

## Rule 1168

### Adhesive and Sealant Applications

#### (A) General

##### (1) Purpose

- (a) The purpose of this rule is to reduce emissions of Volatile Organic Compounds (VOCs) and to eliminate emissions of chloroform, ethylene dichloride, methylene chloride, perchloroethylene, and trichlorethylene from the application of Adhesives, Adhesive Primers, Sealants, Sealant Primers or any other Primers.

##### (2) Applicability

- (a) 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

The definitions contained in District Rule 102 – *Definition of Terms* shall apply unless the term is otherwise defined herein: Defined terms are capitalized for ease of recognition.

- (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) ABS to PVC Transition Cement – Plastic Solvent Welding Adhesive used to join ABS and PVC building drains or building sewers.
- (3) Adhesive Primer for Plastic – A material applied to a Plastic substrate alone or before applying an Adhesive in order to obtain better adhesion.
- (4) 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 window screens, lamp-posts, heating and air conditioning equipment, other mechanical equipment, large fixed stationary tools, signs, motion picture and television productions sets, and concrete forms.
- (5) 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, window screens, lamp-posts, heating and air conditioning equipment, other mechanical equipment, large fixed stationary tools, signs, motion picture and television productions sets, and concrete forms.

- (6) Carpet Pad Adhesive – An Adhesive used for the installation of carpet pad (or cushion) beneath a carpet.
- (7) Cellulose Plastic – A plastic containing the naturally occurring polymer or polysaccharide, cellulose (C<sub>6</sub>H<sub>10</sub>O<sub>5</sub>). Examples include, but are not limited to, cellulose acetate, cellulose acetate butyrate, cellulose nitrate and cellulose propionate.
- (8) Ceramic Tile Adhesive – An Adhesive used in the installation of Ceramic Tile products.
- (9) Ceramic Tile – A ceramic surfacing unit made from clay or a mixture of clay and other materials.
- (10) 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.
- (11) Contact Adhesive – An Adhesive applied to two (2) separate surfaces, allowed to dry, and brought together for adhesion and bonding with subsequent pressure. Contact adhesive does not include rubber cements that are primarily intended for use on paper substrates. Contact adhesive also does not include vulcanizing fluids that are designed and labeled for tire repair only.
- (12) 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.
- (13) 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.
- (14) Drywall Adhesive – An Adhesive used during the installation of gypsum dry wall to studs or solid surfaces.
- (15) Edge Glue – An adhesive applied to the edge of multi-sheet carbonless forms prior to being fanned apart after drying.
- (16) Elastomeric Adhesive – A Rubber or thermoplastic based adhesive intended by the manufacturer to be used in the manufacture of life preserving equipment including, but not limited to, aircraft float systems, life rafts, and life jackets; or other personal or equipment protection products.
- (17) Flexible Vinyl – Non-rigid polyvinyl chloride Plastic with a five (5) percent by weight plasticizer content.

- (18) 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.
- (19) 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.
- (20) 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.
- (21) Immersible Product Manufacturing – The manufacture of products intended for immersion in liquids, including wetsuits, rubber fuel bladders, inflatable boats, and life preservers.
- (22) 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.
- (23) 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.
- (24) 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.
- (25) 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.
- (26) 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.
- (27) 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.

- (28) Motor Vehicle Glass Bonding 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.
- (29) 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.
- (30) Multipurpose Construction Adhesive – Any Adhesive to be used for the installation or repair of various construction materials, including but not limited to Fiberglass Reinforced Plastic (FRP), ceiling tile and acoustical tile, and excluding Drywall, Subfloor, and Panel.
- (31) Non-Membrane Roof Installation/Repair Adhesive – Any Adhesive intended by the manufacturer to be used for the installation or repair of non-membrane roofs and that is not intended for the installation of prefabricated single-ply flexible roof membrane. This category includes plastic or asphalt roof cement, asphalt roof coatings and cold application cement.
- (32) Non-Membrane 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.
- (33) Non-staining Plumbing Putty Sealant – Any non-staining sealant intended by the manufacturer to provide watertight seals around faucets and drains, and is formulated to be used on granite, marble, quartz, sandstone, or any other natural surface.
- (34) 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.
- (35) 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.
- (36) 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.
- (37) 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.

