

## Chapter NR 419

## CONTROL OF ORGANIC COMPOUND EMISSIONS

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NR 419.01 Applicability; purpose. (1) **APPLICABILITY.** This chapter applies to all air contaminant sources which emit organic compounds and to their owners and operators.

(2) **PURPOSE.** This chapter is adopted under ss. 144.31 and 144.38, Stats., to categorize organic compound air contaminant sources and to establish emission limitations for these categories in order to protect air quality.

History: Cr. Register, September, 1986, No. 369, eff. 10-1-86; am. Register, February, 1990, No. 410, eff. 3-1-90.

NR 419.02 Definitions. The definitions in this section apply to the terms used in chs. NR 419 to 425. In addition, the definitions in ch. NR 400 apply to the terms used in this chapter.

(1) "Adsorption system" means a device containing adsorbent material (e.g., activated carbon, alumina, silica gel); an inlet and outlet for exhaust gases; and a system to regenerate the saturated adsorbent.

(1m) "Automobile" means all passenger cars or passenger car derivatives capable of seating 12 or fewer passengers.

(1s) "Core" means in foundry operations a separable part of a mold which is usually made of sand and is used to create openings and various cavities in the castings.

(1t) "Core binder" means any substance used to bind sand together to form a core.

(1u) "Core or mold coating" means a substance used to alter the surface of a core or mold through coating or cleaning after the core or mold has been manufactured.

(2) "Floating roof" means a storage tank cover consisting of a double deck or pontoon single deck, which rests upon and is supported by the petroleum liquid being contained, and is equipped with a closure seal or seals to seal the space between the roof edge and tank wall. The floating roof may be either a covered external floating roof in an open storage tank or an internal floating cover beneath a fixed roof.

(3) "Hydrocarbon" means any organic compound containing carbon and hydrogen.

(3m) "Mold" means the matrix in which metal is cast and receives its form.

(4) "Photochemically reactive organic substances" means any of the following:

(a) Group A: Hydrocarbons, alcohols, aldehydes, esters, ethers or ketones, which have olefinic or cyclo-olefinic type unsaturation.

(b) Group B: Aromatic compounds with 8 or more carbon atoms to the molecule, except ethylbenzene.

(c) Group C: Ethylbenzene, toluene or ketones having branched hydrocarbon structures.

(d) Group D: A solvent or mixture of organic compounds in which any of the following conditions are met:

1. More than 20% of the total volume is composed of any combination of compounds listed in group A, B or C above.

2. More than 5% of the total volume is composed of any combination of the compounds listed in group A above.

3. More than 8% of the total volume is composed of any combination of the compounds listed in group B above.

(6) "Submerged fill pipe" means any fill pipe with a discharge opening which is entirely submerged when the liquid level is 15.2 centimeters (6 inches) above the tank bottom.

(6m) "Urethane cold box binder" means a core binder which uses components such as phenol formaldehyde resins and isocyanates to form a bond after catalysis by an organic gas such as triethylamine or dimethylethylamine.

(7) "Vent" means any port or opening which allows gases to be discharged to the atmosphere when leaving a reactor or other equipment.

History: Renum. from NR 154.01, cr. (intro.) and (7), Register, September, 1986, No. 369, eff. 10-1-86; renum. (1) and (2) to be (1m) and NR 400.02 (72), Register, February, 1990, No. 410, eff. 3-1-90; cr. (1s), (1t), (1u), (3m) and (6m), Register, June, 1994, No. 462, eff. 7-1-94.

**NR 419.03 General limitations.** (1) No person may cause, allow or permit organic compound emissions into the ambient air which substantially contribute to the exceeding of an air standard or cause air pollution.

(2) No person may cause, allow or permit organic compounds to be used or handled without using good operating practices and taking reasonable precautions to prevent the spillage, escape or emission of organic compounds, solvents or mixtures. Such precautions shall include, but are not limited to:

(a) Use of caution to prevent spillage or leakage when filling tanks, trucks or trailers.

