

CHAPTER 1: AIR QUALITY REGULATIONS

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PURPOSE AND APPLICABILITY OF REGULATIONS

Many businesses operate processes and equipment or engage in activities emitting air pollutants. Some emit contaminants through a stack before entering the atmosphere and some are released in a building or open area before entering the atmosphere. These are considered direct and indirect sources of air contaminants. Sources of air pollution include things

like coating and degreasing operations; fuel burning equipment, such as boilers and incinerators; and material handling operations, such as concrete and asphalt batch plants.

Air quality regulations address the quantity and nature of air pollutants that directly or indirectly enter the atmosphere. Regulations described in this chapter are not specifically aimed at reducing worker exposure to air contaminants in the workplace. Air Quality regulations have been developed to protect human health and the environment. [Regulations protecting workers from the inhalation of air contaminants](#) are administered by the Michigan Occupational Safety and Health Administration (MIOSHA). Visit the MIOSHA web site (Michigan.gov/MIOSHA) for more information.

AGENCIES AND THEIR LAWS AND RULES

Indirect and direct releases of air pollutants into the air are regulated under federal and state statutes and rules. The purpose of these requirements is to minimize the adverse impact air contaminants may have on human health and the environment. The U.S. Environmental Protection Agency (USEPA) is responsible for developing new regulations to implement the mandates of the federal Clean Air Act Amendments (CAAA) of 1990. Federal air quality regulations are published under Title 40, Parts 50 through 99 of the Code of Federal Regulations (40 CFR Parts 50-99).

[Part 55 \(Air Pollution Control\)](#) of the Natural Resources and Environmental Protection Act, Public Act 451 of 1994, as amended (Act 451) is the state law that regulates sources of air contaminants. The first administrative rules promulgated under Part 55 of Act 451, the Michigan Air Pollution Control Rules, became effective on August 15, 1967. The Air Quality Division (AQD) of the Michigan Department of Environment, Great Lakes, and Energy (EGLE) is responsible for developing and implementing state air quality rules and enforcing compliance with state and federal air quality requirements.

To assist small businesses impacted by state and federal air quality regulations, EGLE develops publications simplifying air quality regulations, offers training on a variety of air quality regulatory programs, and responds to inquiries.

IMPORTANT AIR QUALITY TERMS

The following are key terms that appear often when discussing state and federal air quality regulations.

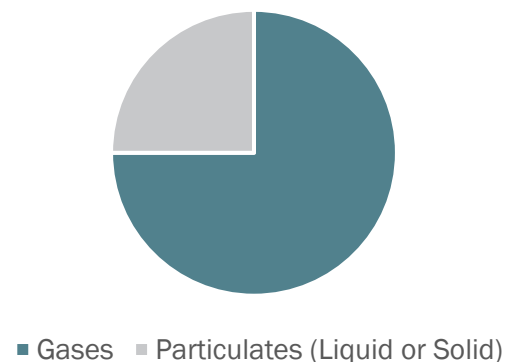
AIR CONTAMINANT

In high school chemistry you learned all matter exists in either a solid, liquid, or gaseous state under certain conditions. The same applies to air contaminants. Solid and liquid air contaminants are called particulate. The majority of air contaminants exist in a gaseous state. Every air contaminant belongs somewhere on the pie chart in Figure 1.1 which represents the universe of air contaminants.

State and federal air quality regulations, such as the New Source Performance Standards (NSPS) or the [Renewable Operating Permit \(ROP\)](#) program, target specific defined groups, or what we refer to as families, of air contaminants. There are many families, some big and some small.

Many air contaminants belong to more than one family. In fact, most hazardous air pollutants (HAPs) are also considered Volatile Organic Compounds (VOCs). For example, xylene is a VOC, a HAP, *and* a regulated air pollutant. Note: The USEPA uses the term "air pollutant," whereas the state uses the term "air contaminant." Both terms mean the same and can be used interchangeably.

Figure 1.1 Universe of Air Contaminants



Families of Air Contaminants

Criteria - SO₂, NO₂, CO, Lead, Ozone, Particulate Matter (PM). The USEPA has set National Ambient Air Quality Standards for the criteria air pollutants to protect public health and the environment.

Class I and II - Chlorofluorocarbons (CFCs) and Hydrochlorofluorocarbons (HCFCs)

Ozone Precursors - VOCs and NO_x. Most sources do not emit ozone directly. However, they may

emit VOCs and NO_x which, in the presence of sunlight, contribute to ozone formation.

Hazardous Air Pollutants (HAPs) – The USEPA has identified a [specific list of compounds](#) and is regulating sources that are the primary emitters of these compounds through the promulgation of National Emission Standards for Hazardous Air Pollutants (NESHAPs). See Appendix 1-A for a listing of HAPs.

Toxic Air Contaminants - According to R 336.120(f), any substance which is or may become harmful to public health or the environment can be regulated as a [toxic air contaminant](#), except for 41 substances which have been excluded. See Appendix 1-B for a listing of the excluded compounds.

New Source Performance Standards (NSPS) - The NSPS regulates the emission of the following air pollutants from various sources: criteria air pollutants plus dioxin/furan, fluorides, hydrogen chloride, hydrogen sulfide, sulfuric acid, total reduced sulfur, reduced sulfur compounds and more.

National Emission Standards for Hazardous Air Pollutants (NESHAP) - The following air pollutants were regulated by the NESHAPs that were promulgated prior to the Clean Air Act Amendments of 1990: arsenic, asbestos, beryllium, benzene, mercury, radionuclides, and vinyl chloride.

Section 112(r) Air Pollutants - Section 112(r) of the 1990 Clean Air Act Amendments requires risk management planning and accidental release prevention. A total of 77 toxic chemicals and 63 flammable chemicals are regulated under Section 112(r).

Regulated Air Pollutants - All air pollutants regulated under the federal Clean Air Act: criteria air pollutants, ozone precursors, HAPs, NSPS, NESHAP, and Class I and II air pollutants.

STATIONARY SOURCE

A stationary source or facility consists of all the buildings and structures that house the emission units. Stationary sources can range from something as simple as an auto body shop containing one emission unit (i.e., a spray paint booth) to an auto assembly plant containing multiple buildings housing hundreds of emission units.

DEVICES

There are three types of devices: process, control, and stack. A process device is equipment that generates air contaminants, such as a boiler. A control device is equipment that captures and/or destroys air contaminants, such as a filter. A stack device is a conduit for dispersing air

contaminants.

EMISSION UNIT

Many manufacturing operations are made up of various individual process, control, and stack devices. Take a coating line for example. Process devices could include a primer booth, top coat booth, flash off, and curing oven. The AQD has issued guidance on how to arrange devices into the proper emission unit groupings. The purpose of the emission unit concept is simply to provide some order and consistency on how various air quality regulations (i.e., Permit to Install, ROP, and Michigan Air Emissions Reporting System [MAERS]) are administered.

According to the guidance, [AQD Operational Memorandum #6](#) (which can be found at [Michigan.gov/egle/regulatory-assistance/regulations/policies-and-procedures](https://www.michigan.gov/egle/regulatory-assistance/regulations/policies-and-procedures)), state and federal rules are used to define the emission unit groupings. Many air rules are specific to a single device or collection of devices. Depending on the rules, the emission unit can be as simple as a parts cleaning tank which contains one process device (i.e., the tank of solvent), no control devices, and no stack devices. On the other hand, an emission unit can be as complex and large as an asphalt plant consisting of many process devices (i.e., dryers and systems for screening, handling, storing, and weighing hot aggregate, dust collectors, and stacks).

The emission unit concept ensures the grouping of devices remains consistent throughout all regulatory programs. Under the Permit to Install, special conditions are grouped by emission unit. Under the ROP program, all applicable requirements are grouped by emission unit. Under MAERS, the annual emissions of air contaminants are reported by emission unit.

POTENTIAL TO EMIT

Potential to emit (PTE) is defined in R 336.1116(n). This is a calculation done for each air contaminant an emission unit emits based on operations at maximum rate capacity, 24 hours per day, 365 days a year, and without any air pollution control device. A stationary source's PTE is the summation of the PTE of all emission units. PTE is typically reported in tons of a specific air contaminant per year, e.g., 200 tons of sulfur dioxide per year.

The PTE of emission units can be reduced by installing control devices or placing restrictions on operating hours and/or the amount of raw materials used only if the operation of the control device **and** these restrictions are federally enforceable, typically contained in a Permit to Install or ROP.