- (38) Plastic Foam – Foam constructed of Plastics.
- (39) 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.
- (40) Plastic Solvent Welding Adhesive (ABS) –An Adhesive that is intended by the manufacturer to join ABS pipe, fittings, and other system components, including, but not limited to, components for shower pan liner, drain, closet flange, and backwater valve systems.
- (41) Plastic Solvent Welding Adhesive (CPVC) – An Adhesive intended by the manufacturer for welding of chlorinated polyvinyl chloride plastic, and labeled as such.
- (42) Plastic Solvent Welding Adhesive Primer – Any Primer intended by the manufacturer for use to prepare Plastic substrates prior to bonding or welding.
- (43) Plastic Solvent Welding Adhesive (PVC) – An Adhesive intended by the manufacturer for use in the welding of Polyvinyl Chloride Plastic pipe.
- (44) 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.
- (45) Potable Water Sealant – Any sealant intended by the manufacturer to be used in water treatment or water distribution applications, which requires compliance with NSF/ANSI Standard 61: Drinking Water System Components – Health Effects.
- (46) Pre-formed Rubber Product – A rubber product which has undergone a vulcanization process and is in its final state for further use and is not intended to be vulcanized any further.
- (47) 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.
- (48) Reinforced Plastic Composite – Composite material consisting of Plastic reinforced with fibers.
- (49) 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.
- (50) 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.

- (51) Sealant Primer – Any product applied to a substrate, prior to the application of a Sealant, to enhance the bonding surface.
- (52) Sheet Rubber Lining Installation Adhesive – Adhesives used in 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.
- (53) 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.
- (54) 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.
- (55) 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.
- (56) 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.
- (57) 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.
- (58) 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.
- (59) Structural Glazing Adhesive – Any Adhesive to be used to adhere glass, ceramic, metal, stone, or composite panels to exterior building frames.
- (60) Structural Wood Member Adhesive – An Adhesive used for the construction of any load bearing joints in wooden joists, trusses, or beams.
- (61) Styrene-Acrylonitrile Welding Adhesive – An Adhesive intended by the manufacturer to weld styrene-acrylonitrile co-polymer plastics. Bonding of styrene-acrylonitrile to any other substrate (such as metal) is not included under this plastic welding adhesive subcategory.
- (62) Subfloor Adhesive – An Adhesive used in the installation of subflooring material over floor joists.

- (63) 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.
- (64) Tire Repair Adhesive – Adhesive used after 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.
- (65) 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.
- (66) 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.
- (67) 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.
- (68) Traffic Marking Tape Adhesive Primer – Any Adhesive Primer intended by the manufacturer to be applied to surfaces prior to installation of Traffic Marking Tape.
- (69) 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.
- (70) 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.
- (71) 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.
- (72) 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.
- (73) Wood Plank Flooring – Solid or laminated wood in plank form.

(C) Requirements

- (1) 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

Application Processes	VOC Emission Limit Less Water and Less Exempt Compounds	
	Proposed Limits in g/L	Proposed Limits in lb/gal
<b>General Adhesive</b> <i>(General adhesive application processes are those not specifically identified in other categories listed below as specialty adhesives application processes).</i>		
Fiberglass	80	0.7
Flexible Vinyl	250	2.1
Metal	30	0.3
Plastic Foams	50	0.4
Porous Material (Except Wood)	50	0.4
Pre-formed Rubber Products	250	2.1
Reinforced Plastic Composite	200	1.7
Rubber	250	2.1
Wood	30	0.3
Other Substrates	250	2.1
<b>Specialty Adhesive</b>		
Building Envelope Membrane	250	2.1
Carpet Pad	50	0.4
Ceramic Tile Installation	65	0.5
Contact Adhesive	80	0.7
Contact Adhesive – Special Purpose	250	2.1
Cove Base Installation	50	0.4
Drywall and Panel	50	0.4
Edge Glue	250	2.1
Elastomeric	750	6.3
Floor Covering Installation (Indoor)	150	1.3
Floor Covering Installation (Outdoor)	250	2.1
Immersible Product Manufacturing	650	5.4
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
Non-membrane Roof Installation/Repair	300	2.5
Other Flooring	50	0.4
Perimeter Bonded Sheet Vinyl	660	5.5

