§ 98.244 Monitoring and QA/QC requirements.

(a) If you use CEMS to determine emissions from process vents, you must comply with the procedures specified in §98.34(c).

(b) If you use the mass balance methodology in §98.243(c), use the procedures specified in paragraphs (b)(1) through (b)(4) of this section to determine feedstock and product flows and carbon contents.

1. Operate, maintain, and calibrate belt scales or other weighing devices as described in Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices NIST Handbook 44 (2009) (incorporated by reference, see §98.7), or follow procedures specified by the measurement device manufacturer. You must recalculate each weighing device according to one of the following frequencies. You may recalculate either at the minimum frequency specified by the manufacturer or biennially (i.e., once every two years).

2. Operate and maintain all flow meters used for gas and liquid feedstocks and products according to the manufacturer’s recommended procedures. You must calibrate each of these flow meters as specified in paragraphs (b)(2)(i) and (b)(2)(ii) of this section:

(i) For all gaseous fuels that contain ethylene process off-gas, use the emissions factors for “Fuel Gas” in Table C–1 of subpart C of this part (General Stationary Fuel Combustion Sources).

(ii) For Tier 3, use either the default heat value for fuel gas in Table C–1 of subpart C of this part or a calculated HHV, as allowed in Equation C–8 of subpart C of this part.

3. Except as specified in paragraph (d)(5) of this section, calculate CO₂, CH₄, and N₂O emissions using the methodology specified in §§98.243(b)(1) through (b)(3).

4. Except as specified in §98.33(c) for the same tier methodology that you used for calculating CO₂ emissions.

Where:

CO₂ = Annual CO₂ mass emissions from process operations and process off-gas combustion (metric tons/year).

\(0.001\) = Conversion factor from kg to metric tons.

44 = Molecular weight of CO₂ (kg/kg-mole).

12 = Atomic weight of carbon (C) (kg/kg-mole).

(d) Optional combustion methodology for ethylene production processes. For each ethylene production process, calculate GHG emissions from combustion units that burn fuel that contains any off-gas from the ethylene process as specified in paragraphs (d)(1) through (d)(5) of this section.

(1) Except as specified in paragraphs (d)(2) and (d)(5) of this section, calculate CO₂ emissions using the Tier 3 methodology in subpart C of this part.

(2) You may use either Equation C–1 or Equation C–2a in subpart C of this part to calculate CO₂ emissions from combustion of any ethylene process off-gas streams that meet either of the conditions in paragraphs (d)(2)(i) or (d)(2)(ii) of this section (for any default values in the calculation, use the defaults for fuel gas in Table C–1 of subpart C of this part). Follow the otherwise applicable procedures in subpart C to calculate emissions from combustion of all other fuels in the combustion unit.

(3) Except as specified in paragraph (d)(5) of this section, calculate CH₄ and N₂O emissions using the applicable procedures in §98.33(c) for the same tier methodology that you used for calculating CO₂ emissions.

(i) For all gaseous fuels that contain ethylene process off-gas, use the emissions factors for “Fuel Gas” in Table C–1 of subpart C of this part (General Stationary Fuel Combustion Sources).

(ii) For Tier 3, use either the default heat value for fuel gas in Table C–1 of subpart C of this part or a calculated HHV, as allowed in Equation C–8 of subpart C of this part.

(4) You are not required to use the same Tier for each stationary combustion unit that burns ethylene process off-gas.

(5) For each flare, calculate CO₂, CH₄, and N₂O emissions using the methodology specified in §§98.253(b)(1) through (b)(3).

(i) You may use either the calibration methods specified by the flow meter manufacturer or an industry consensus standard method. Each flow meter must meet the applicable accuracy specification in §98.3(1), except as otherwise specified in §§98.3(1)(4) through (1)(6).

(ii) You must recalibrate each flow meter according to one of the following frequencies. You may recalibrate at the minimum frequency specified by the manufacturer, biennially (every two years), or at the interval specified by the industry consensus standard practice used.

