Soda Ash Manufacturing

Subpart CC, Greenhouse Gas Reporting Program

United States Environmental Protection Agency

Under the Greenhouse Gas Reporting Program (GHGRP), owners or operators of facilities that contain soda ash manufacturing (as defined below) must report emissions from soda ash manufacturing processes and 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 GHG emissions; and follow the specified procedures for quality assurance, missing data, recordkeeping, and reporting per the requirements of 40 CFR 98 Subpart CC – Soda Ash Manufacturing.

How Is This Source Category Defined?

A soda ash manufacturing facility is any facility that produces soda ash by calcining trona, calcining sodium sesquicarbonate, or by using a liquid alkaline feedstock process that directly produces carbon dioxide (CO_2).

In the context of the soda ash manufacturing sector, "calcining" means the thermal/chemical conversion of the bicarbonate fraction of the feedstock to sodium carbonate.

What Greenhouse Gases Must Be Reported?

Soda ash manufacturing facilities must report CO_2 process emissions from each soda ash manufacturing line.

In addition, each facility must report GHG emissions for any other applicable source categories for which calculation methods are provided in other subparts of the rule. For example, facilities must report CO_2, nitrous oxide (N_2O), and methane (CH_4) 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 rule requirements for calculating and reporting emissions from any other applicable source categories located at the facility.

How Must Greenhouse Gas Emissions Be Calculated?

For CO_2 emissions from soda ash manufacturing lines, facilities must use one of the following methods, as appropriate:

- Soda ash manufacturing lines that meet the conditions of § 98.33(b)(4)(ii) or § 98.33(b)(4)(iii) must report using a continuous emission monitoring system (CEMS) and follow the Tier 4 methodology of 40 CFR part 98, subpart C to report combined CO_2 emissions from calcination and fuel combustion.
- For other soda ash manufacturing lines, reporters can elect to use one of the following:
  - Install and operate a CEMS to measure combined process and combustion CO_2 emissions according to the requirements specified in 40 CFR part 98, subpart C.
  - Calculate CO_2 process emissions using one of three alternative methods, as applicable:
    - ***Trona input method.*** Calculate calcination emissions using the following measurements:
      - Monthly mass of trona input.
      - The monthly inorganic carbon in the trona based on weekly composite analysis.

- ***Soda ash output method.*** Calculate calcination emissions using the following measurements:
  - Monthly mass of soda ash produced.
  - The monthly inorganic carbon in the soda ash.
- ***Site-specific emission factor method.*** Can only be used to calculate emissions from the liquid alkaline feedstock process through an annual performance test using:
  - Direct measurements of hourly CO_2 concentration at process vents.
  - Hourly stack gas volumetric flow rate from mine water stripper/evaporate.

A checklist for data that must be monitored is available at: https://www.epa.gov/ghgreporting/monitoring-checklist-subpart-cc-soda-ash-manufacturing.

What Information Must Be Reported?

In addition to the information required by the General Provisions at 40 CFR 98.3(c), each facility must report the following information:

If a CEMS is used to measure CO_2 emissions, then under this subpart the relevant information required for the CEMS by subpart C (General Stationary Fuel Combustion Sources) and the following information for each manufacturing line must be reported:

- Line identification number.
- Annual consumption of trona or liquid alkaline feedstock (metric tons).
- Annual production of soda ash (tons).
- Annual production capacity of soda ash (tons).

If a CEMS is not used to measure emissions, then the following information must be reported for each manufacturing line:

- Line identification number.
- Annual process CO_2 emissions (metric tons).
- Annual soda ash production (tons).
- Annual soda ash production capacity (tons).
- Method used to calculate CO_2 emissions for each manufacturing line (trona input method, soda ash output method, or site-specific emission factor method).
- Number of manufacturing lines used to produce soda ash.
- If producing soda ash using the liquid alkaline feedstock process and using the site-specific emission factor method, report the following relevant information:
  - Stack gas volumetric flow rate during performance test (dscfm).
  - Hourly CO_2 concentration during performance test (percent CO_2).
  - CO_2 emission factor (metric tons CO_2/metric tons of process vent flow from mine water stripper/evaporator).
  - CO_2 mass emission rate during performance test (metric tons/hour).
  - Average process vent flow from mine water stripper/evaporator during performance test (pounds/hour).
  - Annual process vent flow rate from mine water stripper/evaporator (thousand pounds/hour).
- Number of times that missing data procedures were used for the following parameters:

- Trona or soda ash (number of months).
- Inorganic carbon contents of trona or soda ash (weeks).
- Process vent flow rate from mine water stripper/evaporator (number of months).

Facilities must enter required data into the electronic Greenhouse Gas Reporting Tool (e-GGRT) to be reported in the annual report, and must also enter into e-GGRT's *Inputs Verifier Tool* (IVT) the inputs to emission equations for which reporting is not required. IVT uses these entered data to calculate the equation results.

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 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 CC, visit the Subpart CC 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.