

VENTURA COUNTY AIR POLLUTION CONTROL DISTRICT

RULE 74.20 - ADHESIVES AND SEALANTS

(Adopted 6/8/93, Revised 9/10/96, 1/14/97, 9/9/03, 1/11/05, 9/11/12, 10/09/18)

A. Applicability

The provisions of this rule apply to any person who supplies, sells, offers for sale, manufactures, solicits the application of, or uses adhesives, sealants, sealant primers or adhesive primers in Ventura County.

B. Requirements

1. Unless otherwise specified in Subsection B.2 or B.3, a person shall not apply any adhesives or any adhesive primers, which have an ROC content less water and exempt organic compounds in excess of 250 g/l (for low-solids adhesives or adhesive primers, the ROC content is based on a "grams per liter of material" basis).
2. Adhesives/Sealants/Adhesive Primers/Sealant Primers (Specific Applications): No person shall apply any adhesive, sealant or primer, which is defined under the following product categories, and has an ROC content, less water and exempt organic compounds in excess of the following limits, as applied (for low-solids adhesives, sealants or primers, the ROC content is based on a "grams per liter of material" basis).

Limits			
"Grams of ROC per Liter of Adhesive, Sealant or Primer Less Water and Exempt Organic Compounds"			
<u>Category</u>	<u>Current Limit</u>	<u>Effective</u>	<u>Effective</u>
		7/1/2019	1/1/2023

Architectural Adhesive Products:

Multipurpose Construction Adhesive	70		
Ceramic, Porcelain & Stone Wall Tile Adhesive	65		
Cove Base Adhesive	50		
Drywall Adhesive	50		
Flooring Adhesives:			
Ceramic, Porcelain, & Stone Floor Tile	65		
Outdoor Carpet	150	50	
Indoor Carpet or Carpet Pad	50		
Rubber Flooring	60		
Subfloor Adhesive	50		
VCT and Asphalt Tile	50		
Wood Flooring	100		20
Other Flooring	150	50	
Panel Adhesive	50		

Limits
 "Grams of ROC per Liter of Adhesive, Sealant or Primer
 Less Water and Exempt Organic Compounds"

<u>Category</u>	<u>Current Limit</u>	<u>Effective 7/1/2019</u>	<u>Effective 1/1/2023</u>
Architectural Adhesive Products (cont.):			
Roofing Adhesives:			
Single Ply Roof Membrane	250		
Nonmembrane Roof	300		
Structural Glazing Adhesive	100		
Structural Wood Member Adhesive	140		
Miscellaneous Adhesives:			
Contact Adhesive	80		
Special Purpose Contact Adhesive	250		
Sheet-Applied Rubber Lining Operations	850		
Tire Retread	100		
Traffic Marking Tape Adhesive	150		
Top and Trim Adhesive	540		
Waterproof Resorcinol Glue	170		
Plastic Welding Products:			
ABS Welding	400	325	
ABS to PVC Transition Cement	510		
Cellulosic Plastic Welding (except ethyl cellulose)	100		
CPVC Welding	490		
PVC Welding	510		
Styrene-Acrylonitrile Welding	100		
Plastic Welding Primer	650	550	
Other plastic welding	500		
Adhesive Primers:			
Vehicle Glass Adhesive Primer	700		
Pressure Sensitive Adhesive Primer	785		
Other Adhesive Primer	250		
Sealants:			
Aerosol Insulating Foam Sealant	250		
Marine Deck	760		
Nonmembrane Roof	300		
Non-Staining Plumbing Putty	420	150	50
Potable Water Sealant	420	100	
Roadway Sealant	250		
Single-Ply Roof Membrane Sealant	450		
All Other Roof Sealants	420	300	
All Other Architectural Sealants (Non-Roof)	250	50	
All Other Sealants (Non-Architectural)	420		250

Limits
 "Grams of ROC per Liter of Adhesive, Sealant or Primer
 Less Water and Exempt Organic Compounds"

<u>Category</u>	<u>Current Limit</u>
Sealant Primers:	
Architectural Nonporous	250
Architectural Porous	775
Marine Deck	760
Other Sealant Primers	750

3. Adhesives (Substrates or Nonspecific Operations): No person shall apply any adhesive to a substrate with an ROC content, "less water and exempt organic compounds" in excess of the following limits, as applied (for low-solid adhesives, sealants or primers, the ROC content is based on a "grams per liter of material basis").

If an adhesive is used to bond dissimilar substrates, the applicable substrate category with the highest ROC limit shall be the limit for that operation. If an operator uses an adhesive product listed in Subsection B.2, then the requirement in that section applies rather than this one.

