

RULE 353 ADHESIVES AND SEALANTS. (Adopted 8/19/1999, revised [date of amended rule adoption])

A. Applicability

This rule is applicable to any person who supplies, sells, offers for sale, distributes, manufactures, solicits the application of, or uses any adhesives product, adhesive bonding primers, adhesive primers, sealants product, sealant primers, or any other primers or associated solvent for use within the District, unless otherwise specifically exempted by this rule.

Comment [A1]: Adding or associated solvent extends the applicability to solvent cleaning. This change stems from a commitment in the 2010 Clean Air Plan.

B. Exemptions

Except as otherwise specifically provided herein, the provisions of this rule shall not apply to the following:

1. The provisions of this rule shall not apply to the following:

a1. Adhesives and associated solvents used in tire repair operations, provided a label on the adhesive used states "For Tire Repair Only."

b2. Adhesives and associated solvents used in the assembly and manufacturing of undersea-based weapon systems.

e3. All the provisions of this rule, except Sections D, E, G, I, and H, shall apply to any adhesives products, adhesive bonding primers, adhesive primers, sealants, sealant primers products, and any associated solvent or any other primers being tested or evaluated used in any laboratory tests or analyses, including quality assurance or quality control applications, bench scale projects, or short-term (less than 2 years) research and development projects, quality assurance, or analytical laboratory. To qualify for this exemption, provided that the following records shall be maintained and made available to District personnel for a period of at least five (5) years:

Comment [A2]: Modeled on the Rule 321.B.8.b exemption.

1)a. A list of all such materials used, which at a minimum includes the manufacturer's identification, the product category of the material or type of application, and the reactive organic compound content of each material.

2)b. For each short-term research and development project, the project description, date it commenced, and date it concluded.

Comment [A3]: Substantiates that R&D projects are short-term.

c. Such records shall be retained in accordance with the provisions of Section O.45 of this rule.

d4. Solvent welding operations and associated cleaning solvents used in the manufacturing of medical devices, such as, but not limited to, catheters, heart valves, blood cardioplegia machines, tracheotomy tubes, blood oxygenators, and cardiatory reservoirs.

e. Plaque laminating operations where adhesives are used to bond a clear, polyester acetate laminate to wood with lamination equipment installed prior to July 1, 1992. Any person seeking to claim this exemption shall notify the Control Officer in writing that a complying adhesive is not available.

f5. Adhesives product and adhesive bonding primers, adhesive primers, sealants, sealant primers product, or any other primers coating operations and associated solvent use regulated by either of that are subject to any of the following District rules, provided the rule has been approved as part of the State Implementation Plan by the Environmental Protection Agency.

- ~~1)a.~~ Rule 337, Surface Coating of ~~Aircraft or Aerospace Vehicles~~ Parts and Products/Components.
- ~~2)b.~~ Rule 354, Graphic Arts.
- ~~6.~~ Adhesives products and ~~adhesive bonding primers, adhesive primers, sealants, sealant primers products, or any other primers~~ that contain less than 20 grams of reactive organic compound per liter (0.17 pounds of reactive organic compound per gallon) of adhesive or sealant, less water and less exempt compounds, as applied. Solvents used in association with adhesive products and/or sealant products exempt by this provision are also exempt from the requirements of Sections G.1 and H.
- ~~7.~~ All the provisions of this rule, except Sections D, E, F, G, H, I, K, L, M, N, O.1 - O.5, and Q, shall apply to ~~C~~cyanoacrylate adhesives and associated solvents.
- ~~8.~~ All the provisions of this rule, except Sections D, E, and K, shall apply to ~~A~~adhesives products and ~~adhesive bonding primers, adhesive primers, sealants, sealant primers products, or any other primers,~~ which are sold or supplied by the manufacturer or suppliers in containers of ~~4-8~~ fluid ounces or less.
- ~~29.~~ All ~~The~~ provisions of this rule, except Sections ~~K (Prohibition of Sales)~~ D and E, shall ~~not~~ apply if the to any stationary source that has total reactive organic compound emissions less than 200 pounds per calendar year from adhesive products, adhesive bonding primers, adhesive primers, sealant products, associated solvents, and strippers, sealant primers, or any other primers, applied at the stationary source are less than 200 pounds per calendar year. Any person claiming this exemption shall record and maintain monthly operational records that ~~can substantiate this claim/document compliance.~~ Further, the records shall be made available to District personnel for a period of at least five (5) years. Such records shall be retained in accordance with the provisions of Section O.5.
- ~~310.~~ All the provisions of this rule, except ~~The sales prohibition in~~ Sections D, E, and K-1, and K-2 ~~of this rule shall not~~ apply to:
- a. Any supplier or seller of any adhesive product (including aerosol adhesive), adhesive bonding primer, adhesive primer, sealant, or sealant primer product, ~~or any other primer~~ where the supplier or seller:
 - 1) Ships the product outside of Santa Barbara County for use outside of Santa Barbara County.
 - 2) Provides product to a user who has installed a District permitted reactive organic compound add-on control device.
 - b. Any manufacturer of any adhesive product (including aerosol adhesive) or ~~adhesive bonding primer, adhesive primer, sealant, sealant primer product, or any other primer,~~ if the manufacturer has provided the maximum volatile organic compound content per Section L ~~of this rule~~ and if:
 - 1) The product was not sold directly to a user or a sales outlet located in Santa Barbara County, or
 - 2) The product was sold to an independent distributor that is not a subsidiary of, or under the direct control of, the manufacturer.

- c. The sale of any adhesive product (including aerosol adhesive) ~~or adhesive bonding primer, adhesive primer, sealant, sealant primer product, or any other primer,~~ except plastic cement welding adhesives, if:
 - 1) The product is sold in any container(s) having a capacity of 16 fluid ounces or less (net volume) or one pound or less (net weight); and
 - 2) The total net weight or volume of two or more containers packaged together must be equal to or less than one pound or 16 fluid ounces, respectively, to qualify for this exemption.

11. Any solvent cleaning performed with a solvent (including emulsions) that contains two percent by weight or less of each of the following:

- a. Reactive organic compounds, and
- b. Toxic air contaminants (as determined by generic solvent data, solvent manufacturer's composition data or by a gas chromatography test and a mass spectrometry test).
- c. Any person claiming this exemption shall maintain the records specified in Sections O.I.a and O.I.f in a manner consistent with Section O.5 and make them available for review.

Comment [A4]: Essentially the same as the Rule 321.B.1 exemption.

12. Adhesive products (including aerosol adhesives) and sealant products subject to the Air Resources Board consumer products regulation found in Title 17 of the California Code of Regulations, section 94507 et seq.

Comment [A5]: Modeled on exemptions found in South Coast AQMD (SC) Rule 1168(j)(13) and SJV Rule 4653.4.1.7.

13. All the provisions of this rule, except Sections G.I, H, and R, shall apply to solvents and strippers used on the following:

- a. Solar cells, laser hardware, scientific instruments, high-precision optics, telescopes, microscopes, avionics equipment, and military fluid systems; and
- b. Cotton swabs when removing cottonseed oil before the cleaning of high-precision optics; and
- c. Paper gaskets; and
- d. Clutch assemblies where rubber is bonded to metal by means of an adhesive.

Comment [A6]: Rule 353.14.a & b are essentially the same as Rule 321.B.8.a & c and Rule 353.14.c & d stem from Rule 321.B.16.d and e.

C. Definitions

See Rule 102, Definitions, for definitions not limited to this rule. For purposes of this rule, the following definitions shall apply:

Comment [A7]: Our protocol is to add this lead-in sentence.

