§ 98.54 Monitoring and QA/QC requirements.

(a) You must conduct a new performance test and calculate a new emissions factor for each adipic acid production unit according to the frequency specified in paragraphs (a)(1) through (3) of this section.

(1) Conduct the performance test annually. The test must be conducted at a point during production that is representative of the average emissions rate from your process. You must document the methods used to determine the representative point.

(2) Conduct the performance test when your adipic acid production process is changed either by altering the ratio of cyclohexanone to cyclohexanol or by installing abatement equipment.

(3) If you requested Administrator approval for an alternative method of determining \(\text{N}_2\text{O}\) emissions under §98.53(a)(2), you must conduct the performance test if your request has not been approved by the Administrator within 150 days of the end of the reporting year in which it was submitted.

\[
\text{N}_2\text{O} = \sum_{z=1}^{M} E_{a,z} + E_{b,z} + E_{c,z} + E_{d,z} \quad \text{(Eq. E-4)}
\]

where:

\(E_{a,z}\) = Annual \(\text{N}_2\text{O}\) mass emissions from adipic acid production unit “\(z\)” according to Equation E-3a of this section (metric tons).

\(E_{b,z}\) = Annual \(\text{N}_2\text{O}\) mass emissions from adipic acid production unit “\(z\)” according to Equation E-3b of this section (metric tons).

\(E_{c,z}\) = Annual \(\text{N}_2\text{O}\) mass emissions from adipic acid production unit “\(z\)” according to Equation E-3c of this section (metric tons).

\(E_{d,z}\) = Annual \(\text{N}_2\text{O}\) mass emissions from adipic acid production unit “\(z\)” according to Equation E-3d of this section (metric tons).

\(M\) = Total number of adipic acid production units.
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(b) You must measure the N$_2$O concentration during the performance test using one of the methods in paragraphs (b)(1) through (b)(3) of this section.

(1) EPA Method 320, Measurement of Vapor Phase Organic and Inorganic Emissions by Extractive Fourier Transform Infrared (FTIR) Spectroscopy in 40 CFR part 63, Appendix A;

(2) ASTM D6348–03 Standard Test Method for Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform Infrared (FTIR) Spectroscopy (incorporated by reference, see §98.7); or

(3) An equivalent method, with Administrator approval.

c) You must determine the adipic acid production rate during the performance test according to paragraph (c)(1) or (c)(2) of this section.

(1) Direct measurement (such as using flow meters or weigh scales).

(2) Existing plant procedures used for accounting purposes.

d) You must determine the volumetric flow rate during the performance test in conjunction with the applicable EPA methods in 40 CFR part 60, appendices A–1 through A–4. Conduct three emissions test runs of 1 hour each. All QA/QC procedures specified in the reference test methods and any associated performance specifications apply. For each test, the facility must prepare an emissions factor determination report that must include the items in paragraphs (d)(1) through (d)(3) of this section:

(1) Analysis of samples, determination of emissions, and raw data.

(2) All information and data used to derive the emissions factor.

(3) The production rate(s) during the performance test and how each production rate was determined.

e) You must determine the monthly amount of adipic acid produced. You must also determine the monthly amount of adipic acid produced during which N$_2$O abatement technology is operating. These are determined by summing the respective monthly adipic acid production quantities determined in paragraph (e) of this section.

(f) You must determine the annual amount of adipic acid produced during which N$_2$O abatement technology is operating. These are determined by summing the respective monthly adipic acid production quantities determined in paragraph (e) of this section.


§ 98.55 Procedures for estimating missing data.

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 paragraphs (a) and (b) of this section.

(a) For each missing value of monthly adipic acid production, the substitute data shall be the best available estimate based on all available process data or data used for accounting purposes (such as sales records).

(b) For missing values related to the performance test, including emission factors, production rate, and N$_2$O concentration, you must conduct a new performance test according to the procedures in §98.54 (a) through (d).

§ 98.56 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 (l) of this section at the facility level.

(a) Annual process N$_2$O emissions from adipic acid production (metric tons).

(b) Annual adipic acid production (tons).

(c) Annual adipic acid production during which N$_2$O abatement technology (located after the test point) is operating (tons).

(d) Annual process N$_2$O emissions from adipic acid production facility that is sold or transferred off site (metric tons).

(e) Number of abatement technologies (if applicable).

(f) Types of abatement technologies used (if applicable).

(g) Abatement technology destruction efficiency for each abatement technology (percent destruction).