MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY

IRON AND STEEL FOUNDRY AREA SOURCES
NESHAP GUIDANCE

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) developed this fact sheet to help Michigan iron and steel foundries comply with the requirements found in the **National Emission Standards for Hazardous Air Pollutants (NESHAP) for Iron and Steel Foundry Area Sources (Rule)**. This fact sheet is to be used only as a guide and is not a substitute for reading and understanding the final Rule.

OVERVIEW OF THE RULE

One of the goals of the Federal Clean Air Act is to reduce the emission of hazardous air pollutants (HAPs). The reduction of HAPs is achieved through the promulgation of emission standards for categories of sources that emit HAPs. The U.S. Environmental Protection Agency (U.S. EPA) identified 30 HAPs that pose the greatest threat to public health in urban areas. The U.S. EPA has identified categories of area sources (small emitters of HAPs) that account for 90% of the

releases of the 30 Urban HAPs and are now promulgating standards to reduce the emissions of the Urban HAPs. These federal standards are referred to as the National Emission Standards for Hazardous Air Pollutants (NESHAP). Iron and steel foundries were included in the area source category list based on the emission of the Urban HAPs: chromium, lead, manganese, and nickel.

The NESHAP for Iron and Steel Foundry Area Sources (Title 40, Part 63, Subpart ZZZZZ) contains emission standards based on generally available control technology (GACT) for the control of urban HAPs emitted from metal melting furnaces at large area sources. The NESHAP also established pollution prevention management practices based on GACT applicable to all area source foundries. The pollution prevention management practices reduce HAP emissions of organics, metals, and mercury generated from furnace charge materials and prohibit the use of methanol as a component of binder formulations in certain applications.

On September 10, 2020, the U.S. EPA finalized a technology review of the NESHAP standard, as required by section 113(f) of the CAA. The U.S. EPA determined there were no developments in practices, processes, and control technologies that necessitated revisions to the GACT standards. However, the U.S. EPA did finalize amendments to the standard to remove provisions related to Startup, Shutdown, Malfunction exemptions, make minor corrections and clarifications, and require electronic reporting for notifications, performance test results and compliance reports.

The final rule can be found at epa.gov/stationary-sources-air-pollution/iron-and-steel-foundries-national-emission-standards-hazardous-air. In this fact sheet, different sections of the rule are indicated with a "**§**" and the number or the section.

APPLICABILITY (§63.10880)

You are subject to this Rule if you own or operate an **iron and steel foundry** that is an **area source.**

An **iron and steel foundry** is a facility or a portion of a facility that melts scrap, ingot, and/or other forms of iron and/or steel and pours the resulting molten metal into molds to produce final or near final shape products for sale. Research and development facilities, operations that only produce non-commercial castings, and operations associated with nonferrous metal production are not included in this definition.

An **area source** has the potential to emit less than 10 tons per year of a single **hazardous air pollutant (HAP)** and less than 25 tons per year of any combination of HAPs. If a facility emits more than these amounts, it is considered a "*major source*" and not subject to this Rule.

DEFINITIONS OF NEW AND EXISTING SOURCES (§63.10880)

The date by which you should be in compliance with the requirements depends on whether your iron and steel foundry is considered "new" or "existing".

New source Initial startup or reconstruction of the foundry occurred **after** September 17, 2007.

Existing source Initial startup or reconstruction occurred on or **before** September 17, 2007.

Reconstruction The fixed capital costs exceed 50 percent of the fixed capital required to construct a comparable new foundry.

DEFINITIONS OF SMALL AND LARGE FOUNDRIES (§63.10880)

The size classification of your foundry: small or large, determines what portions of the rule applies to your foundry. If your foundry is an *existing* source, first determine your annual metal melt production. If the production is equal to or less than 20,000 tons, then your foundry is considered **small**. If more than 20,000 tons, it is considered **large**. If your foundry is *a new source* and the annual melt capacity is equal to or less than 10,000 tons, then your foundry is considered **small**. If more than 10,000 tons, it is considered **large**.

