\[
CO_2 = \sum_{p=1}^{m} E_p \quad \text{(Eq. EE-1)}
\]

Where:

\( CO_2 \) = Annual CO\(_2\) emissions from titanium dioxide production facility (metric tons/year).

\[
E_p = \sum_{n=1}^{12} \frac{44}{12} C_{p,n} \times \frac{2000}{2205} \times CCF_n \quad \text{(Eq. EE-2)}
\]

Where:

\( E_p \) = Annual CO\(_2\) mass emissions from chloride process line \( p \) (metric tons).

\( C_{p,n} \) = Calcined petroleum coke consumption for process line \( p \) in month \( n \) (tons).

\( \frac{44}{12} \) = Ratio of molecular weights, CO\(_2\) to carbon.

\( \frac{2000}{2205} \) = Conversion of tons to metric tons.

\( CCF_n \) = Carbon content factor for petroleum coke consumed in month \( n \) from the supplier or as measured by the applicable method incorporated by reference in §98.7 according to §98.314(c) (percent by weight expressed as a decimal fraction).

\( n \) = Number of month.

(3) If facility generates carbon-containing waste, you must calculate the total annual quantity of carbon-containing waste produced from all process lines using Equation EE-3 of this section and its carbon contents according to §98.314(e) and (f):

\[
TWC = \sum_{p=1}^{m} \sum_{n=1}^{12} WC_{p,n} \quad \text{(Eq. EE-3)}
\]

Where:

\( TWC \) = Annual production of carbon-containing waste from titanium dioxide production facility (tons).

\( WC_{p,n} \) = Production of carbon-containing waste in month \( n \) from chloride process line \( p \) (tons).

\( p \) = Process line.

\( m \) = Total number of process lines.

\( n \) = Number of month.

(c) If GHG emissions from a chloride process line are vented through the same stack as any combustion unit or process equipment that reports CO\(_2\) 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 CO\(_2\) 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.

§98.314 Monitoring and QA/QC requirements.

(a) You must measure your consumption of calcined 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 calcined petroleum coke consumption measurements.

(c) You must determine the carbon content of the calcined petroleum coke each month based on 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).
For quality assurance and quality control of the supplier data, you must conduct an annual measurement of the carbon content from a representative sample of the petroleum coke consumed using ASTM D3176–89 and ASTM D5373–08.

You must determine the quantity of carbon-containing waste generated from each titanium dioxide production line on a monthly basis using plant instruments used for accounting purposes including direct measurement weighing the carbon-containing waste not used during the process (by belt scales or a similar device) or through the use of sales records.

You must determine the carbon contents of the carbon-containing waste from each titanium production line on an annual basis by collecting and analyzing a representative sample of the material using ASTM D3176–89 and ASTM D5373–08.

§ 98.316 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 titanium dioxide production line.

(a) If a CEMS is used to measure CO₂ emissions, then you must report the relevant information required under §98.36(e)(2)(vi) for the Tier 4 Calculation Methodology and the following information in this paragraph (a).

1. Identification number of each process line.
2. Annual consumption of calcined petroleum coke (tons).
3. Annual production of titanium dioxide (tons).
4. Annual production capacity of titanium dioxide (tons).
5. Annual production of carbon-containing waste (tons), if applicable.

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

1. Identification number of each process line.
2. Annual CO₂ emissions from each chloride process line (metric tons/year).
3. Annual consumption of calcined petroleum coke for each process line (tons).
4. Annual production of titanium dioxide for each process line (tons).
5. Annual production capacity of titanium dioxide for each process line (tons).
6. Calcined petroleum coke consumption for each process line for each month (tons).
7. Annual production of carbon-containing waste for each process line (tons), if applicable.