
TITLE 326 AIR POLLUTION CONTROL BOARD**Emergency Rule**
LSA Document #09-697(E)**DIGEST**

Temporarily adds new provisions to address volatile organic compounds (VOC) reasonably available control technology (RACT) in Lake County and Porter County for miscellaneous industrial adhesive operations. Authority: [IC 4-22-2-37.1\(a\)\(13\)](#). Effective September 3, 2009.

SECTION 1. Applicability. (a) This document applies to each miscellaneous industrial adhesive application process at sources that meet the following criteria:

- (1) Are located in Lake County or Porter County.**
- (2) Have actual volatile organic compound (VOC) emissions, before consideration of controls, equal to or greater than three (3) tons per rolling twelve (12) month period from all miscellaneous industrial adhesive application processes and related cleaning activities.**

(b) An application process consists of a series of one (1) or more adhesive applicators and any associated drying area or oven, or both, wherein an adhesive is applied, dried or cured, or both. An application process ends at the point where the adhesive is dried or cured, or prior to any subsequent application of a different adhesive. It is not necessary for an application process to have an oven or flash-off area.

(c) Industrial adhesive application operations exempt from the requirements of this document based on the threshold applicability in subsection (a)(2) shall maintain records as required under SECTION 8 of this document.

SECTION 2. Definitions. The following definitions apply throughout this document:

- (1) "Acrylonitrile-butadiene-styrene welding" or "ABS welding" means any process to weld acrylonitrile-butadiene-styrene pipe.**
- (2) "Adhesive" means any chemical substance that is applied for the purpose of bonding two (2) surfaces together other than by mechanical means.**
- (3) "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.**
- (4) "Aerosol adhesive or adhesive primer" means an adhesive or adhesive primer 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.**
- (5) "Ceramic tile installation adhesive" means any adhesive intended by the manufacturer for use in the installation of ceramic tiles.**
- (6) "Contact bond adhesive" means an adhesive that:**
 - (A) is designed for application to both surfaces that are to be bonded together;**
 - (B) is allowed to dry before the two (2) surfaces are placed in contact with each other;**
 - (C) forms an immediate bond that is impossible, or difficult, to reposition after both adhesive-coated surfaces are placed in contact with each other; and**
 - (D) 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.**

The term does not include rubber cements that are primarily intended for use on paper substrates or vulcanizing fluids that are designed and labeled for tire repair only.

(7) "Cove base" means a flooring trim unit, generally made of vinyl or rubber, having a concave radius on one (1) edge and a convex radius on the opposite edge that is used:

- (A) in forming a junction between the bottom wall course and the floor; or**
- (B) to form an inside corner.**

(8) "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.

(9) "Cyanoacrylate adhesive" means any adhesive with a cyanoacrylate content of at least ninety-five percent (95%) by weight.

(10) "Ethylene propylene diene monomer roof membrane" or "EPDM roof membrane" means a prefabricated single sheet of elastomeric material that is:

- (A) composed of ethylene propylene diene monomer (EPDM); and**

- (B) field applied to a building roof using one (1) layer of membrane material.
- (11) "Flexible vinyl" means nonrigid polyvinyl chloride plastic with a least five percent (5%) by weight plasticizer content.
- (12) "Indoor floor covering installation adhesive" means the following:
 - (A) Any adhesive intended by the manufacturer for use in the installation of the following:
 - (i) Wood flooring.
 - (ii) Carpet.
 - (iii) Resilient tile.
 - (iv) Vinyl tile.
 - (v) Vinyl backed carpet.
 - (vi) Resilient sheet and roll or artificial grass.
 - (B) Excluded from this definition are adhesives used to install:
 - (i) ceramic tile; and
 - (ii) perimeter bonded sheet flooring with vinyl backing onto a nonporous substrate, such as flexible vinyl.
- (13) "Laminate" means a product made by bonding together two (2) or more layers of material.
- (14) "Metal to urethane or rubber molding or casting adhesive" means any adhesive intended by the manufacturer to bond metal to:
 - (A) high density or elastomeric urethane; or
 - (B) molded rubber materials;in heater molding or casting processes, to fabricate products such as rollers for computer printers or other paper handling equipment.
- (15) "Motor vehicle adhesive" means an adhesive, including glass bonding adhesive, used at a source that is not an automobile or light duty truck assembly coating source, applied for the purpose of bonding two (2) vehicle surfaces together without regard to the substrates involved.
- (16) "Motor vehicle glass bonding primer" means a primer, used at a source that is not an automobile or light duty truck assembly coating source, that:
 - (A) is applied to:
 - (i) windshields;
 - (ii) other glass; or
 - (iii) body openings;to prepare the glass or body opening for the application of glass bonding adhesives or the installation of adhesive bonded glass; and
 - (B) includes:
 - (i) glass bonding; and
 - (ii) cleaning primers;that perform both functions (cleaning and priming of the windshield or other glass, or body openings) prior to the application of adhesive or the installation of adhesive bonded glass.
- (17) "Motor vehicle weather-strip adhesive" means an adhesive, used at a source that is not an automobile or light duty truck assembly coating source, applied to weather-stripping materials for the purpose of bonding the weather-strip material to the surface of the vehicle.
- (18) "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, the following:
 - (A) Drywall.
 - (B) Subfloor.
 - (C) Panel.
 - (D) Fiberglass reinforced plastic (FRP).
 - (E) Ceiling tile.
 - (F) Acoustical tile.
- (19) "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.
- (20) "Panel installation" means the installation of any:
 - (A) plywood;
 - (B) predecorated hardboard (or tileboard);
 - (C) FRP; and
 - (D) similar predecorated or nondecorated panels;to studs or solid surfaces using an adhesive formulated for that purpose.
- (21) "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 (4) inches wide around the perimeter of the sheet flooring.

(22) "Plastics" means synthetic materials chemically formed by the polymerization of organic (carbon-based) substances. Plastics are described as follows:

(A) Usually compounded with one (1) or more of the following:

- (i) Modifiers.
- (ii) Extenders.
- (iii) Reinforcers.

(B) Capable of being:

- (i) molded;
- (ii) extruded;
- (iii) cast into various shapes and films; or
- (iv) drawn into filaments.

(23) "Plastic solvent welding adhesive" means any adhesive intended by the manufacturer for use to dissolve the surface of plastic to form a bond between mating surfaces.

(24) "Plastic solvent welding adhesive primer" means any primer intended by the manufacturer for use to prepare plastic substrates prior to bonding or welding.

(25) "Porous material" means a substance that has tiny openings, often microscopic, in which fluids may be absorbed or discharged, including, but not limited to, paper and corrugated paperboard. For purposes of this document, the term does not include wood.

(26) "Reinforced plastic composite" means a composite material consisting of plastic reinforced with fibers.

(27) "Rubber" means any natural or manmade rubber substrate, including, but not limited to, the following:

- (A) Styrene-butadiene rubber.
- (B) Polychloroprene (neoprene).
- (C) Butyl rubber.
- (D) Nitrile rubber.
- (E) Chlorosulfonated polyethylene.
- (F) Ethylene propylene diene terpolymer.

(28) "Sheet rubber lining 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.

(29) "Single-ply roof membrane" means a prefabricated single sheet of rubber, normally ethylene propylene diene terpolymer, that is field applied to a building roof using one (1) layer of membrane material. For purposes of this document, the term does not include membranes prefabricated from EPDM.

(30) "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.

(31) "Single-ply roof membrane installation and repair adhesive" means any adhesive labeled for use in the installation or repair of single-ply roof membrane, where the following apply:

(A) Installation includes, at a minimum, the following:

- (i) Attaching the edge of the membrane to the edge of the roof.
- (ii) Applying flashings to vents, pipes, and ducts that protrude through the membrane.

(B) Repair includes the following:

- (i) Gluing the edges of torn membrane together.
- (ii) Attaching a patch over a hole.
- (iii) Reapplying flashings to vents, pipes, or ducts installed through the membrane.