<b>Application Processes</b>	<b>VOC Emission Limit Less Water and Less Exempt Compounds</b>	
	<b>Proposed Limits in g/L</b>	<b>Proposed Limits in lb/gal</b>
<b>Plastic Solvent Welding:</b>		
ABS	325	2.7
ABS to PVC Transition	510	4.3
Cellulose	100	0.8
CPVC	490	4.1
PVC	510	4.3
Styrene-Acrylonitrile	100	0.8
All Other Plastic Solvent Welding	250	2.1
<b>Rubber Floor</b>	60	0.5
<b>Sheet Rubber Lining Installation</b>	850	7.1
<b>Single-Ply Roof Membrane Installation/Repair</b>	250	2.1
<b>Structural Glazing</b>	100	0.8
<b>Structural Wood Member</b>	140	1.7
<b>Subfloor</b>	50	0.4
<b>Thin Metal Laminating</b>	780	6.5
<b>Tire Retread</b>	100	0.8
<b>Top and Trim</b>	540	4.5
<b>Traffic Marking Tape</b>	150	1.3
<b>VCT and Asphalt Tile</b>	50	0.4
<b>Waterproof Resorcinol Glue</b>	170	1.4
<b>Wood Flooring</b>	100	0.8
<b>Adhesive Primer</b>		
Motor Vehicle Glass Bonding	900	7.5
Plastic Solvent Welding	550	4.6
Single-Ply Roof Membrane	250	2.1
Traffic Marking Tape	150	1.3
Other Adhesive Primer	250	2.1
<b>Sealant Primers</b>		
Architectural – Non-Porous	250	2.1
Architectural - Porous	775	6.5
Modified Bituminous	500	4.2
Other Sealant Primer	750	6.3
<b>Sealants</b>		
Architectural	250	2.1
Non-membrane Roof	300	2.5
Non-staining Plumbing Putty	150	1.3
Potable Water	100	0.8
Roadway	250	2.1
Single-Ply Roof Membrane	450	3.8
All Other Architectural Sealants	50	0.4
All Other Roof Sealants	300	2.5
All Other Sealant	420	3.5

- (2) Military Specification Adhesives and Sealants
- (a) The VOC limits of Table 1 shall not apply to use of an Adhesive or Sealant, on a military installation, for which there is a Military Specification which has been approved by the Air Pollution Control Officer (APCO) in writing pursuant to this subsection.
  - (b) Any person seeking to use an Adhesive or Sealant, for which there is a Military Specification, which is subject to the provisions of this rule, shall:
    - (i) Submit a petition to the APCO stating the performance requirements, volume of Adhesive or Sealant, and VOC content which is attainable. Such petition shall include a technical justification of the attainable VOC content and an explanation why the Adhesive or Sealant cannot meet the limits set forth in subsection (C)(1).
    - (ii) If the APCO grants written approval, such petition shall be resubmitted for approval on an annual basis.
    - (iii) If the APCO grants written approval, such approval shall contain volume and VOC limit conditions.
    - (iv) Records shall be maintained pursuant to Section (D).
- (3) A Person shall use closed, nonabsorbent containers for the storage or disposal of cloth, paper, or any other absorbent material used for Solvent surface preparation and cleanup.
- (4) Solvent Cleaning Operations
- (a) The requirements of this Section shall apply to any Person using Solvent for Surface Preparation, cleanup, and adhesive and sealer removal, including spray Equipment.
  - (b) A Person shall not use VOC-containing materials for the cleanup of application Equipment used in coating operations, unless (C)(4)(b)(i)-(iv) are true;
    - (i) Application Equipment cleaning Equipment requirements:
      - a. The application Equipment is disassembled and cleaned in an enclosed system during the washing, rinsing and draining processes; or
      - b. 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
      - c. Other application Equipment cleaning methods that are demonstrated to be as effective as the Equipment described above in minimizing emissions of VOC to the atmosphere

are used, provided that the device has been approved in writing prior to use by the APCO, CARB and USEPA.