(b) Use of caution when filling automobile tanks to prevent spillage.

History: Renum. from NR 154.13 (1) (a) and (b), Register, September, 1986, No. 369, eff. 10-1-86; am. (1) and (2) (intro.), Register, February, 1990, No. 410, eff. 3-1-90.

**NR 419.04 Disposal of VOC wastes.** (1) Effective August 1, 1979, no person may cause, allow or permit the disposal of more than 5.7 liters (1.5 gallons) of any liquid VOC waste, or of any liquid, semisolid or solid waste materials containing more than 5.7 liters (1.5 gallons) of any VOC, in any one day from a facility in a manner that would permit their evaporation into the ambient air during the ozone season. This includes, but is Register, June, 1994, No. 462

not limited to, the disposal of VOC which must be removed from VOC control devices so as to maintain the control devices at their required operating efficiency.

(2) Disposal during the ozone season shall be by methods approved by the department, such as incineration, recovery for reuse, or transfer in closed containers to an acceptable disposal facility, such that the quantity of VOC which evaporates into the ambient air does not exceed 15% (by weight) or 5.7 liters (1.5 gallons) in any one day, whichever is larger.

History: Renum. from NR 154.13 (1) (c), Register, September, 1986, No. 369, eff. 10-1-86; am. (1), Register, February, 1990, No. 410, eff. 3-1-90.

**NR 419.05 Storage of any organic compound. (1) APPLICABILITY.** (a) This section applies to all storage tanks for organic compounds having capacities greater than 151,412 liters (40,000 gallons) in the Southeastern Wisconsin Intrastate AQCR, and to all such storage tanks throughout the state on which construction or modification commenced after April 1, 1972, with the following exceptions:

1. Tanks storing organic compounds that are not photochemically reactive on which construction or modification commenced before August 1, 1979.

2. Tanks used exclusively for storing organic compounds exempted under s. NR 425.04 (1) (a).

(b) Where a provision of s. NR 420.03 also applies, the more stringent requirement shall be met.

(2) **STORAGE REQUIREMENTS.** When storing organic compounds, solvents, or mixtures having a vapor pressure equal to or greater than 10.5 kPa (1.52 psia) at 21°C (70°F), floating roofs, vapor condensation systems, vapor holding tanks, or equally effective alternative control methods approved by the department shall be used. Any alternative control method approved by the department under this subsection shall be submitted to, and will not become effective for federal purposes until approved by, the administrator of the U.S. environmental protection agency or designee as a source-specific revision to the department's state implementation plan for ozone.

History: Renum. from NR 154.13 (2) (c) and am. Register, September, 1986, No. 369, eff. 10-1-86; am. (1) (a) 2., Register, February, 1990, No. 410, eff. 3-1-90; am. (2), Register, December, 1993, No. 466, eff. 1-1-94.

**NR 419.06 Transfer of any organic compound. (1) APPLICABILITY.** (a) This section applies to transfer operations in the Southeastern Wisconsin Intrastate AQCR involving organic compounds, solvents or mixtures having a vapor pressure greater than 10.5 kPa (1.52 psia) at 21°C (70°F), and to such transfer operations throughout the state at facilities on which construction or modification was commenced after April 1, 1972, with the following exceptions:

1. Transfer operations involving organic compounds which are not photochemically reactive at facilities on which construction or modification was commenced before August 1, 1979.

2. Transfer operations involving, exclusively, organic compounds exempted under s. NR 425.04 (1) (a).

(b) Where a provision elsewhere in ss. NR 420.04 and 421.03 (2) also applies, the more stringent requirement shall be met.

(2) **TANK LOADING.** For transfers to storage tanks having greater than 3,785 liter (1,000 gallon) capacity, a permanent submerged fill pipe shall be used, provided such a tank does not have controls mentioned in s. NR 421.03 (3) (b).