PTE is important because applicability of the state and federal requirements is dependent upon a source's or emission unit's potential to emit, not actual emissions. Actual emissions can deviate day-to-day and year-to-year and are unpredictable, whereas the PTE remains consistent and predictable because it is based upon maximum capacity, continuous operation, or is reflected in a

limit found in the Permit to Install.

Example:

Company ABC operates three emission units: a boiler and two coating lines. There is no federally enforceable limitation on the PTE. The company calculated the PTE for each of their processes assuming continuous operation and maximum capacity. The table below identifies the PTE of each air contaminant from each emission unit and from the source.

Table 1.1 PTE Calculation for Company ABC (tons per year)

Emission Unit	VOC	CO	NOx	S02	PM
Coating Line #1	28				5
Coating Line #2	15				5
Boiler		6	5	1	3
PTE of Source	43	6	5	1	13

MAJOR SOURCE

A major source is a stationary source whose PTE exceeds established annual emission thresholds. These levels have been set for individual air contaminants. There are four different types of major sources: major prevention of significant deterioration source (PSD), major offset source, major ROP source, and major HAP source. Each of these categories has different annual emissions thresholds. For example, under the ROP program, a major source is one having a PTE greater than 100 tons or more of any regulated air contaminant, 10 tons of a single HAP, or 25 tons of a combination of HAPs. Under PSD, a major source has a PTE great than 100 or 250 tons of any regulated air contaminant, depending on what type of source it is.

Sources meeting one or more major source definitions may be subject to some very complex and costly control requirements.

Table 1.2 Potential to Emit thresholds for major sources.

Type of Pollutant	Title V Major Source tons/year	NESHAP Major Source tons/year	PSD Major ^{1,2} tons/year	Major Non-attainment ³ tons/year
Particulate Matter (PM)			100/250	
Particulate Matter \leq 10 microns in diameter (PM10)	100		100/250	Moderate - 100 Serious - 70
Particulate Matter \leq 2.5 microns in diameter (PM2.5)	100		100/250	
Volatile Organic Compounds (VOCs)	100		100/250	Marginal - 100 Moderate - 100 Serious - 50 Severe - 25 Extreme - 10
Carbon Monoxide (CO)	100		100/250	Moderate - 100 Serious - 50
Nitrogen Oxides (NOx)	100		100/250	Marginal - 100 Moderate - 100 Serious - 50 Severe - 25 Extreme - 10
Sulfur Dioxide (SO ₂)	100		100/250	100
Lead (Pb)*	100		100/250	100
Hazardous Air Pollutants (HAPs) <ul style="list-style-type: none"> Any single HAP Any combination of HAPs 		10 25 *Lead compounds are HAPs		
Greenhouse Gases (GHG)	100,000 on a CO ₂ e basis, and 100 GHGs mass basis		100,000 on a CO ₂ e basis	
Any other regulated air contaminant	100			

¹100 tpy for 28 specific categories (see Table 2-1 of "Potential to Emit Workbook), 250 tpy for all other source categories. Call the Environmental Assistance Center for further help with these source categories.

MINOR SOURCE

Sources whose PTE is less than the major source annual emission thresholds are considered minor sources. A true minor source is one that, even operating at its maximum capacity and continuously, cannot exceed the annual emission threshold levels. A synthetic minor source is a source having a permit (i.e., Permit to Install or ROP) with conditions legally restricting its PTE to below the threshold levels. Becoming a synthetic minor source may prevent you from being required to comply with some complicated regulations.

PERMIT TO INSTALL

Emission units or sources of air contaminants exceeding certain thresholds with their potential to emit are required to apply for and receive a [Permit to Install \(PTI\)](#) prior to the installation and operation of the process(es). Receiving a PTI involves filling out a PTI application and providing the AQD with additional information about the air contaminants that will be generated by the process(es). An AQD permit engineer reviews the provided information and drafts permit conditions. These conditions are shared with the company, and many times the public, for comment prior to being finalized and approved.

1.1 SUMMARY OF MICHIGAN'S AIR QUALITY RULES

EGLE's AQD has numerous regulations relating to air permitting of air contaminants. The purpose of these rules is to keep Michigan in attainment of the National Ambient Air Quality Standards (NAAQS). The USEPA has set standards for specific air contaminants including ozone, particulate matter, sulfur dioxide, nitrogen dioxide, lead, and carbon monoxide. Adverse effects to human health and the environment can occur when the concentration of these pollutants exceeds (or is in nonattainment of) the standard.

The rules promulgated under Part 55 of Act 451, the [Michigan Air Pollution Control Rules](#), are grouped into parts:

- Part 1 - Definitions.
- Part 2 – Air Use Approval (Air Permitting, Offsets, and Air Toxics).
- Part 3 – Emissions Limitations and Prohibitions – Particulate Matter.
- Part 4 – Emissions Limitations and Prohibitions – Sulfur-Bearing Compounds.
- Part 6 – Emissions Limitations and Prohibitions – Existing Sources of VOC Emissions
- Part 7 – Emissions Limitations and Prohibitions – New Sources of VOC Emissions
- Part 8 – Emissions Limitations and Prohibitions – Oxides of Nitrogen.
- Part 9 - Miscellaneous Provisions.

- Part 10 – Intermittent Testing and Sampling
- Part 11 – Continuous Emissions Monitoring
- Part 14 – Clean Corporate Citizen Program
- Part 15 - Emission Limitations and Prohibitions-Mercury
- Part 16 - Organization, Operation, and Procedures
- Part 17 - Hearings
- Part 18 - Prevention of Significant Deterioration of Air Quality
- Part 19 - New Source Review for Major Sources Impacting Nonattainment Areas

The Michigan Air Pollution Control Laws and Rules can be viewed at [Michigan.gov/Air](https://www.michigan.gov/Air) under **Laws and Rules**.



The USEPA also has a variety of complex air quality regulations such as New Source Performance Standards (NSPS), National Emission Standards for Hazardous Air Pollutants (NESHAPs), and Prevention of Significant Deterioration (PSD) air programs, to regulate sources of air contaminants. These regulations are discussed in [Chapter 1.14 through 1.20](#).



How do you know which regulations apply to your sources of air pollution?

Prior to installing a new source of air contaminants, you must complete and submit a PTI application to the AQD. The application must include all of the applicable federal and state regulations which apply to the source type or process. These rules and regulations are then incorporated into the Permit to Install. Being well-informed of the laws is the best way to know which regulations apply to sources of air pollution or are exempt from permit requirements.

1.2 PART 2 RULES: AIR PERMITS, AND AIR TOXICS REGULATIONS

Michigan has two state air permitting programs; [Permit to Install \(PTI\)](#) and [Renewable Operating Permit \(ROP\)](#). The authority to permit air pollution sources under these programs are found in Part 2 of the Michigan Air Pollution Control Rules. In addition, the Part 2 rules contain a set of rules that regulate the emission of toxic air contaminants. Below is a summary of these widely applicable rules.

Air permitting is the means regulatory agencies use to combine applicable state and federal requirements associated with a source of air pollution into one legally and enforceable document. Facilities that emit air contaminants but are exempt from permitting requirements do not go

unregulated. These sources may still be subject to air quality regulations which have requirements to be followed, such as monitoring and recordkeeping to ensure compliance with a specific rule.

1.2.1 PERMIT TO INSTALL PROGRAM

Many businesses do obtain building permits, electrical permits, or mechanical permits for the installation of new structures and equipment from their local municipality. Businesses may not be aware the need for a Permit to Install or PTI from the AQD must be evaluated for equipment and activities that emit air contaminants. Air permitting in Michigan is pre-construction, meaning, prior to constructing a new facility or putting in equipment in an existing facility, whether a permit is required must be determined and if necessary, applied for and approved.

According to [R 336.1201](#) of the Michigan Air Pollution Control Rules, before a facility can legally install, relocate, modify, or reconstruct equipment that emits air contaminants, it must apply for and receive an approved Permit to Install. Each approved Permit to Install contains a list of general and special conditions the source must comply with. These conditions typically:

- ✓ Limit the emission of air contaminants.
- ✓ Restrict hours of operation.
- ✓ Limit the amount and type of raw materials used.
- ✓ Require the operation of air pollution control devices.
- ✓ Contain monitoring and recordkeeping requirements

Not all sources of air contaminants need to be permitted under R 336.1201. Part 2 of the Air Pollution Control Rules contains numerous rules exempting insignificant sources of air pollution from the Permit to Install requirement. For example, welding operations and natural gas-fired furnaces with a heat rated capacity of no more than 50 million Btu/hr. are exempt from the permitting requirements.

