

## 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.

(8) "Virgin petroleum liquid" means crude petroleum, petroleum, condensate and any finished or intermediate products manufactured in or extracted in a petroleum refinery or in a similar facility. Virgin petroleum liquids include gasoline, diesel fuel, kerosene, distillate fuel oils, residual fuel oils, or other products produced through distillation of petroleum or through redistillation, cracking, extraction or reforming of unfinished petroleum derivatives.

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. 418, eff. 3-1-90; cr. (1s), (1t), (1u), (3m) and (6m), Register, June, 1994, No. 462, eff. 7-1-94; cr. (8), Register, September, 1994, No. 465, eff. 10-1-94.

**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.

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(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 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. 456, 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", "derived from", and "contained in" 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 one of the test procedures of s. NR 605.08, including the 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, storage or disposal of hazardous waste must be followed if the contaminated soil or water is hazardous waste.

(2) **SOIL AND WATER REMEDIATION PROCEDURE NOTIFICATION AND 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 complete soil or water remediation notification form to the department's bureau of air management. Notification shall be postmarked or delivered as follows:

1. As soon as possible, but no later than the next working day following commencement of remediation, for virgin petroleum liquid spills for which remediation begins within 48 hours of the spill.

2. At least 10 business days prior to commencement of remediation for any other project.

Note: For remediation projects other than virgin petroleum contamination projects, department approval may be required.

(b) The department's bureau of air management may approve, conditionally approve or deny approval for a remediation project described in the notification required in par. (a) 2.

(c) The remediation may commence if the requirements in par. (a) are met and if the remediation project:

1. Meets the emission limits in sub. (4) and the requirements in sub. (5);
2. Will not cause emissions in such quantity, concentration or duration as to be injurious to human health; and
3. Will not cause emissions in quantities which will substantially contribute to the exceeding of an ambient air quality standard or ambient air increment or cause air pollution.

Note: This rule only addresses the remediation notification submittal and approval requirements of the bureau of air management. Remediation notification submittal or remediation approval may be required by other bureaus in the department as well.

(3) EXEMPTIONS. (a) Any person using one of the procedures listed in this subsection is exempt from the requirement to submit a remediation notification form under sub. (2) and is exempt from the emission limits specified in sub. (4) except those contained in ch. NR 445:

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

(b) Installation and use of crop irrigation systems or dewatering wells to remediate contaminated water.

(c) Installation and use of any technique or device to remediate soil or water contaminated with organic compounds as part of actions taken by EPA under the authority of the comprehensive environmental response compensation and liability act of 1980, 42 USC 9601 et seq.

(d) Landfilling of contaminated soil.

(e) Landspreading of contaminated soil, including the agricultural landspreading of soil contaminated with pesticide or fertilizer.

(f) Pilot testing of a negative pressure venting system provided the testing is limited to a total withdrawal of not more than 150,000 standard cubic feet (scf) of air.

Note: The total withdrawal may be determined by the equation: Total withdrawal (scf) = hours of operation of pilot test (hr) x average flow rate in cubic feet per minute at standard conditions (scfm) x 60 min/hr. An example is: 10 hours of operation x 250 scfm x 60 min/hr = 150,000 scf. When testing at multiple flow rates, determine the withdrawal for each flow rate and sum the withdrawals for a total withdrawal.

(g) Wastewater treatment plants.

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

(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 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, except as specified in par. (c).

(c) When remediating soil or water; thermal evaporation units shall meet the following organic compounds emissions limits until April 15, 1995. Thereafter thermal evaporation units shall meet the organic compounds emissions limit in par. (b) when remediating soil or water. Organic compounds emissions shall be calculated per par. (d).

1. 9.0 pounds per hour with a total of not more than 2 tons per calendar month and 16 tons per year for any facility located in Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Washington or Waukesha county.

2. 300 pounds per day with a total of not more than 2 tons per calendar month and 16 tons per year for any facility located in any other county.

(d) The organic compound emissions for pars. (b) and (c) are determined by averaging the contaminant concentrations in all samples of the contaminated soil or water analyzed and multiplying that average by the total amount of soil or water to be remediated. If in any sample there is no contamination detected, the detection level of the test method is used for the contaminant concentration in that sample.

(e) The organic compound emissions determined for pars. (b) and (c) may be reduced by any control method approved by the bureau of air management.

**Note:** Control methods may include but are not limited to stack test results, afterburners, carbon absorption units, etc.

(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.

(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 soil 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 soil or water 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. Register, September 1994, No. 465

ply 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. If an asphalt plant has had more than one compliance test during the last 5 calendar years, the results of the most recent test will be used for purposes of demonstrating compliance with this section.

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

4. 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.

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

6. 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.* (a) Testing of emissions from facilities or procedures used to remediate soil or water contaminated with organic compounds shall be conducted using test methods approved in advance by the department's bureau of air management. Testing shall be scheduled and reported as follows:

1. Emissions from negative pressure venting of contaminated soil shall be conducted according to the following schedules:

a. 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.

b. When a substance listed in Table 3 of s. NR 445.04 is present in the contaminated soil, testing for the Table 3 substance shall be done once during the first 3 days of operation, once during the third week of operation, and once every 6 months thereafter. For soil contaminated with more than one Table 3 air contaminant, the department's bureau of air management may approve the testing of certain Table 3 substances that act as indicators for other Table 3 substances present in the soil.

Note: For example, for soils contaminated only with virgin petroleum liquids, benzene is the Table 3 air contaminant of primary concern. Benzene testing alone would satisfy this subdivision.

2. Any facility or procedure used to remediate soil or water contaminated with organic compounds, except for negative pressure venting, may be required to test the emissions from the remediation according to a schedule determined by the department's bureau of air management.

3. Additional testing may be required by the department.

4. The first quarter results of any testing shall be submitted to the department's bureau of air management within 60 days following the end of the first quarter.

5. The testing required under this paragraph may only be modified or discontinued with written approval from the department's bureau of air management.

Note: Continued testing may be required by other bureaus in the department.

(b) Testing of contaminated soil or water required by the department shall be conducted by the owner of the contaminated soil or water or by the owner's representative.

(7) RECORDKEEPING REQUIREMENTS. (a) An owner or operator of a facility or procedure used to remediate contaminated soil or water shall:

1. Meet the recordkeeping requirements listed in s. NR 439.04 (1) and (2).

2. Maintain records for 3 years quantifying the year-to-date weight of s. NR 445.04 Table 3 substances contained in soil or water remediated for which testing was required under sub. (6).

3. Maintain records of calculations and amounts of soil or water remediated for 3 years.

4. Meet permit recordkeeping conditions specified in air pollution control permits.

(8) 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; am. (2) (a) (intro.), (b), (c) 2., 3., (4) (a), (b), (5) (c), cr. (2) (a) 1., 2., (note), (4) (c) to (e), (5) (d) 2., (7), r. (3) (b) (intro.), (5) (a), r. and recr. (2) (c) (intro.), (6), renum. (3) (a) (intro.) 1. to 5., (b) 1. and 2., (5) (d) 2. to 5., (7), to be (3) (intro.), (a) to (c), (f) and (g), (d) and (e), (5) (d) 3. to 6. and (8) and am. (3) (intro.), (c) to (f), Register, September, 1994, No. 465, eff. 10-1-94.

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 thresh-



olds 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.