(3) **TANK LOAD OUT FOR HIGH THROUGHPUT FACILITIES.** At facilities with over 151,412 liters (40,000 gallons) per day throughput, a vapor collection and disposal system, vapor collection adaptors and vapor-tight seal, or an underfill method with the top hatches partially closed or a means of creating a slight back pressure when loading tank trucks or trailers shall be used.

(4) **TANK LOAD OUT FOR LOW THROUGHPUT FACILITIES.** At facilities with 151,412 liters (40,000 gallons) or less per day throughput, the underfill method or a submerged fill pipe extending to within 6 inches of the tank bottom shall be employed when loading tank trucks or trailers.

History: Renum. from NR 154.13 (3) (f) and am. Register, September, 1986, No. 369, eff. 10-1-86; am. (1) (a) 2., Register, February, 1990, No. 410, eff. 3-1-90.

**NR 419.07 Remediation of contaminated soil or water. (1) APPLICABILITY.** This section applies to all facilities and procedures used to remediate soil or water contaminated with organic compounds which are direct air contaminant sources and to their owners and operators.

Note: Certain contaminated soils and water are hazardous wastes. Due to the "mixture" and "derived from" rules found in ch. NR 605, soils and water contaminated by listed hazardous waste under s. NR 605.09 (2), Table II or III, are also hazardous wastes. In addition, any residue or contaminated soil, water or other debris resulting from the cleanup of a spill of any material listed in Table IV or V of s. NR 605.09 (3) is a listed hazardous waste. Soils, water or other debris may also be considered hazardous waste when they exhibit a hazardous characteristic under s. NR 605.08, including the state extraction procedure toxicity test, or under the federal toxicity characteristic leaching procedure test. Contaminated soils and water must be evaluated for the applicability of hazardous waste management rules (chs. NR 600 to 685). The requirements in chs. NR 600 to 685 for the treatment, handling and storage of hazardous waste must be followed if the contaminated soil or water is hazardous waste.

(2) **SOIL AND WATER REMEDIATION PROCEDURE APPROVAL.** (a) Except as provided in sub. (3), no person may use any procedure to remediate soil or water contaminated with organic compounds unless the person has submitted a soil or water remediation application form to the department's bureau of air management and has received approval under this subsection.

Note: This rule only addresses approval by the bureau of air management. Approval may be required by other bureaus in the department including the bureau of solid and hazardous waste management.

(b) The department's bureau of air management shall approve, conditionally approve or deny the application required in par. (a) within 5 business days of receipt of a complete application.

(c) The department's bureau of air management may approve or conditionally approve the application required in par. (a) if the source:

1. Meets the emission limits in sub. (4) and the requirements in sub. (5);

2. Will not be in such quantity, concentration or duration as to be injurious to human health; and

3. Will not be in quantities which will substantially contribute to the exceeding of an ambient air quality standard, ambient air increment, or cause air pollution.

(3) EXEMPTIONS. (a) Any person using one of the procedures listed in this paragraph is exempt from the requirement to apply for and obtain a remediation procedure approval under sub. (2) and is exempt from the emission limits specified in sub. (4) except those contained in ch. NR 445:

1. Installation and use of devices which remove organic compounds from a private or municipal potable water supply.

2. Installation and use of crop irrigation systems or dewatering wells to remediate contaminated water.

3. Installation and use of any technique or device to remediate soil or water contaminated with organic compounds as part of on-site actions taken under the authority of the comprehensive environmental response compensation and liability act of 1980, as amended, 42 USC 9601 et seq.

4. Pilot tests of negative pressure venting systems provided those tests are completed within 8 hours of startup and the air flow rate during the pilot test does not exceed 100 standard cubic feet per minute.

5. Wastewater treatment plants.

Note: Wastewater treatment plants are not exempt from permit requirements.