Annual metal melt production means the total quantity of metal charged to all iron and steel melting furnaces at the foundry in a given calendar year.

Annual metal melt capacity depends on whether or not the furnace(s) are permitted by EGLE's Air Quality Division. If they are permitted, then the capacity is determined by the maximum permitted production rate calculated on an annual basis. If the permit limits the operating hours of the furnaces, then the permitted hours are used in annualizing the maximum permitted metal production rate. If not, then the capacity is determined by assuming the furnaces are operating at 8,760 hours per year.

Section 63.10881 (d) & (e) of the Rule explains what you need to do if over time your small foundry meets the definition of a large foundry due to increased metal melt production or if your large foundry becomes a small foundry due to a decrease in production.

Size Classification of Foundries

Size	Existing[1]	New[2]
Small	≤ 20,000	≤ 10, 000
Large	> 20,000	>10,0000

[1]Annual metal melting production in tons

[2]Annual metal melting capacity in tons

SMALL FOUNDRY REQUIREMENTS

Small foundries must comply with pollution prevention management requirements to keep contaminants and mercury out of the scrap and prohibits methanol in certain binder formulations. There are also notification, recordkeeping, and reporting requirements that apply.

POLLUTION PREVENTION MANAGEMENT REQUIREMENTS (§63.10885 AND §63.10886)

METALLIC SCRAP MANAGEMENT PROGRAM

Foundries may have certain scrap subject to one option and other scrap subject to the other option if the scrap remains segregated until charge make-up. Small foundries must comply with one of the options listed below.

1. Prepare and operate by written material specifications for the purchase and use of only materials that do not include post-consumer automotive body scrap, engine blocks, oil filters, oily turnings, lead components, chlorinated plastics, or free liquids (except for water that resulted from exposure to rain). Any post-consumer engine blocks, post-consumer oil filters, or oily turnings that are processed and/or cleaned to the extent practicable such that the materials do not include lead components, mercury switches, chlorinated plastics, or free organic liquids can be included in this certification.

2. Prepare and operate by written material specifications for the purchase and use of only iron and steel scrap that has been depleted (to the extent practicable) of organics and HAP metals in the charge materials used by the foundry. The scrap must be depleted of used oil filters, chlorinated plastic parts, accessible lead-containing components (such as batteries and lead weights), and a program to ensure the scrap materials are drained of free liquids. If using a cupola metal melting furnace that is equipped with an afterburner, then used oil filters are allowed in the scrap.

MERCURY REQUIREMENTS

Comply with one of the following options for each scrap provider, contract, or shipment. You may have one scrap provider, contract, or shipment subject to one option and others subject to other options.

1. Prepare, submit for approval, and implement a detailed site-specific plan for the removal of mercury containing switches from motor vehicle scrap.
2. Certify your participation in and purchase of motor vehicle scrap only from scrap providers who participate in the National Mercury Switch Recovery Program (NMSRP) for the removal of mercury containing switches.
3. Certify that the only materials from motor vehicles in the scrap are those recovered for their specialty alloy content (such as chromium, nickel, molybdenum, or other alloys) and that the type of scrap is not reasonably expected to contain mercury switches.
4. Certify that the scrap does not contain motor vehicle scrap.

BINDER FORMULATION

Do not use a binder chemical formulation containing methanol as a specific ingredient of the catalyst formulation for a furfuryl alcohol warm box mold or core making line. This does not apply to the resin portion of the binder system.

Compliance Dates:

All existing sources were required to comply with the Metallic Scrap Management Program and Binder Formulation by January 2, 2009, and with the Mercury Requirements by January 4, 2010.

New sources must be in in compliance with all of the above requirements as of January 2, 2008, or upon startup if startup occurred after January 2, 2008.