Limits
 "Grams of ROC per Liter of Adhesive
 Less Water and Exempt Organic Compounds"

<u>Substrate/Application</u>	<u>Current Limit</u>
Fiberglass	80
Flexible Vinyl	250
Metal to Metal	30
Plastic Foam	50
Porous Material (Except Wood and Plastic Foam)	50
Wood	30

4. Substrate Surface Preparation:

No person shall use a material for substrate surface preparation that exceeds the following applicable limit:

<u>Category</u>	<u>Type of Limit</u>	<u>Limit</u>
Inkjet Printer Head Assembly	ROC Content	200 g/l of material
All Others	ROC Content	25 g/l of material

5. Solvent Cleaning:

No person shall use ROC-containing materials for solvent cleaning unless the ROC content is 25 grams per liter of material or lower.

6. Storage of ROC-Containing Materials: All ROC-containing materials, including but not limited to, adhesives, sealants, coatings, cleanup solvents or surface preparation materials, shall be stored in closed containers, which are nonabsorbent and do not leak. These storage containers shall be closed except when filling or emptying.

7. Adhesive Spray Application Equipment Cleaning:

No person shall use ROC-containing materials for the cleaning of spray application equipment used in adhesive operations unless a solvent containing no more than 25 grams of ROC per liter of material shall be used for cleaning, flushing or soaking of filters, flushing lines, pipes, pumps, and other parts of the application equipment.

8. Add-on Control Equipment Option: In lieu of complying with the provisions of Subsections B.1, B.2 or B.3, emissions of ROC may be controlled by an emission capture and control system, which reduces ROC emissions to the atmosphere, provided that:

- a. The combined control and capture efficiency reduces emissions by at least 85 percent, by weight, during any period of continuous operation not to exceed 24 hours, and
- b. Written approval for such equipment, in the form of an Authority to Construct and a Permit to Operate is received from the Air Pollution Control Officer (APCO).

9. Adhesive Strippers: No person shall use an adhesive stripper unless its ROC composite partial pressure is 9.5 mm Hg or less at 20 °C.

10. Primers, Sealants or Adhesives Containing 1,1,1-Trichloroethane or Methylene Chloride: No person shall apply any primer, sealant or adhesive to any surface, if that product contains any 1,1,1-trichloroethane or methylene chloride. Adhesives containing methylene chloride used to plastic weld the following plastic substrates are exempt from this requirement:

- a. Polycarbonate
- b. Polysulfone
- c. Acrylics including Polymethylmethacrylate (PMMA)
- d. Phenylene-Oxide based resins
- e. Polyetherimide

11. Prohibition of Specification: No person shall solicit, require for use, or specify the application of any adhesive, primer or sealant, 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.

12. Compliance Statement Requirement: The manufacturer of any adhesive, sealant, sealant primer or adhesive primer subject to this rule shall include a designation of the maximum ROC or VOC content as supplied, including adhesive components, expressed in grams per liter or pounds per gallon excluding water and exempt organic compounds from the appropriate test method in Section E or based on product formulation data, on containers and data sheets. This designation shall include recommendations regarding thinning, reducing, or mixing with any other ROC or VOC-containing materials. This statement shall include the maximum ROC or VOC on an as-applied basis when used in accordance with the manufacturer's recommendations.
13. Liquid Cleaning Material Compliance Statement: The manufacturer of liquid cleaning materials subject to this rule shall designate on product containers and data sheets the ROC content of cleaning materials as supplied. This designation shall include recommendations regarding mixing with any other ROC containing materials, and express the cleaning material ROC content when used in accordance with the manufacturer's recommendations. All letters and numbers used to designate ROC or VOC content on product labels shall be visible and legible.
14. Prohibition of Sales:
 - a. Except as provided in Subsections B.14.c, B.14.d, or B.14.e, no person shall supply, sell, or offer for sale any adhesive, sealant or primer which, at the time of sale, is defined under a product category in Subsection B.2, and exceeds the ROC limits listed in Subsection B.2 after the specified effective dates. This provision only applies to products that are supplied to or sold to persons within the District.
 - b. Except as provided in Subsections B.14.c, B.14.d, or B.14.e, no person shall supply, sell, or offer for sale any adhesive, sealant, or primer which, at the time of sale, contains any 1,1,1-trichloroethane or methylene chloride, except for those adhesives designed to plastic weld polycarbonates, polysulfones, acrylics, phenylene oxide based resins or polyetherimides.
 - c. The sales prohibition in Subsections B.14.a and B.14.b shall not apply to any supplier or seller of any adhesive, sealant or primer as follows:
 - 1) Any adhesive shipped outside of the District for use outside of the District.
 - 2) The sale of adhesives to a user who has installed an APCD permitted ROC add-on control device.
 - d. The sales prohibitions in Subsections B.14.a and B.14.b shall not apply to the sale of any adhesive, sealant, or primer, except plastic welding products and except aerosol insulating foam sealants, if:
 - 1) The adhesive, sealant, or primer is sold in any container(s) having a capacity of 16 ounces or less (net volume) or 1 pound or less (net weight); and

