

Ferroalloy Production



Final Rule: Mandatory Reporting of Greenhouse Gases

Under the Mandatory Reporting of Greenhouse Gases (GHGs) rule, owners or operators of facilities that contain ferroalloy production processes (as defined below) and that emit 25,000 metric tons or more of GHGs per year (expressed as carbon dioxide equivalents) from ferroalloy production processes, stationary combustion, miscellaneous use of carbonates, and other source categories (see information sheet on General Provisions) must report emissions from ferroalloy production processes and any other source categories located at the facility for which emission calculation methods are defined in the rule. Owners or operators are required to collect emission data; calculate GHG emissions; and follow the specified procedures for quality assurance, missing data, recordkeeping, and reporting.

How Is This Source Category Defined?

The ferroalloy production source category consists of any facility that uses pyrometallurgical techniques to produce any of the following metals: ferrochromium, ferromanganese, ferromolybdenum, ferronickel, ferrosilicon, ferrotitanium, ferrotungsten, ferrovanadium, silicomanganese, or silicon metal.

What GHGs Must Be Reported?

Ferroalloy production facilities must report the following emissions:

- Process carbon dioxide (CO₂) emissions from each electric arc furnace (EAF) used for any ferroalloy production listed in the source category definition.
- Process methane (CH₄) emissions from each EAF used for the production of silicon metal, ferrosilicon 65 percent, ferrosilicon 75 percent, or ferrosilicon 90 percent.
- CO₂, nitrous oxide (N₂O), and CH₄ emissions from each stationary combustion unit on site under 40 CFR part 98, subpart C (General Stationary Fuel Combustion Sources).

In addition, each facility must report GHG emissions for any other source categories for which calculation methods are provided in other subparts of the rule. Please refer to the relevant information sheet for a summary of the requirements for calculating and reporting emissions from other source categories.

How Must GHG Emissions Be Calculated?

For CO₂ emissions from each EAF, use one of two methods, as appropriate:

- EAFs with certain types of continuous emission monitoring systems (CEMS) in place must report using the CEMS and following the Tier 4 methodology of 40 CFR part 98, subpart C to report CO₂ process emissions from the EAF.
- For other affected EAFs, the reporter can elect to use either of two methods:
 - Install and operate a CEMS to measure CO₂ emissions according to requirements specified in 40 CFR part 98, subpart C.
 - Calculate annual CO₂ emissions using a mass balance equation that includes measurements of the mass and carbon content of each carbon containing input (ore, carbon electrodes, flux, and reducing agents) and output material (product and nonproduct materials) for each EAF. For carbon content, use data provided by the material supplier or by annual analyses of three representative samples of each material.

For mass of each material, either measure directly or calculate using process information. Exclude any materials that contribute less than 1 percent of the total carbon into the process.

- If CO₂ process emissions from an EAF are emitted through the same stack as CO₂ emissions from a combustion unit or process equipment that uses a CEMS and follows Tier 4 methodology to report CO₂ emissions, then the CEMS must be used to measure and report combined emissions from that stack, instead of using the carbon mass balance calculation procedure.

For each EAF, the annual CH₄ process emissions from the production of silicon metal, ferrosilicon 65 percent, ferrosilicon 75 percent, or ferrosilicon 90 percent must be estimated using the annual mass of alloy produced and the default CH₄ emission factors provided in Table K-1 in the rule.

A checklist for data that must be monitored is available at:

www.epa.gov/climatechange/emissions/downloads/checklists/ferroalloyproduction.pdf.

When Must Reports be Submitted?

The submission date for the annual GHG report can vary in the first 3 years of the program.

- Reporting Year 2010. The report was required to be submitted by September 30, 2011.
- Reporting Year 2011. The due date depends on which source categories are included in the report. If the report includes one or more of the source categories listed below, then the report must be submitted by September 28, 2012. This reporting deadline applies to all subparts being reported by the facility. In addition, if the facility contains one or more of these source categories and the facility submitted a GHG annual report for reporting year 2010 under another subpart (e.g., subpart C for general stationary fuel combustion), then by April 2, 2012 you must notify EPA through e-GGRT that you are not required to submit the second annual report until September 28, 2012 (the notification deadline according to 4 CFR 98.3(b) is March 31, 2012, however, because this date falls on a Saturday in 2012, the notification is due on the next business day).
 - Electronics Manufacturing (subpart I)
 - Fluorinated Gas Production (subpart L)
 - Magnesium Production (subpart T)
 - Petroleum and Natural Gas Systems (subpart W)
 - Use of Electric Transmission and Distribution Equipment (subpart DD)
 - Underground Coal Mines (subpart FF)
 - Industrial Wastewater Treatment (subpart II)
 - Geologic Sequestration of Carbon Dioxide (subpart RR)
 - Manufacture of Electric Transmission and Distribution (subpart SS)
 - Industrial Waste Landfills (subpart TT)
 - Injection of Carbon Dioxide (subpart UU)
 - Imports and Exports of Equipment Pre-charged with Fluorinated GHGs or Containing Fluorinated GHGs in Closed-cell Foams (subpart QQ)

If the report contains none of the source categories listed above, then the report must be submitted by April 2, 2012 (the deadline is March 31, 2012, however, because this date falls on a Saturday, the annual report is due on the next business day).

- Reporting Year 2012. Starting in 2013 and each year thereafter, the report must be submitted by March 31 of each year, unless the 31st is a Saturday, Sunday, or federal holiday, in which case the reports are due on the next business day.

What Information Must Be Reported?

In addition to the information required by the General Provisions at 40 CFR 98.3(c), the rule requires each ferroalloy production facility to report the following information for each EAF (unless otherwise noted):

- Annual facility ferroalloy product production capacity (tons).
- Annual production for each ferroalloy product (tons), as applicable.
- Total number of EAFs at facility used for production of ferroalloy products.
- Annual CO₂ emissions (metric tons) from production of any ferroalloy product listed in Table K-1.
- Annual CH₄ emissions (metric tons) from production of any ferroalloy product listed in Table K-1.
- Identification number.

If a CEMS is used to measure CO₂ emissions, then the relevant information required under 40 CFR part 98, subpart C for sources using a CEMS to measure CO₂ emissions must be reported.

If a CEMS is not used to measure CO₂ process emissions, and the carbon mass balance procedure is used to determine CO₂ emissions, then the following information must also be reported for each EAF:

- Annual material quantity for each material included for the calculation of annual process CO₂ emissions.
- Annual average of the carbon content determinations for each material included for the calculation of annual process CO₂ emissions.
- Method used to determine carbon content for each material.
- How missing data values, if any, were determined for mass of carbon containing inputs and outputs.

EPA has temporarily deferred the requirement to report data elements in the above list that are used as inputs to emission equations (76 FR 53057, August 25, 2011). For the current status of reporting requirements, including the list of data elements that are considered to be inputs to emissions equations, consult the following link: <http://www.epa.gov/climatechange/emissions/CBI.html>

For More Information

This document is provided solely for informational purposes. It does not provide legal advice, have legally binding effect, or expressly or implicitly create, expand, or limit any legal rights, obligations, responsibilities, expectations, or benefits in regard to any person. The series of information sheets is intended to assist reporting facilities/owners in understanding key provisions of the final rule.

Visit EPA's Web site (www.epa.gov/climatechange/emissions/ghgrulemaking.html) for more information, including the final preamble and rule, additional information sheets on specific industries, the schedule for training sessions, and other documents and tools. For questions that cannot be answered through the Web site, please contact us at: GHGreporting@epa.gov.