

$$CO_2 = \sum_{n=1}^{12} [T_n * EF_{CO_2,n}] * \frac{2000}{2205} \quad (\text{Eq. BB-2})$$

Where:

CO₂ = Annual CO₂ emissions from silicon carbide production facility (metric tons CO₂).
 T_n = Petroleum coke consumption in month n (tons).
 EF_{CO₂,n} = CO₂ emissions factor from month n (calculated in Equation BB-1 of this section).
 2000/2205 = Conversion factor to convert tons to metric tons.
 n = Number of month.

(c) If GHG emissions from a silicon carbide production furnace or process unit are vented through the same stack as any combustion unit or process equipment that reports CO₂ emissions using a CEMS that complies with the

Tier 4 Calculation Methodology in subpart C of this part (General Stationary Fuel Combustion Sources), then the calculation methodology in paragraph (b) of this section shall not be used to calculate process emissions. The owner or operator shall report under this subpart the combined stack emissions according to the Tier 4 Calculation Methodology in § 98.33(a)(4) and all associated requirements for Tier 4 in subpart C of this part.

(d) You must calculate annual process CH₄ emissions from all silicon carbide production combined using Equation BB-3 of this section:

$$CH_4 = \sum_{n=1}^{12} [T_n * 10.2] * \frac{2000}{2205} * 0.001 \quad (\text{Eq. BB-3})$$

Where:

CH₄ = Annual CH₄ emissions from silicon carbide production facility (metric tons CH₄).
 T_n = Petroleum coke consumption in month n (tons).
 10.2 = CH₄ emissions factor (kg CH₄/metric ton coke).
 2000/2205 = Conversion factor to convert tons to metric tons.
 0.001 = Conversion factor from kilograms to metric tons.
 n = Number of month.

§ 98.284 Monitoring and QA/QC requirements.

(a) You must measure your consumption of petroleum coke using plant instruments used for accounting purposes including direct measurement weighing the petroleum coke fed into your process (by belt scales or a similar device) or through the use of purchase records.

(b) You must document the procedures used to ensure the accuracy of monthly petroleum coke consumption measurements.

(c) For CO₂ process emissions, you must determine the monthly carbon

content of the petroleum coke using reports from the supplier. Alternatively, facilities can measure monthly carbon contents of the petroleum coke using ASTM D3176–89 (Reapproved 2002) Standard Practice for Ultimate Analysis of Coal and Coke (incorporated by reference, *see* § 98.7) and ASTM D5373–08 Standard Test Methods for Instrumental Determination of Carbon, Hydrogen, and Nitrogen in Laboratory Samples of Coal (incorporated by reference, *see* § 98.7).

(d) For quality assurance and quality control of the supplier data, you must conduct an annual measurement of the carbon content of the petroleum coke using ASTM D3176–89 and ASTM D5373–08 Standard Test Methods for Instrumental Determination of Carbon, Hydrogen, and Nitrogen in Laboratory Samples of Coal (incorporated by reference, *see* § 98.7).

§ 98.285 Procedures for estimating missing data.

For the petroleum coke input procedure in § 98.283(b), a complete record of

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all measured parameters used in the GHG emissions calculations is required (e.g., carbon content values, etc.). Therefore, whenever a quality-assured value of a required parameter is unavailable, a substitute data value for the missing parameter shall be used in the calculations as specified in the paragraphs (a) and (b) of this section. You must document and keep records of the procedures used for all such estimates.

(a) For each missing value of the monthly carbon content of petroleum coke, the substitute data value shall be the arithmetic average of the quality-assured values of carbon contents immediately preceding and immediately following the missing data incident. If no quality-assured data on carbon contents are available prior to the missing data incident, the substitute data value shall be the first quality-assured value for carbon contents obtained after the missing data period.

(b) For each missing value of the monthly petroleum coke consumption, the substitute data value shall be the best available estimate of the petroleum coke consumption based on all available process data or information used for accounting purposes (such as purchase records).

§ 98.286 Data reporting requirements.

In addition to the information required by § 98.3(c), each annual report must contain the information specified in paragraphs (a) or (b) of this section, as applicable for each silicon carbide production facility.

(a) If a CEMS is used to measure process CO₂ emissions, you must report under this subpart the relevant information required for the Tier 4 Calculation Methodology in § 98.36 and the information listed in this paragraph (a):

(1) Annual consumption of petroleum coke (tons).

(2) Annual production of silicon carbide (tons).

(3) Annual production capacity of silicon carbide (tons).

(b) If a CEMS is not used to measure process CO₂ emissions, you must report the information listed in this paragraph (b) for all furnaces combined:

(1) Monthly consumption of petroleum coke (tons).

(2) Annual production of silicon carbide (tons).

(3) Annual production capacity of silicon carbide (tons).

(4) Carbon content factor of petroleum coke from the supplier or as measured by the applicable method in § 98.284(c) for each month (percent by weight expressed as a decimal fraction).

(5) Whether carbon content of the petroleum coke is based on reports from the supplier or through self measurement using applicable ASTM standard method.

(6) CO₂ emissions factor calculated for each month (metric tons CO₂/metric ton of petroleum coke consumed).

(7) Sampling analysis results for carbon content of consumed petroleum coke as determined for QA/QC of supplier data under § 98.284(d) (percent by weight expressed as a decimal fraction).

(8) Number of times in the reporting year that missing data procedures were followed to measure the carbon contents of petroleum coke (number of months) and petroleum coke consumption (number of months).

§ 98.287 Records that must be retained.

In addition to the records required by § 98.3(g), you must retain the records specified in paragraphs (a) and (b) of this section for each silicon carbide production facility.

(a) If a CEMS is used to measure CO₂ emissions, you must retain under this subpart the records required for the Tier 4 Calculation Methodology in § 98.37 and the information listed in this paragraph (a):

(1) Records of all petroleum coke purchases.

(2) Annual operating hours.

(b) If a CEMS is not used to measure emissions, you must retain records for the information listed in this paragraph (b):

(1) Records of all analyses and calculations conducted for reported data listed in § 98.286(b).

(2) Records of all petroleum coke purchases.

(3) Annual operating hours.