(b) Any person using one of the following procedures is exempt from the emission limits specified in sub. (4) except for those contained in ch. NR 445:

1. Landfilling of contaminated soil or

2. Landspreading of contaminated soil.

(4) EMISSION LIMITATIONS. (a) An owner or operator of a soil or water remediation project shall treat or dispose of soil or water contaminated with organic compounds in a manner approved by the department which minimizes the emission of organic compounds.

(b) The organic compound emissions from the remediation of soil or water may not exceed 9.0 pounds of organic compounds per hour and any specific limit in ch. NR 445.

(5) OTHER REQUIREMENTS. In addition to the other requirements of this section, a source shall meet the following requirements:

Note: Material which is hazardous waste shall comply with the requirements in chs. NR 600 to 685.

(a) *Storage of contaminated soil.* Unless it is subject to storage requirements under chs. NR 500 to 599, soil contaminated with organic compounds which is being stored in open piles shall be underlaid and overlaid by a barrier which will prevent organic compound emissions and prevent the infiltration and exfiltration of water, and the piles shall be diked to keep run-off water from leaving the site.

(b) *Treatment of chlorinated organic compounds.* 1. Except as provided in subd. 2, a thermal evaporation unit may not be used to remediate soil or water contaminated with chlorinated organic compounds unless an air pollution control permit has been issued to the source authorizing it to

remediate soil or water contaminated with chlorinated organic compounds.

2. A thermal evaporation unit may remediate soil or water contaminated with gasoline which contains small amounts of chlorinated organic additives to the gasoline, even though the unit does not have a permit authorizing it to remediate soil or water contaminated with chlorinated organic compounds.

(c) *Fuel requirements.* A thermal evaporation unit may not be used to remediate soils or water contaminated with organic compounds containing aromatic hydrocarbons while using a fuel which is contaminated with chlorinated organic compounds unless an air pollution control permit has been issued to the source allowing it to use the fuel contaminated with chlorinated organic compounds while remediating soils contaminated with aromatic hydrocarbons.

(d) *Requirements for asphalt plants to remediate soil.* In addition to the other requirements of this section, the following requirements shall apply to all asphalt plants which remediate soil or water contaminated with organic compounds:

1. The asphalt plant shall have had a compliance stack test for particulate matter within the last 5 calendar years which determined that the particulate matter emission rate during the test did not exceed 0.04 grains per dry standard cubic foot (gr/dscf), not including backhalf condensable particulate matter.

2. The stack height shall be equal to or greater than 25 feet above grade.

3. If the asphalt plant is using a wet scrubber to control particulate matter emissions, the scrubber pond shall meet the requirements of ch. NR 213.

4. The asphalt plant shall have an air pollution control permit to operate which allows it to remediate soil or water containing organic compounds.

5. The asphalt plant shall be operating in compliance with its permit.

(e) *Objectionable odors.* If objectionable odors, as determined under s. NR 429.03, are determined to result from the remediation, the source shall take preventive measures satisfactory to the department to abate or control such emissions.

(6) **TESTING REQUIREMENTS.** Emissions from facilities for negative pressure venting of contaminated soil shall be tested using a test method approved in advance by the department's bureau of air management.

(a) Testing under this subsection shall be conducted according to the following schedules:

1. Total organic compound emissions shall be tested once each day for the first 3 days of operation; weekly for the next 3 weeks; and monthly thereafter.

2. When benzene is present in the contaminated soil, benzene emissions shall be tested once during the first 3 days of operation, once during the third week of operation, and once every 6 months thereafter.

(b) The test results shall be submitted to the department's bureau of air management as soon as possible after the completion of each test.

(c) Additional testing may be required by the department.

(d) The testing required under par. (a) may be discontinued with written approval from the department's bureau of air management.

(7) **WAIVER.** The department may waive compliance with any requirement of this section to the extent necessary to prevent an emergency condition which threatens public health, safety or welfare.

History: Cr. Register, August, 1991, No. 428, eff. 9-1-91.

