

Environmental Protection Agency

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meets the requirements of either § 98.2(a)(1) or (a)(2).

§ 98.212 GHGs to report.

You must report CO₂ process emissions from all miscellaneous carbonate use at your facility as specified in this subpart.

§ 98.213 Calculating GHG emissions.

You must determine CO₂ process emissions from carbonate use in accordance with the procedures specified in either paragraphs (a) or (b) of this section.

(a) Calculate the process emissions of CO₂ using calcination fractions with Equation U-1 of this section.

$$E_{CO_2} = \sum_{i=1}^n M_i * EF_i * F_i * \frac{2000}{2205} \quad (\text{Eq. U-1})$$

Where:

E_{CO₂} = Annual CO₂ mass emissions from consumption of carbonates (metric tons).

M_i = Annual mass of carbonate type i consumed (tons).

EF_i = Emission factor for the carbonate type i, as specified in Table U-1 to this subpart, metric tons CO₂/metric ton carbonate consumed.

F_i = Fraction calcination achieved for each particular carbonate type i (decimal frac-

tion). As an alternative to measuring the calcination fraction, a value of 1.0 can be used.

n = Number of carbonate types.

2000/2205 = Conversion factor to convert tons to metric tons.

(b) Calculate the process emissions of CO₂ using actual mass of output carbonates with Equation U-2 of this section.

$$E_{CO_2} = \left[\sum_{k=1}^m (M_k * EF_k) - \sum_{j=1}^n (M_j * EF_j) \right] * \frac{2000}{2205} \quad (\text{Eq. U-2})$$

Where:

E_{CO₂} = Annual CO₂ mass emissions from consumption of carbonates (metric tons).

M_k = Annual mass of input carbonate type k (tons).

EF_k = Emission factor for the carbonate type k, as specified in Table U-1 of this subpart (metric tons CO₂/metric ton carbonate input).

M_j = Annual mass of output carbonate type j (tons).

EF_j = Emission factor for the output carbonate type j, as specified in Table U-1 of this subpart (metric tons CO₂/metric ton carbonate input).

m = Number of input carbonate types.

n = Number of output carbonate types.

§ 98.214 Monitoring and QA/QC requirements.

(a) The annual mass of carbonate consumed (for Equation U-1 of this subpart) or carbonate inputs (for Equation U-2 of this subpart) must be deter-

mined annually from monthly measurements using the same plant instruments used for accounting purposes including purchase records or direct measurement, such as weigh hoppers or weigh belt feeders.

(b) The annual mass of carbonate outputs (for Equation U-2 of this subpart) must be determined annually from monthly measurements using the same plant instruments used for accounting purposes including purchase records or direct measurement, such as weigh hoppers or belt weigh feeders.

(c) If you follow the procedures of § 98.213(a), as an alternative to assuming a calcination fraction of 1.0, you can determine on an annual basis the calcination fraction for each carbonate consumed based on sampling and chemical analysis using a suitable method such as using an x-ray fluorescence

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standard method or other enhanced industry consensus standard method published by an industry consensus standard organization (e.g., ASTM, ASME, etc.).

§ 98.215 Procedures for estimating missing data.

(a) A complete record of all measured parameters used in the GHG emissions calculations is required. 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 paragraph (b) of this section. You must document and keep records of the procedures used for all such estimates.

(b) For each missing value of monthly carbonate consumed, monthly carbonate output, or monthly carbonate input, the substitute data value must be the best available estimate based on the all available process data or data used for accounting purposes.

§ 98.216 Data reporting requirements.

In addition to the information required by § 98.3(c), each annual report must contain the information specified in paragraphs (a) through (g) of this section at the facility level, as applicable.

(a) Annual CO₂ emissions from miscellaneous carbonate use (metric tons).

(b) Annual mass of each carbonate type consumed (tons).

(c) Measurement method used to determine the mass of carbonate.

(d) Method used to calculate emissions.

(e) If you followed the calculation method of § 98.213(b)(1)(i), you must report the information in paragraphs (e)(1) through (e)(3) of this section.

TABLE U-1 TO SUBPART U OF PART 98—CO₂ EMISSION FACTORS FOR COMMON CARBONATES

Mineral name—carbonate	CO ₂ emission factor (tons CO ₂ /ton carbonate)
Limestone—CaCO ₃	0.43971
Magnesite—MgCO ₃	0.52197
Dolomite—CaMg(CO ₃) ₂	0.47732
Siderite—FeCO ₃	0.37987
Ankerite—Ca(Fe, Mg, Mn)(CO ₃) ₂	0.47572

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(1) Annual carbonate consumption by carbonate type (tons).

(2) Annual calcination fractions used in calculations.

(3) If you determined the calcination fraction, indicate which standard method was used.

(f) If you followed the calculation method of § 98.213(b)(1)(ii), you must report the information in paragraphs (f)(1) and (f)(2) of this section.

(1) Annual carbonate input by carbonate type (tons).

(2) Annual carbonate output by carbonate type (tons).

(g) Number of times in the reporting year that missing data procedures were followed to measure carbonate consumption, carbonate input or carbonate output (months).

§ 98.217 Records that must be retained.

In addition to the records required by § 98.3(g), you must retain the records specified in paragraphs (a) through (d) of this section:

(a) Monthly carbonate consumption (by carbonate type in tons).

(b) You must document the procedures used to ensure the accuracy of the monthly measurements of carbonate consumption, carbonate input or carbonate output including, but not limited to, calibration of weighing equipment and other measurement devices.

(c) Records of all analyses conducted to meet the requirements of this rule.

(d) Records of all calculations conducted.

§ 98.218 Definitions.

All terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

TABLE U-1 TO SUBPART U OF PART 98—CO₂ EMISSION FACTORS FOR COMMON CARBONATES—Continued

Mineral name—carbonate	CO ₂ emission factor (tons CO ₂ /ton carbonate)
Rhodochrosite—MnCO ₃	0.38286
Sodium Carbonate/Soda Ash—Na ₂ CO ₃	0.41492