**Section 724.934 Test Methods** **and** **Procedures**

a) Each owner or operator subject to the provisions of this Subpart AA must comply with the test methods and procedures requirements provided in this Section.

b) When a closed-vent system is tested for compliance with no detectable emissions, as required in Section 724.933(l), the test must comply with the following requirements:

1) Monitoring must comply with Reference Method 21 (Determination of Volatile Organic Compound Leaks) in appendix A to 40 CFR 60 (Test Methods), incorporated by reference in 35 Ill. Adm. Code 720.111(b).

2) The detection instrument must meet the performance criteria of Reference Method 21.

3) The instrument must be calibrated before use on each day of its use by the procedures specified in Reference Method 21.

4) Calibration gases must be as follows:

A) Zero air (less than 10 ppm of hydrocarbon in air); and

B) A mixture of methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n-hexane.

5) The background level must be determined as set forth in Reference Method 21.

6) The instrument probe must be traversed around all potential leak interfaces as close to the interface as possible as described in Reference Method 21.

7) The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance.

c) Performance tests to determine compliance with Section 724.932(a) and with the total organic compound concentration limit of Section 724.933(c) must comply with the following:

1) Performance tests to determine total organic compound concentrations and mass flow rates entering and exiting control devices must be conducted and data reduced in accordance with the following reference methods and calculation procedures:

A) Reference Method 2 (Determination of Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot Tube)) in appendix A to 40 CFR 60 (Test Methods), incorporated by reference in 35 Ill. Adm. Code 720.111(b), for velocity and volumetric flow rate.

B) Reference Method 18 (Measurement of Gaseous Organic Compound Emissions by Gas Chromatography) or Reference Method 25A (Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer) in appendix A to 40 CFR 60 (Test Methods), incorporated by reference in 35 Ill. Adm. Code 720.111(b), for organic content. If Reference Method 25A is used, the organic HAP used as the calibration gas must be the single organic HAP representing the largest percent by volume of the emissions. The use of Reference Method 25A is acceptable if the response from the high-level calibration gas is at least 20 times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale.

C) Each performance test must consist of three separate runs, each run conducted for at least one hour under the conditions that exist when the hazardous waste management unit is operating at the highest load or capacity level reasonably expected to occur. For the purpose of determining total organic compound concentrations and mass flow rates, the average of results of all runs applies. The average must be computed on a time-weighted basis.

D) Total organic mass flow rates must be determined by the following equation:

i) For a source using Reference Method 18:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Eh | = | Q2sd | x | ( | n  Σ  i=1 | Ci  x MWi | ) | x 0.0416 x 10-6 |

Where:

|  |  |  |
| --- | --- | --- |
| Eh | = | The total organic mass flow rate, kg/h |
| Q2sd | = | The volumetric flow rate of gases entering or exiting control device, dscm/h, as determined by Reference Method 2 |
| n | = | The number of organic compounds in the vent gas |
| Ci | = | The organic concentration in ppm, dry basis, of compound i in the vent gas, as determined by Reference Method 18 |
| MWi | = | The molecular weight of organic compound i in the vent gas, kg/kg-mol |
| 0.0416 | = | The conversion factor for molar volume, kg-mol/m3, at 293 K and 760 mm Hg |
| 10-6 | = | The conversion factor from ppm |

ii) For a source using Reference Method 25A:

Eh = Q x C x MW x 0.0416 x 10-6

Where:

|  |  |  |
| --- | --- | --- |
| Eh | = | The total organic mass flow rate, kg/h |
| Q | = | The volumetric flow rate of gases entering or exiting control device, dscm/h, as determined by Reference Method 2 |
| C | = | The organic concentration in ppm, dry basis, of compound i in the vent gas, as determined by Reference Method 25A |
| MW | = | The molecular weight of propane, 44 kg/kg-mol |
| 0.0416 | = | The conversion factor for molar volume, kg-mol/m3, at 293 K and 760 mm Hg |
| 10-6 | = | The conversion factor from ppm |

E) The annual total organic emission rate must be determined by the following equation:

A = F x H

Where:

|  |  |  |
| --- | --- | --- |
| A | = | total organic emission rate, kg/y |
| F | = | the total organic mass flow rate, kg/h, as calculated in subsection (c)(1)(D) |
| H | = | the total annual hours of operation for the affected unit, h/y |

F) Total organic emissions from all affected process vents at the facility must be determined by summing the hourly total organic mass emissions rates (F as determined in subsection (c)(1)(D)) and by summing the annual total organic mass emission rates (A as determined in subsection (c)(1)(E)) for all affected process vents at the facility.