(32) "Structural glazing adhesive" means any adhesive intended by the manufacturer to apply any of the following to exterior building frames:

- (A) Glass.
- (B) Ceramic.
- (C) Metal.
- (D) Stone.
- (E) Composite panels.

(33) "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.

(34) "Thin metal laminating adhesive" means any adhesive intended by the manufacturer for use in bonding multiple layers of:

- (A) metal to metal; or
- (B) metal to plastic;

in the production of electronic or magnetic components in which the thickness of the bond line or

lines is less than twenty-five hundredths (0.25) mils.

(35) "Tire repair" means a process that includes:

(A) expanding a:

- (i) hole;
- (ii) tear;
- (iii) fissure; or
- (iv) blemish;

in a tire casing; and

(B) completing the process by:

- (i) grinding or gouging;
- (ii) applying adhesive; and
- (iii) filling;

the hole or crevice with rubber.

(36) "Waterproof resorcinol glue" means a two (2) part resorcinol-resin-based adhesive designed for applications where the bond line must be resistant to conditions of continuous immersion in fresh water or salt water.

SECTION 3. VOC content limits. (a) Except as provided in subsection (c) and SECTION 4 of this document, on and after April 1, 2011, an owner or operator applying miscellaneous industrial adhesives or adhesive primers within Lake County or Porter County shall comply with applicable VOC content limits specified in subsection (f).

(b) The VOC content limits in subsection (f) for adhesives or adhesive primers applied to particular substrates shall apply as follows:

- (1) If an operator uses an adhesive that is subject to a specific VOC content limit in subsection (f), the specific limit is applicable rather than an adhesive-to-substrate limit.
- (2) The applicable substrate category with the highest VOC content shall be the limit when an adhesive is used to bond dissimilar substrates together.

(c) A person using an adhesive or adhesive primer subject to this document may comply with subsection (a) by using add-on air pollution control equipment if the equipment meets the following requirements:

- (1) The VOC emissions from the use of all adhesives or adhesive primers subject to this document are reduced by an overall capture and control efficiency of at least eighty-five percent (85%) by weight.
- (2) The combustion temperature is monitored continuously if a thermal incinerator is operated.
- (3) Inlet and exhaust gas temperatures are monitored continuously if a catalytic incinerator is operated.
- (4) Control device efficiency is monitored continuously if a carbon absorber or control device other than a thermal or catalytic incinerator is operated.
- (5) Operation records sufficient to demonstrate compliance with the requirements of this subsection are maintained as required by SECTION 6 of this document.

(d) Work practices shall be used to minimize VOC emissions from mixing operations, storage tanks, and other containers, and handling operations for adhesives, adhesive primers, cleaning materials, and waste materials. Work practices shall include, at a minimum, the following:

- (1) Store all VOC adhesives, adhesive primers, and cleaning materials in closed containers or pipes.
- (2) Minimize spills of VOC adhesives, adhesive primers, and clean up any spill immediately.
- (3) Convey any adhesives, adhesive primers, and cleaning materials in closed containers or pipes.
- (4) Keep mixing vessels that contain VOC adhesives, adhesive primers, or other materials closed except when specifically in use.
- (5) Clean equipment without atomizing the cleaning solvent and ensure all spent solvent is captured in a closed container.

(e) In addition to the VOC content limits in subsection (f), one (1) or a combination of the following equipment shall be used for adhesive or adhesive primer application:

- (1) Electrostatic equipment.
- (2) High volume low-pressure (HVLP) spray equipment.
- (3) Flow coating.
- (4) Roller coating or hand application, including nonspray application methods similar to hand or mechanically powered caulking gun, brush, or direct hand application.

- (5) Dip coating, including electrodeposition.
 (6) Airless spray.
 (7) Air-assisted airless spray.
 (8) Other coating application method capable of achieving a transfer efficiency equivalent to or better than that achieved by HVLP spraying.

