
ENVIRONMENTAL Fact Sheet



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Controlling Volatile Organic Compound Emissions from Industrial Sources in New Hampshire

In the recent past, certain parts of New Hampshire exceeded the federal health standards for ground-level ozone, the major component of “smog.” Ground-level ozone is formed when volatile organic compounds (VOCs) combine with oxides of nitrogen in the presence of sunlight and heat. Examples of VOC-containing materials include coatings, industrial and commercial solvents, petroleum products (e.g., gasoline), diluents, thinners, degreasing agents, and propellants such as isoprene and terpene.

Since VOCs are recognized as precursors to ground-level ozone, VOCs are regulated under the federal Clean Air Act and New Hampshire’s Clean Air Rules. Currently, consumer products and architectural coatings such as paints, varnishes or stains are regulated at the federal and state levels. New Hampshire’s VOC rules in Env-A 1200, which this fact sheet summarizes, primarily address industrial facilities.

What is VOC RACT?

Chapter Env-A 1200 “Volatile Organic Compounds Reasonably Available Control Technology,” or VOC RACT, reduces VOC emissions from point (stationary) sources. RACT represents control technology that is generally available and that results in the lowest emission rate that sources are reasonably capable of meeting. Such controls are generally industry-specific and factor in technological and economic feasibility constraints of particular industry groups or, in some cases, individual facilities. Optimal techniques for VOC control are very industry-specific. In general, these techniques include coating reformulation – such as the use of low-VOC or water-based coatings – add-on controls such as carbon adsorption systems, design changes, and such operation and maintenance controls as leak prevention.

In additions to VOC RACT, all **new major** sources and **major modifications** of existing major sources are subject to federal New Source Review (NSR) requirements, which require VOC controls at the lowest achievable emission rate (LAER). A *major source* for VOCs in New Hampshire is a source that emits or has the potential to emit 50 tons per year (tpy) or more of VOCs. *Major modification* thresholds are defined in the statewide permitting program section of the Rules according to geographical area. LAER is required for such sources throughout the Ozone Transport Region (OTR), which consists of all the Northeastern states from Maine to Virginia. LAER, defined as either the most effective technology in current use or required in any state irrespective of cost, is much more stringent than RACT in most situations.

Applicability Provisions of the VOC RACT Rules

The VOC RACT rules apply to facilities that meet either a specific RACT applicability emissions threshold or other design, size, or product output criteria. Such thresholds and criteria have been established by the U.S. Environmental Protection Agency for over 40 categories of industrial sources. Sources which don't fall into one of the categories but which are major sources, as defined above, are also subject to the VOC RACT rules.

Sources in the following categories are "RACT-applicable" subject at least to state level RACT review and possibly RACT-level controls, if they emit VOCs in an amount that exceeds the potential emissions or other thresholds.

Source Category	VOC RACT Applicability Threshold or Criteria <i>TPE = Theoretical Potential to Emit</i> <i>Actuals = Actual emissions before controls</i>
Metal Can Coating	TPE ≥ 10 tpy
Paper, Fabric, Film & Foil Coating (Different thresholds for different requirements)	Actuals ≥ 3 tpy 10 tpy ≥ TPE < 25 tpy TPE ≥ 25 tpy
Vinyl and Urethane Substrate Coating	TPE ≥ 10 tpy
Metal Furniture Coating	Actuals ≥ 3 tpy
Magnetic Wire Insulation Coating	TPE ≥ 10 tpy
Metal Coils Coating	TPE ≥ 10 tpy
Misc. Metal and Plastic Parts Coating	Actuals ≥ 3 tpy
Wood Furniture	TPE ≥ 25 tpy for furniture coating
Burial Caskets and Gunstock Coating	TPE ≥ 50 tpy for burial caskets and gunstock coating
Flat Wood Paneling Coating	Actuals ≥ 3 tpy
Rotogravure and Flexographic Printing	TPE ≥ 50 tpy
Offset Lithographic and Letterpress Printing	Actuals ≥ 3 tpy TPE ≥ 25 tpy
VOL Storage and Transfer	VOL with vapor pressure > 1.52 psia and capacity > 420,000 gals for crude oil storage Daily throughput ≥ 20,000 gal for bulk gasoline loading Daily throughput of < 20,000 gal for bulk gasoline plant
Cutback and Emulsified Asphalt	
Fiberglass Boat Manufacturing	Actuals ≥ 3 tpy
Misc. Industrial Adhesives	Actuals ≥ 3 tpy
Industrial Cleaning Solvents	Cold cleaning machine – capacity 0.26 gal Open top vapor degreaser – top area ≥ 10.8 ft ² Conveyorized degreaser – air/solvent interface area ≥ 21.6 ft ² Use of solvents - Actuals ≥ 3 tpy
Misc. and Multi-category Sources	TPE ≥ 50 tpy

In determining the applicability of the VOC RACT rules to a specific facility, certain types of activities are excluded. These include research and testing activities that aggregate to less than 5 tpy, “non-core” activities unrelated to a company’s product line (e.g., the operation of office equipment), small amounts of non-compliant coatings and special agents, and “minor core” industrial processes as defined in Env-A 1203.38. Since New Hampshire structured its VOC RACT rules to allow some flexibility, a source should carefully determine if the rules apply and, if so, what compliance options are available.

Compliance Provisions of the VOC RACT Rules

Owners and operators of sources determined to be subject to the VOC RACT rules face a variety of compliance obligations, depending on the source category or sub-category. EPA has published “control techniques guidelines” for most of the defined source categories. These guidelines serve as the basis for New Hampshire’s compliance provisions for classifiable processes and devices. For coating and finishing processes, this generally means satisfying a prescribed emission rate limit (pounds of VOC per gallon) or possibly an application technique. Standards for classifiable printing and graphic arts processes are primarily VOC content limits or prescribed reductions. Volatile organic liquid storage and transport facilities and refineries may be required to make certain design adaptations, including retrofits, and to meet a variety of operation and maintenance standards to minimize fugitive emissions.

The VOC RACT rules provide flexibility to affected sources by offering a number of compliance options, including alternative RACT standards for sources that, for legitimate reasons, cannot meet the prescribed standards. Such sources must obtain a “RACT Order,” which is subject to EPA approval [Env-A 1205.03].

For More Information

The VOC RACT rules are complex, federally-mandated rules involving multiple conditions, applicabilities, compliance options and procedures. The DES Air Resources Division can help facilities in determining their RACT applicability and assessing compliance options. For more information on the VOC RACT rules, or New Hampshire’s air pollution permitting program in general, please contact the DES Air Resources Division, PO Box 95, Concord, NH 03302-0095; (603)271-1370; <http://des.nh.gov/organization/divisions/air/pehb/apps/voc-ract/index.htm> .