INITIAL NOTIFICATION/COMPLIANCE STATUS REQUIREMENTS (§63.10885 AND §63.10886)

The Rule requires: 1) an initial notification identifying basic information about the facility, 2) a notification of size classification, and 3) notification of compliance status. Forms and instructions are available for use to comply with the above notification requirements. Visit Michigan.gov/Air, choose "Compliance", then choose "National Emission Standards for Hazardous Air Pollutants (NESHAP): Iron and Steel Foundry Area Sources."

COMPLIANCE DATES:

Type of Notification and Due Dates

Area Source Type	Initial Notification	Notification of Size Classification	Compliance Status: Metallic Scrap and Binder Formulations	Compliance Status: Mercury Switch Removal
Existing	May 1, 2008	January 2, 2009	February 1, 2009	February 3, 2010
New	May 1, 2008, or not later than 120 days after startup.	Not later than 120 days after startup.	February 1, 2008, or not later than 30 days after startup, whichever is later.	February 1, 2008, or not later than 30 days after startup, whichever is later.

RECORDKEEPING REQUIREMENTS (§63.10890)

Small iron and steel foundries need to maintain the following records:

- Records supporting your initial notification and notification of compliance status.
- Records of your written material specifications for your Metallic Scrap Management Program and records demonstrating compliance with your Metallic Scrap Management Program and Mercury Requirements.
- For site-specific plans for mercury, records must be kept for the number of mercury switches removed or weight of mercury recovered from switches, vehicles processed, and percent of mercury switches recovered.
- For the National Mercury Switch Recovery Program option, records must be kept and maintained identifying each scrap provider and documenting their participation in a U.S. EPA- approved mercury program. If the facility purchases scrap from a broker, records must be retained identifying each broker and documenting that the scrap provided by the broker was obtained from scrap providers participating in an approved program.
- Records to document the use of binder chemical formulation that does not contain methanol.
- Records of the annual quantity and composition of each HAP-containing chemical binder or coating material used to make molds or cores.
- Records of metal melt production for each calendar year.

Compliance Dates:

All existing sources were required to begin keeping records by January 2, 2009, to verify compliance with the Metallic Scrap Management Program and Binder Formulation, and by January 4, 2010, to verify compliance with the Mercury Requirements.

New foundries were required to keep the above records as of January 2, 2008, or upon startup if startup occurred after January 2, 2008.

Records (either in a printed or electronic format) must be maintained for at least five years after the date of each record. At a minimum, the most recent two years of data need to be kept on site.

REPORTING REQUIREMENTS (§63.10890)

In accordance with the September 10, 2020 technology review, beginning on March 9, 2021, you must submit all subsequent compliance, notification, and semiannual reports to the U.S. EPA via the Compliance and Emissions Data Reporting Interface (CEDRI). You must also submit semiannual compliance reports to the appropriate EGLE, Air Quality Division District Office. Send the form to the attention of the "AQD District Supervisor."

The report must identify any deviation from the Pollution Prevention Management Practices and the corrective action taken. If you are complying with the site-specific plan for mercury switch removal, you must submit the number of mercury switches removed or the weight of mercury recovered from the switches, vehicles processed, and percent of mercury switches recovered.

COMPLIANCE DATES:

New and Existing foundries must submit semiannual compliance reports. The compliance reports must be submitted by the 30th day following the end of each calendar half (July 31 or January 31).

LARGE FOUNDRY REQUIREMENTS

In addition to complying with the Pollution Prevention Management Requirements small foundries are subject to, large foundries must also comply with particulate matter (PM) or total metal HAP emission limits and opacity standards.