“Acrylonitrile-Butadiene-Styrene (ABS) Welding Adhesive” means any adhesive intended by the manufacturer to weld ABS pipe. ABS pipe is made by reacting monomers of acrylonitrile, butadiene, and styrene and is normally identified with an ABS marking.

“Adhesive” means any substance that is used to bond one surface to another surface by attachment or fused union.

“Adhesive Primer” means any product intended by the manufacturer to be applied to a substrate, prior to the application of an adhesive, to provide a bonding surface.

“Adhesive Product” means any adhesive, glue, cement, mastic, adhesive bonding primer, adhesive primer,

adhesive primer for plastics, and any other adhesive primer. Adhesive products are a type of coating.

“**Adhesive Bonding Primer**” means an adhesive applied to a surface to improve the bond of subsequent adhesives and sometimes to inhibit corrosion.

“**Adhesive Primer for Plastic**” means a material applied to a plastic substrate before applying an adhesive in order to obtain better adhesion.

“**Adhesive Solid**” means the nonvolatile portion of an adhesive that remains after heating a sample of the material at 110° degrees Celsius for one hour.

“**Aerosol Adhesive**” means an adhesive packaged as an aerosol product in which the spray mechanism is permanently housed in a nonrefillable 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 in the Air Resources Board consumer products regulation found in Title 17 of the California Code of Regulations, section 94507 et seq.

“**Aerosol Product**” means a hand-held, non-refillable container that expels pressurized product by means of a propellant-induced force.

“**Airless Spray**” means a spray method in which a pump forces the adhesive through an atomizing nozzle at high pressure (1,000 to 6,000 pounds per square inch).

“**Any Other Primer**” means a coating or adhesive applied to a substrate to improve adhesion of subsequently applied adhesive, except adhesive primer and adhesive bonding primer.

“**Architectural Sealant/Primer**” means 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 downspouts, and windows.

“**Associated Solvent**” means any solvent used in solvent cleaning operations subject to this rule.

“**Automotive Glass Adhesive Primer**” means any adhesive primer intended by the manufacturer to be applied to automotive glass prior to installation with an adhesive/sealant. This primer improves adhesion to the pinch weld and blocks ultraviolet light.

“**Bench Scale Project**” means a project (other than at a research and development facility) that is operated on a small scale, such as one capable of being located on a laboratory bench top.

“**Catalytic Incinerator**” means any device that burns reactive organic compounds or toxic air contaminants in air using a material that increases the rate of combustion without itself undergoing a net chemical change in the process. Common catalyst materials include but are not limited to, platinum alloys, chromium, copper oxide, and cobalt.

“**Ceramic Tile Installation Adhesive**” means any adhesive intended by the manufacturer for the installation of ceramic tiles.

“**Ceramic Tile**” means a ceramic surfacing unit made from clay or a mixture of clay and other materials.

“**Chlorinated Polyvinyl Chloride (CPVC) Welding Adhesive**” means any adhesive intended by the manufacturer for the welding of CPVC plastic pipe. CPVC plastic is a polymer of the monomer that contains 67 percent chlorine and is normally identified with a CPVC marking.

Comment [A8]: Modeled on the SJV Rule 4653 definition. Existing text in the rule is simplified by using the **adhesive product** and **sealant product** terms.

Comment [A9]: The District protocol is to remove degree symbols, abbreviations, and acronyms. Hence, they are spelled out here and elsewhere.

Comment [A10]: One example of many Rule 321 definitions being incorporated into Rule 353.

Comment [A11]: Modeled on the SJV Rule 4653 definition; it is used in Section Q.11.

“Coating” means a material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, adhesive products, paints, varnishes, sealant products, and stains.

Comment [A12]: Some of the new terms stem from additions to Rule 337.

Comment [A13]: Added for ease of understanding that these materials are **coatings**.

“Computer Diskette Jacket Manufacturing Adhesive” means any adhesive intended by the manufacturer to glue the fold-over flaps to the body of a vinyl computer diskette jacket.

“Contact Bond Adhesive” or “Contact Adhesive” means any adhesive intended by the manufacturer to adhere to itself instantaneously upon contact. ~~The adhesive is applied to both adherends and allowed to become dry, which develops a bond when the adherends are brought together without sustained pressure. for application to both surfaces to be bonded together, which is allowed to dry before the two surfaces are placed in contact with each other, forms an immediate bond that is impossible, or difficult, to reposition after both adhesive-coated surfaces are placed in contact with each other, and does not need sustained pressure or clamping of surfaces after the adhesive-coated surfaces have been brought together using sufficient momentary pressure to establish full contact between both surfaces. 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.~~

Comment [A14]: Modeled on the SJV Rule 4653 definition. The term **contact adhesive** appears several places (e.g., Rule 353 Q.10).

“Contact Bond Adhesive-Specialty Substrates” or “Specialty Contact Adhesive” means any contact adhesive that is intended by the manufacturer to be used for the bonding of nonporous substrates to each other, the bonding of decorative laminate in post-forming application, ~~or for~~ the bonding of decorative laminate to metal, melamine-covered board, or curved surfaces, or ~~when used to bond the bonding of~~ any substrate to metal, rubber, rigid plastic, or wood veneer not exceeding 1/16 inch in thickness.

Comment [A15]: Similar to the SJV Rule 4653 definition. Rule 353.Q.10 uses **specialty contact adhesive**.

“Control” means the reduction, by destruction or removal, of the amount of affected pollutants in a gas stream prior to discharge to the atmosphere.

“Control System” means any combination of pollutant capture system(s) and control device(s) used to reduce discharge to the atmosphere of reactive organic compound or toxic air contaminant emissions generated by a regulated operation.

“Cove Base Installation Adhesive” means any adhesive intended by the manufacturer for the installation of cove base (or wall base), which ~~means is~~ generally made of vinyl or rubber, on a wall or vertical surface at floor level.

“Cyanoacrylate Adhesive” means an adhesive with a cyanoacrylate content of at least 95 percent by weight.

“Detailing or Touch-up Guns” mean any small air spray equipment, including air brushes, that operate at no greater than 5 cubic feet per minute air flow and no greater than 50 pounds per square inch gauge air pressure and are used to coat small products or portions of products.

“Dip Coat Application” means any process in which a substrate is immersed in a solution (or dispersion) containing the coating material, and then withdrawn.

“Drywall Installation” means the installation of gypsum drywall to studs or solid surfaces using an adhesive formulated for that purpose.

“Electrodeposition” means the application of a coating using a water-based electrochemical bath process. The component being coated is immersed in a bath of the coating. An electric potential is applied between the component and an oppositely charged electrode hanging in the bath. The electric potential causes the ionized coating to be electrically attracted, migrated, and deposited on the component being coated.

“Electrostatic Spray” means any method of applying a spray coating in which an electrical charge is applied to the coating and the substrate is grounded. The coating is attracted to the substrate by the electrostatic potential between them.

~~“Exempt Compound” means any compound identified as an exception to the definition of “reactive organic compound” in Rule 102.~~

Comment [A16]: Deleted because the definition is being added to Rule 102.

“Fiberglass” means ~~a fiber made fine filaments of~~ from glass and similar in appearance to wool or cotton fiber.

“Flexible Vinyl” means nonrigid polyvinyl chloride plastic with at least five percent, by weight, of plasticizer content. A plasticizer means a material, such as a high boiling point organic solvent, that ~~means is~~ incorporated into an adhesive to increase its flexibility, workability, or distensibility, and may be determined using ASTM Method E260-94(2006), “Standard Practice for Packed Column Gas Chromatography,” ASTM International, or from product formulation data.