**NR 419.08 Core and mold manufacturing for iron or steel foundries.** (1) **APPLICABILITY.** (a) This section applies to the manufacture of cores or molds for use at iron or steel foundries at any facility which is located in the county of Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Washington or Waukesha.

(b) The emission limits of sub. (2) do not apply to:

1. Iron or steel foundries or core manufacturing facilities which are located in the county of Kenosha, Milwaukee, Ozaukee, Racine, Washington or Waukesha which have maximum theoretical emissions of VOC from core and mold manufacturing of less than 25 tons per year.

2. Iron or steel foundries or core manufacturing facilities which are located in the county of Kewaunee, Manitowoc or Sheboygan which have maximum theoretical emissions of VOC from core and mold manufacturing of less than 100 tons per year.

(c) Any owner or operator of an iron or steel foundry or core manufacturing facility having annual emissions less than the applicability thresholds in par. (b) shall comply with the reporting requirements of sub. (7) for that facility.

(2) **EMISSION AND OPERATIONAL LIMITATIONS.** No owner or operator of a core or mold manufacturing system which produces cores or molds for use at iron or steel foundries may cause, allow or permit the operation of the system unless:

(a) The as applied VOC content of each core or mold coating, when measured using the methods contained in s. NR 439.06 (3) (b), does not exceed any of the following limits:

1. 30%, by weight, including water, for core or mold coatings which have an as purchased density of 15.0 pounds per gallon or greater,

2. 70%, by weight, including water, for core or mold coatings which have an as purchased density of less than 15.0 pounds per gallon.

(b) All core and mold coating storage vessels and containers remain covered whenever product is not being moved into or out of the vessel or container, and

(c) Emissions of any VOC resulting from the catalysis step in the formation of a urethane cold box binder are controlled with an overall efficiency of at least 90%.

(3) **COMPLIANCE AND CERTIFICATION DEADLINES.** (a) Final compliance with the requirements of sub. (2) shall be achieved by May 31, 1995.

(b) The owner or operator shall submit certification to the department, no later than July 1, 1995, that the facility is in compliance with the requirements of sub. (2), as demonstrated by the applicable testing methods of s. NR 439.06 (3).

(4) **EMISSION TESTING.** The owner or operator of a facility which employs a urethane cold box binder shall demonstrate compliance with the emission rate in sub. (2) (c) using one of the test methods in s. NR 439.06 (3) (a) prior to the final compliance date in sub. (3) (a), and at least every 2 years thereafter within 60 days of the anniversary of the initial compliance test.

(5) **EMISSION CONTROL SYSTEM MONITORING.** The owner or operator of any facility which uses a wet scrubber to control VOC emissions from the catalysis of urethane cold box binders shall continuously measure and record the pH of the scrubber liquid in addition to meeting the monitoring requirements of s. NR 439.055 (1) (e).

(6) **RECORDKEEPING.** Owners or operators of a facility subject to this section shall maintain the following records in accordance with s. NR 439.04 (1) to (3):

(a) The quantity, in pounds, of each type of core binder used on an annual basis.

(b) Records of operation variables which are required to be measured under sub. (5) and s. NR 439.055 (1) (e).

(c) The total quantity, in pounds, of organic gas used to catalyze the formation of urethane cold box binders on an annual basis.

(d) The as purchased density and percent VOC, by weight, of each core or mold coating used at the facility.

(e) The total quantity, in pounds or gallons, of each core or mold coating used on a monthly basis.

(f) The total quantity of solvent, in pounds, added to each core or mold coating on a monthly basis.

(7) **REPORTING.** The owner or operator of a facility which is subject to this section shall report all of the following to the department by April 1, 1995:

(a) The name and location of the facility.

(b) The maximum and actual core production rate at the facility for each binder type used in calendar year 1994.

(c) The density, percent VOC by weight and actual and maximum usage rate for each core or mold coating used at the facility in calendar year 1994.

History: Cr. Register, June, 1994, No. 462, eff. 7-1-94.