

Magnesium Production



Subpart T, 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 and carrier gases as well as for all other source categories located at the facility for which methods are defined in the rule. Owners and 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 per the requirements of 40 CFR Part 98 Subpart T – Magnesium Production.

How Is This Source Category Defined?

The magnesium production source category is defined as consisting of any process where magnesium metal is produced through smelting (including electrolytic smelting), refining, or remelting operations (including primary production facilities that extract magnesium from its ore and secondary production facilities that recover magnesium from scrap), or any process where molten magnesium is used in alloying, casting, drawing, extruding, forming, or rolling operations.

Who Must Report?

Magnesium production facilities that emit more than 25,000 metric tons CO₂e per year.

What Greenhouse Gases Must Be Reported?

Each facility must report total annual emissions for each of the following greenhouse gases used in magnesium production facilities:

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

In addition, the facility must report greenhouse gas emissions for any other source categories for which calculation methods are provided in the rule, as applicable. For example, magnesium production and processing facilities with fossil fuel-fired stationary combustion units must report CO₂, nitrous oxide (N₂O), and methane (CH₄) emissions from stationary combustion units 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 greenhouse gas emissions from any other source categories at the facility.

How Must Greenhouse Gas Emissions Be Calculated?

For magnesium production facilities, the annual emissions of each GHG are equal to the amount of that GHG used as a cover or carrier gas in magnesium smelting, refining and casting processes. Owners or operators of magnesium production facilities must monitor the annual consumption of each GHG used as a cover or carrier gas using one of three methods:

- Maintaining inventory records, including:

- *Acquisitions*: The amount of each cover and carrier gas acquired through purchases or other transactions.
- *Disbursements*: The amount of each cover and carrier gas disbursed to sources and locations outside the facility through sales or other transactions (e.g., returning used gas cylinders to the gas distributor).
- *Inventory Assessments*: The change in inventory of each stored cover and carrier gas based on inventory reviews conducted at the beginning and end of each reporting year.
- 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).

A checklist for data that must be monitored is available at: <https://www.epa.gov/ghgreporting/subpart-t-checklist>

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 produced in each primary and secondary production process (in metric tons).
- Magnesium throughput for each magnesium melting and casting process (in metric tons).
- Cover gas flow rate for each production process (in standard cubic feet per minute).
- Cover gas composition for each production process (in percent by volume).
- For any missing monitoring data, the length of time the data were missing, the method used to estimate emissions and the quantity of emissions estimated.
- Overall cover gas usage rate for the facility for the reporting year (in kg of GHG/metric ton of magnesium).
- An explanation of any change in the facility cover gas usage rate greater than 30 percent compared with the prior reporting year (e.g., installation of new melt protection technology reduced the cover gas usage rate by X% or leak discovered in the cover gas delivery system that resulted in increased consumption).
- A description of any new melt protection technologies adopted that account for changes in emissions from the previous year.

When and How Must Reports Be Submitted?

Annual reports 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. 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 at <https://ccdsupport.com/confluence/>.

When Can a Facility Stop Reporting?

There are several scenarios under which a facility may discontinue reporting. These scenarios are summarized in the [Subpart A Information Sheet](#) as well as in an [FAQ](#).

For More Information

For additional information on Subpart T, visit the [Subpart T Resources](#) webpage. For additional information on the Greenhouse Gas Reporting Program, visit the [Greenhouse Gas Reporting Program Website](#), which includes information sheets on other rule subparts, [data](#) previously reported to the Greenhouse Gas Reporting Program, [training materials](#), and links to [frequently asked questions](#).

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 Greenhouse Gas Reporting Program.