“Flow Coat Application” means any coating application system, with no air supplied to the nozzle, where paint flows over the part and the excess coating drains back into the collection system.

“Fluid System” means a power transmission system that uses the force of flowing liquids and gases to transmit power. Fluid systems include hydraulic systems and pneumatic systems.

“Foam” means a rigid or spongy cellular mass with gas bubbles dispersed throughout.

“Glue” means a hard gelatin obtained from hides, tendons, cartilage, bones, etc., of animals. Through general use, the term “glue” is synonymous with the term “adhesive.”

“Grams of Reactive Organic Compound (ROC) per Liter of Adhesive or Sealant, Less Water and Less Exempt Compounds” means the weight of reactive organic compound per combined volume of reactive organic compound and adhesive or sealant solids, and can be calculated by the following equation:

$$\begin{array}{l} \text{Grams of ROC per Liter of Adhesive or Sealant,} \\ \text{Less Water and Less Exempt Compounds} \end{array} = \frac{W_s - W_w - W_e}{V_m - V_w - V_e}$$

Where: W_s = weight of volatile compounds in grams
 W_w = weight of water in grams
 W_e = weight of exempt compounds in grams
 V_m = volume of material in liters
 V_w = volume of water in liters
 V_e = volume of exempt compounds in liters

For adhesives or sealants that contain reactive diluents, the reactive organic compound content of the adhesive or sealant is determined after curing. The grams of reactive organic compound per liter of adhesive or sealant shall be calculated by the following equation:

$$\begin{aligned} \text{Grams of ROC per Liter of Adhesive or Sealant,} \\ \text{Less Water and Less Exempt Compounds} &= \frac{W_{rs} - W_{rw} - W_{re}}{V_{rm} - V_{rw} - V_{re}} \end{aligned}$$

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_{re} = weight of exempt compounds not consumed during curing in grams
 V_{rm} = volume of material not consumed during curing in liters
 V_{rw} = volume of water not consumed during curing in liters
 V_{re} = volume of exempt compounds not consumed during curing in liters

“Grams of Reactive Organic Compound Per Liter of Material” means the weight of reactive organic compound per volume of material and can be calculated by the following equation:

$$\text{Grams of ROC per liter of Material} = \frac{W_s - W_w - W_e}{V_m}$$

Where: W_s = weight of volatile compounds in grams
 W_w = weight of water in grams
 W_e = weight of exempt compounds in grams
 V_m = volume of material in liters

“Hand Application Method” means the application of a surface coating by manually held non-mechanically operated equipment. Such equipment includes paint brush, hand-roller, trowel, spatula, dauber, rag or sponge.

“High-Precision Optics” means any optical element used in an electro-optical device that is designed to sense, detect, or transmit light energy, including specific wavelengths of light energy and changes in light energy levels.

“High Volume Low Pressure Spraying Equipment” means any spray equipment that is used to apply coating by means of a spray gun that operates at 10.0 pounds per square inch gauge of atomizing air pressure or less at the air cap.

“Indoor Floor Covering Installation Adhesive” means any adhesive intended by the manufacturer for the installation of wood flooring, carpet, resilient tile, vinyl tile, vinyl backed carpet, resilient sheet and roll, or artificial grass. Ceramic tile installation and the installation of perimeter bonded sheet flooring with vinyl backing onto a non-porous substrate, such as flexible vinyl are excluded from this category.

“Laminate” means a product made by bonding together two or more layers of material.

“Liquid Leak” means any coating, stripper, or solvent leak at a rate of more than three drops per minute or any visible liquid mist.

“**Low-Solids Adhesive, Sealant, or Primer**” means any product that contains 120 grams or less of solids per liter of material.

“**Marine Deck Sealant/Sealant Primer**” means any sealant or sealant primer intended by the manufacturer to be applied to wooden marine decks.

“**Metal to Urethane/Rubber Molding or Casting Adhesive**” means 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.

“**Multipurpose Construction Adhesive**” means any 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 (FRP), ceiling tile, and acoustical tile.

“**Natural Draft Opening**” means any opening in a room, building, or total enclosure that remains open during operation of the facility and that is not connected to a duct in which a fan is installed. The rate and direction of the natural draft through such an opening is a consequence of the difference in pressures on either side of the wall containing the opening.

“**Nonmembrane Roof Installation/Repair Adhesive**” means any adhesive intended by the manufacturer for the installation or repair of nonmembrane roofs and that ~~means-is~~ not intended for the installation of prefabricated single-ply flexible roofing membrane. This category includes plastic or asphalt roof cement, asphalt roof coatings, and cold application cement.

“**Operating Parameter Value**” means any minimum or maximum value established for a control equipment or process parameter which, if achieved by itself or in combination with one or more other operating parameter values, determines that an owner or operator has continued to comply with an applicable emission limitation.

“**Outdoor Floor Covering Installation Adhesive**” means any adhesive intended by the manufacturer for the installation of floor covering that ~~means-is~~ not in an enclosure and means exposed to ambient weather conditions during normal use.

“**Panel Installation**” means the installation of plywood, pre-decorated hardboard (or tileboard), fiberglass reinforced plastic, and similar pre-decorated or non-decorated panels to studs or solid surfaces using an adhesive formulated for that purpose.

“**Percent Reactive Organic Compound By Weight**” means the ratio of the weight of the reactive organic compound to the weight of the material, expressed as a percentage of reactive organic compound by weight. The percent reactive organic compound by weight can be calculated as follows:

$$\% ROCweight = \left[\frac{W_v}{W} \right] \times 100$$

Where: W_v = weight of ROCs in grams

W = weight of material in grams

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

“**Plastic Cement Welding Adhesive Primer**” means any primer intended by the manufacturer to prepare plastic substrates prior to bonding or welding.

[Annotated draft of July 7, 2011]

“**Plastic Foam**” means any foam constructed of plastics.

“**Plastics**” means various 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.

“**Polyurethane Foams**” means plastic foams, as defined in "Whittington's Dictionary of Plastics," page 329, and may be either rigid or flexible.

“**Polyvinyl Chloride (PVC) Plastic**” means a polymer of the chlorinated vinyl monomer that contains 57 percent chlorine and is normally identified with a PVC marking.

“**Polyvinyl Chloride (PVC) Welding Adhesive**” means any adhesive intended by the manufacturer for the welding of PVC plastic pipe.

“**Porous Material**” means a substance that has tiny openings, often microscopic, in which fluids may be absorbed or discharged. Such materials include but are not limited to wood, paper, corrugated paperboard, and plastic foam.

“**Propellant**” means a fluid under pressure that expels the contents of a container when a valve means opened.

“**Reactive Diluent**” means a liquid which is a reactive organic compound during application and one in which, through chemical and/or physical reactions, such as polymerization, 20 percent or more of the reactive organic compound becomes an integral part of a finished material.

“**Reactive Organic Compound**” as defined in Rule 102, Definitions.

“**Reactive Organic Compound Composite Partial Pressure**” means the sum of the partial pressures of compounds defined as reactive organic compounds. Reactive organic compound composite pressure shall be calculated as follows:

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

Where:

W_i = Weight of the “i”th reactive organic compound, in grams

W_w = Weight of water, in grams

W_e = Weight of the “e”th exempt compound, in grams

MW_i = Molecular weight of the “i”th reactive organic compound, in grams per grams-mole

MW_w = Molecular weight of water, in grams per grams-mole

MW_e = Molecular weight of the “e”th exempt compound, in grams per grams-mole

PP_c = Reactive organic compound composite partial pressure at 20 degrees Celsius, in millimeters of mercury

VP_i = Vapor pressure of the “i”th reactive organic compound at 20 degrees Celsius, in millimeters of mercury

“**Roadway Sealant**” means any sealant 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.