- 2) The total weight or volume of two or more containers packaged together must be less than 1 pound or 16 ounces, respectively, to qualify for this exemption.
 - e. The sales prohibitions in Subsections B.14.a and B.14.b shall not apply to any manufacturer of any adhesive, sealant, or primer if the manufacturer has provided an accurate compliance statement and if:
 - 1) The product was not sold directly to a user or a sales outlet located in the District, or
 - 2) The product was sold to an independent distributor that is not a subsidiary of, or under the direct control of the manufacturer.
15. Sell-Through and Use-Through Provision: Any adhesive or sealant that is manufactured prior to the effective date of the applicable ROC content limit in Subsection B.2 and that has an ROC content limit above that limit (but not above the limit in effect at the date of manufacture) may be sold, supplied, or offered for sale for up to three years after the specified effective date and may be used up to four years after the specified effective date as long as the date of manufacture is clearly visible on the container (or code for manufacture date has been provided to the District) . This provision shall not apply to those adhesives or sealants subject to current ROC limits in Subsection B.2.

C. Exemptions

1. This rule, except Section B.14, shall not apply to any stationary source that emits less than 200 pounds of ROC in every rolling period of 12 consecutive calendar months from adhesive and sealant operations. Emissions from cold cleaners, vapor degreasers, and aerosol products shall not be included in this determination. Any person claiming this exemption shall provide monthly records sufficient to substantiate this claim.
2. Exemption of Operations Subject to Other District Rules: The provisions of this rule shall not apply to the following operations that are subject to other District rules.
 - a. Assembling, manufacturing and repairing of aerospace components subject to Rule 74.13, excluding manufacturing of aircraft tires.
 - b. Any graphic arts operation subject to the requirements of Rule 74.19, Graphic Arts.
 - c. Any screen printing operation subject to the requirements of Rule 74.19.1, Screen Printing Operations.
3. Exemption of Specific Operations from ROC Standards for Adhesives/Sealants/Primers: The ROC limits of Subsections B.1, B.2, and B.3 of this rule shall not apply to the following operations.

- a. Assembling and manufacturing of undersea-based weapon systems.
 - b. Testing and evaluation of adhesive or sealant products in any research and development or analytical laboratories.
 - c. Plastic welding operations used in the manufacturing of medical devices.
 - d. Tire repair operations, provided the label on the adhesive used states "For Tire Repair Only".
 - e. Field installation or repair of potable water linings and covers at potable water treatment, potable water storage, or potable water distribution facilities. Potable water treatment is any process that will improve the quality of water to make it exceed or meet applicable drinking water standards.
 - f. Manufacturing operations of the following products: diving suits, rubber fuel bladders, inflatable boats, life preservers or other stand-alone elastomeric type products designed for immersion in liquids. The adhesive products used by these operations must be labeled "For the bonding of immersible products only."
 - g. Inkjet printer head assembly operations where the ROC content of the adhesive used for laminating is less than 100 grams per liter of material.
 - h. Thin film laminating operations of magnetic or electronic components excluding inkjet printer head assembly operations.
 - i. Glass bonding and priming processes in automotive convertible top manufacturing operations.
4. Exemption of Specific Adhesives and Sealants:
- a. Any adhesive, primer, or sealant that contains less than 20 grams of ROC per liter of material is exempt from all the provisions of this rule.
 - b. Any aerosol adhesive (except aerosol insulating foam sealant) is exempt from all provisions of this rule.
 - c. Any cyanoacrylate or methacrylate-based adhesive is exempt from all provisions of this rule.
 - d. Any adhesive tape is exempt from all provisions of this rule.
 - e. Any low pressure (less than 250 psi) or high pressure (1,000 to 1,300 psi) two-component spray polyurethane foam system that uses exempt organic compounds as the blowing agent and that uses ancillary spray equipment and hoses to apply the foam.

- f. Any one-component spray polyurethane foam system in a cylinder (containing not less than 10 pounds and not more than 23 pounds of prepolymerized mixtures) that uses exempt organic compounds as the blowing agent and that uses ancillary spray equipment or hoses to apply the foam.
5. The provisions of Subsection B.3 of this rule shall not apply to any person who uses less than 10 gallons per rolling period (consisting of 12 consecutive calendar months) per stationary source of an adhesive, a sealant, or primer in a separate formulation provided the total volume of noncomplying adhesives, sealants, or primers at a stationary source does not exceed 55 gallons per rolling period (consisting of 12 consecutive calendar months). If a specific adhesive, sealant, sealant primer or adhesive primer can be defined under one of the product categories in Subsection B.2, then this exemption does not apply. Any person seeking to claim this exemption shall notify the APCO in writing that a complying adhesive, sealant or primer is not available and maintain records sufficient to substantiate this claim.