View EGLE's "[Permit to Install Exemption Handbook](#)," available at [Michigan.gov/Air](https://www.michigan.gov/Air) under **Laws and Rules**.



The Permit to Install (PTI):

1. Is a state permit to emit air contaminants into the ambient air.
2. Dictates how compliance with conditions of the permit protects public health and the environment.
3. Includes specific state and federal rules applying to the equipment covered under the permit. Many of these applicable rules are included as "underlying applicable requirements" as a "UAR" in the permit.

4. Conditions limit the potential to emit of the process or facility. If the proposed installation or modification of an emission unit or source meets the definition of a major PSD or offset source, then the source may be subject to additional stringent regulations such as [modeling emissions](#), installing best available control technology (BACT), and going through a public hearing. The only way to avoid these added requirements is to accept restrictions limiting PTE to below major source emission threshold levels using permit conditions. Businesses who cannot avoid these additional requirements may need the services of a consultant to complete their permit applications.
5. Is free. No fees are associated with applying for and obtaining an air permit in Michigan.
6. Does not expire and does not have to be renewed. Permit remains valid for as long as the equipment is in operation. However, it may require notification of completion of the installation, construction, reconstruction, relocation, or modification (see R 336.1201[7][a]) and notification of the status of compliance (see R 336.1201[7][b]).

If you do need a permit, obtain the “**Permit to Install Workbook – A Practical Guide to Completing an Air Permit Application.**” Permit to Install application forms and instructions are available online at [Michigan.gov/Air](https://www.michigan.gov/Air).

1.2.2 THE RENEWABLE OPERATING PERMIT (ROP) PROGRAM

It’s important not to confuse the PTI with Michigan’s other air permit: [the ROP](#). The ROP program falls under Title V of the Clean Air Act Amendments of 1990 and is administered by the AQD under R 336.1210-1218 of the Michigan Air Pollution Control Rules. The ROP program clarifies which requirements apply to a facility emitting air contaminants. Currently, these obligations are scattered among numerous state and federal regulations. The ROP incorporates all requirements into a single document giving the facility, state, and local regulatory agencies, the USEPA, and the public a clearer picture of air emission requirements at a facility.

According to R 336.1211, facilities meeting the definition of a “major source” must obtain an ROP. The USEPA has also required all acid rain and waste incineration facilities to obtain an ROP even if they are below the major source cutoffs.

The ROP program does not supersede or replace the PTI requirements. Sources having to apply for an ROP are still required to submit a PTI application when installing or modifying emission units. All PTI conditions are eventually folded into a facility’s ROP.

For guidance on determining whether or not your facility is a “major source” and subject to the ROP program, contact the Environmental Assistance Center at 800-662-9278 or refer to EGLE’s “*Potential to Emit Workbook*,” available at [Michigan.gov/EGLEPublications](https://www.michigan.gov/EGLEPublications).



1.2.3 AIR TOXICS REGULATIONS

In response to increased concern over adverse health effects related to air toxics, federal regulations and state requirements have been put into effect to reduce air toxics emissions. In Michigan, air toxics are regulated under two sets of rules: (1) state administrative rules regulating toxic air contaminants or TACs; and (2) the federal Clean Air Act regulating the release of hazardous air pollutants (HAPs). See [Chapter 1.16](#) for the discussion on HAPs.

According to Michigan's rules, all known substances which are or may become harmful to public health or the environment are regulated as "toxic air contaminants (TAC)." The state of Michigan addresses toxic air contaminants in R 336.1224-1232 (Rules 224-232) of the Michigan Air Pollution Control Rules promulgated under Part 55 of Act 451. The primary requirements are found in Rules 224 and 225, stating that a source emitting a TAC:

- "Shall not cause or allow the emission of the toxic air contaminant from the proposed new or modified emission unit or units in excess of each of the following:
- (Rule 224 [1]): Best available control technology for toxics (T-BACT); requirements for new and modified sources of air toxics; exemptions.
- (Rule 225 [1]): Health-based screening level requirements for new or modified sources of air toxics."

These rules apply to all new or modified sources of air pollution required under Michigan regulations to obtain a PTI (see [Chapter 1.2.1](#)). Michigan's toxic air contaminant rules require a two-fold analysis. First, the owners or operators of sources of TACs are required to evaluate and use the best economically feasible, technologically advanced air pollution controls. This means that, as new technology progresses, and better air pollution controls are developed, each new or modified source is required to consider the newest and best technology. Second, the facility is required to limit its toxic air emissions to amounts at or below those determined to be protective of public health for each toxic air contaminant. As technology advances, these limits must be continuously reviewed and changed if necessary, for each toxic air contaminant. Limiting these emissions may be done through the permitting process.

Michigan T-BACT

The special conditions of a PTI set enforceable emission limits and work practice standards. The toxic air contaminant emission limits are based on a control technology analysis (T-BACT). Emission limits are typically expressed in pounds/hour based on maximum operational capacity and in terms of process variables such as material processed, fuel consumed, or pollutant concentrations (e.g., pounds of TAC per million BTUs [lbs/10⁶ Btu], pounds of TAC per gallon of coating solids applied, or micrograms of TAC per dry standard cubic meter of air [ug/dscm]).

Best available control technology for toxics (T-BACT) is the most efficient alternative reasonably achievable as stated in R 336.1102(a):

“T-BACT is the maximum degree of emission reduction which the department determines is reasonably achievable for each process emitting toxic air contaminants, taking into account energy, environmental, and economic impacts and other costs.”

Screening Levels

R 336.1225 contains an AQD methodology used to demonstrate an emission unit's TAC emissions. Following this methodology ensures emissions will not result in a harmful effect on the public. One does this by comparing the predicted ambient (outside air) level of the air contaminant at the facility's property line with the appropriate health-based screening level (defined below). If the predicted ambient level is below the screening level and the emission is adequately controlled under best available control technology for toxics (T-BACT), then the emission is acceptable. If it exceeds the screening level, the facility must make changes to reduce the emission or improve the dispersion of the air contaminant, or both. This is done to reduce the predicted ambient level to below the screening level.

R 336.1227 lays out [how to demonstrate compliance with a health-based screening level](#).

R 336.1227(1)(a) contains a simple method to determine the allowable emission rate based only on the screening level. This method does not use site-specific data and assumes poor dispersion of the TAC, due to a short stack and short distance from the stack to the facility property line. The screening method in R 336.1227(1)(b) uses a table requiring a few facility-specific characteristics to determine the allowable emission rate. This method generally provides a higher allowable emission rate than in R 336.1227(1)(a) by using site-specific characteristics. Lastly, R 336.1227(1)(c) uses dispersion models to determine compliance with health-based screening levels. This method generally provides for the highest allowable emission rate due to the use of facility and site-specific information and elimination of conservative assumptions.

A screening level indicates the level an air contaminant can be emitted and still be protective of public health. R 336.1225 does not allow companies to emit air contaminants in quantities exceeding the screening levels at the property line, except for special circumstances allowed under R 336.1225(3) and R 336.1226. There are three screening levels; the initial threshold screening levels (ITSL) are screening levels designed to protect against noncarcinogenic effects; and initial risk screening levels (IRSL) and secondary risk screening levels (SRSL) protect against carcinogenic effects. Not every air contaminant has all three screening levels. Screening levels are developed from toxicological data and are expressed in concentrations of micrograms per cubic meter (ug/m³) and in various averaging times, i.e., 1 hour, 8 hours, 24 hours, and annually.

The AQD maintains a list of all screening levels. The list of screening levels is updated periodically as more compounds are evaluated, and available at [Michigan.gov/egle/about/organization/air-quality/air-toxics](https://www.michigan.gov/egle/about/organization/air-quality/air-toxics).

1.3 PART 3 RULES: PARTICULATE MATTER

Part 3 of the Michigan Air Pollution Control Rules establishes particulate emission limitations for various activities. [Open burning](#) and the density of visible emissions from a vent or stack are regulated as well. Certain facilities are required to develop plans to control fugitive dust emissions from roadways, storage piles, and other dust-generating activities.