Comment [A17]: Composite vapor pressure is being replaced by reactive organic compound composite partial pressure in Sections G.2, G.2.b, & H. This change follows Rule 321 and other air district rule approaches

“**Rubber**” includes any natural or manmade rubber substrate, including but not limited to, styrene-butadiene rubber (SBR), polychloroprene (neoprene), butyl rubber, nitrile rubber, chlorosulfonated polyethylene (CSM), and ethylene propylene diene terpolymer (EPDM).

“**Scientific Instrument**” means an instrument (including the components, assemblies, and subassemblies used in their manufacture) and associated accessories and reagents that is used for the detection, measurement, analysis, separation, synthesis, or sequencing of various compounds.

“**Sealant**” means any material with adhesive properties that is formulated primarily to fill, seal, waterproof, or weatherproof gaps or joints between two surfaces. Sealants include caulks.

“**Sealant Primer**” means any product intended by the manufacturer to be applied to a substrate, prior to the application of a sealant, to enhance the bonding surface.

“**Sealant Product**” means any sealant and sealant primer. Sealant products are a type of coating.

“**Sealant Solid**” means the nonvolatile portion of a sealant that remains after heating a sample of the material at 110 degrees Celsius for one hour.

“**Sheet-Applied Rubber Installation**” means sheet rubber lining applied to the interior walls of stationary tanks and rail cars.

“**Single-Ply Roof Membrane**” means single sheets of rubber, normally EPDM (ethylene-propylene diene terpolymer), that are applied in a single layer to a building roof (normally a flat roof).

“**Single-Ply Roof Membrane Adhesive**” means any adhesive intended by the manufacturer for the installation or repair of single-ply roof membrane. Installation includes, as a minimum, attaching the edge of the membrane to the edge of the roof and applying flashings to vents, pipes, and ducts that protrude through the membrane. Repair includes gluing the edges of tears together, attaching a patch over a hole, and reapplying flashings to vents, pipes, or ducts installed through the membrane.

“**Single-Ply Roof Membrane Adhesive Primer**” means any primer intended by the manufacturer to clean and promote adhesion of the single-ply roof membrane seams or splices prior to bonding.

“**Single-Ply Roof Membrane Sealant**” means 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. Repair includes, but is not limited to gluing the edges of tears together, attaching a patch to a hole, and reapplying flashings to vents, pipes, or ducts installed through the membrane.

“**Solvent**” means any liquid containing any reactive organic compound or any toxic air contaminant, which is used as a diluent, thinner, dissolver, viscosity reducer, cleaning agent, drying agent, preservative, or other similar uses.

“**Solvent Bonding**” has the same meaning as “solvent welding.”

“**Solvent Cleaning**” means any activity, operation, or process (including, but not limited to, surface preparation, cleanup, or wipe cleaning) performed outside of a solvent cleaning machine, that uses solvent to remove uncured adhesives, uncured coatings, uncured inks, uncured polyester resin material, uncured sealant, or other contaminants, including, but not limited to, dirt, soil, oil, lubricants, coolants, moisture, fingerprints, and grease, from parts, products, tools, machinery, application equipment, and general work areas. Cleaning spray equipment used for the application of coating, adhesive, ink, polyester resin material, or sealant is also considered to be solvent cleaning irrespective of the spray material being cured.

“**Solvent Welding**” means 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.

Comment [A18]: Solvent and solvent cleaning are the same definitions found in Rule 321. Solvent includes any liquid containing any toxic air contaminant.

“Stationary Source” as defined in Rule 102, Definitions.

“Stripper” means any liquid that is applied to a surface to remove cured or dried coatings such as primers, adhesives (e.g., debonding or unglueing), topcoats, and temporary protective coatings.

“Structural Glazing Adhesive” means any adhesive intended by the manufacturer to adhere glass, ceramic, metal, stone, or composite panels to exterior building frames.

“Subfloor Installation” means the installation of subflooring material over floor joists, including the construction of any load bearing joists. Subflooring means covered by a finish surface material.

“Surface Preparation Solvent” means a solvent used in the cleaning of a substrate to remove dirt, oil, and other contaminants (e.g., uncured coatings). This surface cleaning means-is typically done prior to the application of primers, adhesives, or sealants.

“Thermal Incinerator” means any device that burns reactive organic compounds or toxic air contaminants in air by direct application of heat. Thermal incinerators are usually equipped with burners, refractory lined chambers, heat recovery equipment, and process controllers.

“Thin Metal Laminating Adhesive” means any adhesive intended by the manufacturer to bond multiple layers of metal to metal or metal to plastic in the production of electronic or magnetic components in which the thickness of the bond line(s) means-is less than 0.25 mil (0.00025 inch, 0.00635 millimeter).

“Tire Repair” means 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.

“Tire Retread Adhesive” means any adhesive intended by the manufacturer to be applied to the back of precure tread rubber and to the casing and cushion rubber. It may also be used to seal buffed tire casings to prevent oxidation while the tire means-is being prepared for a new tread.

“Traffic Marking Tape” means 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.

“Traffic Marking Tape Adhesive Primer” means any primer intended by the manufacturer to be applied to surfaces prior to installation of traffic marking tape.

“Transfer Efficiency” means the ratio of the weight of coating solids adhering to the object being coated to the weight of coating solids used in the application process, expressed as a percentage.

“Viscosity” means the internal friction of a liquid that makes it resistant to flow.

“Volatile Organic Compound (VOC)” has the same meaning as “reactive organic compound” as defined in Rule 102, Definitions. Tertiary-butyl acetate (also known as t-butyl acetate or tBAC) shall be considered exempt as a reactive organic compound only for purposes of reactive organic compound emissions limitations or reactive organic compound content requirements and will continue to be a reactive organic compound for purposes of all recordkeeping, emissions reporting, photochemical dispersion modeling, and inventory requirements which apply to reactive organic compounds.

Comment [A19]: Including rule titles for referenced rules follows an EPA recommendation.

Comment [A20]: The tBAC qualifier addresses EPA concerns.

“Waste Solvent Residue” means sludge that may contain dirt, oil, metal particles, and/or other undesirable waste products concentrated after heat distillation of solvent either in a solvent cleaning machine itself or after distillation in a separate still.

“Waterproof Resorcinol Glue” means 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.

“Wood Flooring Installation” means the installation of a wood floor surface, which may be in the form of parquet tiles, planks, or strip-wood.

“Wood Parquet Flooring” means 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.

“Wood Plank Flooring” means solid or laminated wood in plank form.

D. Requirements – Reactive Organic Compound Limits for Specific Applications of Adhesive Products, or Adhesive Bonding Primers, Adhesive Primers, Sealant Products, Sealant Primers, or Any Other Primer

Except as provided in Sections E and I of this rule, ~~no~~ person shall ~~not~~ apply nonaerosol adhesive products, adhesive bonding primers, adhesive primers, or sealant products, sealant primers, or any other primer that are defined under the Table 353-1 product categories and that have a reactive organic compound content (grams per liter [g/l], less water and less exempt compounds) in excess of the Table 353-1 limits. For low-solids adhesives, sealants, or primers, the reactive organic compound content is based on ~~a~~ grams of reactive organic compound per liter of material basis.

Comment [A21]: Our practice is to improve text flow by changing the sentence structure in this manner.

