

5-253.8 Industrial Adhesives

(a) Applicability.

- (1) Except as provided below, this section applies to any person who uses, applies, sells, supplies, offers for sale or manufactures for sale any adhesive, sealant, adhesive primer or sealant primer for use in Vermont.
- (2) Exemptions. This section shall not apply to the following:
 - (i) Any adhesive, sealant, adhesive primer or sealant primer that is sold, supplied or offered for sale by any person to a retail outlet outside of Vermont.
 - (ii) Any of the following compounds or operations:
 - (A) Adhesives, sealants, adhesive primers or sealant primers being tested or evaluated in any research and development, quality assurance or analytical laboratory.
 - (B) Adhesives and sealants that contain less than 20 grams of VOC per liter of adhesive or sealant, less water and less exempt compounds, as applied.
 - (C) Cyanoacrylate adhesives.
 - (D) Adhesives, sealants, adhesive primers or sealant primers that are sold or supplied by the manufacturer or supplier in containers with a net volume of 16 fluid ounces or less, or a net weight of one pound or less, except plastic cement welding adhesives and contact adhesives.
 - (E) Contact adhesives that are sold or supplied by the manufacturer or supplier in containers with a net volume of one gallon or less.
 - (F) Tire repair operations, provided the label of the adhesive states "For tire repair only".
 - (G) In the assembly, repair and manufacture of aerospace or undersea-based weapon systems.
 - (H) In the manufacture of medical equipment.
 - (I) Plaque laminating operations in which adhesives are used to bond clear, polyester acetate laminate to wood with lamination equipment installed prior to July 1, 1992. Any person claiming such exemption shall maintain monthly operational records sufficient to demonstrate compliance.
 - (iii) Any stationary source whose total VOC emissions from all adhesives, sealants, adhesive primers and sealant primers used at the source are less than 200 pounds per 12 month rolling period. Any person claiming such exemption shall maintain monthly operational records sufficient to demonstrate compliance.
 - (iv) Up to a combined 55 gallons per calendar year of noncomplying adhesives, sealants, adhesive primers, sealant primers, cleanup solvents and surface preparation solvents at a

stationary source. Any person claiming such exemption shall maintain monthly operational records sufficient to demonstrate compliance.

- (b) Definitions. For the purpose of this section, the following definitions apply, in addition to those of Section 5-101 of this chapter.

"Acrylonitrile-butadiene-styrene or ABS welding adhesive" means any adhesive intended by the manufacturer to weld acrylonitrile-butadiene-styrene pipe, which is made by reacting monomers of acrylonitrile, butadiene and styrene.

"Adhesive" means any chemical substance that is applied for the purpose of bonding two surfaces together other than by mechanical means.

"Adhesive primer" means any product intended by the manufacturer for application to a substrate, prior to the application of an adhesive, to provide a bonding surface.

"Aerospace component" means for the purposes of this section, the fabricated part, assembly of parts or completed unit of any aircraft, helicopter, missile, or space vehicle, including passenger safety equipment.

"Aerosol adhesive" means an adhesive packaged as an aerosol product in which the spray mechanism is permanently housed in a non-refillable can designed for handheld application without the need for ancillary hoses or spray equipment.

"Architectural sealant or 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.

"Automotive glass adhesive primer" means an adhesive primer labeled by the manufacturer to be applied to automotive glass prior to installation of the glass using an adhesive/sealant. This primer improves the adhesion to pinch weld and blocks ultraviolet light.

"CARB" means the California Air Resources Board.

"Ceramic tile installation adhesive" means any adhesive intended by the manufacturer for use in the installation of ceramic tiles.

"Chlorinated polyvinyl chloride plastic" or "CPVC plastic" means a polymer of the vinyl chloride monomer that contains 67% chlorine and is normally identified with a CPVC marking.

"Chlorinated polyvinyl chloride welding adhesive" or "CPVC welding adhesive" means an adhesive labeled for welding of chlorinated polyvinyl chloride plastic.

"Cleanup solvent" means a VOC-containing material used to remove a loosely held uncured (i.e., not dry to the touch) adhesive or sealant from a substrate, or clean equipment used in applying a material.

“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” means an adhesive that: (i) is designed for application to both surfaces to be bonded together, and (ii) is allowed to dry before the two surfaces are placed in contact with each other, and (iii) forms an immediate bond that is impossible, or difficult, to reposition after both adhesive-coated surfaces are placed in contact with each other, and (iv) 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.

“Cove base” means a flooring trim unit, generally made of vinyl or rubber, having a concave radius on one edge and a convex radius on the opposite edge that is used in forming a junction between the bottom wall course and the floor or to form an inside corner.