1.3.1 PARTICULATE EMISSION LIMITS

R 336.1331 contains maximum allowable emission rates of [particulate matter](#) from a variety of emission units, such as fuel-burning equipment, incinerators, steel manufacturing, foundries, kilns, asphalt paving plants, cement manufacturing, iron ore pelletizing, fertilizer plants, and exhaust systems serving material handling equipment not previously identified. Most emission rates are expressed in pounds of particulate emitted per 1,000 pounds of exhaust gas.

1.3.2 OPACITY

Opacity is the degree to which air emissions reduce the transmission of light. Opacity is measured in percentage. For example, if the opacity of air contaminants being discharged from a stack is 20 percent, then 20 percent of the light traveling through the plume is blocked by the air emissions and 80 percent of the light passes through the plume. The higher the opacity, the denser the plume of air emissions. R 336.1301 limits the opacity of visible emissions discharged from an emission unit. This rule prevents businesses from discharging dense smoke from their activities

1.3.3 OPEN BURNING

Open burning is the burning of unwanted materials where smoke and other emissions are released directly into the air without passing through a chimney or stack. Open burning is regulated by air quality and solid waste regulations, and sometimes under local ordinance.

Open burning from a business is prohibited, and open burning from other sources is restricted. [Public Act 102 of 2012](#) was signed into law on April 19, 2012, prohibiting the open burning of household trash containing plastic, rubber, foam, chemically treated wood, textiles, electronics, chemicals or hazardous materials. The burning of these materials poses a danger to human health and the environment. The law amends the open burning provisions contained in [Section 11522](#) of the Natural Resources and Environmental Protection Act (Public Act 451 of 1994). The changes took effect on October 16, 2012, and contain penalty provisions, which may be enforced by local units of government, should a local ordinance not exist.



Open burning of brush, logs, stumps, and trees is prohibited within 1,400 feet of an incorporated city or village limit. The open burning of grass clippings and leaves is not allowed in municipalities having a population of 7,500 or more unless the local governing body has specifically enacted an ordinance authorizing it. A burn permit may be required prior to conducting open burning. For information on obtaining a burn permit go to [Michigan.gov/dnr/managing-resources/forestry/fire/burn-permit](https://www.michigan.gov/dnr/managing-resources/forestry/fire/burn-permit). Structures may not be burned for the purpose of demolition. Air quality regulations allow structures to be intentionally burned for the purpose of **fire suppression training** only. This type of burning requires an asbestos survey be completed and materials removed prior to the burn. An intent to burn notification must also be submitted through [EGLE's Asbestos Notification System](#).

Open burning may also be regulated by the local unit of government. Contact local authorities about their ordinances. Additional information about open burning can be found at EGLE's Open Burning website at [Michigan.gov/OpenBurning](https://www.michigan.gov/OpenBurning).

1.4 PART 4 RULES: SULFUR BEARING COMPOUNDS

Part 4 of the Michigan Air Pollution Control Rules establish [sulfur dioxide](#) emission limitations on boilers and other fuel-burning equipment. The sulfur content of fuels, such as coal and fuel oil, must fall within prescribed percentages.

1.5 PART 6 RULES: EXISTING SOURCES OF VOC EMISSIONS

In 1978, the USEPA published a document containing available methods and technologies designed to reduce emissions from a variety of sources that emit VOCs. Many of the control strategies in this document were incorporated into the Michigan Air Pollution Control Rules, specifically the Part 6 rules.

The USEPA document describes the technologies as reasonably available control technology (RACT). RACT was developed to help state and local agencies determine the level of VOC control needed to represent the lowest achievable emission rate using reasonably available control technology. Significant research was conducted to establish RACT and identify a level of control that industry could comply with, while benefiting the environment through improved air quality. Part 6 rules are often referred to as the RACT rules, and they are used to regulate existing sources of VOCs in accordance with state obligations under the federal Clean Air Act. Table 1.2 contains a listing of all the VOC-emitting emission units regulated under the Part 6 rules.

Table 1.3 Summary of Part 6 Rules

Rule Number*	Emission Unit	“Existing” Means Equipment Installed before:
604-605	Storage of organic compounds	July 1, 1979
606-609	Loading of gasoline into gas stations and bulk plants	July 1, 1979
610	Automotive and light-duty trucks; cans; coils; large appliances; metal furniture; magnet wire; and nonmetallic surfaces of fabrics, vinyl, or paper coating lines	July 1, 1979
611-614	Solvent vapor degreasers and cold cleaners	July 1, 1979
615-617	Petroleum refinery	July 1, 1979
618	Cutback paving asphalt	July 1, 1979
619	Perchloroethylene dry cleaning equipment	July 1, 1980
620	Flat wood paneling lines	July 1, 1980
621	Metallic surface coating lines	July 1, 1980
622	Petroleum refineries	July 1, 1980
623	Storage of petroleum liquids	July 1, 1980
624	Graphic art lines	July 1, 1980
625	Pharmaceutical products	July 1, 1980
627	Delivery vessels	Not applicable
628	Synthetic organic chemicals	January 5, 1981
629	Natural gas processing	January 20, 1984
630	Paint manufacturing	July 1, 1987
631	Polystyrene and organic resins	July 1, 1987
632	Plastic coating lines	July 1, 1979
651	Degreasers	Not applicable

1.6 PART 7 RULES: NEW SOURCES OF VOC EMISSIONS

Under Part 7 of the Michigan Air Pollution Control Rules, a new source is defined as any emission unit placed into service on or after July 1, 1979. According to R 336.1702, when installing a new source of VOCs or modifying an existing source, a facility must evaluate the following four emission rates and use whichever one results in the lowest maximum allowable emission rate of VOCs.

1. An emission rate based upon Best Available Control Technology (BACT).
2. The maximum allowable emission rate specified by a New Source Performance Standard (NSPS) promulgated by the USEPA.
3. The maximum allowable emission rate specified as a condition of a Permit to Install.
4. The maximum allowable emission rate specified in the Part 6 rules of the Michigan Air Pollution Control Rules.

BACT ANALYSIS

BACT is defined as the most stringent emission limit or control technique that has either been achieved in practice for a category of emission units, is found in other state air quality rules, or is considered by the regulatory agency to be technically feasible and cost effective. A BACT analysis performed as part of the permit review process, triggers continual use of technology resulting in low emissions of air contaminants. Since technology is ever-changing, BACT is an evolutionary process striving for continuous improvement of air quality in the state.

NEW SOURCE PERFORMANCE STANDARDS

Under Section 111 of the Clean Air Act, the USEPA is authorized to establish an NSPS for new or modified sources in specific industrial categories. These standards set emission limits for over 75 categories having the potential to emit a significant amount of air contaminants that could endanger public health.

The NSPS requirements are found in the federal rules published in the Code of Federal Regulations (CFR). The federal rules relating to environmental protection are contained in Title 40 of the CFR. Air quality regulations are found in Parts 50 to 99 of Title 40. The NSPS requirements are in Part 60. Each specific NSPS is a subpart of Part 60.

PERMIT CONDITIONS

An emission rate contained in a previously issued Permit to Install is reviewed by the permit engineer of the AQD and applied to a similar new source undergoing the permit review. From a practical standpoint, this emission rate is not viable as it would be difficult to limit emissions by permit condition to a level more stringent than prescribed by BACT.

PART 6 RULES

The last step in identifying the lowest maximum allowable emission rate for a proposed new source of VOC emissions is the emission limitations contained within the Part 6 rules of Michigan Air Pollution Control Rules.

1.7 PART 8 RULES: OXIDES OF NITROGEN (NOX)

Part 8 of the Michigan Air Pollution Control Rules establish emission limits on sources of oxides of nitrogen. These sources include larger fossil fuel-fired emission units such as electricity generating units, boilers/process heaters, stationary internal combustion engines, cement kilns, and stationary gas turbines. Emission units subject to the Part 8 rules must comply with the emission limits provided, as well as all applicable monitoring, testing, and recordkeeping requirements.

1.8 PART 9 RULES: MISCELLANEOUS PROVISIONS

The rules in Part 9 of the Michigan Air Pollution Control Rules can apply to any business, regardless of the type of air contaminant emitted or emission unit installed. According to R 336.1901, air contaminants cannot be emitted in quantities that could have an injurious effect on human health or safety or cause unreasonable interference with the comfortable enjoyment of life and property.

Businesses, upon request from the AQD, must prepare a malfunction abatement plan to prevent, detect, and correct malfunctions resulting in the emissions of air contaminants exceeding any applicable limitation (R 336.1911). When a business has a malfunction of a process device and/or control device resulting in the exceedance of an emission standard or limitation over a prescribed amount of time, it must be reported to the AQD (R 336.1912).

