

AIR MANAGEMENT PROGRAM FACT SHEET



The Organic Compound Rule in Section NR 424.03

April 2023

What is the organic compound rule?

To help decrease air pollution in Wisconsin, the Department of Natural Resources (DNR) created regulations to control volatile organic compound (VOC) emissions. VOCs have been found to be a primary component in the formation of ground-level ozone (i.e., smog).

Reasonably Available Control Technology (RACT) regulations require specific industries to reduce VOC emissions. If a business is not among the specific industries affected by RACT regulations and organic compound emissions are generated from its process lines, the facility may be affected by the requirements of section NR 424.03, Wisconsin Administrative Code.

When does this rule affect a business?

Does a facility operate a process line that emits organic compounds? A process line is “one or more actions or unit operations which must function simultaneously or in sequence in order to manufacture or modify a product.” A unit might not be considered a process if there is no final product for sale. The DNR will determine whether a unit is considered a process for purposes of this rule.

Any process line that must meet an emission limitation in chapters NR 419-423 is not required to meet the rule in NR 424.03, Wis. Adm. Code.

What are the exemptions to this rule?

A process line may be exempt from this rule if:

- It is located outside the counties of Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington and Waukesha and was not constructed or changed in some way since April 1, 1972.
- It is an organic compound-water separation system processing less than 200 gallons per day.
- It is an enclosed (on at least three sides) paint spraying operation with less than 30 pounds of VOC emissions per day.
- It always emits less than 15 pounds VOC per day.

What does a business need to do if it is exempt?

Showing that a facility is exempt from this rule will depend on which exemption applies. If a facility is exempt solely because of location and when the process line was constructed or changed, then nothing else needs to be done. If it is exempt because its emissions are below one of the exemption levels, then records documenting the exemption must be kept.

Each of the quantitative exemption levels is based on either the amount of material used or VOC emissions over a set period of time. The time period in the exemption determines how often records need to be kept. For the “pounds VOC per day” exemptions, daily records are needed to show emissions below the specified level every day of operation.

The most difficult part of this is calculating the quantity of VOC emissions. To do this:

1. Keep records of how much VOC containing materials (in gallons) is used daily at the process line. This includes VOCs from clean up solvents directly related to the process, like gun cleaner for painting operations.
2. Obtain copies of the Safety Data Sheet (SDS) for each VOC containing material used on the process line. These should be available from the supplier. Look in the Physical Characteristics section of the SDS, and ensure it lists either:
 - VOC content in pounds per gallon (lb/gal), or
 - VOC content in percent (%) by weight (wt) and density of the coating in lb/gal.
3. If a facility does not have the information necessary to get the value for VOC content in lb/gal, it should ask the supplier. The supplier should know the VOC content of the materials they supply. To calculate VOC content in lb/gal from the percent by weight (% by wt) and the coating density, follow this example:

Equation:

Coating density (lb/gal) x VOC content (% by wt) / 100 = VOC content (lb VOC/gal)

Example characteristics:

Coating Density = 14 lb/gal; VOC content = 40% by wt

Calculate:

14 lb/gal x 40 / 100 = 5.6 lb VOC/gal

4. Once the VOC content in lb/gal is determined, calculate VOC emissions. Multiply the VOC content by the amount of coating used, measured in gallons, to get pounds of VOC per day for that coating.

For example, if a facility uses 5 gallons of a coating with 5.6 lb VOC/gal for one day:

5 gal/day x 5.6 lb VOC/gal = **28 lb VOC/day**.

5. Complete this calculation for each VOC containing material used in the process line each day. Then add together the VOC emissions from all materials used to get the total VOC emissions in pounds per day. If this total is less than the daily exemption allowed for the process line, the facility is exempt from the requirements in NR 424.

Any records documenting the exemption, whether paper or electronic, must be kept on site for five years.

How does a business comply with this regulation?

If a facility is not exempt from NR 424, requirements are based on the year of construction of the process line.

1. If installation of a process line, or the most recent changes to it, occurred before August 1, 1979, then only photochemically reactive organic compounds must be controlled by 85%. Photochemically reactive organic compounds are defined in s. NR 419.02, Wis. Adm. Code, and include compounds that have a certain level of reactivity in sunlight to form ozone when released into the air. The supplier may know

which organic compounds in their coatings and solvents meet the definition. DNR staff can also help review the SDS to determine which compounds meet the definition.

Some materials containing organic compounds do not actually contain any photochemically reactive organic compounds. A process line that has not been changed or updated since before August 1, 1979, would not be required to control emissions from these materials. If none of the materials contain any photochemically reactive organic compounds, then it would not be required to control emissions at all.

2. If the process line was installed or last changed on or after August 1, 1979, then all VOC emissions must be controlled by 85% overall. The definition for VOCs is found in s. NR 400.02, Wis. Adm. Code, and is different than the definition of photochemically reactive organic compounds.
3. If a facility can show the DNR that it is not feasible to control emissions from the process line under requirements 1 or 2 above, alternate requirements may be applicable.

Example: A facility may have a high exhaust flow and a low emissions rate. The conditions considered infeasible to control depend on conditions at the process line under review and the cost to install an appropriate control device. The DNR issued a [guidance memo](#) that establishes the conditions where costs are considered feasible.

The facility may need to hire a consultant to perform the task of cost evaluations for control of VOCs. The DNR's Small Business Environmental Assistance Program (SBEAP) has fact sheets available to help with hiring a consultant and finding consultants who work in Wisconsin:

- [Tips for Hiring an Environmental Consultant](#) (SB-005)
- [Consultants List](#) (SB-004)

If a facility can show that the cost of control is infeasible, the alternate requirements that will then apply are called Latest Available Control Techniques and operating practices (LACT). LACT requirements are specific to the characteristics of the process line.

Example: A business where a certain type of coating or other raw material is required to manufacture a particular product. The VOC content of that coating or raw material is very high (greater than 8.0 pounds VOC per gallon) but no known material with lower VOC content will work properly for the process. As part of the LACT requirements, the DNR may set a deadline by which the facility must find a lower VOC content material.

4. If one of the RACT requirements listed in ch. NR 422, Wis. Adm. Code, fits the type of process, but the facility is otherwise exempt from the rule in NR 422, it could choose to meet the limit anyway. In some industries this is the easier option, because the VOC containing materials available from the suppliers already meet the RACT limits in NR 422. If the materials used already meet a RACT rule in NR 422, complying with NR 424.03 could minimize changes to the operations.

Additional information and assistance

- Review the rule at [NR 424, Wis. Adm. Code](#)
- Access the [guidance memo](#) on NR 424 compliance.
- Contact one of the permit coordinators listed by topic on the [Air Permit Contacts](#) webpage.
- Contact the SBEAP for assistance at 855-889-3021 or DNRSsmallBusiness@wisconsin.gov.

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