

Ammonia Manufacturing



Final Rule: Mandatory Reporting of Greenhouse Gases

Under the Mandatory Reporting of Greenhouse Gases (GHGs) rule, owners or operators of facilities that manufacture ammonia (as defined below) must report emissions from ammonia manufacturing processes and 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 GHG emissions; and follow the specified procedures for quality assurance, missing data, recordkeeping, and reporting.

How Is This Source Category Defined?

The ammonia manufacturing source category consists of process units in which ammonia is produced either by steam reforming or gasification of a hydrocarbon feedstock.

What GHGs Must Be Reported?

Ammonia manufacturing facilities must report the following emissions:

- Carbon dioxide (CO₂) process emissions from each ammonia manufacturing unit.
- CO₂, methane (CH₄), and nitrous oxide (N₂O) emissions from each stationary combustion unit. Report these emissions under 40 CFR 98, subpart C (General Stationary Fuel Combustion Sources) by following the requirements of subpart C.
- CO₂ emissions collected and either used on site or transferred off site, following the requirements of 40 CFR part 98, subpart PP (Suppliers of Carbon Dioxide).

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.

How Must GHG Emissions Be Calculated?

Calculate and report process CO₂ emissions from each ammonia manufacturing process unit by using one of two methods:

- Installing and operating a continuous emission monitoring system (CEMS) to measure combined process and combustion CO₂ emissions according to the requirements specified in 40 CFR part 98, subpart C.
- Calculating CO₂ process emissions using the equations provided in the rule for solid, liquid, and gaseous feedstocks and the following measurements:
 - Continuous measurement of gaseous or liquid feedstock consumed (using a flow meter).
 - Monthly aggregate of solid feedstock consumed (using company records).
 - Carbon content and average molecular weight of each feedstock consumed (using reports from your supplier).

However, if process CO₂ emissions from an ammonia manufacturing process unit 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 in subpart C to report CO₂ emissions, then the CEMS must be used to measure and report combined emissions from that stack, instead of using the calculation procedures described above.

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

www.epa.gov/climatechange/emissions/downloads/checklists/ammoniamanufacturing.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), owners or operators of ammonia manufacturing facilities must report the following information:

If a CEMS is used to measure CO₂ emissions, report under this subpart the relevant information required by 40 CFR part 98, subpart C for the Tier 4 Calculation Methodology and the following information:

- Annual quantity of each type of feedstock consumed for ammonia manufacturing (standard cubic feet [scf] of feedstock or gallons of feedstock or kilograms [kg] of feedstock).
- Method used for determining quantity of feedstock used.
- Total pounds of synthetic fertilizer produced and total nitrogen contained in that fertilizer.

If a CEMS is not used to measure emissions, report the following information for each unit:

- Annual CO₂ process emissions (metric tons).
- Monthly quantity of each type of feedstock consumed for ammonia manufacturing (scf of feedstock or gallons of feedstock or kg of feedstock).
- Method used for determining quantity of monthly feedstock used.
- Whether monthly carbon content for each feedstock is based on reports from the supplier or analysis of carbon content.
- If monthly carbon content of feedstock is based on analysis, the test method used.
- Sampling analysis results of carbon content of petroleum coke as determined for QA/QC of supplier data under 98.74(e).
- If a facility uses gaseous feedstock:
 - Carbon content of the gaseous feedstock, for month n (kg C per kg of feedstock).
 - Molecular weight of the gaseous feedstock (kg/kg-mole).
 - Molar volume conversion factor of the gaseous feedstock (scf per kg-mole).
- If a facility uses liquid feedstock, the monthly carbon content of the liquid feedstock (kg C per gallon of feedstock).
- If a facility uses solid feedstock, the monthly carbon content of the feedstock (kg C per kg of feedstock).
- Annual CO₂ emissions associated with the waste recycle stream for each ammonia process unit (metric tons).
- Carbon content of the waste recycle stream for each month (kg C per kg of waste recycle stream).
- Volume of the waste recycle stream for each month (scf).
- Method used for analyzing carbon content of waste recycle stream.
- Annual urea production (metric tons) and method used to determine urea production.
- Uses of urea produced, if known.
- Total pounds of synthetic fertilizer produced and total nitrogen contained in that fertilizer.

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.