1.9 PART 10 RULES: INTERMITTENT TESTING AND SAMPLING

Part 10 of the Michigan Air Pollution Control Rules give the AQD authority to require sources to quantify their air emissions to verify compliance with the emission standards. The testing must be performed in accordance with established testing methodologies and approved by the AQD Technical Programs Unit staff prior to testing.

1.10 PART 11 RULES: CONTINUOUS EMISSION MONITORING

Large sources of air contaminants must operate continuous emission monitoring equipment to verify compliance with the applicable emission standards. The monitoring equipment is typically installed in the process device itself or in the stack.

1.11 PART 14 RULES: CLEAN CORPORATE CITIZEN PROGRAM

Michigan's Clean Corporate Citizen Program allows sources demonstrating environmental stewardship and a strong environmental ethic to receive public recognition and air quality permit processing benefits. For more information, call 800-662-9278 or go to Michigan.gov/EGLEc3.



1.12 MICHIGAN AIR EMISSIONS REPORTING SYSTEM

The federal Clean Air Act requires each state maintain an inventory of air pollution emissions for certain facilities and update this inventory every year. Michigan's emission inventory is the [Michigan Air Emissions Reporting System](#) (MAERS). The AQD maintains MAERS by requesting certain facilities annually report their emissions. This information is used to track air pollution

trends, determine the effectiveness of current air pollution control programs, serve as a basis for future-year projections of air quality, track source compliance, provide information for permit review, and calculate the emissions portion of the air quality fee.

Not every facility is required to report to MAERS. Facilities subject to fees, or have opted-out of the ROP program, must report emissions. In addition, facilities with actual annual emissions greater than the following thresholds will be included in MAERS and will be notified to report emissions annually:

- Carbon monoxide (CO) - 100 tons per year
- Nitrogen oxides (NO_x) - 40 tons per year
- Sulfur dioxide (SO₂) - 40 tons per year
- Particulate matter (PM) - 25 tons per year
- Particulate matter (PM-10) - 15 tons per year
- Volatile organic compounds (VOC) – 10 tons per year

MAERS reports are due by March 15 each year. By the end of January, the AQD notifies facilities that must submit the MAERS report.

View the *MAERS User Guide* at Michigan.gov/MAERS for more information.



1.13 TAX EXEMPTION FOR AIR POLLUTION CONTROL

As per Article II, Chapter I, Part 59 (Air Pollution Control Facility; Tax Exemption) of Public Act 451 of 1994, hereinafter referred to as “Part 59,” tax exemptions for air pollution control are available through an application separate from the Permit to Install application. Specific procedures must be followed to be granted tax relief and tax exemption certificates are terminated when equipment is removed.

Part 59 provides for the exemption of air pollution control facilities from sales, use, and property taxes (equipment installed prior to the effective date of Part 59 is eligible for tax exemption).

Applications for tax exemption for air pollution control facilities must be submitted to the **Michigan State Tax Commission (STC)** in triplicate on the “**Application for Air Pollution Control Tax Exemption Certificate**” forms. All applications must be submitted by June 15 and be administratively complete to ensure that final determinations are made by the end of the tax year. [These forms](#) can be obtained from the Michigan Department of Treasury, State Tax Commission, at Michigan.gov/PropertyTax.

The evaluation of an application and decision of what equipment meets the requirements of Part 59 is based on the descriptions in the Act.

1.14 FEDERAL AIR REGULATIONS

The USEPA promulgates federal rules and standards affecting a wide variety of sources of air contaminants, especially those operated by manufacturers. EGLE's AQD receives delegation from the USEPA to implement and enforce compliance with these federal regulations. Manufacturers should be aware of additional air quality regulations including Prevention of Significant Deterioration (PSD), New Source Performance Standards (NSPS), National Emission Standards for Hazardous Air Pollutants (NESHAPs), Risk Management Plans, and the regulation of CFCs.

1.15 PREVENTION OF SIGNIFICANT DETERIORATION

The primary provisions of the [Prevention of Significant Deterioration \(PSD\) program](#), as found in Michigan's Part 18 Rules, mirror the federal requirements in 40 CFR 52.21 and require new major stationary sources and major modifications at existing major sources be carefully reviewed prior to construction. The review is intended to ensure compliance with the national ambient air quality standards, the applicable PSD increment concentrations, and the requirement to apply best available control technologies on the project's emissions of air pollutants above significance. The review for major stationary sources and major modifications to major stationary sources is required by the Clean Air Act to undergo a new source review (NSR) and obtain a permit before construction.

PSD applicability depends on a new source or a modification to an existing source resulting in emission increases above certain applicability thresholds. A "major stationary source" is any source type belonging to a specific list of source categories emitting or having the potential to emit 100 tons per year or more of any NSR pollutant, or any other source type which emits or has the potential to emit any NSR pollutant in amounts equal to or greater than 250 tons per year. A stationary source generally includes all pollutant-emitting activities which belong to the same industrial grouping, are located on contiguous or adjacent properties, and are under common control.

A major modification is a physical change or a change in the method of operation of an existing major stationary source. In determining if a specific project would become subject to the PSD program, the modification must be determined to result in both a significant emissions increase (by itself) and a significant net emissions increase (across the whole stationary source) of any NSR pollutant.

The basic goals of the PSD program are: (1) to ensure economic growth can continue while simultaneously preserving existing air quality (i.e., prevent degradation of an attainment area into a nonattainment area); and (2) to preserve and protect the air quality in areas of special natural recreational, scenic, or historic value, such as national parks and wilderness areas (i.e., Class I areas). Nonattainment areas are covered by [Michigan's Part 19 Rules](#).

The PSD Program contains:

1. Changed the method of determining the baseline level of emissions from which changes are measured to determine if a significant or significant net emissions increase will occur.
2. Instituted applicability determinations by comparing projected future actual emissions against baseline actual emissions. Previously, applicability was determined on the increase in allowable emissions above baseline actual emissions.
3. Created a Plantwide Applicability Limit permitting regime, in which compliance with a single, plantwide emissions limit becomes the sole determiner of NSR applicability for future changes at the facility.

The method for determining baseline actual emissions is different depending on the source. This timeframe may be five years to ten years, the period over which a two-year average of actual annual emissions could be selected as the baseline from which emission changes are measured. Any consecutive 24-month period during the previous ten years can be selected by an applicant as the emissions baseline.

The actual to projected actual applicability test can be used to determine if a modification at an existing source will result in a significant emissions increase. To accomplish this, future emissions are projected based on anticipated business demand. Any emissions increases resulting from future production that would have, or could have, been accommodated without the modification do not count towards NSR applicability. The creation of the actual to projected actual applicability test does not eliminate the traditional actual to potential applicability test; it is an alternative test.

The Plantwide Applicability Limit (PAL) permit written into the reformed PSD regulations establish another alternative PSD applicability threshold to the actual to potential or actual to projected actual methods. The PSD PAL leaves almost all existing permit requirements in place and adds a new, facility-wide, tons per year emissions limit for a single pollutant. This facility-wide pollutant-specific limit establishes the applicability threshold for PSD – if the PAL is not exceeded, NSR applicability is not triggered. The goal of the PAL is to internally motivate facilities to voluntarily reduce emissions to accommodate future increases rather than subject those increases to NSR.

For more information about the PSD reforms, you may refer to the [“PSD Workbook – A Practical Guide to Prevention of Significant Deterioration.”](#)

For assistance in determining whether your proposed installation or modification of an emission unit or source will trigger the PSD requirements, contact the Environmental Assistance Center at 800-662-9278.

1.16 NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

The 1970 version of the federal Clean Air Act required the USEPA to set emission standards referred to as National Emission Standards for Hazardous Air Pollutants (NESHAP). From 1970 to 1990, NESHAPs were issued for only seven compounds: asbestos, beryllium, mercury, vinyl chloride, arsenic, radionuclides, and benzene.

Under Title III of the Clean Air Amendments of 1990, Congress wanted the USEPA to speed up the pace of regulation. Section 112 of the Clean Air Act Amendments calls for the development of NESHAPs to reduce the emissions of **hazardous air pollutants (HAPs)**. The original list of HAPs contained 189 compounds; however, caprolactam and methyl ethyl ketone (MEK) have been removed from the list and the USEPA may consider other compounds to be added or removed. See Appendix 1-A for a listing of HAPs.

