

Adhesives and Sealants Regulations

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MassDEP

MA Adhesives and Sealants Regulations

- 310 CMR 7.18(30), promulgated on 8/30/2013
- Regulates the VOC emissions of adhesives, sealants, adhesive primers, sealant primers and associated surface preparation and cleanup solvents
- Compliance dates:
 - Manufacturers: 1/1/15
 - Distributors/Sellers: 9/1/2015
 - Users: 5/1/2016
- Based on OTC Model Rule (2007) and EPA CTG (2008)
- Estimated VOC reductions of 2,300 ton per year or 6.3 ton per summer day
- Savings of \$1,060 to a cost of \$2,320 per ton of VOC reduced for reformulation of products (per California Air Resources Board (CARB) estimates)



OTC and Adhesives and Sealants Model Rule

- Section 184(a) of the CAA established the Ozone Transport Region (OTR) and Ozone Transport Commission (OTC)
- OTC's mandate is to assess the degree of interstate transport of ozone and its precursors throughout the OTR and recommend strategies to the OTC states for reducing ozone
- OTC identified reducing VOC emissions from adhesives and sealants as an appropriate control strategy based on the level of emissions and availability of cost-effective controls
- OTC developed an Adhesives and Sealants Model Rule (2007) based on a California Air Resources Board (CARB) model rule (1998)

Adhesives and Sealants CTG

- CAA requires MA, as a state located within OTR, to adopt Reasonably Available Control Technologies (RACT) to reduce ozone and its precursors
- EPA published a Control Technique Guideline (CTG) for industrial adhesives (September 2008) with requirements on VOC content of adhesives and adhesive primers, housekeeping practices, and application methods at facilities that have actual VOC emissions of 15 lb/day or more (referred to as a “CTG-affected facility” in MassDEP’s regulations)
- MassDEP’s regulations incorporate the CTG requirements, with a few being applicable only to the CTG-affected facilities

310 CMR 7.18(30) Definitions

- An “adhesive” is a material that is used to bond two surfaces together
- A “sealant” is a material with adhesive properties that is used primarily to fill, seal, waterproof or weatherproof gaps or joints between two surfaces
- Adhesives applied as a coating on a single surface where the application does not involve bonding of two surfaces as part of the operation (such as those in manufacturing adhesive tapes) are covered under the “coatings” regulations and not under the Adhesives and Sealants regulations

Applicability

- Covered materials:
 - adhesives, sealants, adhesive primers, sealant primers, and associated cleanup and surface preparation materials
- Any person who:
 - manufactures, sells, supplies, or offers for sale any adhesive, sealant, adhesive primer, or sealant primer for use in Massachusetts
 - uses, applies, or solicits the use or application of such a product within Massachusetts
- Does not apply to:
 - **homeowners** and others who use such products at a private residence for personal use
 - products manufactured/distributed **for exclusive use outside of MA** (with records to substantiate)
 - specifically exempted products and operations

Exemptions

- Small quantity use of non-compliant products at a facility where
 - total usage of noncompliant products, including **cleanup and surface preparation solvents** is less than **55 gal** per calendar year; or
 - total VOC emissions from all noncompliant products used (excluding cleanup and surface preparation solvents) are less than **200 lb** per calendar year

→ ***Exempted small users must keep records to substantiate use and emissions***
- Manufacture, sale, supplying, or offering for sale of noncompliant products for **use in conjunction with add-on air pollution controls** provided that records are kept to substantiate this claim



Exemptions (cont.)