- (ii) Closed containers or pipes are used to capture, store and convey VOC-containing cleaning and cleaning waste materials;
- (iii) Spills of VOC-containing cleaning and cleaning waste materials are minimized;
- (iv) VOC emissions are minimized during cleaning of application, storage, mixing, and conveying equipment by ensuring that equipment cleaning is performed without atomizing the cleaning solvent.

(c) A Person shall not use VOC-containing materials for Surface Preparation and cleanup unless:

- (i) The material contains 25 grams or less of VOC per liter of material (0.21 pounds per gallon); 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 8 mm Hg or less, at 20 °C (68 °F).

(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; or,
- (g) Such other Adhesive application methods as demonstrated to the APCO Officer to be capable of achieving a transfer efficiency that is equal or greater than that of the 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)(2) or (C)(5), or both, 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) 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.

#### (D) Monitoring and Recordkeeping

##### (1) Adhesives and Sealants Records

- (a) Any Facility or Person claiming exemption pursuant to subsections (J)(2), (J)(3), (J)(5), (J)(8), (J)(9), or (J)(12) shall meet the recordkeeping requirements of this Rule so as to be able to certify the exemption status.
- (b) Any Person subject to subsections (C)(1), (C)(4)(c), or (D)(1)(a) shall comply with the following requirements:
  - (i) Maintain and produce a current list of Adhesives or Sealant Products in use which provides all of the data necessary to evaluate compliance, including, but not limited to, the following information, as applicable:
    - a. The category of material as specified in subsection (C)(1);
    - b. Manufacturer name and identification of each Adhesive or Sealant or its components;
    - c. Mix ratio of components; and
    - d. VOC content, vapor pressure and/or initial boiling point, as applicable, for each Adhesive or Sealant material.
  - (ii) Maintain and produce monthly records of the amount of each Adhesive and Sealer used.
  - (iii) Maintain and produce records on a monthly basis showing the type and amount of Solvent used for stripping, surface preparation, or cleaning.
- (c) Any Facility or Person claiming an exemption pursuant to subsection (D)(1) of this rule shall maintain and produce records of purchase orders and invoices of VOC-containing materials which specify the name of the materials in use. The requirements of this paragraph shall be in addition to all other applicable recordkeeping requirements specified in this Section.

##### (2) Add-on Control Equipment Records

- (a) Any Person using emission Control Equipment, pursuant to subsection (C)(6), shall maintain and produce daily records of key system operating parameters and maintenance procedures which will demonstrate continuous operation and compliance of the emissions Control Equipment

during periods of emissions-producing activities. Key system operating parameters are those necessary to ensure compliance with VOC content of Coating requirements, such as temperatures, pressures and flow rates.

- (3) All records for the previous five (5) year period maintained and produced pursuant to this Section shall be retained and available for inspection by the APCO upon request.

## (E) Container Labeling Requirements

- (1) Adhesive, Sealants and solvents subject to this rule shall be labeled pursuant to subsections (a) - (c) below as appropriate.
  - (a) VOC Content: Each container of Adhesive product and Sealant product subject to this rule shall display the maximum VOC content of the Adhesive product or Sealant product as applied. VOC content shall be displayed as grams of VOC per liter of Adhesive product or Sealant product, excluding water and exempt compounds, or grams of VOC per liter of material for low-solids adhesive products. Each container of Solvent subject to this rule shall display the maximum VOC content (in grams of VOC per liter of material) as supplied.
  - (b) VOC and labeling requirements may be made available on a separate product data sheet or Safety Data Sheet (SDS) if the product container clearly identifies the product contained within.
  - (c) Thinning Recommendations: Each container of adhesive product or sealant product subject to this rule shall display a statement of the manufacturer's recommendations regarding thinning, reducing, or mixing of the adhesive product with any other VOC containing material. Mixing recommendations shall specify a ratio which results in a compliant, as applied, Adhesive product, or Sealant product.
  - (d) Manufacturers of any Adhesive product, Sealant product or Solvent subject to this rule shall indicate on the container, or on a separate product data sheet or Safety Data Sheet (SDS), the name of the Solvent, manufacturer's name, the VOC content, and density of the Solvent, as supplied. The VOC content shall be expressed in units of grams per liter or lb/gallon.