TABLE 353-1. REACTIVE ORGANIC COMPOUND LIMITS FOR SPECIFIC APPLICATIONS

TYPE	PRODUCT CATEGORY	ROC LIMITS (less water and exempt compounds)			
		On and After 08/19/1999		On and After 01/01/2000	
		(g/l)	(lb/gal)	(g/l)	(lb/gal)
1. Adhesives					
	ABS welding	400	3.3	400	3.3
	Ceramic tile installation	130	1.1	130	1.1
	Computer diskette jacket manufacturing	850	7.1	850	7.1
	Contact bond	540	4.5	250	2.1
	Contact bond-specialty substrates	540	4.5	400	3.3
	Cove base installation	150	1.3	150	1.3
	CPVC welding	490	4.1	490	4.1
	Indoor floor covering installation (except ceramic tile installation)	150	1.3	150	1.3
	Metal to urethane/rubber molding or casting	850	7.1	850/250	7.1
	Multipurpose construction (except cove base installation)	200	1.7	200	1.7
	Nonmembrane roof installation/repair	300	2.5	300	2.5
	Other plastic cement welding	510	4.3	510	4.3
	Outdoor floor covering installation	250	2.1	250	2.1
	Perimeter bonded sheet vinyl flooring installation	660	5.5	660	5.5
	PVC welding	510	4.3	510/500	4.3
	Sheet-applied rubber installation	850	7.1	850	7.1
	Single-ply roof membrane installation/repair	250	2.1	250	2.1
	Structural glazing	100	0.8	100	0.8
	Thin metal laminating	780	6.5	780	6.5
	Tire retread	100	0.8	100	0.8

TABLE 353-1. REACTIVE ORGANIC COMPOUND LIMITS FOR SPECIFIC APPLICATIONS

TYPE	PRODUCT CATEGORY	ROC LIMITS (less water and exempt compounds)			
		On and After 08/19/1999		On and After 01/01/2000	
		(g/l)	(lb/gal)	(g/l)	(lb/gal)
	Traffic marking tape	150	1.3	150	1.3
	Waterproof resorcinol glue	170	1.4	170	1.4
2. Sealants					
	Architectural	250	2.1	250	2.1
	Marine deck	760	6.3	760	6.3
	Nonmembrane roof installation/repair	300	2.5	300	2.5
	Roadway	250	2.1	250	2.1
	Single-ply roof membrane	450	3.8	450	3.8
	Other	420	3.5	420	3.5
3. Adhesive Primers					
	Automotive glass	700	5.8	700	5.8
	Plastic cement welding	650	5.4	650	5.4
	Single-ply roof membrane	250	2.1	250	2.1
	Traffic marking tape	150	1.3	150	1.3
	Other	250	2.1	250	2.1
4. Sealant Primers					
	Architectural – non porous	250	2.1	250	2.1
	Architectural – porous	775	6.5	775	6.5
	Marine deck	760	6.3	760	6.3
	Other	750	6.3	750	6.3

Comment [A22]: Deleting outdated limits simplifies the table.

E. **Requirements – Reactive Organic Compound Limits for Nonspecific Applications of Adhesive Products, Adhesive Bonding Primers, Adhesive Primers, or Sealant Products, Sealant Primers, or Any Other Primer onto Substrates**

Except as provided below and in Section I of this rule, a no person shall not apply nonaerosol adhesive products, adhesive bonding primers, adhesive primers, or sealant products, sealant primers, or any other primer to a substrate that have a reactive organic compound content (g/l, less water and less exempt compounds) in excess of the Table 353-2 limits. For low-solids adhesives, sealants, or primers, the reactive organic compound content is based on a 4 grams of reactive organic compound per liter of material basis.

The limit for a nonspecific application onto a substrate where an operator:

1. Bonds dissimilar substrates together, is the applicable substrate category with the highest reactive organic compound content.
2. Uses an adhesive or sealant listed in Table 353-1, is the limit specified in Table 353-1 for that particular product category.

TABLE 353-2. REACTIVE ORGANIC COMPOUND LIMITS FOR NONSPECIFIC APPLICATIONS OF ADHESIVE PRODUCTS, ADHESIVE BONDING PRIMERS, ADHESIVE PRIMERS, AND SEALANT PRODUCTS, SEALANT PRIMERS, OR ANY OTHER PRIMER ONTO SUBSTRATES

SUBSTRATE/APPLICATION	ROC LIMITS (less water and exempt compounds)	
	On and After 08/19/1999	
	(g/l)	(lb/gal)
Flexible vinyl	250	2.1
Fiberglass	200	1.7
Metal	30	0.3
Porous material	120	1.0
Rubber	250	2.1
Other substrates	250	2.1

F. Requirements – Aerosol Adhesives Reactive Organic Compound Limit

Except as provided in Section I ~~of this rule~~, a no person shall ~~not~~ use any aerosol adhesive unless the reactive organic compound content, ~~including the propellant, does not exceed 75 percent by weight~~ complies with the Air Resources Board consumer products regulation found in Title 17 of the California Code of Regulations, section 94507 et seq.

G. Requirement – Cleanup Solvent and/or Cleanup Method

1. ~~Before [one year from the date of amended rule adoption], Except~~ except as provided in Section I ~~of this rule~~, no person shall use materials containing reactive organic compound for the removal of ~~uncured adhesive products, adhesive bonding primers, adhesive primers, or uncured sealant products, sealant primers, or any other primer~~ from surfaces, other than spray application equipment, unless the reactive organic compound composite ~~vapor~~ partial pressure of the solvent used is less than 45 millimeters ~~(mm)~~ of mercury (Hg) at 20 degrees ~~(°)~~ Celsius (C).

Effective [one year from the date of amended rule adoption], except as provided in Section I, no person shall use any solvent containing more than 25 grams of reactive organic compound (0.21 pound of reactive organic compound per gallon) per liter of material for the removal of uncured adhesive products or uncured sealant products from surfaces.

2. Spray application equipment: ~~Before [one year from the date of amended rule adoption], Except~~ except as provided in Section I ~~of this rule~~, either one of the following shall be used for cleaning, flushing or soaking of filters, flushing lines, pipes, pumps, and other parts of the application equipment:
 - a. An enclosed cleaning system, or an equivalent cleaning system as determined by the test method referenced in Section N. ~~89 of this rule~~, or
 - b. A solvent with a reactive organic compound content of 70 grams per liter (0.6 ~~lb/gal~~ pound per gallon) or less. Parts containing dried adhesive may be soaked in an organic solvent as long as the reactive organic compound composite ~~vapor~~ partial pressure, ~~excluding water and exempt compounds~~, of the solvent is 9.5 ~~mm of Hg~~ millimeters of mercury at 20°C degrees Celsius or less and is kept in a closed container, which shall be closed except when depositing or removing parts or materials from the container.

Comment [A23]: Both ARB and EPA recommend a 25 g/l limit on the solvent's ROC content.

Effective [one year from the date of amended rule adoption], except as provided in Section I, any person cleaning spray application equipment with a solvent containing more than 25 grams of reactive organic compound per liter (0.21 pound of reactive organic compound per gallon) of material shall use an enclosed cleaning system, or equipment that is proven to the satisfaction of the Control Officer to be equally effective as an enclosed cleaning system at controlling emissions. "Equal effectiveness" of an alternative cleaning system shall be determined by the test method referenced in Section N.8. If an enclosed cleaning system is used, it shall totally enclose spray guns, cups, nozzles, bowls, and other parts during washing, rinsing, and draining procedures, and it shall be used according to the manufacturer's recommendations and be closed when not in use.

Comment [A24]: Modeled on the Rule 321.M.3 provisions.