STANDARDS AND MANAGEMENT PRACTICES (§63.10895)

Existing or new large foundries must comply with one or more of the standards and management practices below:

- Large foundries must comply with the same Metallic Scrap Management Program, Mercury Requirements and Binder Formulation applicable to small foundries.
- Existing and new large foundries must install, operate, and maintain a capture and collection system for each metal melting furnace. The Rule does allow for uncontrolled furnaces if part of an emissions averaging group.
- Existing sources must meet a particulate matter (PM) emission limit of 0.8 pounds of PM per ton of metal charged or 0.06 pounds of total metal HAP per ton of metal charged for each metal melting furnace or group of metal melting furnaces.
- New sources must meet a PM limit of 0.1 pounds of PM per ton of metal charged or 0.008 pounds of total metal HAP per ton of metal charged. Total metal HAP means the sum of the concentrations of antimony, arsenic, beryllium, cadmium, chromium, cobalt, lead, manganese, mercury, nickel, and selenium.

- For new sources operating wet scrubbers as their collection system, the 3-hour average pressure drop, and scrubber water flow rate must be maintained at or above the minimum levels established during the performance test. For new sources operating electrostatic precipitators, the voltage and secondary current to the control device must be at or above the level established during the performance test.
- For both existing and new sources, maintain the opacity of fugitive emissions from foundry operations to no greater than 20 percent (except for one 6-minute average per hour up to 30 percent). Please note that R 336.1301(1)(a) (Rule 301(1)(a) of the Michigan Air Pollution Control Rules only allows one 6-minute average per hour of not more than 27% opacity.

COMPLIANCE DATES:

All existing large foundries needed to comply with the Metallic Scrap Management Program and Binder Formulation by January 2, 2009, and with the Mercury Requirements by January 4, 2010. Existing large foundries had until January 2, 2011, to comply with all of the other standards and practices listed above.

New large foundries had to be in compliance with all of the above requirements by January 2, 2008 or upon startup, whichever is later.

OPERATION AND MAINTENANCE (§63.10880)

Large sources must prepare a written operation and maintenance (O&M) plan and operate at all times according to the plan. For a furnace subject to a PM, total metal HAP, or opacity emissions limit, the O&M plan must be followed for each associated control device for a furnace subject to a PM, total metal HAP, or opacity emission limit. A copy of the O&M plan must be maintained at the foundry and made available for review upon request. For a list of what should be contained in the O&M plan, refer to §63.10896 (a)(1) through (5).

COMPLIANCE DATES:

Existing large foundries had until January 2, 2011, to comply. New large foundries had to be in compliance with the above requirements by January 2, 2008, or upon startup, if startup occurs after January 2, 2008.

MONITORING (§63.10897)

Existing sources must make initial and subsequent periodic visual inspections of each PM control device for each metal melting furnace. A new source must monitor control devices with a continuous parameter monitoring system (CPMS) for a wet scrubber or electrostatic precipitators and a bag leak detection system for each negative or positive pressure baghouse. If an exceedance of the emission limitations occurs, respond by taking all corrective actions necessary to restore the control device and/or furnace to its normal operations. Document when the

correction actions were taken. For details of monitoring requirements, including compliance dates, refer to §63.10897.

PERFORMANCE TESTING (§63.10897)

Particulate Matter/Total Metal HAP: Only large foundries are required to perform initial performance testing to show compliance with particulate matter or total metal HAP emission limits from metal melting furnaces. A facility has the option to submit the results of a prior performance test for PM or total metal HAPs if it was conducted within the past five years using the procedures specified in the Rule and approved by the Michigan Department of Environment, Great Lakes, and Energy (EGLE), Air Quality Division.

Subsequent performance testing to demonstrate compliance with the PM or total metal HAP emission limits for metal melting furnaces is required every five years or when an operating limit or process change is made that will likely increase HAP emissions.

COMPLIANCE DATES:

If performance testing must be conducted, it must initially be conducted within 180 days of the compliance date for both an existing and new source. For an existing source, the compliance date was two years after the date of initial notification of size classification (January 2, 2009); therefore, performance testing was required to be conducted by July 1, 2011. For new sources, the compliance date was July 1, 2008, or 180 days after startup.