## (F) Test Methods

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.

- (1) The VOC content of cleaning materials and Adhesives, Primers or Sealants shall be determined by using:
  - (a) 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
- (b) SCAQMD Method 304 (*Determination of Volatile Organic Compounds (VOC) in Various Materials*).
- (2) The Exempt Compound content shall be determined by:
- (a) SCAQMD Method 302-91 (*Distillation of Solvents from Paints, Coatings and Inks*, February 1993);
  - (b) SCAQMD Method 303-91 (*Determination of Exempt Compounds*, February 1993); or
  - (c) ASTM Method D4457-85 (91) (*Standard Test Method for Determination of Dichloromethane and 1,1,1-Trichloroethane in Paints and Coatings by Direct Injection into a Gas Chromatograph*).
- (3) The VOC content of PVC, CPVC, and ABS pipe cements, Adhesive Primer for Plastic shall be determined by:
- (a) SCAQMD Method 316A-92 (*Determination of Volatile Organic Compounds (VOC) in Materials Used for Pipes and Fittings*, October 1996)
- (4) The VOC content of Cyanoacrylate Adhesives shall be determined by:
- (a) SCAQMD Method 316B (*Determination of Volatile Organic Compounds (VOC) in Adhesives Containing Cyanoacrylates*, August 1997).
- (5) The efficiency of the control device and the VOC content measured and calculated as carbon in the control device exhaust gases for the determination of emissions of Exempt Compounds shall be determined by:
- (a) USEPA Test Method 18 (*Measurement of Gaseous Organic Compound Emissions by Gas Chromatography*); or
  - (b) CARB Method 422 (*Exempt Halogenated Volatile Organic Compounds in Gases*, September 12, 1990)
- (6) The efficiency of the control device and the VOC content measured and calculated as carbon in the control device exhaust gases for the determination of total organic compound emissions shall be determined by:
- (a) USEPA Test Method 25 (*Determination of Total Gaseous Nonmethane Organic Emissions as Carbon*);
  - (b) USEPA Test Method 25A (*Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer*);

- (c) SCAQMD Method 25.1 (*Determination of Total Gaseous Non-Methane Organic Emissions as Carbon*); or
  - (d) SCAQMD Method 25.3 (*Low Concentration Non-Methane Non-Ethane Organic Compound from Clean Fueled Combustion Sources*).
- (7) Viscosity will be determined by ASTM D 1084 (*Standard Test Methods for Viscosity of Adhesives*).
- (8) The active and passive solvent losses from spray gun cleaning systems shall be determined using SCAQMD *General Test Method for Determining Solvent Losses from Spray Gun Cleaning Systems*, October 3, 1989.
- (9) 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.
- (10) The following calculations shall be used to determine compliance with the provisions of this rule:
- (a) Grams of VOC Per Liter of Adhesive or Sealant, 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:

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

Where:  $G_v$  = Grams of VOC Per Liter of Adhesive or Sealant Less Water and Less Exempt Compounds

$W_s$  = 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

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

$$G_v = \frac{W_{rs} - W_{rw} - W_{res}}{V_{rm} - V_{rw} - V_{res}}$$

Where:  $G_v$  = Grams of VOC Per Liter of Adhesive or Sealant Less Water and Less Exempt Compounds

$W_{rs}$  = 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

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

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

Where:  $G_v$  = Grams of VOC Per Liter of Adhesive or Sealant

$W_s$  = 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

- (d) Percent VOC by Weight - The percent VOC by weight can be calculated as follows:

$$P_v = \frac{W_v}{W} \times 100$$

Where:  $P_v$  = Percent VOC by Weight

$W_v$  = Weight of VOC, in grams

$W$  = Weight of materials, in grams

- (11) All test methods referenced in this section shall be those incorporated by reference into the Federal Register or by USEPA for use in State Implementation Plan rules.
- (12) Alternative Test Methods
- (a) Other test methods demonstrated to provide results that are acceptable for purposes of determining compliance with any provisions of this rule may also be used after review and approval in writing by the District, CARB and USEPA.