Implementation of Section 112 began with the identification of sources that are major contributors of the original list of HAPs. The USEPA has identified over 174 source categories of sources that emit HAPs and that should be regulated.

1.16.1 MAJOR AND AREA HAP SOURCES DEFINED

A “major HAP source” is a facility having the potential to emit more than 10 tons per year of any single HAP or 25 tons of all HAPs combined. An “area source” is one having the potential to emit less than 10 tons of any single HAP or 25 tons of all HAPs combined. NESHAPs have been promulgated that apply to major HAP sources and area sources as well.

1.16.2 REGULATING MAJOR AND AREA HAP SOURCES - MACT AND GACT

Section 112 of the federal Clean Air Act requires regulations be promulgated establishing emission standards (commonly referred to as NESHAPs) for each category of major sources and area sources of HAPs identified in the USEPA schedule of regulation promulgation. The standards for major sources of HAPs must require the maximum degree of emission reduction the USEPA determines to be achievable by each particular source category. This standard is referred to as the maximum achievable control technology (MACT) for short. MACT levels can be different for existing and new sources. The USEPA determines what kind of controls qualify as the “maximum control” for each category of HAP sources. For source categories with at least 30 sources nationwide, MACT must be no less stringent than the average emission rate achieved by the best performing 12 percent of existing sources. MACT ensures both new and existing major sources of toxic air pollution use the kind of technology which provides maximum control of HAPs on an ongoing basis. The terms NESHAP and MACT are often used interchangeably.

Area sources may require either MACT or Generally Available Control Technology (GACT). GACT are standards less stringent than MACT. Information about standards that have been promulgated for area sources can be found at epa.gov/ttn/atw/area/arearules.html.

1.16.3 SCHEDULE FOR COMPLIANCE WITH THE NESHAPS

New sources (i.e., sources commencing construction or reconstruction after proposal of the NESHAP) must comply with the standard immediately upon start-up with one exception.

Sources constructed or reconstructed after the NESHAP proposal, but before promulgation, must comply with the promulgated standard within three years of promulgation. Existing sources (i.e., sources in operation prior to the proposed standard) have three years from the promulgation date to comply with the NESHAP.

1.16.4 ADDITIONAL NESHAP INFORMATION

To obtain copies of the NESHAP standards as they appear in the Code of Federal Regulations (CFR), go to ecfr.gov/current/title-40. NESHAPs are contained in Part 63 of Title 40.

Outreach materials on some of the promulgated NESHAPs can be downloaded at Michigan.gov/Air (choose “Compliance”)

1.16.5 COMPARISON OF FEDERAL AND MICHIGAN AIR TOXICS RULES

Michigan’s air toxics rules take precedence over the federal Clean Air Act regulations where the rules provide for stricter control of toxic air pollution. The following table outlines the provisions of both Michigan’s toxic air contaminant regulations and the federal Clean Air Act Amendment’s hazardous air pollutant regulations:

Table 1.4 Comparison of Federal and State Air Toxic Regulations

Issue	Federal Clean Air Act Amendments	Michigan Air Toxics Rules
Applies to new or modified sources of air toxics?	Yes	Yes
Applies to existing sources of air toxics?	Yes	No
Which air toxics are regulated?	At present, 187 chemicals known as hazardous air pollutants or HAPs (the list is subject to change)	All substances which are harmful except for 41 specifically exempted compounds (see Appendix 1-B). These regulated contaminants are known as toxic air contaminants or TACs.
Effective date of regulations	Phased in between 1990 and 2000 (and beyond)	In effect now
Types of controls required	Maximum achievable controls	Best available controls and health-based screening levels

1.16.6 NESHAP FOR ASBESTOS

Businesses contemplating the demolition or renovation of any structure should be aware this activity may be regulated under the NESHAP for Asbestos. The purpose of this NESHAP is to minimize the release of asbestos fibers during renovation and demolition activities. The NESHAP applies to renovations of institutional, commercial, or industrial structures if the amount of regulated asbestos-containing material is 260 or more linear feet, 160 or more square feet, or 35 or more cubic feet. The NESHAP applies to all demolition activities at institutional, commercial, or industrial structures, regardless of whether the structures contain asbestos.

The NESHAP for Asbestos was promulgated on April 6, 1973, and revised in 1990.

Since the NESHAP was one of the early promulgated NESHAPs, the regulation is found in [Part 61 \(Subpart M\)](#), not Part 63, of Title 40 of the Federal Code of Regulations.

The NESHAP for Asbestos has four requirements: notification, work practice standards, proper waste disposal, and training. A notification form describing the project must be postmarked or hand delivered at least 10 working days before beginning demolition or renovation activities enabling the regulatory agency to ensure all precautions are being taken to minimize asbestos emissions. The work practice standards require asbestos be adequately wetted and carefully lowered to the ground. For waste disposal, all asbestos-containing waste must be placed in leak-tight containers or leak-tight wrapping. These containers or wrapped materials must be properly labeled and taken to an appropriate waste disposal site as soon as is practical. Finally, the training requirement is met by having at least one trained supervisor present when asbestos is stripped, removed, disturbed, or handled.

For more detailed information about the NESHAP for Asbestos, contact the NESHAP Asbestos Coordinator at 517-256-0880. To obtain a copy of the “[Understanding the Asbestos NESHAP](#)” fact sheet visit Michigan.gov/EGLEPublications.

1.17 NEW SOURCE PERFORMANCE STANDARDS

New Source Performance Standards (NSPS) are federal requirements applicable to over 75 categories of industrial emission units. The USEPA developed these standards to ensure that old sources of air pollution would be replaced with less polluting technology, thus having a net benefit to air quality.

Not only does the installation of certain new emission units after a specific date trigger applicability of the NSPS, but changes to your existing emission units could also subject you to the standards. Changes are defined in terms of modifications and reconstruction. Modification is defined as “any physical or operational change to an existing emission unit which results in an increase in emissions to the atmosphere of any pollutant to which a standard applies.” If the fixed capital cost of the changes you make to your emission unit is more than 50 percent of the fixed capital costs

required to construct a comparable emission unit, then your facility has been “reconstructed” under the NSPS definition. For example, if you replaced the dryer portion of an asphalt plant, you would need to compare the cost of the new dryer to the cost of an entirely new asphalt plant as defined in the NSPS for Hot Mix Asphalt Facilities to determine if your changes fall under the definition of reconstruction.

All of the NSPS are located in **Title 40, Part 60**, of the Code of Federal Regulations. Each regulation is identified in subparts of Part 60. The NSPS applies to emission units constructed, modified, or reconstructed after the effective date of the standard.

It is important to understand the definitions of an affected facility under NSPS before you install, modify, or reconstruct sources of air pollution so you will be able to comply with all of the pertinent emission limits, record keeping, reporting, and other operational requirements that may be included in the NSPS.

1.18 ACID RAIN REGULATIONS

Electric generating units (EGU) selling electricity to the grid and burning fossil fuel may be required to obtain and operate in compliance with a **Phase II acid rain permit**, pursuant to Title IV of the federal Clean Air Act. EGUs that have a nameplate capacity of less than 25 MW *and* burn a fuel with an annual average sulfur content of less than 0.05 percent are exempt from Title IV.

The AQD is the authority responsible for issuing Phase II acid rain permits in Michigan. EGUs that become subject to Title IV are required to submit an application to the AQD 24 months before the unit commences operation. Units which are exempt from the program must submit the exemption form (original and one copy) to the AQD. All acid rain forms should be sent to RE: Acid Rain Permit Application, EGLE-AQD, 301 E. Louis Glick Hwy, Jackson, MI 49201. One copy must also be sent to the USEPA. Application and exemption forms and their instructions are available from the USEPA Acid Forms Web site at epa.gov/AirMarkets/acid-rain-permitting.

Any operating stationary combustion source emitting sulfur dioxide (SO₂) but is not otherwise required to meet the mandatory SO₂ emissions limitations of Title IV is eligible to opt into the Acid Rain Program. Combustion sources are defined as fossil fuel-fired boilers, turbines, or internal combustion engines. The Opt-in Program offers a combustion source a financial incentive to voluntarily reduce its SO₂ emissions. By reducing emissions below its allowance allocation, an opt-in source will have unused allowances which it can sell in the SO₂ allowance market. Opting in will be profitable if the revenue from the sale of allowances exceeds the combined cost of the emissions reduction and the cost of participating in the Opt-in Program. Further information on the Opt-in Program is available on the USEPA Air Markets Web site epa.gov/Airmarkets.