D. Recordkeeping

1. Any person subject to this rule shall:
 - a. Maintain a current list of all adhesives, sealants, primers, strippers and solvents that provides all information necessary to evaluate compliance including the following, as applicable:
 - 1) The name and manufacturer of each ROC-containing material including any catalysts, reducers, or other components used.
 - 2) Mix ratio, if applicable.
 - 3) ROC content (less water and exempt organic compounds except low-solids coatings, which are expressed as grams per liter of material basis), as applied,
 - 4) ROC composite partial pressure of the adhesive stripper.
 - 5) Applicable ROC content limit or ROC composite partial pressure limit from Section B.
 - b. Maintain records of the monthly volume of each complying adhesive, sealant, primer, solvent, or stripper used that is required to be tracked by a District permit condition.
 - c. Maintain records of the daily volume of each noncompliant adhesive, sealant, primer, solvent or stripper used. Adhesives, sealants or primers qualifying for the exemption in Subsection C.5 shall not be subject to this daily recordkeeping requirement.

- d. Any person using an emission control system as a means of complying with this rule shall maintain daily records of key system operating and maintenance procedures which will demonstrate continuous operation and compliance of the emission control device during periods of emission producing activities.
2. All records shall be retained for at least two (2) years from the date of each entry and shall be available to District personnel upon request.

E. Test Methods

1. The ROC and solids content of all adhesives products, sealants, primers and cleaning solvents, except as specified in Section E.3, shall be determined using EPA Reference Method 24 (40 CFR Part 60, Appendix A), South Coast AQMD: Laboratory Method 304 (Determination of Volatile Organic Compounds in Various Materials), or SCAQMD Method 313 (Determination of Volatile Organic Compounds by Gas Chromatography-Mass Spectrometry).
2. Exempt organic compounds shall be determined using ASTM D4457-91 or SCAQMD Laboratory Method 303. For exempt compounds where no reference test method is available, a facility requesting the exemption shall provide appropriate test methods approved by the APCO and approvable by the U.S. EPA.
3. The ROC content of any plastic welding product shall be determined using Proposed SCAQMD Laboratory Method of Analysis for Enforcement Samples, Method 316a-92, "Determination of VOC in Material Used for Pipes and Fittings" (October 1996).
4. The capture efficiency shall be determined according to EPA's technical document, "Guidelines for Determining Capture Efficiency," January 9, 1995, and Methods in 40 CFR 51 Appendix M, Methods 204-204F, as applicable:
Methods 204, Criteria for and Verification of a Permanent or Temporary Total Enclosure
Method 204A, VOC content in Liquid Input Stream
Method 204B, VOC Emissions in Captured Stream
Method 204C, VOC Emissions in Captured Stream (Dilution Technique)
Method 204D, VOC Emissions in Uncaptured Stream from Temporary Total Enclosure
Method 204E, VOC Emissions in Uncaptured Stream from Building Enclosure, and
Method 204F, VOC Content in Liquid Input Streams (Distillation Approach)

Control system efficiency shall be determined by 40 CFR 60, Appendix A, Method 18, "Measurement of Gaseous Organic Compound Emissions by Gas Chromatography", Method 25, "Determination of Total Gaseous Nonmethane Organic Emissions as Carbon" or Method 25A, "Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer."
5. ROC composite partial pressure shall be calculated using a widely accepted published source such as: Boublik, T., V. Fried and E. Hala, "The Vapor Pressure of Pure Substances," Elsevier Scientific Publishing Co. New York (1973); Perry's Chemical Engineer's

Handbook, McGraw-Hill Book Company; CRC Handbook of Chemistry and Physics, Chemical Rubber Publishing Company (1986-87), and Lange's Handbook of Chemistry, John A. Dean, editor, McGraw-Hill Book Company (1985). The true vapor pressure of a component in a mix may be determined by ASTM Method D2879-96. The ROC composite pressure of a solvent mix consisting entirely of ROC may be determined by ASTM Method D2879-97, "Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope."

6. If applicable, the ROC content of reactive adhesives may be determined using EPA Method Appendix A to Subpart PPPP of Part 63 – Determination of Weight Volatile Matter Content and Weight Solids Content of Reactive Adhesives. This method is a sandwich method where the adhesive cures between two substrates to prevent moisture in the atmosphere from competing with the reaction taking place in the adhesive. This method may not be used for one-part moisture-cured urethanes, silicone adhesives, or reactive sealants.