“Cove base installation adhesive” means any adhesive intended by the manufacturer to be used for the installation of cove base or wall base on a wall or vertical surface at floor level.

“Cyanoacrylate adhesive” means any adhesive with a cyanoacrylate content of at least 95% by weight.

“Dry wall installation” means the installation of gypsum dry wall to studs or solid surfaces using an adhesive formulated for that purpose.

“Flexible vinyl” means non-rigid polyvinyl chloride plastic with at five percent by weight plasticizer content.

“Fiberglass” means a material consisting of extremely fine glass fibers.

“Indoor floor covering installation adhesive” means any adhesive intended by the manufacturer for use in the installation of wood flooring, carpet, resilient tile, vinyl tile, vinyl backed carpet, resilient sheet and roll or artificial grass. Adhesives used to install ceramic tile and 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.

“Low-solids adhesive, sealant or primer” means any product that contains 120 grams or less of solids per liter of material.

“Marine deck sealant” or “marine deck sealant primer” means any sealant or sealant primer labeled for application to wooden marine decks.

“Medical equipment manufacturing” means the manufacture of medical devices, such as, but not limited to, catheters, heart valves, blood

cardioplegia machines, tracheostomy tubes, blood oxygenators, and cardiatory reservoirs.

“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.

“Motor vehicle adhesive” means an adhesive, including glass bonding adhesive, used at a facility that is not an automobile or light-duty truck assembly coating facility, applied for the purpose of bonding two vehicle surfaces together without regard to the substrates involved.

“Motor vehicle weatherstrip adhesive” means an adhesive, used at a facility that is not an automobile or light-duty truck assembly coating facility, applied to weatherstripping materials for the purpose of bonding the weatherstrip material to the surface of the vehicle.

“Multipurpose construction adhesive” means any adhesive intended by the manufacturer for use in 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.

“Nonmembrane roof installation/repair adhesive” means any adhesive intended by the manufacturer for use in the installation or repair of nonmembrane roofs and that is not intended for the installation of prefabricated single-ply flexible roofing membrane, including, but not limited to, plastic or asphalt roof cement, asphalt roof coating and cold application cement.

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

“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.

“Perimeter bonded sheet flooring installation” means the installation of sheet flooring with vinyl backing onto a nonporous substrate using an adhesive designed to be applied only to a strip of up to four inches wide around the perimeter of the sheet flooring.

“Plastic cement welding adhesive” means any adhesive intended by the manufacturer for use to dissolve the surface of plastic to form a bond between mating surfaces.

“Plastic cement welding adhesive primer” means any primer intended by the manufacturer for use to prepare plastic substrates prior to bonding or welding.

“Plastic foam” means foam constructed of plastics.

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

“Plastics” means synthetic materials chemically formed by the polymerization of organic (carbon-based) substances. Plastics are usually compounded with modifiers, extenders, and/or reinforcers and are capable of being molded, extruded, cast into various shapes and films or drawn into filaments.

“Polyvinyl chloride plastic” or “PVC plastic” means a polymer of the chlorinated vinyl monomer that contains 57% chlorine.

“Polyvinyl chloride welding adhesive” or “PVC welding adhesive” means any adhesive intended by the manufacturer for use in 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, including, but not limited to, wood, paper and corrugated paperboard.

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

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

“Roadway sealant” means any sealant intended by the manufacturer for application to public streets, highways and other surfaces, including but not limited to curbs, berms, driveways and parking lots.

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

“SCAQMD” means the South Coast Air Quality Management District, a part of the California Air Resources Board, which is responsible for the regulation of air quality in the State of California.

“Sealant primer” means any product intended by the manufacturer for application to a substrate, prior to the application of a sealant, to enhance the bonding surface.

“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 sealant primers and caulks.

“Sheet-applied rubber installation” means the process of applying sheet rubber liners by hand to metal or plastic substrates to protect the underlying substrate from corrosion or abrasion. These operations also include laminating sheet rubber to fabric by hand.

“Single-ply roof membrane” means a prefabricated single sheet of rubber, normally ethylene-propylenediene terpolymer, that is field applied to a building roof using one layer of membrane material.

“Single-ply roof membrane installation and repair adhesive” means any adhesive labeled for use in 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 torn membrane 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 labeled for use 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 labeled for application to single-ply roof membrane.

“Solvent” means organic compounds that are used as diluents, thinners, dissolvers, viscosity reducers, cleaning agents or other related uses.

“Structural glazing adhesive” means any adhesive intended by the manufacturer to apply 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 is covered by a finish surface material.

“Surface preparation solvent” means a solvent used to remove dirt, oil and other contaminants from a substrate prior to the application of a primer, adhesive or sealant.

