**Section 721.934 Test Methods and Procedures**

a) Each remanufacturer or other person that stores or treats the hazardous secondary material subject to the provisions of this Subpart AA must comply with the test methods and procedural requirements provided in this Section.

b) When a closed-vent system is tested for compliance with no detectable emissions, as required in Section 721.933(l) of this Subpart AA, 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.

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:

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

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 721.932(a) and with the total organic compound concentration limit of Section 721.933(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 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, 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 must be conducted for at least one hour under the conditions that exist when the hazardous secondary material 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 must apply. 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 sources utilizing Reference Method 18.

$$E\_{h =} Q\_{2sd}\left\{\sum\_{i=1}^{n}C\_{i}MW\_{i}\right\}\left[0.0416\right]\left[10^{-6}\right]$$

Where:

|  |  |  |
| --- | --- | --- |
| Eh | = | Total organic mass flow rate, kg/h |
| Q2sd | = | Volumetric flow rate of gases entering or exiting control device, as determined by Reference Method 2, dscm/h |
| n | = | Number of organic compounds in the vent gas |
| Ci | = | Organic concentration in ppm, dry basis, of compound i in the vent gas, as determined by Reference Method 18 |
| MWi | = | Molecular weight of organic compound i in the vent gas, kg/kg-mol |
| 0.0416 | = | Conversion factor for molar volume, kg-mol/m3 (@293 K and 760 mm Hg)  |
| 10-6 | = | Conversion from ppm |

ii) For sources utilizing Reference Method 25A.

Eh= (Q)(C)(MW)(0.0416)(10-6)

Where:

|  |  |  |
| --- | --- | --- |
| Eh | = | Total organic mass flow rate, kg/h |
| Q | = | Volumetric flow rate of gases entering or exiting control device, as determined by Reference Method 2, dscm/h |
| C | = | Organic concentration in ppm, dry basis, as determined by Reference Method 25A |
| MW | = | Molecular weight of propane, 44 |
| 0.0416 | = | Conversion factor for molar volume, kg-mol/m3 (@293 K and 760 mm Hg) |
| 10-6 | = | Conversion from ppm |

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

EA=(Eh)(H)

Where:

|  |  |  |
| --- | --- | --- |
| EA | = | Total organic mass emission rate, kg/y |
| Eh | = | Total organic mass flow rate for the process vent, kg/h |
| H | = | Total annual hours of operations 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 emission rates (Eh, as determined in subsection (c)(1)(D)) and by summing the annual total organic mass emission rates (EA, as determined in subsection (c)(1)(E)) for all affected process vents at the facility.

2) The remanufacturer or other person that stores or treats the hazardous secondary material must record process information as necessary to determine the conditions of the performance tests. Operations during periods of startup, shutdown, and malfunction must not constitute representative conditions for the purpose of a performance test.

3) The remanufacturer or other person that stores or treats the hazardous secondary material at 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 control of the remanufacturer or other person that stores or treats the hazardous secondary material, the Agency may approve compliance determination using the average of the results of the two other runs. The Agency must state any approval or disapproval of a compliance determination in writing to the remanufacturer or other person that stores or treats the hazardous secondary material.

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

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

A) The remanufacturer or other person that stores or treats the hazardous secondary material must take a minimum of four grab samples of material for each material stream managed in the affected unit under process conditions expected to cause the maximum material organic concentration.

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

C) Each sample must be analyzed and the total organic concentration of the sample must be computed using Method 9060A of "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA Publication SW-846, incorporated by reference in 35 Ill. Adm. Code 720.111, or analyzed for its individual organic constituents.

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

2) Using knowledge of the material to determine that its total organic concentration is less than 10 ppmw. Documentation of the material determination is required. Examples of documentation that must be used to support a determination under this provision include production process information documenting that no organic compounds are used, information that the material 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 material stream having a total organic content less than 10 ppmw, or prior speciation analysis results on the same material stream where it can also be documented that no process changes have occurred since that analysis that could affect the material total organic concentration.

e) The determination that distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations manage hazardous secondary materials with 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 material is first managed in a hazardous secondary material management unit, whichever is later; and

2) For continuously generated material, annually; or

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

f) When a remanufacturer or other person that stores or treats the hazardous secondary material 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 secondary material with organic concentrations of at least 10 ppmw based on knowledge of the material, the dispute may be resolved by using direct measurement, as specified at subsection (d)(1). The Agency must state any disagreement in writing to the remanufacturer or other person that stores or treats the hazardous secondary material.

(Source: Amended at 42 Ill. Reg. 21673, effective November 19, 2018)