F. Violations

Failure to comply with any provision of this rule, including the requirement to maintain records or supply VOC or ROC information, or supply ROC composite partial pressure information, shall constitute a violation of this rule. Noncompliance determined by any test method specified or referenced in this Rule is a violation of this Rule. Where more than one approved test method may be applicable, sources shall not be required to demonstrate compliance using more than one approved test method.

G. Definitions

1. "ABS Welding Adhesive": Any adhesive that is intended by the manufacturer to weld acrylonitrile styrene (ABS) plastic. ABS is made by reacting monomers of acrylonitrile, butadiene, and styrene and is normally identified with ABS marking.
2. "ABS to Polyvinyl Chloride (PVC) Transition Cement": Any plastic welding adhesive that is intended by the manufacturer to join ABS to PVC building drains or building sewers.
3. "Acrylic": Acrylic is any thermoplastic polymer or copolymer of acrylic acid, methacrylic acid, ester of these acids, or acrylonitrile. Acrylic contains at least one version of a methacrylate monomer, including but not limited to: methylmethacrylate or butylmethacrylate.
4. "Adhesive": Any substance that is used to bond one surface to another surface by attachment.
5. "Adhesive Primer": Any film-forming material applied to a substrate, prior to the application of an adhesive or adhesive tape, to increase adhesion or film bond strength, promote wetting, or form a chemical bond with a subsequently applied adhesive.

6. "Adhesive Tape": Any backing material coated with an adhesive, and includes, but is not limited to, drywall tape, heat sensitive tape, pressure sensitive adhesive tape, and water-activated tape.
7. "Aerosol Insulating Foam Sealant": Any 8 ounce to 30 ounce aerosolized can of polyurethane prepolymer foam used to fill and form a durable, airtight, water-resistant seal to common building substrates, such as wood, brick, concrete, foam board, and plastic. This sealant is intended by the manufacturer to be used for hand-held applications.
8. "Adhesive Stripper": A volatile liquid applied to remove a cured or dried adhesive.
9. "Aerosol Adhesive": Any 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 adhesives, mist spray adhesives, and web spray adhesives, as defined by the California Air Resources Board consumer product regulation found in Title 17 of the California Code of Regulations, beginning at Section 94507.
10. "Architectural Appurtenance": Any accessory to a stationary structure, including, but 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 production sets, and concrete forms, excluding aquariums.
11. "Architectural Sealant Primer- Nonporous": Any sealant primer intended by the manufacturer to be applied to nonporous material surfaces on stationary structures, including mobile homes, and their appurtenances.
12. "Architectural Sealant Primer- Porous": Any sealant primer intended by the manufacturer to be applied to porous material surfaces on stationary structures, including mobile homes, and their appurtenances.
13. "Architectural Sealant": Any sealant intended by the manufacturer to be applied on stationary structures, including mobile homes, and their appurtenances.
14. "Capture Efficiency": The percentage of ROC used, emitted, evolved, or generated by the operation, that is collected, and directed to an air pollution control device.
15. "Carbon Adsorption": A carbon unit that is typically either a fixed-bed or a fluidized-bed design. ROC-laden air is pretreated, if necessary, to remove any solids, liquids, and long-chain, high-boiling organic compounds that might coat the carbon. The exhaust stream then passes through the adsorbing bed where the ROCs collect on the surface of the carbon.
16. "Catalytic Incinerator": An incinerator that requires a catalyst to promote the oxidation of the ROCs at a lower temperature. The catalyst is often, but not always, a platinum serial metal deposited in a porous form onto a structure, such as a honeycomb, or pellets. The

ROCs are preheated up to 650 to 900 °F and then enter the catalyst area. There the oxidation of the ROCs continues to produce an increase in temperature across the catalyst bed.