(3) You must perform tank level measurements (if used to determine feedstock or product flows) according to one of the following methods. You may use any standard method published by a consensus-based standards organization or you may use an industry standard practice. Consensus-based standards organizations include, but are not limited to, the following:

- ASTM International (100 Barr Harbor Drive, P.O. Box CB700, West Conshohocken, Pennsylvania 19428–B2959, (800) 262–1373, http://www.astm.org)
- American Society of Mechanical Engineers (ASME, Three Park Avenue, New York, NY 10016–5990, (800) 843–2763, http://www.asme.org)

(4) Beginning January 1, 2010, use any applicable methods specified in paragraphs (b)(4)(i) through (xv) of this section to determine the carbon content or composition of feedstocks and products and the average molecular weight of gaseous feedstocks and products. Calibrate instruments in accordance with paragraphs (b)(4)(i) through (xv) of this section, as applicable. For coal used as a feedstock, the samples for carbon content determinations shall be taken at a location that is representative of the coal feedstock used during the corresponding monthly period. For carbon black products, samples shall be taken of each grade or type of product produced during the monthly period. Samples of coal feedstock or carbon black product for carbon content determinations may be either grab samples collected and analyzed monthly or a composite of samples collected more frequently and analyzed monthly. Analyses conducted in accordance with methods specified in paragraphs (b)(4)(i) through (xv) of this section may be performed by the owner or operator, by an independent laboratory, by the supplier of a feedstock, or by a product customer.

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


(iv) ASTM UOP539–97 Refinery Gas Analysis by Gas Chromatography (incorporated by reference, see §98.7).


(vi) 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).

(viii) Method 8015C, Method 8021B, Method 8031, or Method 9060A (all incorporated by reference, see §98.7).

(x) Performance Specification 9 in 40 CFR part 60, appendix B for continuous
online gas analyzers. The 7-day calibration error test period must be completed prior to the effective date of the rule.


(xii) ASTM D7633–10 Standard Test Method for Carbon Black—Carbon Content (incorporated by reference, see § 98.7).

(xiii) The results of chromatographic analysis of a feedstock or product, provided that the chromatograph is operated, maintained, and calibrated according to the manufacturer’s instructions.

(xiv) The results of mass spectrometer analysis of a feedstock or product, provided that the mass spectrometer is operated, maintained, and calibrated according to the manufacturer’s instructions.

(xv) Beginning on January 1, 2010, the methods specified in paragraphs (b)(4)(xv)(A) and (B) of this section may be used as alternatives for the methods specified in paragraphs (b)(4)(i) through (b)(4)(xiv) of this section.


(B) Modifications of existing analytical methods or other methods that are applicable to your process provided that the methods listed in paragraphs (b)(4)(i) through (b)(4)(xiv) of this section are not appropriate because the relevant compounds cannot be detected, the quality control requirements are not technically feasible, or use of the method would be unsafe.

(c) If you comply with § 98.243(b) or (d), conduct monitoring and QA/QC for flares in accordance with § 98.254(b) through (e) for each flare gas flow meter, gas composition meter, and/or heating value monitor that you use to comply with § 98.253(b)(1) through (b)(3). You must implement all applicable QA/QC requirements specified in this paragraph (c) beginning no later than January 1, 2015.


§ 98.245 Procedures for estimating missing data.

For missing feedstock and product flow rates, use the same procedures as for missing fuel usage as specified in § 98.35(b)(2). For missing feedstock and product carbon contents and missing molecular weights for gaseous feedstocks and products, use the same procedures as for missing carbon contents and missing molecular weights for fuels as specified in § 98.35(b)(1).

For missing flare data, follow the procedures in § 98.255(b) and (c).

[78 FR 71962, Nov. 29, 2013]

§ 98.246 Data reporting requirements.

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

(a) If you use the mass balance methodology in § 98.243(c), you must report the information specified in paragraphs (a)(1) through (a)(11) of this section for each type of petrochemical produced, reported by process unit.