2) The owner or operator must record such process information as is necessary to determine the conditions of the performance tests. Operations during periods of startup, shutdown, and malfunction do not constitute representative conditions for the purpose of a performance test.

3) The owner or operator of an affected facility must provide, or cause to be provided, performance testing facilities as follows:

A) Sampling ports adequate for the test methods specified in subsection (c)(1).

B) Safe sampling platforms.

C) Safe access to sampling platforms.

D) Utilities for sampling and testing equipment.

4) For the purpose of making compliance determinations, the time-weighted average of the results of the three runs must apply. In the event that a sample is accidentally lost or conditions occur in which one of the three runs must be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the owner or operator's control, compliance may, upon the Agency's approval, be determined using the average of the results of the two other runs.

d) To show that a process vent associated with a hazardous waste distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operation is not subject to the requirements of this Subpart AA, the owner or operator must make an initial determination that the time-weighted, annual average total organic concentration of the waste managed by the waste management unit is less than 10 ppmw using one of the following two methods:

1) Direct measurement of the organic concentration of the waste using the following procedures:

A) The owner or operator must take a minimum of four grab samples of waste for each wastestream managed in the affected unit under process conditions expected to cause the maximum waste organic concentration.

B) For waste generated onsite, the grab samples must be collected at a point before the waste is exposed to the atmosphere, such as in an enclosed pipe or other closed system that is used to transfer the waste after generation to the first affected distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operation. For waste generated offsite, the grab samples must be collected at the inlet to the first waste management unit that receives the waste provided the waste has been transferred to the facility in a closed system such as a tank truck and the waste is not diluted or mixed with other waste.

C) Each sample must be analyzed and the total organic concentration of the sample must be computed using Method 9060A (Total Organic Carbon) of "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", USEPA publication number EPA-530/SW-846, incorporated by reference under 35 Ill. Adm. Code 720.111(a), or analyzed for its individual constituents.

D) The arithmetic mean of the results of the analyses of the four samples apply for each wastestream managed in the unit in determining the time-weighted, annual average total organic concentration of the waste. The time-weighted average is to be calculated using the annual quantity of each wastestream processed and the mean organic concentration of each wastestream managed in the unit.

2) Using knowledge of the waste to determine that its total organic concentration is less than 10 ppmw. Documentation of the waste determination is required. Examples of documentation that must be used to support a determination under this subsection (d)(2) include the following:

A) Production process information documenting that no organic compounds are used;

B) Information that the waste is generated by a process that is identical to a process at the same or another facility that has previously been demonstrated by direct measurement to generate a wastestream having a total organic content less than 10 ppmw; or

C) Prior speciation analysis results on the same wastestream where it is also documented that no process changes have occurred since that analysis that could affect the waste total organic concentration.

e) The determination that a distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operation that manages hazardous wastes that have time-weighted, annual average total organic concentrations less than 10 ppmw must be made as follows:

1) By the effective date that the facility becomes subject to the provisions of this Subpart AA or by the date when the waste is first managed in a waste management unit, whichever is later; and either of the following:

2) For continuously generated waste, annually; or

3) Whenever there is a change in the waste being managed or a change in the process that generates or treats the waste.

f) When an owner or operator and the Agency do not agree on whether a distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operation manages a hazardous waste with organic concentrations of at least 10 ppmw based on knowledge of the waste, direct measurement may be used to resolve the dispute, as specified in subsection (d)(1).

(Source: Amended at 42 Ill. Reg. 22614, effective November 19, 2018)