17. "Cellulosic Plastics": Any plastic containing the naturally occurring polymer or polysaccharide, cellulose (C₆H₁₀O₅)_n. Examples include cellulose acetate, cellulose acetate butyrate, cellulose nitrate and cellulose propionate.
18. "Ceramic, Porcelain, and Stone Tile Installation Adhesive": Any adhesive that is intended by the manufacturer to be used for installation of tile products.
19. "Contact Adhesive": Any adhesive that is intended by the manufacturer to adhere to itself instantaneously upon contact and is indicated by the label or data sheet as a contact adhesive. This adhesive is applied to both adherents and allowed to become dry, which develops a bond when the adherents are brought together without sustained pressure. For the purpose of this rule, products that qualify as a contact adhesive using the above definition, and that are labeled exclusively for only one of the following applications shall not be required to meet the ROC limit for "Contact Adhesives" in Subsection B.2:
 - a. Single-ply roofing
 - b. Bonding of immersible products
 - c. Bonding of flexible vinyl to flexible vinyl
 - d. Nonmembrane roofing
20. "Cove Base Installation Adhesive": Any adhesive that is intended by the manufacturer to be used for cove base (or wall base) installation. The cove base is generally made of vinyl or rubber, and is installed on a wall or vertical surface at floor level.
21. "CPVC Welding": Any adhesive intended by the manufacturer for the welding of CPVC (chlorinated polyvinyl chloride) plastic. CPVC is a polymer of the monomer that contains 67 percent chlorine and is normally identified with a CPVC marking.
22. "Cyanoacrylate Adhesive": Any adhesive that is a single-component reactive diluent adhesive that contains at least 85 percent by weight, methyl, ethyl, methoxymethyl or other functional groupings of cyanoacrylate.
23. "Dry Wall Adhesive": An adhesive that is intended by the manufacturer to be used to install gypsum dry wall to studs or solid surfaces.
24. "Energy Curable Adhesives and Sealants": Single-component reactive products that cure upon exposure to visible-light, ultra-violet light, or to an electron beam. The VOC content of thin film Energy Curable Adhesives and Sealants may be determined by manufacturers using ASTM Method 7767-11, Standard Test Method to Measure Volatiles from Radiation Curable Acrylate Monomers, Oligomers, and Blends and Thin Coatings Made from Them.

25. "Exempt Organic Compounds": As defined in Rule 2, Definitions, of these Rules, except for the purpose of this rule, exempt organic compounds shall also include the following foam blowing agents:
- trans-1,3,3,3-tetrafluoropropene (HFO-1234ze)
 - trans-1-chloro-3,3,3-trifluoropropene (HFO-1233zd)
 - cis-1,1,1,4,4,4-hexafluoro-2-butene (HFO-1336mzz-Z) Note: The inclusion of this compound as an exempt ROC shall not become effective until EPA adopts a final rule confirming its exempt VOC status.
26. "Fiberglass": Fiberglass is any fiber reinforced plastic (FRP) surface that has fiber material set in a binding substance of plastic resins.
27. "Flexible vinyl": Nonrigid polyvinyl chloride plastic with at least five percent, by weight, of plasticizer content. A plasticizer is a material, such as a high-boiling point organic solvent, that is incorporated into an adhesive to increase its flexibility, workability, or distensibility, and may be determined using ASTM Method E260-91 or from product formulation data.
28. "Grams of ROC per liter of Adhesive, Sealant, or Primer, less water and exempt organic compounds": The weight of ROC per combined volume of ROC and coating solids calculated using the following equation:

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

Where: W_s = Weight of volatile compounds (grams)
 W_w = Weight of water (grams)
 W_{es} = Weight of exempt organic compounds (grams)
 V_m = Volume of material (liters)
 V_w = Volume of water (liters)
 V_{es} = Volume of exempt organic compounds (liters)

29. "Grams of ROC per Liter of Material": The weight of ROC per volume of material shall be calculated using the following equation:

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

Where: W_s = Weight of volatile compounds (grams)
 W_w = Weight of water (grams)
 W_{es} = Weight of exempt organic compounds (grams)
 V_m = Volume of material (liters)

30. "Gun Washer": Electrically or pneumatically operated system that is designed to clean spray application equipment and minimize emissions. A gun washer may also be considered a gun

cleaning system that consists of spraying solvent into an enclosed container using a snug fitting.

31. "Inkjet Printer Head Assembly Operation": Any operation used to manufacture or assemble the printer head used on inkjet printers. Inkjet printing is a printing method where the liquid ink is transferred at high velocity through a small diameter opening(s) to a solid substrate.
32. "Low Emission Spray Gun Cleaner": Any properly used spray gun equipment cleanup device which has passive solvent losses of no more than 0.6 grams per hour and has active solvent losses of no more than 15 grams per operating cycle as defined by the test method in Subsection E.6.
33. "Low-Solids Adhesive, Sealant or Primer": Any product that has less than one pound of solids per gallon of material (120 grams or less of solids per liter of material). Such solids are the non-volatiles remaining after a sample is heated at 110°C for one hour.
34. "Marine Deck Sealant": Any sealant intended by the manufacturer to be applied to wooden marine decks.
35. "Marine Deck Sealant Primer": Any sealant primer intended by the manufacturer to be applied to wooden marine decks.
36. "Multipurpose Construction Adhesives": Any adhesive that is intended by the manufacturer to be used for the installation or repair of various construction materials or to bond architectural appurtenances, including but not limited to drywall, subfloor, panel, tileboard, deck and lumber, seams, fiberglass reinforced plastic (FRP), ceiling tile and acoustical tile. Adhesives used to bond uninstalled cabinets, counters, and other architectural appurtenances are subject to this adhesive category.
37. "Nonmembrane Roof Sealant/Adhesive": Any sealant or adhesive that is intended by the manufacturer to install or repair nonmembrane roofs and that is not intended for the installation of prefabricated single-ply flexible roofing membranes. This category includes plastic or asphalt roof cement, asphalt roof coatings, and cold application cement.
38. "Outdoor Carpet Adhesive": Any adhesive intended by the manufacturer for the installation of carpet or artificial turf that is not in an enclosure and is exposed to ambient weather conditions.
39. "Non-Staining Plumbing Putty": Any non-staining sealant intended by the manufacturer to be provide watertight seals around faucets and drains, and is formulated to be used on granite, marble, quartz, sandstone, or any other natural surfaces.
40. "Panel Adhesive": An adhesive that is intended by the manufacturer to be used for 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.