H. Requirements – Surface Preparation Solvent

Before [one year from the date of amended rule adoption], ~~Except~~ except as provided in Section I of this rule and for single-ply roofing, no person shall use materials containing reactive organic compounds for surface preparation unless the reactive organic compound content of the solvent is 70 grams per liter (0.6 lb/gal/pound per gallon) or less. For single-ply roofing surface preparation solvent, the reactive organic compound composite vapor partial pressure, ~~excluding water and exempt compounds,~~ shall not exceed 45 mm of Hg at 20°C/millimeters of mercury at 20 degrees Celsius.

Effective [one year from the date of amended rule adoption], except as provided in Section I and for single-ply roofing, no person shall use any solvent containing more than 25 grams of reactive organic compound per liter (0.21 pound of reactive organic compound per gallon) of material for surface preparation. For single-ply roofing surface preparation solvent, the reactive organic compound composite vapor pressure shall not exceed 45 millimeters of mercury at 20 degrees Celsius.

I. Requirements – Alternative Compliance Provision

A person may ~~comply~~ elect to use an add-on control system as an alternative to meeting the requirements with the provisions of Sections D, E, F, G, and H, Q, and R of this rule by using approved add-on air pollution control equipment, provided that all of the applicable requires below are met. Any person choosing to install such control system shall obtain an Authority to Construct from the District prior to installation.

Comment [A25]: Revising the limit from 70 to 25 g/l follows ARB and EPA suggestions. Similar to Ventura County APCD (VC) Rule 74.20, the single-ply roofing surface preparation requirement remains unchanged.

1. The reactive organic compound emissions from such operations and/or materials are reduced by at least 85 percent overall capture and destruction efficiency (the capture efficiency multiplied by the control device efficiency) of the total system shall be at least 85.0 percent, by weight.
2. Combustion temperature ~~is shall be~~ continuously monitored when operating a thermal incinerator,
3. Inlet and exhaust gas temperatures ~~are shall be~~ continuously monitored when operating a catalytic incinerator,
4. Control device efficiency ~~is shall be~~ continuously monitored when operating a carbon adsorber or control device other than a thermal or catalytic incinerator, and
5. Written approval for such equipment, in the form of an Authority to Construct and a Permit to Operate, is received from the Control Officer, and Compliance through the use of an emission control system shall not result in affected pollutant emissions in excess of the affected pollutant emissions that would result from compliance with Sections D, E, F, G, H, Q, and R.

Comment [A26]: The addition of **and toxic air contaminant** stems from similar text in Rule 321.N.1.

J. Requirements – ~~Storage of Reactive Organic Compound Containing Materials~~ General Operating

Any person who owns, operates, or uses any application equipment to apply any adhesive products or sealant products shall ensure the coating operation and any solvent cleaning associated with such operation meets the following requirements:

Comment [A27]: Similar to provision in Rule 321.N.6. (Reactive organic compound changed to affected pollutant to include TACs.)

1. All reactive organic compound-containing materials, used or unused, including, but not limited to, adhesive products, sealant products, and reactive organic compound-laden cloth or paper used in solvent cleaning and stripping of cured adhesives, shall be stored or and disposed of in non-absorbent and nonleaking containers equipped with tight-fitting covers, which shall be closed except when depositing or removing materials from the container. All covers shall be in place unless adding material to or removing material from the containers, the containers are empty, or doing maintenance/inspection of the containers. After distillation recovery of solvent, waste solvent residues shall not contain more than 20 percent of reactive organic compound by weight as determined by the test method specified in Section N.14.
2. All application equipment, ventilation system, and emission control equipment shall be installed, operated, and maintained consistent with the manufacturer's specifications.
3. All containers holding reactive organic compound-containing materials shall be free of liquid leaks. All application equipment, solvent distillation units, and gun washers shall not have any liquid leaks, visible tears, holes, or cracks. Any such liquid leak, visible tear, hole, or crack is a violation of this rule.

Any liquid leak, visible tear, hole, or crack that is detected shall be repaired within one day from discovery, or the equipment shall be drained of all surface coating or solvent, consistent with Section F.1 provisions, and shut down until replaced or repaired. Application equipment, solvent distillation units, and gun washers shall not be operated when leaking.
4. All covers, valves, drain plugs, and other closure devices designed to reduce evaporation of reactive organic compound-containing materials shall not be removed or opened except to process work or to perform monitoring, inspections, maintenance, or repairs that require the removal of the covers or other closure devices.
5. Any reactive organic compound-containing material spills shall be wiped up immediately and the used absorbent material (e.g., cloth, paper, sand, sawdust, etc.) shall be stored in closed containers that are handled in accordance with Section J.1.
6. The handling and transfer of coatings, strippers, and cleaning solvents to or from enclosed systems, vats, waste containers, and other cleaning operation equipment that hold or store fresh or spent coatings, strippers, and cleaning solvents shall be conducted in such a manner that minimizes spills.
7. Any storage of any adhesive products and sealant products subject to this rule shall only be done in containers that meet the labeling requirements of Section L.

Comment [A28]: The housekeeping provisions are similar to requirements found in Rule 321.F

K. Requirements – Prohibition of Sales

1. Except as provided in Section B.3 ~~of this rule, after the specified effective dates,~~ no person shall supply, sell, or offer for sale any adhesives ~~product, adhesive bonding primers, adhesive primers, sealants or sealant product, sealant primers, or any other primer~~ that, at the time of sale, exceeds the corresponding reactive organic compound limit listed in Table 353-1 and is defined under a product category in Table 353-1.
2. Except as provided in Section B.3 ~~11~~ of this rule, no person shall supply, sell, or offer for sale, any aerosol adhesive unless, at the time of sale, the ~~reactive organic compound content, including the propellant, does not exceed 75 percent by weight~~ provisions of the Air Resources Board consumer product regulation, found in Title 17 of the California Code of Regulations, section 94507 et seq., are met.

L. Requirements – Manufacturer Compliance Statement and Labeling

The manufacturer of any adhesive ~~products, adhesive bonding primers, adhesive primers, or sealant products, sealant primers, or any other primer~~ subject to this rule shall ~~display the~~ include a designation of the maximum reactive organic compound or volatile organic compound content as supplied, expressed in grams per liter or pounds per gallon excluding water and exempt compounds determined by from the appropriate test method, on labels or containers and data sheets. This designation shall ~~display include~~ recommendations regarding thinning, reducing, or mixing with any other reactive organic compound- or volatile organic compound-containing material. This information shall include the maximum reactive organic compound or volatile organic compound content on an as-applied basis when used in accordance with the manufacturer's recommendations.

Comment [A29]: Modeled on the VC Rule 74.20.B.12 provisions.

M. Requirements – Prohibition of Specification

No person shall solicit, require for use, or specify the application of any adhesive ~~products, adhesive bonding primers, adhesive primers, sealant products, or associated solvent sealant primers, or any other primer,~~ if such use or application results in a violation of the provisions of this rule. This prohibition shall apply to all written or oral contracts.

