

# Titanium Dioxide Production



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## Final Rule: Mandatory Reporting of Greenhouse Gases

*Under the Mandatory Reporting of Greenhouse Gases (GHGs) rule, owners or operators of facilities that contain titanium dioxide production processes (as defined below) must report emissions from titanium dioxide production 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 titanium dioxide production source category consists of any facility that uses the chloride process to produce titanium dioxide.

### What GHGs Must Be Reported?

Each titanium dioxide production facility must report carbon dioxide (CO<sub>2</sub>) process emissions from each chloride process line.

In addition, each facility must report GHG emissions for other source categories for which calculation methods are provided in the rule. For example, facilities must report CO<sub>2</sub>, nitrous oxide (N<sub>2</sub>O), and methane (CH<sub>4</sub>) 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 source categories at the facility.

### How Must GHG Emissions Be Calculated?

Reporters must calculate CO<sub>2</sub> process emissions using one of two methods, as appropriate:

- Installing and operating a continuous emission monitoring system (CEMS) according to the requirements specified in 40 CFR part 98, subpart C.
- Calculating the process CO<sub>2</sub> emissions for each process line using monthly measurements of the mass and carbon content of calcined petroleum coke.

However, if process CO<sub>2</sub> emissions from titanium dioxide production are emitted through the same stack as a combustion unit or process equipment that uses a CEMS and follows Tier 4 methodology in subpart C to report CO<sub>2</sub> emissions, then the reporter must use the CEMS to measure and report combined CO<sub>2</sub> emissions from that stack instead of using the calculation procedures in subpart EE (Titanium Dioxide Production).

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

[www.epa.gov/climatechange/emissions/downloads/checklists/titaniumdioxideproduction.pdf](http://www.epa.gov/climatechange/emissions/downloads/checklists/titaniumdioxideproduction.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), each annual report must include the following information for each titanium dioxide production line:

If a CEMS is used to measure emissions, then report under this subpart the relevant information required under 40 CFR, subpart C for the Tier 4 Calculation Methodology and the following information for each process line:

- Identification number of separate chloride process lines.
- Annual consumption of calcined petroleum coke (tons).
- Annual production of titanium dioxide (tons).

- Annual production capacity of titanium dioxide (tons).
- Annual production of carbon-containing waste (tons), if applicable.

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

- Identification number of each process line.
- Annual CO<sub>2</sub> emissions from each chloride process line (metric tons/year).
- Annual consumption of calcined petroleum coke for each process line (tons).
- Annual production of titanium dioxide for each process line (tons).
- Annual production capacity of titanium dioxide for each process line (tons).
- Monthly consumption of calcined petroleum coke for each process line (tons).
- Annual production of carbon-containing waste for each process line (tons), if applicable.
- Monthly production of titanium dioxide for each process line (tons).
- Monthly carbon content factor of petroleum coke from the supplier (percent by weight expressed as a decimal fraction).
- Whether monthly carbon content of the petroleum coke is based on reports from the supplier or through self measurement using applicable American Society for Testing and Materials (ASTM) Standard Test Methods.
- Carbon content for carbon-containing waste (percent by weight expressed as a decimal fraction).
- If carbon content of petroleum coke is based on self measurement, the ASTM Standard Test Methods used.
- Sampling analysis results of carbon content of petroleum coke as determined for QA/QC of supplier data under 98.314(d) (percent by weight expressed as a decimal fraction).
- Number of separate chloride process lines located at the facility.
- The number of times in the reporting year that missing data procedures were followed to measure the carbon content of petroleum coke (number of months); petroleum coke consumption (number of months); carbon-containing waste generated (number of months); and carbon content of the carbon-containing waste (number of times during 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](http://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](mailto:GHGreporting@epa.gov).