

Ferroalloy Production

Subpart K, Greenhouse Gas Reporting Program

OVERVIEW

Subpart K of the Greenhouse Gas Reporting Program (GHGRP) (40 CFR 98.110 – 98.118) applies to any facility that produces ferroalloys and that meets the Subpart K source category definition. Some subparts have thresholds that determine applicability for reporting, and some do not. To decide whether your facility must report under this subpart, please refer to 40 CFR 98.111 and the GHGRP [Applicability Tool](#).

This Information Sheet is intended to help facilities reporting under Subpart K understand how the source category is defined, what greenhouse gases (GHGs) must be reported, how GHG emissions must be calculated and shared with EPA, and where to find more information.



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 (FeCr), ferromanganese (FeMn), ferromolybdenum (FeMo), ferronickel (FeNi), ferrosilicon (FeSi), ferrotitanium (FeTi), ferrotungsten (FeW), ferrovanadium (FeV), silicomanganese (C₅H₆MnSi), or silicon (Si) 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 Si metal, FeSi 65%, FeSi 75%, or FeSi 90%.
- CO₂, nitrous oxide (N₂O), and CH₄ emissions from each stationary combustion unit on site under Subpart C (General Stationary Fuel Combustion Sources) found at 40 CFR 98.30 – 98.38.

If multiple Greenhouse Gas Reporting Program (GHGRP) source categories are co-located at a facility, the facility may need to report greenhouse gas (GHG) emissions under a different subpart. Please refer to the relevant Information Sheet for a summary of the rule requirements for any other source categories located at the facility.



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 Calculation Methodology of Subpart C (40 CFR 98.30 – 98.38) 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 Subpart C (40 CFR 98.30 – 98.38).
 - Calculate annual CO₂ emissions using a mass balance equation that includes measurements of the mass and carbon (C) content of each C-containing input (ore, C electrodes, flux, and reducing agents) and output material (product and nonproduct materials) for each EAF. For C 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% of the total C 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 Calculation Methodology to report CO₂ emissions, then the CEMS must be used to measure and report combined emissions from that stack, instead of using the C mass balance calculation procedure.
- For each EAF, the annual CH₄ process emissions from the production of Si metal, FeSi 65%, FeSi 75%, or FeSi 90% must be estimated using the annual mass of alloy produced and the default CH₄ emission factors (EFs) provided in Table K-1 in the rule.

A checklist for data that must be monitored is available here: [Subpart K Monitoring Checklist](#).



What Information Must Be Reported?

In addition to the information required by the General Provisions in Subpart A, found at 40 CFR 98.3(c), the following must be reported:

- 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 Subpart C (40 CFR 98.30 – 98.38) 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 C mass balance procedure is used to determine CO₂ emissions, then the following information must also be reported for each EAF:

- Method used to determine C content for each material.
- How missing data values, if any, were determined for mass of C-containing inputs and outputs.



What Records Must Be Maintained?

Reporters are required to retain records that pertain to their annual GHGRP as described at 40 CFR 98.3(g). Please see the [Subpart A Information Sheet](#) and 40 CFR 98.3(g) for general recordkeeping requirements. Specific recordkeeping requirements for Subpart K are listed at 40 CFR 98.117.



When and How Must Reports be Submitted?

Reporters must submit their annual GHGRP reports for the previous calendar year to the EPA by March 31st, unless the 31st falls on a Saturday, Sunday, or federal holiday, in which case reports are due on the next business day. Annual reports must be submitted electronically using the [electronic Greenhouse Gas Reporting Tool \(e-GGRT\)](#), the GHGRP's online reporting system.

Additional information on setting up user accounts, registering a facility, and submitting annual reports is available on the [GHGRP Help webpage](#).



When Can a Facility Stop Reporting?

A facility may discontinue reporting under several scenarios, which are summarized in Subpart A (found at 40 CFR 98.2(i)) and the [Subpart A Information Sheet](#).



For More Information

For additional information on Subpart K, please visit the [Subpart K webpage](#). For additional information on the GHGRP, please visit the [GHGRP website](#), which includes additional information sheets, [data](#) previously reported to the GHGRP, [training materials](#), and links to Frequently Asked Questions ([FAQs](#)). For questions that cannot be answered through the GHGRP website, please contact us at: GHGreporting@epa.gov.

This Information Sheet is provided solely for informational purposes. It does not replace the need to read and comply with the regulatory text contained in the rule. Rather, it is intended to help reporting facilities and suppliers understand key provisions of the GHGRP. It does not provide legal advice; have a legally binding effect; or expressly or implicitly create, expand, or limit any legal rights, obligations, responsibilities, expectations, or benefits with regard to any person or entity.