Opacity: Opacity testing for fugitive emissions from foundry operations must be conducted at a frequency not less than every 6 months. As an alternative to Method 9 performance testing, a foundry may conduct visible emissions (VE) testing by Method 22 (40 CFR Part 60, Appendix A–7). The test is successful if no visible emissions are observed for 90 percent of the readings over 1 hour. If VE is observed greater than 10 percent of the time over one hour, then the facility must conduct another performance test [using Method 9 (40 CFR Part 60, Appendix A–4)] as soon as possible, but no later than 15 calendar days after the Method 22 test. For details regarding performance testing, refer to §63.10898.

INITIAL NOTIFICATION/COMPLIANCE STATUS REQUIREMENTS

The Rule requires:

1) an initial notification identifying basic information about the facility,
2) a notification of size classification,
3) notification of compliance status, and
4) various notifications pertaining to performance tests.

A form and instructions to help you comply with the above notification requirements is available on the Air Quality Division web page, National Emission Standards for Hazardous Air Pollutants (NESHAP): Iron and Steel Foundry Area Sources at Michigan.gov/Air | Compliance.

Type of Notification and Due Dates

Notification	Existing Sources	New Sources
Initial Notification	May 1, 2008	May 1, 2008, or not later than 120 days after startup if startup occurred after January 2, 2008.
Notification of Size Classification	January 2, 2009	Not later than 120 days after startup.
Compliance Status: Metallic Scrap Management and Binder Formulation	February 1, 2009	February 1, 2008, or not later than 30 days after startup if startup occurred after January 2, 2008.
Compliance Status: Mercury Switch Removal	February 3, 2010	February 1, 2008, or not later than 30 days after startup, if startup occurred after January 2, 2008.
Notification of intent to use previous test data instead of conducting new performance test	March 3, 2011	Not applicable to new sources.
Notification of Opacity Test	May 1, 2011	May 1, 2008 or 60 days prior to conducting the test, whichever is later.
Notification of PM/total metal HAP Performance Test	May 1, 2011	May 1, 2008 or 60 days prior to conducting the test, whichever is later.
Conduct Performance Test	July 1, 2011	July 1, 2008 or 180 days after startup, if startup occurred after January 2, 2008.
Notification of compliance status for emission limits, capture and collection system, O&M plan, and bag leak detection system monitoring plan (if applicable).	July 31, 2011 (i.e., no later than 30 days after initial tests if only an opacity test is conducted and no new PM or total metal HAP test is conducted) or August 30, 2011 (i.e., no later than 60 days after the initial test if a new PM or total metal HAP test is conducted).	August 30, 2008 or 60 days after the initial test, whichever is later.

RECORDKEEPING REQUIREMENTS (§63.10899)

Large foundries must keep records of capture system and control device inspections and maintenance, pounds per ton emissions rate for emission averaging groups, records for bag leak detection systems, and conformance with specifications for monitoring systems. For details regarding recordkeeping requirements, refer to §63.10899.

REPORTING REQUIREMENTS (§63.10899)

In accordance with the September 10, 2020 technology review, beginning on March 9, 2021, you must submit all subsequent compliance, notification, and semiannual reports to the U.S. EPA via the Compliance and Emissions Data Reporting Interface (CEDRI). You must also submit semiannual compliance reports to the appropriate EGLE, Air Quality Division District Office.

COMPLIANCE DATES:

New and Existing foundries must submit semiannual compliance reports. The compliance reports must be delivered or postmarked by the 30th day following the end of each calendar half. (July 31 or January 31).

WHERE TO GO FOR HELP

For additional information, forms and instructions, visit the AQD web page, National Emission Standards for Hazardous Air Pollutants (NESHAP): Iron and Steel Foundry Area Sources at www.Michigan.gov/Air | Compliance.

If you have any questions regarding this regulation, please contact:

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