\[
\text{CO}_2 = \sum_{k=1}^{n} E_{\text{CO}_2 k} \quad \text{(Eq. G-5)}
\]

Where:

\( \text{CO}_2 \) = Annual combined \( \text{CO}_2 \) emissions from all ammonia processing units (metric tons) (\( \text{CO}_2 \) process emissions reported under this subpart may include \( \text{CO}_2 \) that is later consumed on site for urea production, and therefore is not released to the ambient air from the ammonia manufacturing process unit(s)).

\( E_{\text{CO}_2 k} \) = Annual \( \text{CO}_2 \) emissions from each ammonia processing unit (metric tons).

\( k \) = Processing unit.

\( n \) = Total number of ammonia processing units.

(c) If GHG emissions from an ammonia manufacturing unit are vented through the same stack as any combustion unit or process equipment that reports \( \text{CO}_2 \) 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 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.


§ 98.74 Monitoring and QA/QC requirements.

(a) You must continuously measure the quantity of gaseous or liquid feedstock consumed using a flow meter. The quantity of solid feedstock consumed can be obtained from company records and aggregated on a monthly basis.

(b) You must document the procedures used to ensure the accuracy of the estimates of feedstock consumption.

(c) You must determine monthly carbon contents and the average molecular weight of each feedstock consumed from reports from your supplier. As an alternative to using supplier information on carbon contents, you can also collect a sample of each feedstock on a monthly basis and analyze the carbon content and molecular weight of the fuel using any of the following methods listed in paragraphs (c)(1) through (c)(8) of this section, as applicable.

(1) ASTM D1945–03 Standard Test Method for Analysis of Natural Gas by Gas Chromatography (incorporated by reference, see §98.7).

(2) ASTM D1946–90 (Reapproved 2006) Standard Practice for Analysis of Reformed Gas by Gas Chromatography (incorporated by reference, see §98.7).


(8) ASTM D3373–08 Standard Methods for Instrumental Determination of Carbon, Hydrogen, and Nitrogen in Laboratory Samples of Coal (incorporated by reference, see §98.7).

(d) Calibrate all oil and gas flow meters that are used to measure liquid and gaseous feedstock volumes and flow rates (except for gas billing meters) according to the monitoring and QA/QC requirements for the Tier 3 methodology in §98.34(b)(1). Perform oil tank drop measurements (if used to quantify feedstock volumes) according to §98.34(b)(2).
§ 98.75 Procedures for estimating missing data.

A complete record of all measured parameters used in the GHG emissions calculations is required. Therefore, whenever the monitoring and quality assurance procedures in §98.74 cannot be followed (e.g., if a meter malfunctions during unit operation), a substitute data value for the missing parameter shall be used in the calculations following paragraphs (a) and (b) of this section. You must document and keep records of the procedures used for all such estimates.

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

(b) For missing feedstock supply rates or waste recycle stream used to determine monthly feedstock consumption or monthly waste recycle stream quantity, you must determine the best available estimate(s) of the parameter(s), based on all available process data.

§ 98.76 Data reporting requirements.

In addition to the information required by §98.3(c), each annual report must contain the information specified in paragraphs (a) and (b) of this section, as applicable for each ammonia manufacturing process unit.

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

1. Annual quantity of each type of feedstock consumed for ammonia manufacturing (scf of feedstock or gallons of feedstock or kg of feedstock).

2. Method used for determining quantity of feedstock used.

(b) If a CEMS is not used to measure emissions, then you must report the following information:

1. Annual CO₂ process emissions (metric tons) for each ammonia manufacturing process unit.

2. Monthly quantity of each type of feedstock consumed for ammonia manufacturing for each ammonia processing unit (scf of feedstock or gallons of feedstock or kg of feedstock).

3. Method used for determining quantity of monthly feedstock used.

4. Whether carbon content for each feedstock for month n is based on reports from the supplier or analysis of carbon content.

5. If carbon content of feedstock for month n is based on analysis, the test method used.

6. Sampling analysis results of carbon content of feedstock as determined for QA/QC of supplier data under §98.74(e).

7. If a facility uses gaseous feedstock, the carbon content of the gaseous feedstock, for month n, (kg C per kg of feedstock).

8. If a facility uses gaseous feedstock, the molecular weight of the gaseous feedstock (kg/kg-mole).

9. If a facility uses gaseous feedstock, the molar volume conversion factor of the gaseous feedstock (scf per kg-mole).

10. If a facility uses liquid feedstock, the carbon content of the liquid feedstock, for month n, (kg C per gallon of feedstock).