(f) The VOC content limits for adhesives and adhesive primers are as follows:

Category**		VOC Content Limit	
		grams/liter	lb/gal
Specialty Adhesive Application Processes			
	Ceramic tile installation	130	1.1
	Contact adhesive	250	2.1
	Cove base installation	150	1.3
	Indoor floor covering installation	150	1.3
	Metal to urethane or rubber molding or casting	850	7.1
	Motor vehicle adhesive	250	2.1
	Motor vehicle weather-strip adhesive	750	6.3
	Multipurpose construction	200	1.7
	Outdoor floor covering installation	250	2.1
	Single-ply roof membrane installation or repair (except EPDM)	250	2.1
	Structural glazing	100	0.8
	Thin metal laminating	780	6.5
	Tire repair	100	0.8
	Perimeter bonded sheet vinyl flooring installation	660	5.5
	Plastic solvent welding (ABS)	400	3.3
	Plastic solvent welding (except ABS)	500	4.2
	Sheet rubber lining installation	850	7.1
	Waterproof resorcinol glue	170	1.4
Adhesive Primer Application Processes			
	Motor vehicle glass bonding primer	900	7.5
	Plastic solvent welding adhesive primer	650	5.4
	Single-ply roof membrane adhesive primer	250	2.1
	Other adhesive primer	250	2.1
Adhesives Applied to the Listed Substrate			
	Flexible vinyl	250	2.1
	Reinforced plastic composite (fiberglass)	200	1.7
	Metal	30	0.3
	Porous material (except wood)	120	1.0
	Rubber	250	2.1
	Other substrates	250	2.1
	Wood	30	0.3

** The VOC content is determined as the weight of VOC, less water and exempt compounds.

SECTION 4. Exemptions and exceptions. (a) The requirements of this document shall not apply to the following:

(1) The use of the following compounds:

(A) Adhesives or adhesive primers being tested or evaluated in any:

- (i) research and development;
- (ii) quality assurance; or
- (iii) analytical;

laboratory, provided records are maintained as required in SECTION 6 of this document.

(B) Cyanoacrylate adhesives.

(C) Adhesives or adhesive primers that are sold or supplied by the manufacturer or supplier in

containers with a net:

- (i) volume of sixteen (16) fluid ounces or less; or
- (ii) weight of one (1) pound or less;

except plastic solvent welding adhesives and contact adhesives.

(D) Contact adhesives that are sold or supplied by the manufacturer or supplier in containers with a net volume of one (1) gallon or less.

(E) Aerosol adhesives and aerosol adhesive primers.

(2) The use of adhesives or adhesive primers in the following operations:

(A) Tire repair operations, provided the label of the adhesive states "For tire repair only".

(B) In the assembly, repair, and manufacture of aerospace or undersea-based weapon systems.

(C) The manufacture of medical equipment.

(D) 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 an exemption under this subdivision shall record and maintain monthly operational records sufficient to demonstrate compliance with this exemption and in accordance with SECTION 6 of this document.

(E) Processes using polyester bonding putties to assemble fiberglass parts at:

- (i) fiberglass boat manufacturing sources; and
- (ii) other reinforced plastic composite manufacturing sources.

(b) SECTION 3 of this document shall not apply to the use of any adhesives or adhesive primers provided the total volume of adhesives and adhesive primers applied source wide does not exceed fifty-five (55) gallons per calendar year. Any person claiming an exemption under this subdivision [sic] shall record and maintain monthly operational records sufficient to demonstrate compliance with this exemption and in accordance with SECTION 6 of this document.

SECTION 5. Compliance dates. The owner or operator of a source that is subject to this document shall comply with the requirements of this document no later than April 1, 2011, or upon initial start-up of the operation for new miscellaneous industrial adhesive operations.

SECTION 6. Record keeping. (a) Each person subject to this document, including the exemption in SECTION 4(b) of this document, shall maintain records demonstrating compliance with this document, including, but not limited to, the following information:

(1) A list of each adhesive or adhesive primer in use and in storage.

(2) A data sheet or material list that provides the following:

(A) Material name.

(B) Manufacturer identification.

(C) Material application.

(3) The use and mix ratio of the following:

(A) Catalysts.

