

Magnesium Production



Greenhouse Gas Reporting Program

Under the Greenhouse Gas Reporting Program (GHGRP), owners or operators of facilities that contain magnesium production processes must report emissions from use of cover or carrier gases as well as for all other source categories located at the facility for which methods are defined in the rule. Owners or operators are required to collect emission data, calculate greenhouse gas (GHG) emissions and follow the specified procedures for quality assurance, missing data, recordkeeping, and reporting.

How Is This Source Category Defined?

Magnesium production and processing facilities are defined as any site where magnesium metal is produced through smelting (including electrolytic smelting), refining, or remelting operations, or any site where molten magnesium is used in alloying, casting, drawing, extruding, forming, or rolling operations.

What GHGs Must Be Reported?

Each facility must report total annual emissions for each of the following cover or carrier gases used in magnesium production or processing:

- Sulfur hexafluoride (SF₆)
- HFC-134a
- The fluorinated ketone FK 5-1-12
- Carbon dioxide (CO₂)
- Any other fluorinated GHG as defined in 40 CFR part 98, subpart A (General Provisions) of the rule

In addition, each facility must report GHG emissions for other source categories for which calculation methods are provided in the rule, as applicable. For example, facilities would report CO₂, nitrous oxide (N₂O), and methane (CH₄) emissions from each stationary combustion unit on site by following the requirements of 40 CFR part 98, subpart C (General Stationary Fuel Combustion Sources). Please refer to the relevant information sheet for a summary of the requirements for calculating and reporting emissions from any other source categories at the facility.

How Must GHG Emissions Be Calculated?

Owners or operators of magnesium production facilities must calculate emissions of each gas by monitoring the annual consumption of cover gases and carrier gases using one of three methods:

- Using a mass-balance approach that takes into account the following:
 - Decrease in Inventory: The decrease in inventory of cover or carrier gases stored in containers from the beginning to the end of the year.
 - Acquisitions: The amount of cover or carrier gas acquired through purchases or other transactions.
 - Disbursements: The amount of cover or carrier gases disbursed to sources and locations outside the facility through sales or other transactions.
- Monitoring the changes in the masses of individual containers or cylinders as the gases are used.

- Monitoring the flow of pure cover gas and carrier gas into the cover gas distribution system using mass flow controllers (MFC).

When Does Reporting Begin?

Facilities subject to subpart T must begin monitoring GHG emissions on January 1, 2011 in accordance with the methods specified in subpart T. For 2012 only, the GHG report must be submitted to EPA by September 28, 2012. This reporting deadline applies to all subparts being reported by the facility. If your subpart T 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).

Starting in 2013 and each year thereafter, reports must be submitted to EPA 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), each annual report must include the following information:

- Total facility emissions of each GHG in metric tons.
- Type of production process (e.g., primary, secondary, die casting).
- Amount of magnesium processed in metric tons for each process type (e.g., metal input to a casting process).
- Cover gas flow rate and composition (e.g., standard cubic feet per minute).
- For any missing data, report the length of time the data were missing, the method used to estimate emissions in their absence, and the quantity of emissions thereby estimated.
- Overall cover gas usage rate for the facility for the reporting year (e.g., 1 kg of SF₆ /metric ton of Mg).
- If applicable, an explanation of any change greater than 30 percent in facility cover gas usage rate (e.g., installation of new melt protection technology or leak discovered in the cover gas delivery system that resulted in increased consumption).
- A description of any new melt protection technologies adopted to account for reduced or increased emissions from the previous year.

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 all rulemakings related to the Greenhouse Gas Reporting Program, 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: ghgmrr@epa.gov.