- Products exempted (for manufacture, sale, and use)
 - cyanoacrylate adhesives
 - used in aerospace/undersea-based weapon systems components
 - used in medical equipment
 - used in plaque laminating (where equipment were installed before July 1, 1992)
 - sold in containers with net volume of 16 fl oz or less, or weight of 1 lb or less (except plastic cement welding adhesives)
 - adhesives and sealants with < 20 g/l of VOC, less water and less exempt compounds, as applied
 - being tested/evaluated in any R&D, QA, or analytical lab
 - tire repair adhesives if labeled “For Tire Repair Only”
 - regulated under Consumer Products, 310 CMR 7.25(12)
- ➔ ***Some exempted uses are subject to labeling, recordkeeping and/or work practice requirements***

Compliance Options for Users of Adhesives and Sealants

- Compliance with emission limits, work practices, and application methods
 - VOC content limits on adhesives, sealants, adhesive primers, and sealant primers
 - restrictions on VOC content, vapor-pressure, and/or equipment configuration for cleanup and surface preparation materials
 - application equipment specifications (limited to the CTG-affected facilities)

OR

- Application of pollution control equipment
 - VOC must be reduced by a capture efficiency of $\geq 85\%$ (w)
 - facility must comply with MassDEP's requirements for operating the control equipment, and maintain necessary records
 - facility must submit an Emission Control Plan (ECP)
 - requirements on work practices also apply



Cleanup and Surface Preparation

- VOC requirements
 - **surface preparation** solvents except in single-ply roofing applications: VOC content < **70 g/l** as applied
 - surface preparation solvents in **single-ply roofing** applications: VOC composite vapor pressure < **45 mm Hg at 20° C**, excluding water and exempt compounds
 - materials used for **removal** of regulated products from any surface: VOC composite vapor pressure < **45 mm Hg at 20° C**, except as provided for spray guns
 - removal of regulated products from **parts of spray guns**:
 - i) use an **enclosed cleaning system** (or equivalent system)
 - minimize VOC emissions during cleaning, rinsing, and draining, and
 - Collect the spent solvent for reuse, recycling, proper disposal; or
 - ii) use a solvent with a VOC content \leq **70 g/l**; or
 - iii) when **soaking parts** containing dried adhesive, use
 - a closed container, and
 - a solvent with a composite vapor pressure \leq **9.5 mm Hg at 20° C**, excluding water and exempt compounds



Application Methods, and Work Practices

- Application methods, required only at “CTG-affected” facilities
 - electrostatic spray
 - HVLP spray
 - flow coat
 - roll coat or hand application (including non-spray applications similar to caulking gun)
 - dip coat (including electrodeposition)
 - airless spray
 - air-assisted airless spray
 - any adhesive application method capable of achieving a transfer efficiency equivalent to or better than that achieved by HVLP spraying

- Work practices
 - mix, convey, and store all VOC-containing products in closed containers, including process-related waste and rework materials
 - minimize spills of products and process-related materials
 - minimize VOC emissions from cleaning of all equipment
 - avoid atomization of solvents; and
 - store all spent solvents in closed containers



Labeling and Recordkeeping

- Containers must have a manufacturer's label that includes:
 - recommendation regarding thinning, reducing, or mixing of the product if the product is to be reduced or mixed
 - the maximum or the actual VOC content of the product as *supplied*
 - the maximum or the actual VOC content of the product that includes the manufacturer's maximum recommendation for thinning *as applied*
- Manufacturers, sellers/suppliers, and users of these products must retain records on site for 3 years
- Other recordkeeping requirements specific to manufacturers, sellers, and users apply
- Users who comply by means of add-on air pollution control equipment have certain additional recordkeeping requirements



Permitting Requirements

- Facilities complying through the pollution control option must submit an ECP
- In most cases where the pollution control compliance option is selected, controls are in place for other processes at the facility, and as such, the facility should already have a permit
- A new operation and/or any increase in air emissions requires an air permit (i.e., plan approval) application/review
- For more information on permitting requirements please contact MassDEP

MassDEP Contact Information

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617-574-6801
- MassDEP Regional Offices for compliance and facility-related issues
 - www.mass.gov/eea/agencies/massdep/about/contacts/
- Regulations and factsheet
 - <http://www.mass.gov/eea/agencies/massdep/air/regulations/310-cmr-7-00-air-pollution-control-regulation.html>
 - <http://www.mass.gov/eea/docs/dep/air/laws/adhfacts.pdf>



QUESTIONS?