(B) Reducers.

(C) Other components.

(4) The VOC content of each product, as supplied.

(5) The final VOC content or vapor pressure, as applied.

(6) The monthly volume of each adhesive or adhesive primer used.

(b) Any person who complies with SECTION 3(a) of this document 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:

(1) The volume used per day of each adhesive or adhesive primer that:

(A) is subject to a VOC content limit in SECTION 3(f) of this document; and

(B) exceeds a limit listed in SECTION 3(f) of this document.

(2) On a daily basis, the:

(A) combustion temperature;

(B) inlet and exhaust gas temperatures; and

(C) control device efficiency, as appropriate;

under SECTION 3(c) of this document.

(3) Daily hours of operation.

(4) All maintenance performed, including the following:

(A) Date of maintenance.

(B) Type of maintenance.

- (c) All records documenting compliance with this document shall be:
- (1) maintained for five (5) years from the date a record is created; and
 - (2) made available to the department within ninety (90) days of a request.

(d) For adhesives or adhesive primers subject to the laboratory testing exemption under SECTION 4(a)(1)(A) of this document, the person conducting the testing shall make and maintain records of all adhesive or adhesive primer materials used, including, but not limited to, the following:

- (1) Product name.
- (2) Product category of the material or type of application.
- (3) VOC content of each material.
- (4) The dates when the exempt adhesives or adhesive primers were used.

SECTION 7. Compliance procedures and test methods. (a) Except as provided in subsections (c) and (d), the VOC and solids content of adhesives or adhesive primers shall be determined in accordance with the following:

- (1) 40 CFR 60, Appendix A, Method 24*.
- (2) Analytical data derived from a material safety data sheet (MSDS) or equivalent information from the supplier as long as it is based on 40 CFR 60, Appendix A, Method 24*.

(b) The organic content of exempt organic compounds shall be determined using ASTM D4457-85*, as applicable.

(c) The VOC content for reactive adhesives shall be determined using the procedures for reactive adhesives in 40 CFR 63, Subpart PPPP, Appendix A*.

(d) If air pollution control equipment is used to meet the requirements of this document, the owner or operator shall make the following determinations:

- (1) The measurement of capture efficiency shall be conducted and reported in accordance with [326 IAC 8-1-4\(c\)](#).
- (2) The control efficiency shall be determined in accordance with [326 IAC 8-1-4\(d\)](#) through [326 IAC 8-1-4\(f\)](#).

(e) Grams of VOC per liter of adhesive, less water and exempt compounds, shall be calculated according to the following equation:

$$\text{Grams of VOC per liter of adhesive} = \frac{W_s - W_w - W_e}{V_m - V_w - V_e}$$

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

(f) Grams of VOC per liter of material shall be calculated according to the following equation:

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

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

(g) Percent VOC by weight shall be calculated according to the following equation:

$$\% \text{ VOC by weight} = (W_v / W) \times 100$$

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

*These documents are incorporated by reference. Copies may be obtained from the Government Printing Office, 732 North Capitol Street NW, Washington, D.C. 20401 or are available for review and copying at the Indiana Department of Environmental Management, Office of Legal Counsel, Indiana Government Center North, Thirteenth Floor, 100 North Senate Avenue, Indianapolis, Indiana 46204.

SECTION 8. Record keeping requirements for exempt sources. (a) An owner or operator applying industrial adhesives that is exempt from the requirements of this document based on the threshold applicability in SECTION 1(a)(2) of this document shall maintain the following records on a monthly basis:

- (1) The total gallons of each adhesive.
- (2) The VOC content of each adhesive.

(b) Records required by subsection (a) shall be submitted to the department within thirty (30) days of the receipt of a written request. If the records are not available, the source shall be considered to be subject to the requirements in SECTION 3 of this document.

SECTION 9. A variance request from the requirements of this document shall be made in accordance with [IC 13-14-8-8](#).

SECTION 10. This document expires on the effective date of LSA [Document] #09-221 or ninety (90) days after filing with the publisher, whichever takes place first.

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