#### (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 April 27, 2020.

#### (H) Prohibition of Sales and Use

- (1) On and after April 27, 2020, except as provided in Section (C)(2), (J), or subsection (3) or (4) 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).
- (2) On and after April 27, 2020, 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 Section (E), 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.
- (4) Sell-Through of Adhesives and Sealants
- (a) An Adhesive or Sealant manufactured before April 27, 2020 may be sold, supplied, or offered up for sale until April 27, 2023.
  - (b) An Adhesive or Sealant manufactured before April 27, 2020 may be applied until April 27, 2024.
  - (c) Subsections (H)(4)(a) and (H)(4)(b) only apply to adhesives and Sealants which are labeled to display the date or date code indicating when the product was manufactured, and that the product complied with the category limits in effect at the time the product was manufactured.
- (I) Rule 442 Applicability
- (1) For solvent use in relation to any Adhesive, Sealant, Adhesive or Sealant application or operation which is exempt from all or a portion of this rule, such usage shall comply with the applicable provisions of District Rule 442 – *Usage of Solvents*.
- (J) Exemptions
- (1) The provisions of this rule shall not apply to the following:
    - (a) Any Facility that uses less than one (1) pint of Adhesives in any one (1) day.
    - (b) Aerosol Products dispensed from Aerosol Spray Cans. These products must comply with the CARB consumer product regulation for aerosol coating products found in 17 California Code of Regulations, §§94507 et seq.
    - (c) Adhesives and Sealants subject to the CARB consumer products regulation found in Title 17 of the California Code of Regulations, beginning at §94507.
    - (d) Adhesives and/or Adhesive application processes that are subject to the provisions of District Rules 1117 – *Graphic Arts and Paper, Film, Foil*

*and Fabric Coatings, and 1118 – Aerospace Assembly, Rework and Component Manufacturing Operations*

- (2) The provisions of subsection (C)(1) shall not apply to the following:
- (a) Adhesives used in Tire Repair.
  - (b) A Facility that demonstrates that the total volume of non-compliant Adhesives, Sealants, Adhesive Primers, Sealant Primers, and is less than 55 gallons per Facility per rolling 12-month period. On or after April 27, 2020, 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.
- (3) The provisions of subsections (C)(1) and (C)(5) shall not apply to the following:
- (a) Processes using polyester bonding putties to assemble fiberglass parts at fiberglass boat manufacturing facilities and at other reinforced plastic composite manufacturing facilities subject to the provisions of Rule 1162 – *Polyester Resin Operations*.
  - (b) Research and Development programs and quality assurance labs provided that:
    - (i) A record is kept of:
      - a. The date when the Adhesives and Sealants are used, and the type of application(s);
      - b. The amount of Adhesives and Sealants used and the VOC content of such Adhesives;
      - c. The amount of Solvents used and VOC content of such Solvents; and
      - d. The manufacturer/suppliers identification and type of material.
    - (ii) Such records shall be retained in accordance with the provisions of Section (D) of this rule.
  - (c) Adhesive or Adhesive Primers used in medical equipment manufacturing operations.
  - (d) Processes using Adhesives and Adhesive Primers that are supplied by the manufacturer in containers with a net volume of 16 ounces or less, or a net weight of one (1) pound or less.
- (4) 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.

- (5) 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.
- (6) The provisions of this rule, except subsection (H)(2), shall not apply to the use of Cyanoacrylate Adhesives.
- (7) A Person may sell or apply a non-complying VOC-containing or methylene chloride-containing product for one (1) year after April 27, 2020 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.
- (8) 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.
- (9) The provisions of this rule, except subsection (H)(2), shall not apply to Shoe Repair, Luggage, and Handbag Adhesives.

See SIP Table at <https://www.mdaqmd.ca.gov/rules/overview>