“Thin metal laminating adhesive” means any adhesive intended by the manufacturer for use in bonding multiple layers of metal to metal or metal to plastic in the production of electronic or magnetic components in which the thickness of the bond line(s) is less than 0.25 mils.

“Tire repair” means a process that includes expanding 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 tread adhesive” means any adhesive intended by the manufacturer for application to the back of precure tread rubber and to the casing and cushion rubber. Tire tread adhesive may also be used to seal buffed tire casings to prevent oxidation while the tire is being prepared for a new tread.

“Traffic marking tape” means preformed reflective film intended by the manufacturer for application 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 for application to surfaces prior to installation of traffic marking tape.

“Undersea-based weapons systems components” means the fabrication of parts, assembly of parts or completed units of any portion of a missile launching system used on undersea ships.

“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.

(c) Standards.

- (1) No person shall use, apply, sell, supply, offer for sale or manufacture for sale any adhesive, sealant, adhesive primer or sealant primer for use in Vermont with a VOC content in excess of the following emission limits:

Adhesive, sealant, adhesive primer or sealant primer category	VOC content limit (grams VOC per liter ^a)
Adhesives	
ABS welding	400
Ceramic tile installation	130
Computer diskette jacket manufacturing	850
Contact bond	250
Cove base installation	150
CPVC welding	490
Indoor floor covering installation	150
Metal to urethane/rubber molding or casting	850
Motor vehicle adhesive	250
Motor vehicle weatherstrip adhesive	750
Multipurpose construction	200
Nonmembrane roof installation/repair	300
Other plastic cement welding	510
Outdoor floor covering installation	250
PVC welding	510
Single-ply roof membrane installation/repair	250
Structural glazing	100
Thin metal laminating	780
Tire retread (not tire repair)	100
Perimeter bonded sheet vinyl flooring installation	660

Waterproof resorcinol glue	170
Sheet-applied rubber installation	850
Sealants	
Architectural	250
Marine deck	760
Nonmembrane roof installation/repair	300
Roadway	250
Single-ply roof membrane	450
Other	420
Adhesive Primers	
Automotive glass	700
Plastic cement welding	650
Single-ply roof membrane	250
Traffic marking tape	150
Other	250
Sealant Primers Applied to the Listed Substrate	
Non-porous architectural	250
Porous architectural	775
Marine deck	760
Other	750
Adhesives Applied to the Listed Substrate	
Flexible vinyl	250
Fiberglass	200
Metal	30
Porous material except wood	120
Rubber	250
Wood	30
Other substrates	250
<p>^a VOC content values are expressed in units of mass of VOC per volume of coating, excluding water and exempt compounds, as applied.</p>	

- (2) Where an adhesive or sealant primer has a specific content limit in the table above, such specific limit shall apply rather than the respective substrate limit.

- (3) Where a substrate limit applies in absence of a specific content limit in the table above, if an adhesive is used to bond dissimilar substrates together, the applicable substrate category with the highest VOC content shall apply.
- (4) No person shall use materials for surface preparation with a VOC content in excess of 70 grams per liter except a material with a composite vapor pressure, excluding water and exempt compounds, not to exceed 45 mm Hg at 20 degrees Celsius may be used for surface preparation before applying single-ply roofing.
- (5) No person shall use materials for the removal of adhesives, sealants, or adhesive or sealant primers from surfaces, other than spray application equipment, with a composite vapor pressure, excluding water and exempt compounds, in excess of 45 mm Hg at 20 degrees Celsius except as provided for in subsection (7) (vii) below.
- (6) Container Labeling. Each manufacturer of an adhesive, sealant, adhesive primer or sealant primer subject to this section shall display the following information on the product container or label:
 - (i) A statement of the manufacturer's recommendation regarding thinning, reducing, or mixing of the product, except that:
 - (A) This requirement does not apply to the thinning of a product with water; and
 - (B) If thinning of the product prior to use is not necessary, the recommendation must specify that the product is to be applied without thinning;
 - (ii) The maximum or the actual VOC content of the product, as supplied, displayed in grams of VOC per liter of product; and
 - (iii) The maximum or the actual VOC content of the product, which includes the manufacturer's maximum recommendation for thinning, as applied, displayed in grams of VOC per liter of product.
- (7) Work Practice Requirements.
 - (i) Application methods. Only one of the following application methods shall be used for the application of adhesives, sealants, adhesive primers or sealant primers: electrostatic spray, High volume-low pressure (HVLP) spray, flow coat, roll coat, or hand application, (including non-spray application methods similar to hand or mechanically powered caulking gun, brush, or direct hand application), dip coating (including electrodeposition), airless spray, air-assisted airless spray, or other application methods capable of achieving a transfer efficiency equivalent to or better than that achieved by HVLP spraying.
 - (ii) Any person using adhesives, sealants, adhesive primers, sealant primers, surface preparation or clean-up solvents subject to this section shall:

- (A) Store or dispose of all such materials and absorbent materials, such as cloth or paper, which are moistened with adhesives, sealants, primers or solvents subject to this section, in non-absorbent containers that shall be closed except when placing materials in or removing materials from the container;
 - (B) Ensure that mixing and storage containers used for VOC-containing adhesives, adhesive primers, and process-related waste materials are kept closed at all times except when depositing or removing these materials;
 - (C) Minimize spills of VOC-containing adhesives, adhesive primers, and process-related waste materials;
 - (D) Convey VOC-containing adhesives, adhesive primers, and process-related waste materials from one location to another in closed containers or pipes; and
 - (E) Minimize VOC emissions from the cleaning of application, storage, mixing, and conveying equipment by ensuring that equipment cleaning is performed without atomizing the cleaning solvent and that all spent solvent is captured in closed containers.
- (iii) Removal of an adhesive, sealant, adhesive primer or sealant primer from the parts of spray application equipment shall be performed as follows:
- (A) In an enclosed cleaning system, or its equivalent as approved by the Air Pollution Control Officer and EPA;
 - (B) Using a solvent with a VOC content less than or equal to 70 grams of VOC per liter of material; or
 - (C) For parts containing dried adhesive, soaking in a solvent where the composite vapor pressure of the solvent, excluding water and exempt compounds, is less than or equal to 9.5 mm Hg at 20 degrees Celsius and the parts and solvent are in a closed container that remains closed except when adding parts to or removing parts from the container.
- (d) Control devices.
- (1) As an alternative to compliance with the emission limits in subsection (c) of this section, an owner or operator may comply with this section by:
 - (i) Installing and operating a capture system and control device for control of VOC emissions from the use or application of all adhesives, sealants, adhesive primers and sealant primers; and
 - (ii) Demonstrating that the overall emission reduction efficiency achieved for such emissions is greater than 90%. The achieved overall emission reduction efficiency shall be determined in

accordance with procedures and test methods specified by the Air Pollution Control Officer and EPA.

- (2) An owner or operator subject to this section shall ensure that:
 - (i) A capture system and control device, if used, are operated at all times, and the owner or operator demonstrates compliance with this section in accordance with the coating analysis and capture system and control device efficiency test methods specified by the Air Pollution Control Officer and EPA; and
 - (ii) The control device is equipped with the monitoring equipment required by the Air Pollution Control Officer, and such equipment is installed, calibrated, operated and maintained according to the vendor's specifications at all times the control device is in use. The monitoring equipment shall monitor the following parameters:
 - (A) Combustion chamber temperature of each thermal incinerator or afterburner;
 - (B) Temperature before the catalyst bed and temperature rise across each catalytic incinerator bed; and
 - (C) The VOC concentration of the inlet and outlet from each carbon adsorption bed.
- (e) Recordkeeping and Reporting.
 - (1) Each person subject to this section shall maintain records demonstrating compliance with this section, including, but not limited to, the following information:
 - (i) A list of each adhesive, sealant, adhesive primer, sealant primer cleanup solvent and surface preparation solvent in use and in storage;
 - (ii) A data sheet or material list which provides the material name, manufacturer identification, and material application;
 - (iii) Catalysts, reducers or other components used and the mix ratio;
 - (iv) The VOC content of each product as supplied;
 - (v) The final VOC content or vapor pressure, as applied; and
 - (vi) The monthly volume of each adhesive, sealant, adhesive primer, sealant primer, cleanup or surface preparation solvent used.
 - (2) Any person who complies with this section through the use of add-on air pollution control equipment shall record the key operating parameters for the control equipment, including but not limited to, the following information:

- (i) The volume used per day of each adhesive, sealant, adhesive primer, sealant primer or solvent that is subject to a VOC content limit in Table 1 and that exceeds such a limit;
 - (ii) On a daily basis, the combustion temperature, inlet and exhaust gas temperatures and control device efficiency, as appropriate, pursuant to sub-section (d)(ii) of this section;
 - (iii) Daily hours of operation; and
 - (iv) All maintenance performed including the date and type of maintenance.
- (3) For adhesives, sealants, adhesive primers and sealant primers subject to the laboratory testing exemption pursuant to this section, the person conducting the testing shall make and maintain records of all such materials used, including, but not limited to, the product name, the product category of the material or type of application and the VOC content of each material.
- (4) All records made to determine compliance with this section shall be maintained for five (5) years from the date such record is created.