41. "Percent ROC by Weight": The ratio of the weight of ROC to the weight of the material, expressed as a percentage by weight. The percent ROC by weight is calculated as follows:

$$\% \text{ ROC weight} = \frac{W_v}{W} \times 100$$

Where W_v = Weight of the ROCs (grams)
 W = Weight of the Material (grams)

42. "Plastic Welding Primer": Any primer intended by the manufacturer to prepare plastic substrates prior to welding.
43. "Plastic Foam": Any rigid or spongy cellular plastic mass with gas bubbles dispersed throughout. Examples include but are not limited to: urethane foams, PVC foams, Styrofoam, Foamboard and polyethylene foams.
44. "Plastic Welding": The use of solvent-based adhesives to dissolve plastic surfaces to form a weld-like bond between mating surfaces.
45. "Plastic Welding Products": Any product intended by the manufacturer to weld plastic substrates, or to prepare plastic substrates prior to welding. These products include ABS welding products, cellulosic plastic welding products, CPVC welding products, PVC welding products, styrene-acrylonitrile welding products, plastic welding primers, and other plastic welding products.
46. "Plastics": Synthetic materials chemically formed by the polymerization of organic (carbon-based) materials.
47. "Polycarbonate": Polycarbonate is a type of thermoplastic "structural" foam and contains a plastic resin that can be found in Lexan manufactured by General Electric Company or in Tuffrak manufactured by Rohm and Haas Company.
48. "Porous Material": A material whose surface is permeable to liquids; such materials include but are not limited to paper, and corrugated paperboard.
49. "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.
50. "Pressure Sensitive Adhesive": Any adhesive intended by the manufacturer to form a bond when pressure is applied (without the need for solvent, water, or heat) and is typically applied to backings or release liners.

51. "Pressure Sensitive Adhesive Primer": Any adhesive primer intended by the manufacturer to be applied during the application of a pressure sensitive adhesive product. This primer will result in the increased adhesion or shorter cure times of the applied adhesive.
52. "PVC Welding Adhesive": Any adhesive intended by manufacturer to weld polyvinyl chloride (PVC) plastic. PVC plastic is a polymer of the chlorinated vinyl monomer that contains 57 percent chlorine and which is normally identified with a PVC marking.
53. "Reactive Organic Compounds (ROC)": As defined in Rule 2, Definitions, of these Rules. The term "volatile organic compound" (VOC) is equivalent to ROC.
54. "Reactive Adhesives": Any adhesive that is composed of monomers that become integral parts of the cured product through chemical reactions. Reactive products include, but are not limited to, polyurethane and two-component regulated products.
55. "Roadway Sealant": 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.
56. ROC Composite Partial Pressure": The sum of the partial pressures of the compounds defined as ROCs. ROC composite partial pressure is calculated as follows:

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

Where:

W_i = Weight of the "i"th ROC compound, in grams

W_w = Weight of water, in grams

W_e = Weight of the "e"th exempt organic compound, in grams

MW_i = Molecular weight of the "i"th ROC compound, in g/(g-mole)

MW_w = Molecular weight of water, in g/(g-mole)

MW_e = Molecular weight of the "e"th exempt organic compound, in g/(g-mole)

PP_C = ROC composite partial pressure at 20 C, in mm Hg

VP_i = Vapor pressure of the "i"th ROC compound at 20 C, in mm Hg.

57. "Rubber": 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).
58. "Rubber Flooring Adhesive": Any adhesive intended by the manufacturer for 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.