All sources subject to the Title IV Acid Rain Program are also required to obtain a Renewable Operating Permit (see [Chapter 1.2.3](#)).

For further information about the **Acid Rain Program**, contact Brian Carley at 517-416-4631 or CarleyB@Michigan.gov or michigan.gov/air (“Permits”).



1.19 MANAGING CHEMICAL RISK: ACCIDENTAL RELEASE/RISK MANAGEMENT PLAN

Companies of all sizes using certain listed chemicals must submit plans detailing how they will prevent accidental chemical releases from occurring. This compliance requirement is known as the **Accidental Release/Risk Management Program of the 1990 Clean Air Act Amendment's Section 112(r)**. The goal of this regulation is to communicate potential risks to the public and ensure facilities have implemented a baseline internal management structure including safety and prevention and emergency response programs to reduce the possibility of an accidental release. The primary tool used to accomplish this goal is the Risk Management Plan (RMP). A facility must develop a RMP if they have regulated substances (comprised of toxic chemicals and flammables) identified under Section 112(r) at or above a specific threshold quantity set for each substance. Size of the company does not determine applicability; a business is required to complete an RMP if the type and quantity of chemicals used are listed as regulated substances under the rule.

There are three levels of compliance with Section 112(r) called “Programs.” Facilities having a process that uses, stores, manufactures, processes, or handles or transports on-site a Section 112(r) regulated substance over the threshold quantity, are required to conduct some level of accidental release “Program” planning. There are three Programs. Program 1 is the most lenient while Program 3 is the most stringent. The Programs are comprised of four major components:

1. A Hazard Assessment including the modeling of a worst case and alternative accidental chemical release.
2. Establishment of a Management Program (i.e., who’s in charge of the RMP).
3. A Prevention Program to minimize the potential occurrence of an accidental release.
4. An Emergency Response Program to protect public health and the environment.

Program 1, 2, or 3 applicability dictates which of these components a facility must comply with. Facilities subject to Section 112(r) must meet their Program compliance requirements by June 21, 1999, or at the time that a substance is first present at their facility.

For more information on risk management planning, or questions regarding the rule, additional resources and guidance documents for compliance can be downloaded from the USEPA emergency planning Web site at epa.gov/emergency-response.



1.20 OZONE DEPLETING SUBSTANCES

Chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) are inert, toxic chemicals used as refrigerants for air conditioning, home, and commercial refrigeration, and in process cooling equipment that supports manufacturing. Scientists worldwide have concluded that CFCs and HCFCs deplete the ozone layer. As a result, the United States joined 160 nations in signing the Montreal Protocol, an international treaty designed to protect the ozone layer. In the United States, the Protocol is implemented by Title VI of the Clean Air Act (CAA) and Title 40, Part 82, of the Code of Federal Regulations. The regulations provided for the phase-out of CFC production by 1996, HCFC-22 production by 2020, and all other HCFCs by 2030. The regulations also put strict limitations on CFC/HCFC sales, their use in stationary and mobile sources, and their disposal.

The CAA prohibits individuals from knowingly venting CFCs, HCFCs, or any alternative refrigerant into the atmosphere while maintaining, servicing, repairing, or disposing of air conditioning or refrigeration equipment. Furthermore, only USEPA-certified technicians can service or dispose of refrigeration or air conditioning equipment (both stationary and mobile sources). The USEPA regional office must be notified that all equipment used in the recycling or recovery of refrigerants meets the standards. A list of approved certification programs and Air Conditioning and Refrigeration Institute (ARI)-rated recovery/recycle equipment is available from the Stratospheric Ozone Hotline at 800-296-1996. Owners of air conditioning and refrigeration equipment with more than 50 pounds of charge must keep records of the quantity of refrigerant added to their equipment during servicing and maintenance procedures. Any “substantial” leaks in equipment must be repaired within 30 days.

As the effects of ozone-depleting substance phase-outs begin to take hold, the development and usage of viable alternatives becomes increasingly important. In 1994, the USEPA established the significant new alternatives policy (SNAP) program to evaluate new alternatives for ozone-depleting substances. Alternatives that are rated “acceptable” by the SNAP Program can be implemented into processes as legal substitutes. The use of any substance not approved by the SNAP Program is illegal.

Persons with questions concerning CFC/HCFC regulations, the **SNAP Program**, and stratospheric ozone protection can contact the “Ozone Protection Hotline” at 800-296-1996. Visit the USEPA, Stratospheric Protection Division Web site at www.epa.gov/ozone.

1.21 GREENHOUSE GAS (GHG) REGULATIONS

On June 3, 2010, the USEPA issued a final rule setting applicability thresholds for greenhouse gas (GHG) emissions defining when permits under the New Source Review Prevention of Significant Deterioration (**PSD**) and Title V Operating Permit programs are required for new and existing sources. This rule is known as the “Tailoring Rule.”

The **Tailoring Rule** primarily targets sources of combustion, but it may affect other sources modifying or applying for new Permits to Install (**PTIs**) and Renewable Operating Permits (**ROPs**). Sources with emissions of any of the following pollutants may be affected by the Tailoring Rule:

- carbon dioxide (CO₂)
- hydrofluorocarbons (HFCs)
- methane (CH₄)
- nitrous oxide (N₂O)
- perfluorocarbons (PFCs)
- sulfur hexafluoride (SF₆)

Under the Tailoring Rule, PSD permitting requirements cover new construction projects emitting GHG emissions of at least 100,000 tons per year (tpy) even if they do not exceed the permitting thresholds for any other pollutant. Modifications at existing facilities that increase GHG emissions by at least 75,000 tpy will be subject to permitting requirements, even if they do not significantly increase emissions of any other pollutant.

Facilities that emit at least 100,000 tpy Carbon Dioxide equivalent (CO₂e) and 100 tons of GHGs on a mass basis will be subject to permitting under Title V of the Clean Air Act. In Michigan, these permits are known as Renewable Operating Permits (ROPs). Sources with large or multiple fuel burning devices (e.g. boilers, generators, ovens, and process heaters) and sources with large refrigeration units (e.g., warehouses, food processors) should review the GHG Permitting Guidance the AQD has developed to determine whether or not they will be affected by the Tailoring Rule.

1.21.1 GREENHOUSE GAS REPORTING RULE

On December 29, 2009, the USEPA’s Mandatory Reporting of Greenhouse Gases Rule (MRR) became effective. The MRR requires facilities subject to the rule to report their GHG emissions directly to the USEPA starting with their 2010 GHG emissions data.

Visit the USEPA’s Greenhouse Gas Reporting Program at www.epa.gov/ghgreporting to determine if your facility is subject to the MRR reporting requirements. If you have questions, contact the USEPA MRR hotline at 877-GHG-1188 or GHGMRR@epa.gov.

APPENDIX 1-A: HAZARDOUS AIR POLLUTANTS (HAPS)

(Revised January 2022) This list may change. Check [epa.gov/haps/initial-list-hazardous-air-pollutants-modifications](https://www.epa.gov/haps/initial-list-hazardous-air-pollutants-modifications) for current listing.

CAS Number listed, followed by chemical name.

