methylene chloride-containing product for one (1) year after the effective date in subsection (C)(2) for VOC-containing Adhesives and Sealants, and for one year after the applicable effective date of subsection (H)(2), provided:
 - (a) The product complies with the previous applicable VOC limit,
 - (b) The product was manufactured prior to the effective date, and
 - (c) The date of manufacture or a code indicating that date is clearly displayed on the product.
- (14) The provisions of this rule, except subsection (H)(2), shall not apply to Adhesives used to fabricate Orthotics and Prosthetics under a medical doctor's prescription.
- (15) The provisions of this rule, except subsection (H)(2), shall not apply to Shoe Repair, Luggage, and Handbag Adhesives.

[SIP: See AV Full SIP Table at <https://avaqmd.ca.gov/rules-plans>]

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