N. Monitoring Requirements – Compliance Provisions and Test Methods

1. ~~The volatile organic compound and solids content of all n~~Except as specified in Section N.4, ~~nonaerosol adhesive products, adhesive primers, sealant products, and cleaning associated solvents reactive organic compound content, except as specified in Section N.4 of this rule,~~ shall be determined using Environmental Protection Agency Reference Method 24 (40 CFR Part 60, Appendix A-7), ~~its constituent methods, or an equivalent method approved by the Environmental Protection Agency, the Air Resources Board, and the Control Officer or South Coast Air Quality Management District Method 304.~~ The reactive organic compound content of materials containing 50 grams per liter of reactive organic compound or less shall be determined by the South Coast Air Quality Management District Method 313-91, "Determination of Volatile Organic Compounds by Gas Chromatography-Mass Spectrometry," June 1993, or any other test methods approved by the Environmental Protection Agency, the Air Resources Board, and the Control Officer.
2. Exempt ~~organic~~ compounds shall be determined using ASTM D4457-1991, "Standard Test Method for Determination of Dichloromethane and 1,1,1-Trichloroethane in Paints and Coatings by Direct Injection into a Gas Chromatograph," ASTM International. For exempt compounds where no reference test method is available, a facility requesting the exemption shall provide appropriate test methods approved by the Control Officer and approvable by the Air Resources Board and the Environmental Protection Agency.
3. The ~~volatile reactive~~ organic compound content of aerosol adhesives and aerosol adhesive primers shall be determined using South Coast Test Method 305-91, "Determination of Volatile Organic Compounds in Aerosol Applications," June 1993, or Air Resources Board Method 310, "Determination of Volatile Organic Compounds in Consumer Products and Reactive Organic Compounds in Aerosol Coating Products," June 22, 2000, upon the Environmental Protection Agency approval of Method 310.
4. The ~~volatile reactive~~ organic compound content of any plastic welding cement adhesive or primer shall be determined using South Coast Air Quality Management District Method 316A-92, "Determination of Volatile Organic Compound (VOC) in Materials Used for Pipes and Fittings," October 1996.
5. ~~The composite vapor pressure of organic compounds in cleaning materials shall be determined by quantifying the amount of each compound in the blend using gas chromatographic analysis (ASTM E260-96) for organics and ASTM D3792-91 for water content, as applicable, and the following equation:~~

Comment [A30]: EPA recommended referring to SC Method 313 for determining ROC content of materials containing < 50 g/l.

Comment [A31]: Replaced by reactive organic compound composite partial pressure (Section C).

$$Pp_c = \frac{\sum_{i=1}^n (W_i)(VP_i) / Mw_i}{W_w / Mw_w + \sum_{i=1}^n W_e / Mw_e + \sum_{i=1}^n W_i / Mw_i}$$

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 E260 -96.
- W_w = Weight of water, in grams as determined by ASTM D3792 -91.
- W_e = Weight of the "i"th exempt compound, in grams, as determined by ASTM E260 -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 "i"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, as determined by Section N.6 of this Rule.

5. [Reactive organic compound composite partial pressures shall be measured using ASTM D 2879-1997, "Standard Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope," ASTM International, in combination with the formula in the Section C definition of "reactive organic compound composite partial pressure," manufacturer's specified reactive organic compound composite partial pressure, or an accepted scientific reference approved the Environmental Protection Agency, the Air Resources Board, and the Control Officer.](#)
6. [The vapor pressure of each single component compound may be determined from ASTM D2879-96 or may be obtained from a published source approved by the Control Officer, such as the sources referenced in 40 CFR 52.741, or the most current edition of a published source, including, but not limited to: a\). The Vapor Pressure of Pure Substances, Boublik, Fried, and Hala; Elsevier Scientific Publishing Company, New York; b\). Perry's Chemical Engineer's Handbook, McGraw-Hill Book Company; c\). CRC Handbook of Chemistry and Physics, Chemical Rubber Publishing Company; and d\) Lange's Handbook of Chemistry, John Dean, editor, McGraw-Hill Book Company.](#)
76. [The measurement of capture efficiency for reactive organic compound emissions of an emission control system shall be conducted and reported in accordance with the recently approved Environmental Protection Agency Technical Document "Guidelines for Determining Capture Efficiency," issued January 9, 1995, or a District capture efficiency determination method approved by the Environmental Protection Agency determined by verifying the use of a Permanent Total Enclosure and 100 percent capture efficiency as defined by Environmental Protection Agency Method 204, "Criteria for and Verification of a Permanent or Temporary Total Enclosure." Alternatively, if an Environmental Protection Agency Method 204 defined Permanent Total Enclosure is not employed, capture efficiency shall be determined using a minimum of three sampling runs subject to data quality criteria presented in the Environmental Protection Agency technical guidance document "Guidelines for Determining Capture Efficiency, January 9, 1995."](#)

[Annotated draft of July 7, 2011]

Individual capture efficiency test runs subject to the Environmental Protection Agency technical guidelines shall be determined by:

- a. The Temporary Total Enclosure approach of Environmental Protection Agency Methods 204 through 204F; or
- b. The South Coast Air Quality Management District "Protocol for Determination of Volatile Organic Compounds (VOC) Capture Efficiency," May 1995]

Comment [A32]: EPA recommended that the District model the provisions on SC Rule 1122(h)(7)(A) text.

87. The measurement of control device efficiency for reactive organic compound emissions shall be in accordance with determined by Environmental Protection Agency Methods 25, 25A, 25B, or the South Coast Air Quality Management District Method 25.1, "Determination of Total Gaseous Non-Methane Organic Emissions as Carbon," February 1991, or the South Coast Air Quality Management District Method 25.3, "Determination of Low Concentration Non-Methane Non-Ethane Organic Compound Emissions from Clean Fueled Combustion Sources," March 2000, as applicable. Environmental Protection Agency Test Method 18 or Air Resources Board Method 400-422, "Exempt Halogenated VOCs in Gases," September 1990, shall be used to determine emissions of exempt compounds.]

Comment [A33]: These changes follow EPA's recommendation that the District model the provisions on SC Rule 1122(h)(7)(B) text.

98. The active and passive solvent losses from spray gun cleaning systems shall be determined using South Coast Air Quality Management District's, "General Test Method for Determining Solvent Losses from Spray Gun Cleaning Systems," dated October 3, 1989. The test solvent for this determination shall be any lacquer thinner with a minimum vapor pressure of 105 ~~mm of~~ Hg millimeters of mercury at 20°C degrees Celsius, and the minimum test temperature shall be 15°C degrees Celsius.

409. To determine if a diluent is a reactive diluent, the percent of the reactive organic compound that becomes an integral part of the finished material shall be determined using the South Coast Air Quality Management District Method 316A-92, "Determination of Volatile Organic Compound (VOC) in Materials Used for Pipes and Fittings," October 1996.

10. Application equipment coating transfer efficiencies shall be measured using South Coast Air Quality Management District Method "Spray Equipment Transfer Efficiency Test Procedure of Equipment User," May 1989.

11. The capture efficiency requirement for toxic air contaminant emissions that are not reactive organic compounds shall be determined by using the methods described in Section N.6 modified in a manner approved by the District to quantify the mass of liquid or gaseous reactive organic compounds and/or toxic air contaminants. |

Comment [A34]: Similar to the Rule 321.P.3 requirements.

12. The control device efficiency requirement for toxic air contaminant emissions that are not reactive organic compounds shall be determined using:

- a. an Environmental Protection Agency approved test method or methods, or
- b. in the case where there is no Environmental Protection Agency approved test method, a District approved detection method applicable for each target toxics specie.
- c. the Control Officer may require more than one test method on any emission control device where necessary to demonstrate that the overall efficiency is at least 85 percent by weight in reducing emissions of reactive organic compounds and/or toxic air contaminants. Any technique to convert "parts per million by volume" test method results to either 1) "parts per million by weight," or 2) "mass emission rates" (e.g., pounds per hour) shall first be approved by the Control Officer and, if such approval is not provided, then the technique shall not be used to show compliance with this rule.]

Comment [A35]: Essentially the same as Rule 321.P.4 provisions.