75070	Acetaldehyde	510156	Chlorobenzilate	68122	Dimethyl formamide
60355	Acetamide	67663	Chloroform	57147	1,1 Dimethyl hydrazine
75058	Acetonitrile	107302	Chloromethyl methyl ether	131113	Dimethyl phthalate
98862	Acetophenone			77781	Dimethyl sulfate
53963	2-Acetylaminofluorene	126998	Chloroprene	534521	4,6-Dintro-o-cresol, and salts
107028	Acrolein	1319773	Cresols/Cresylic acid (isomers and mixtures)	51285	2,4-Dinitrophenol
79061	Acrylamide	95487	o-Cresol	121142	2,4-Dinitrotoluene
79107	Acrylic acid	108394	m-Cresol	123911	1,4-Dioxane (1,4-Diethyleneoxide)
107131	Acrylonitrile	106445	p-Cresol		
107051	Allyl chloride	98828	Cumene	122667	1,2-Diphenylhydrazine
92671	4-Aminobiphenyl	94757	2,4-D, salts and esters	106898	Epichlorohydrin (1-Chloro-2,3-epoxypropane)
62533	Aniline	3547044	DDE		
90040	o-Anisidine	334883	Diazomethane	106887	1,2-Epoxybutane
1332214	Asbestos	132649	Dibenzofurans	140885	Ethyl acrylate
71432	Benzene	96128	1,2-Dibromo-3-chloropropane	100414	Ethyl benzene
92875	Benzidine			51796	Ethyl carbamate (Urethane)
98077	Benzotrichloride	84742	Dibutylphthalate	75003	Ethyl chloride (Chloroethane)
100447	Benzyl chloride	106467	1,4-Dichlorobenzene(p)	106934	Ethylene dibromide (Dibromoethane)
92524	Biphenyl			107062	Ethylene dichloride (1,2-Dichloroethane)
117817	Bis (2-ethylhexyl) phthalate (DEHP)	91941	3,3-ichlorobenzidine	107211	Ethylene glycol
542881	Bis (chloromethyl) ether	111444	Dichloroethyl ether (Bis(2-chloroethyl)ether)	151564	Ethylene imine (Aziridine)
75252	Bromoform			75218	Ethylene oxide
106945	1-bromopropane	542756	1,3-Dichloropropene	96457	Ethylene thiourea
106990	1,3-Butadiene	62737	Dichlorvos	75343	Ethylidene dichloride (1,1-Dichloroethane)
156627	Calcium cyanamide	111422	Diethanolamine	50000	Formaldehyde
133062	Captan	21697	N,N-Diethyl aniline (N,N-Dimethylaniline)	76448	Heptachlor
63252	Carbaryl			118741	Hexachlorobenzene
75150	Carbon disulfide	64675	Diethyl sulfate	87683	Hexachlorobutadiene
56235	Carbon tetrachloride	119904	3,3-Dimethoxybenzidine	77474	Hexachlorocyclopentadiene
463581	Carbonyl sulfide				
120809	Catechol	60117	Dimethyl aminoazobenzene		
133904	Chloramben				
57749	Chlordane	119937	3,3-Dimethyl benzidine		
7782505	Chlorine				
79118	Chloroacetic acid	79447	Dimethyl carbarmoyl chloride		
532274	2-Chloroacetophenone				
108907	Chlorobenzene				

67721	Hexachloroethane	100027	4-Nitrophenol	108883	Toluene
822060	Hexamethylene-1,6-diisocyanate	79469	2-Nitropropane	95807	2,4-Toluene diamine
680319	Hexamethyl phosphoramidate	684935	N-Nitroso-N-methylurea	584849	2,4-Toluene diisocyanate
110543	Hexane	62759	N-Nitrosodimethylamine	95534	o-Toluidine
302012	Hydrazine	59892	N-Nitrosomorpholine	8001352	Toxaphene (chlorinated camphene)
7647010	Hydrochloric acid	56382	Parathion	120821	1,2,4-Trichlorobenzene
7664393	Hydrogen fluoride (hydrofluoric acid)	82688	Pentachloronitrobenzene (Quintobenzene)	79005	1,1,2-Trichloroethane
123319	Hydroquinone	87865	Pentachlorophenol	79016	Trichloroethylene
78591	Isophorone	108952	Phenol	95954	2,4,5-Trichlorophenol
58899	Lindane (all isomers)	106503	p-Phenylenediamine	88062	2,4,6-Trichlorophenol
108316	Maleic anhydride	75445	Phosgene	121448	Triethylamine
67561	Methanol	7803512	Phosphine	1582098	Trifluralin
72435	Methozychlor	7723140	Phosphorus	540841	2,2,4-Trimethylpentane
74839	Methyl bromide (Bromomethane)	85449	Phthalic anhydride	108054	Vinyl acetate
74873	Methyl chloride (Chloromethane)	1336363	Polychlorinated biphenyls (Aroclors)	593602	Vinyl bromide
71556	Methyl chloroform (1,1,1-Trichloroethane)	1120714	1,3-Propane sultone	75014	Vinyl chloride
60344	Methyl hydrazine	57578	beta-Propiolactone	75354	Vinylidene chloride (1,1 Dichloroethylene)
74884	Methyl iodide (Iodomethane)	123386	Propionaldehyde	1330207	Xylenes (isomers and mixtures)
108101	Methyl isobutyl ketone (Hexone)	114261	Propoxur (Baygon)	95476	o-Xylenes
624839	Methyl isocyanate	75569	Propylene oxide	108383	m-Xylenes
80626	Methyl methacrylate	78875	Propylene dichloride (1,2-Dichloropropane)	106423	p-Xylenes
1634044	Methyl tert butyl ether	75558	1,2-Propylenimine (2-Methyl aziridine)		COMPOUNDS
101144	4,4-Methylene bis (2-chloroaniline)	91225	Quinoline		Antimony compounds
75092	Methylene chloride (Dichloromethane)	106514	Quinone		Arsenic compounds (inorganic including arsine)
101688	Methylene diphenyl diisocyanate (MDI)	100425	Styrene		Beryllium compounds
101779	4,4'-methylenedianiline	96093	Styrene oxide		Cadmium compounds
91203	Naphtalene	1746016	2,3,7,8-Tetrachlorodibenzo p-dioxin		Chromium compounds
98953	Nitrobenzene	79345	1,1,2,2-Tetrachloroethane		Cobalt compounds
92933	4-Nitrobiphenyl	127184	Tetrachloroethylene (Perchloroethylene)		Coke oven emissions
		7550450	Titanium tetrachloride		Cyanide compounds
					Fine mineral fibers
					Glycol ethers*
					Lead compounds
					Manganese compounds
					Mercury compounds
					Nickel compounds
					Polycyclic organic matter
					Radionuclides (including radon)
					Selenium compounds

*Note: Ethylene glycol mono-butyl ether (EGBE) was removed from the HAP list in December 2004. Methyl ethyl ketone (MEK, 2-Butanone) was removed from the HAP list in December 2005.

APPENDIX 1-B: LIST OF COMPOUNDS EXCLUDED FROM THE DEFINITION OF A TOXIC AIR CONTAMINANT

- Acetylene
- Aluminum metal dust
- Aluminum oxide (nonfibrous forms)
- Ammonium sulfate
- Argon
- Calcium carbonate
- Calcium hydroxide
- Calcium oxide
- Calcium silicate
- Calcium sulfate
- Carbon dioxide
- Carbon monoxide
- Cellulose
- Coal dust
- Crystalline silica emissions from processes specified in Rule 120(f)(xi)
- Emery
- Ethane
- Graphite (synthetic)
- Grain dust
- Helium
- Hydrogen
- Iron oxide
- Lead
- Liquefied petroleum gas (LPG)
- Methane
- Neon
- Nitrogen
- Nitrogen oxide
- Nuisance particulates
- Oxygen
- Ozone
- Perlite
- Portland cement
- Propane
- Silicon
- Starch
- Sucrose
- Sulfur dioxide
- Vegetable oil mist
- Water vapor
- Zinc metal dust

WHERE TO GO FOR HELP

Websites, program contacts, and publications/resources for common air regulations topics

Air Emissions Reporting

[Michigan.gov/MAERS](https://www.michigan.gov/MAERS) | InfoMAERS@michigan.gov | 517-285-6700

- [Michigan Air Emissions Reporting System \(MAERS\) User Guide](#)

Air Resources/Guidance

- [Potential to Emit](#)
- [Permits to Install \(PTI\) / New Source Review \(NSR\)](#)
 - [A Deep Dive into Air Permitting – A webinar series](#)
 - [Permit to Install Guidebook – A Practical Guide to Completing an Air Permit Application](#)
- [Renewable Operating Permits \(ROP\) / Title V](#)
 - [ROP Webinar Series](#)
 - [Acid Rain Permits \(Title IV\)](#)
 - [Cross-State Air Pollution Rule \(CSAPR\)](#)
 - [ROP Manual](#)
 - [Life After ROP – Renewable Operating Permit Reporting and Revisions](#)
- [PSD Workbook – A Practical Guide to Prevention of Significant Deterioration](#)

Air Quality Regulations – Federal

U.S. Environmental Protection Agency, Office of Air and Radiation

www3.epa.gov/air | www3.epa.gov/airquality/ | www3.epa.gov/ttn

Air Quality Regulations – State

[Michigan.gov/Air](https://www.michigan.gov/Air) | EGLE Clean Air Assistance Program: 800-662-9278

- [Environmental Consultant Assistance](#)
- [Compliance Resources](#)
 - [NESHAPs](#)
 - [NSPS](#)
 - [Source category guidance](#)
- [Open Burning Guidance](#)