

# Silicon Carbide Production

## Subpart BB, Greenhouse Gas Reporting Program

### OVERVIEW

*Subpart BB of the Greenhouse Gas Reporting Program (GHGRP) (40 CFR 98.280 – 98.288) applies to any facility that contains a silicon carbide (SiC) production process and meets the Subpart BB source category definition. Some Subparts have thresholds that determine applicability for reporting, and some do not. To decide whether your facility must report under this subpart, please refer to 40 CFR 98.281 and the GHGRP [Applicability Tool](#).*

*This Information Sheet is intended to help facilities reporting under Subpart BB understand how the source category is defined, what greenhouse gases (GHGs) must be reported, how GHG emissions must be calculated and shared with EPA, and where to find more information.*



### How is This Source Category Defined?

The silicon carbide (SiC) production source category consists of any process that produces SiC for abrasive purposes.



### What GHGs Must Be Reported?

SiC production facilities must report the following emissions:

- Carbon dioxide (CO<sub>2</sub>) process emissions from all SiC process units or furnaces combined.
- CO<sub>2</sub>, nitrous oxide (N<sub>2</sub>O), and CH<sub>4</sub> emissions from each stationary combustion unit on site under Subpart C (General Stationary Fuel Combustion Sources) found at 40 CFR 98.30 – 98.38.

If multiple Greenhouse Gas Reporting Program (GHGRP) source categories are co-located at a facility, the facility may need to report greenhouse gas (GHG) emissions under a different subpart. Please refer to the relevant Information Sheet for a summary of the rule requirements for any other source categories located at the facility.



### How Must GHG Emissions Be Calculated?

SiC production facilities must calculate the combined annual process CO<sub>2</sub> emissions from all SiC process units and production furnaces as follows:

- Calculate CO<sub>2</sub> emissions by operating and maintaining a continuous emissions monitoring system (CEMS) according to the Tier 4 Calculation Methodology specified in 40 CFR 98.33(a)(4) and all associated requirements for Tier 4 in Subpart C; or
- Calculate CO<sub>2</sub> emissions using the measured monthly petroleum coke consumption and a monthly facility-specific emission factor (EF). The facility-specific EF is the carbon (C) content of the petroleum coke adjusted for C in the SiC product. The adjustment factor is provided in the rule. The C content of the petroleum coke may be provided by the supplier or measured by the facility using methods

specified in the rule. If C content data provided by the supplier is used, then an annual analysis must be performed to confirm that the supplier data is accurate.

If the CO<sub>2</sub> process emissions from a SiC production furnace or process unit are vented through the same stack as a combustion unit or other process equipment that reports CO<sub>2</sub> emissions using a CEMS that complies with the Tier 4 Calculation Methodology in Subpart C, then the combined CO<sub>2</sub> stack emissions must be reported according to the Tier 4 Calculation Methodology in Subpart C.

A checklist for data that must be monitored is available here: [Subpart BB Monitoring Checklist](#).



## What Information Must Be Reported?

In addition to the information required by the General Provisions in Subpart A, found at 40 CFR 98.3(c), the following must be reported under the circumstances indicated:

- If a CEMS is used to measure process CO<sub>2</sub> emissions, then under Subpart BB the relevant information required by 40 CFR 98.36 (Subpart C Fuel Combustion Sources) for the Tier 4 Calculation Methodology and the following information must be reported:
  - Annual consumption of petroleum coke (tons).
  - Annual production of SiC (tons).
  - Annual production capacity of SiC (tons).
- If a CEMS is not used to measure process CO<sub>2</sub> emissions, then the following information must be reported:
  - Annual production of SiC (tons).
  - Annual production capacity of SiC (tons).
  - Whether C 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 method.
  - If using supplier C content data, the results of the sampling analysis for quality assurance/quality control (QA/QC) of supplier data (% by weight expressed as a decimal fraction).
  - Number of months for which missing data procedures were followed to measure the C contents of petroleum coke and petroleum coke consumption.
- If CH<sub>4</sub> abatement technology is used at the facility, then the following information must be reported once in an annual report (once reported it is not required again unless the information changes during a reporting year, in which case, the reporter must include any updates in the annual report for the reporting year in which the change occurred):
  - Type of CH<sub>4</sub> abatement technology used on each SiC process unit or production furnace, and date of installation for each.
  - CH<sub>4</sub> destruction efficiency (DE) for each CH<sub>4</sub> abatement technology (% destruction). You must either use the manufacturer's specified DE or the DE determined via a performance test. If you report the DE determined via a performance test, you must also report the test method that was used during the performance test.
  - Percentage of annual operating hours that CH<sub>4</sub> abatement technology was in use for all SiC process units or production furnaces combined.



## What Records Must Be Maintained?

Reporters are required to retain records that pertain to their annual GHGRP as described at 40 CFR 98.3(g). Please see the [Subpart A Information Sheet](#) and 40 CFR 98.3(g) for general recordkeeping requirements. Specific recordkeeping requirements for Subpart BB are listed at 40 CFR 98.287.



## When and How Must Reports Be Submitted?

Reporters must submit their annual GHGRP reports for the previous calendar year to the EPA by March 31<sup>st</sup>, unless the 31<sup>st</sup> falls on a Saturday, Sunday, or federal holiday, in which case 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 on the [GHGRP Help webpage](#).



## When Can a Facility Stop Reporting?

A facility may discontinue reporting under several scenarios, which are summarized in Subpart A (found at 40 CFR 98.2(i)) and the [Subpart A Information Sheet](#).



## For More Information

For additional information on Subpart BB, please visit the [Subpart BB webpage](#). For additional information on the GHGRP, please visit the [GHGRP website](#), which includes additional information sheets, [data](#) previously reported to the GHGRP, [training materials](#), and links to Frequently Asked Questions ([FAQs](#)). For questions that cannot be answered through the GHGRP website, please contact us at: [GHGreporting@epa.gov](mailto:GHGreporting@epa.gov).

*This Information Sheet is provided solely for informational purposes. It does not replace the need to read and comply with the regulatory text contained in the rule. Rather, it is intended to help reporting facilities and suppliers understand key provisions of the GHGRP. It does not provide legal advice; have a legally binding effect; or expressly or implicitly create, expand, or limit any legal rights, obligations, responsibilities, expectations, or benefits with regard to any person or entity.*