59. "Sales Outlet": Any establishment at which adhesives, sealants, or primers can be sold in person to users of such products.
60. "Sealant Primer": Any product intended by the manufacturer to be applied to a substrate, prior to the application of a sealant, to enhance the bonding surface.
61. "Sealants": Any material with adhesive properties that is formulated primarily to fill, seal, waterproof or weatherproof gaps or joints between two surfaces. Sealants include caulks.
62. "Sheet-Applied Rubber Lining Operations": The process of applying sheet rubber liners by hand 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 by hand.
63. "Single-Ply Roof Membrane Adhesive Primer": Any primer intended by the manufacturer to clean and promote adhesion of the single-ply roof membrane seams or splices prior to bonding.
64. "Single-Ply Roofing Membrane Installation/Repair Adhesive": An adhesive intended by the manufacturer to be used for the installation or repair of a prefabricated single-ply flexible roofing membrane. Single-ply roofing membranes are field-applied using just one layer of membrane material. The containers must be labeled exclusively for such use. Installation includes, as a minimum, attaching the edge of the membrane to the edge of the roof and applying flashing to the 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.
65. "Single-Ply Roofing Membrane Sealant": A sealant intended by the manufacturer to be used for the installation or repair of a prefabricated single-ply flexible roofing membrane. The containers must be labeled exclusively for such use.
66. "Solvent": Organic, petrochemical compounds, which are used as diluents, thinners, dissolvers, reducers, cleaning agents, or for similar uses.
67. "Solvent Cleaning": The use of solvent to remove loosely held uncured adhesives, uncured inks, uncured coatings, and contaminants, which include, but are not limited to, dirt, soil, and grease from parts, products, tools, machinery, equipment, and general work areas.
68. "Special Purpose Contact Adhesive": Any contact adhesive that is used to bond melamine covered board, metal, unsupported vinyl, Teflon, ultra-high molecular weight polyethylene, rubber, or wood veneer 1/16 inch or less thick to any porous or nonporous surface.
69. "Structural Glazing Adhesive": Any adhesive that is intended by the manufacturer to be used to adhere glass, ceramic, metal, stone, or composite panels to exterior building frames.
70. "Structural Wood Member Adhesive": Any adhesive intended by the manufacturer to be used for the construction of a load-bearing joint in wooden joists, trusses, or beams.

71. "Styrene-Acrylonitrile Welding ": Any adhesive intended by 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.
72. "Subfloor Adhesive": Any adhesive intended by the manufacturer to be used for the installation of subflooring material over floor joists.
73. "Substrate Surface Preparation": Cleaning of a substrate to remove dirt, oils, and other contaminants. This surface cleaning is typically done prior to the application of primers, adhesives, or sealants.
74. "Thermal Incineration": A direct-flame incinerator that depends on flame contact and high temperatures in the range of 1200 to 1500 °F to complete oxidation of ROCs. Thermal incinerators usually consist of refractory-lined chambers, burners, controllers, safety equipment and heat recovery equipment.
75. "Thin Metal Laminating of Magnetic or Electronic Components": Any operation, excluding inkjet printer head assembly, that includes the bonding of multiple layers of metal to metal or metal to plastic in the production of electronic components or magnetic components, in which the bond line(s) is less than 0.25 mil.
76. "Tire Repair": The repair of a hole, tear, fissure, or blemish in a tire casing by grinding or gouging, applying adhesive or sealant product and filling the hole or crevice with rubber.
77. "Tire Retread": The process of tire retreading is where adhesives are applied to the back of precured 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 is being prepared for a new tread.
78. "Top and Trim Adhesive": Any adhesive used to install 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.
79. "Traffic Marking Tape": A preformed reflective film intended by the manufacturer to be applied to public streets, highways, and other surfaces, including but not limited to curbs, berms, driveways and parking lots.
80. "Traffic Marking Tape Adhesive": Any adhesive intended by the manufacturer to be applied to surfaces prior to installation of traffic marking tape.
81. "Undersea Based Weapons Systems Components": The fabricated part, assembly of parts or completed units of any portion of the missile launching system used on undersea ships.
82. "VCT and Asphalt Tile Adhesive": Any adhesive intended by the manufacturer for the installation of Vinyl Composite Tile (VCT) or asphalt tile flooring. Vinyl composite tile is a material made from thermoplastic resins, fillers, and pigments.

83. "Vehicle Glass Adhesive Primer": Any primer intended by the manufacturer to be applied to vehicle glass or to the frame of a vehicle prior to the installation or repair of the vehicle glass using an adhesive or sealant to improve adhesion to the pinch weld.
84. "Volatile Organic Compound (VOC)": Shall have the same meaning as Reactive Organic Compounds (ROC) as defined in Rule 2 of these Rules.
85. "Waterproof Resorcinol Glue": Any two-part, resorcinol resin-based adhesive intended by the manufacturer to be used in applications where the bond line must be resistant to conditions of continuous immersion in fresh or salt water.
86. "Wood Flooring Adhesive": Any adhesive intended by the manufacturer for the installation of wood flooring, which may include but is not limited to parquet tiles, wood planks, or strip-wood.