13. Viscosity will be determined by ASTM D 1084-88, "Standard Test Methods for Viscosity of Adhesives," ASTM International.
14. Solvent waste residue reactive organic compound content shall be determined by using Environmental Protection Agency Reference Method 25D or an equivalent method approved by the Environmental Protection Agency, the Air Resources Board, and the Control Officer.
15. When more than one test method or set of test methods are specified for any testing, a test result showing an exceedance of any limit of this rule shall constitute a rule violation.
16. Pursuant to Section O.1.d and e, when a coating, stripper, or solvent is used that is a mixture of different materials blended by the operator, the mixing the volumes of each component for each batch shall be recorded. The reactive organic compound content of the batch shall be calculated and recorded in order to demonstrate compliance with the specified "as applied" limits. Further, if complying using the "reactive organic compound composite partial pressure" method, the reactive organic compound composite partial pressure of each batch shall be calculated and recorded in order to determine compliance with the specified "as applied" limits. The formula in Section C "reactive organic compound composite partial pressure" definition shall be used for such calculations.
17. The Environmental Protection Agency test methods in effect on [date of amended rule adoption] shall be the test methods used to meet the requirements of this rule.

Comment [A36]: Added per the EPA recommendation in the Technical Support Document for SJV Rule 4605 (June 2009).

Comment [A37]: This provision stems from Rule 321.R.1.b.5.

O. Requirements – Recordkeeping

Any person subject to this rule ~~that manufactures or applies adhesive, adhesive bonding primer, adhesive primer, sealant, sealant primer, or any other primer~~ shall comply with the following requirements:

1. Maintain a current list file of each all adhesive, adhesive bonding primer, adhesive primer, sealant, sealant primer, any other primer, and solvent reactive organic compound-containing materials in use at the stationary source subject to this rule and in storage. The file shall provide all of the data necessary to evaluate compliance and shall include, but not be limited to, the following information, as applicable:
 - a. A data sheet or material list giving the material name, manufacturer identification, and material application (e.g., brand name, stock identification number);
 - b. application method;
 - c. material type, specific use instructions (e.g., catalysts, reducers, or other components are added), type operation (e.g., coating, stripping, or solvent cleaning), and, for coating operations, the product type, type of substrate coated, and type of application (i.e., the adhesive product and sealant product type from Table 353-1 or Table 353-2);
 - bd. Any catalysts, reducers, or other components used and the specific mixing ratio-volumes of each component for each batch;
 - ee. The applicable corresponding reactive organic compound content limit(s) or vapor pressure limit from Sections D, E, F, G, and H of this rule from Sections D, E, F, G, H, and R and the actual as applied reactive organic compound content of the materials used, as applied, or If complying using the "reactive organic compound vapor composite partial pressure" method, provide the actual reactive organic compound composite partial pressure of the adhesive, sealant, primer, or solvent materials used;
 - f. current adhesive product, sealant product, stripper, and solvent manufacturer specification sheets, Material Safety Data Sheets, or air quality data sheets, which list the

reactive organic compound content of each material in use at the stationary source subject to this rule.

2. Maintain records for each reactive organic compound-containing material purchased for use at the stationary source. The records shall include, but not be limited to, the following:

- a. material name and manufacturer identification (e.g., brand name, stock identification number);
- b. material type (e.g., adhesive product and sealant product type from Tables 353-1 and 353-2, cleanup solvent, stripper, etc.);
- c. volume of material purchased;
- d. date of purchase; and
- e. receipts of each purchase.

3. Maintain records of the method of disposal each time waste solvent or waste solvent residue is removed from the stationary source for disposal.

24. Maintain records of the monthly volume of each adhesive, adhesive bonding primer, adhesive primer, sealant, sealant primer, other primers, or solvent used. For each material listed in response to Section O.1, maintain on a monthly basis a record of the following:

- a. volume used (gallons);
- b. reactive organic compound content (grams per liter or pounds per gallon); and
- c. resulting reactive organic compound emissions (pounds).

For permitted facilities and users of non-compliant coatings, all records required by this Subsection and Subsection O.1 shall be summarized for each calendar year and submitted to the District by March 1 of the following year. The annual report shall include the name and address of the Permittee, the Permit to Operate number that the coating and solvent cleaning is subject to (if permitted), and/or a statement that the annual report includes non-compliant coating usage information.

34. When compliance is achieved through the use of add-on emission control equipment, as an alternative to meeting the requirements of Sections D, E, F, G, H, Q, or R, maintain daily records on a daily basis of key operating parameters values and maintenance procedures that demonstrate continuous operation and compliance of the for the emission control equipment during periods of emission producing activities shall be maintained. These parameters shall, including include, but not be limited to:

- a. Hours of operation;
- b. Routine and nonroutine maintenance. All maintenance work that requires the emission control system to be shut down;
- c. The applicable information specified in Section I of this rule. All information needed to demonstrate continuous compliance with Section I, such as temperatures, pressures, and/or flow rates;
- d. The daily volume of each noncompliant adhesive, sealant, primer, or solvent used.

Comment [A38]: Subsection 5 text mirrors the Rule 321.R.1.c provisions.

45. ~~All~~ Any records ~~shall be required to be maintained pursuant to this rule shall be kept~~ on site for at least ~~two (2)~~ 3 years ~~and shall be available for inspection~~. Thereafter, ~~the such~~ records shall ~~be maintained~~ either ~~be kept~~ on site or ~~be~~ readily available for expeditious inspection and review for an additional ~~three (3)~~ 2 years.

6. If an operator or District staff discovers a liquid leak, visible tear, hole, or crack in application equipment, a solvent distillation unit, or in a gun washer, the operator shall record:

- a. the date of discovery;
- b. the corrective action taken; and
- c. the date of repair or equipment replacement.

P. Rule Effective Date

Unless otherwise specified, the provisions of this rule become effective on ~~August 19, 1999~~ [date of amended rule adoption].

Q. Requirement – Adhesive and Sealant Application Equipment

Effective [one year from the date of amended rule adoption], no person shall apply adhesives or sealants unless the application is performed with equipment operating according to the manufacturers operating guidelines. In addition, except as provided in Section I, the application method employed shall be one of the following:

1. Electrostatic spray application, or
2. Flow coat application, or
3. Dip coat application, or
4. Roll Coater, or
5. High volume low pressure spraying equipment, or
6. Electrodeposition, or
7. Hand application methods, or
8. Detailing or touch-up guns, or
9. Any other application method approved by the Control Officer, the Air Resources Board, and the Environmental Protection Agency, that has a coating transfer efficiency equivalent to or greater than the 65 percent efficiency as measured using the test method specified in Section N.10.]
10. Except as otherwise provided in Section Q.11, air-atomized spray may only be used for the application of contact adhesives or specialty contact adhesives.
11. For adhesive products and sealant products with an as applied viscosity of 200 centipoise or greater, airless spray, air-assisted airless, and air-atomized spray may be used.

Comment [A39]: Section Q was modeled on the SJV Rule 4653.5.2 and the SC Rule 1168(c)(5) provisions.

Comment [A40]: Similar to the SJV Rule 4653.5.2.8 provisions.

Comment [A41]: Stems from the SJV Rule 4653.5.2.9 provision.

Comment [A42]: Modeled on the SC Rule 1168(c)(5)(H) provision.

R. Requirements – Coating Stripper Use

Effective [one year from the date of amended rule adoption], except as provided in Section I, no person shall apply any stripper or solicit the use of any stripper unless it complies with one or both of the following:

- a. The stripper contains less than 300 grams of reactive organic compound per liter (2.5 pounds of reactive organic compound per gallon) of material.
- b. The stripper has a reactive organic compound composite partial pressure of less than 10 millimeters of mercury at actual usage temperature.