



## Ohio Administrative Code

### Rule 3745-256-34 Test methods and procedures - process vents.

Effective: June 12, 2023

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(A) Each owner or operator subject to rules 3745-256-30 to 3745-256-35 of the Administrative Code shall comply with the test methods and procedures requirements provided in this rule.

(B) When a closed-vent system is tested for compliance with no detectable emissions, as required in paragraph (K) of rule 3745-256-33 of the Administrative Code, the test shall comply with the following requirements:

(1) Monitoring shall comply with reference method 21 in 40 CFR Part 60.

(2) The detection instrument shall meet the performance criteria of reference method 21.

(3) The instrument shall be calibrated before use on each day of its use by the procedures specified in reference method 21.

(4) Calibration gases shall be:

(a) Zero air (less than ten parts per million (ppm) of hydrocarbon in air).

(b) A mixture of methane or n-hexane and air at a concentration of approximately, but less than, ten thousand ppm methane or n-hexane.

(5) The background level shall be determined as provided in reference method 21.

(6) The instrument probe shall 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 five hundred ppm for determining compliance.



(C) Performance tests to determine compliance with paragraph (A) of rule 3745-256-32 of the Administrative Code and with the total organic compound concentration limit of paragraph (C) of rule 3745-256-33 of the Administrative Code shall comply with the following:

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

(a) Method 2 in 40 CFR Part 60 for velocity and volumetric flow rate.

(b) Method 18 or method 25A in 40 CFR Part 60 appendix A, for organic content. If method 25A is used, the organic hazardous air pollutants (HAP) used as the calibration gas shall be the single organic HAP representing the largest per cent by volume of the emissions. The use of method 25A is acceptable if the response from the high-level calibration gas is at least twenty 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 shall 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 shall apply. The average shall be computed on a time-weighted basis.

(d) Total organic mass flow rates shall be determined by the following equation:

(i) For sources utilizing method 18.

$$E_h = Q_{2sd} \left\{ \sum_{i=1}^n C_i MW_i \right\} [0.0416][10^{-6}]$$

Where:



$E_h$  = Total organic mass flow rate, kilograms per hour (kg/h);

$Q_{2sd}$  = Volumetric flow rate of gases entering or exiting control device, as determined by method 2, standard cubic meter of dry gas per hour (dscm/h);

$n$  = Number of organic compounds in the vent gas;

$C_i$  = Organic concentration in ppm, dry basis, of compound  $i$  in the vent gas, as determined by method 18;

$MW_i$  = Molecular weight of organic compound  $i$  in the vent gas, kilogram per kilogram mole (kg/kg-mol);

0.0416 = Conversion factor for molar volume, kg-mol/m<sup>3</sup> [at two hundred ninety-three Kelvin and seven hundred sixty milligrams of mercury (mm Hg)];

$10^{-6}$  = Conversion from ppm.

(ii) For sources utilizing method 25A.

$$E_h = (Q)(C)(MW)(0.0416)(10^{-6})$$

Where:

$E_h$  = Total organic mass flow rate, kg/h;

$Q$  = Volumetric flow rate of gases entering or exiting control device, as determined by method 2, dscm/h;

$C$  = Organic concentration in ppm, dry basis, as determined by method 25A;

$MW$  = Molecular weight of propane, 44;



0.0416 = Conversion factor for molar volume, kg-mol/m<sup>3</sup> (at two hundred ninety-three Kelvin and seven hundred sixty mm Hg);

10<sup>-6</sup> = Conversion from ppm.

(e) The annual total organic emission rate shall be determined by the following equation:

$$E_A = (E_h)(H)$$

Where:

$E_A$  = Total organic mass emission rate, kilograms per year (kg/y);

$E_h$  = Total organic mass flow rate for the process vent, kg/h;

H = Total annual hours of operations for the affected unit, h.

(f) Total organic emissions from all affected process vents at the facility shall be determined by summing the hourly total organic mass emission rates [ $E_h$ , as determined in paragraph (C)(1)(d) of this rule] and by summing the annual total organic mass emission rates [ $E_A$ , as determined in paragraph (C)(1)(e) of this rule] for all affected process vents at the facility.

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

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

(a) Sampling ports adequate for the test methods specified in paragraph (C)(1) of this rule.

(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 shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the three runs shall 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 director'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 rules 3745-256-30 to 3745-256-35 of the Administrative Code, the owner or operator shall 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 ten parts per million by weight (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 shall take a minimum of four grab samples of waste for each waste stream managed in the affected unit under process conditions expected to cause the maximum waste organic concentration.

(b) For waste generated on-site, the grab samples shall 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 shall 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 shall be analyzed and the total organic concentration of the sample shall be



computed using method 9060A of "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," U.S. EPA publication SW-846; or analyzed for its individual organic constituents.

(d) The arithmetic mean of the results of the analyses of the four samples shall apply for each waste stream 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 waste stream processed and the mean organic concentration of each waste stream managed in the unit.

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

(E) The determination that distillation fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations manage hazardous wastes with time-weighted annual average total organic concentrations less than ten ppmw shall be made as follows:

(1) By the effective date that the facility becomes subject to rules 3745-256-30 to 3745-256-35 of the Administrative Code or by the date when the waste is first managed in a waste management unit, whichever is later; and

(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 director 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 ten ppmw based on knowledge of the waste, the dispute may be resolved using direct measurement as specified at paragraph (D)(1) of this rule.

[Comment: For dates of non-regulatory government publications, publications of recognized organizations and associations, federal rules, and federal statutory provisions referenced in this rule, see rule 3745-50-11 of the Administrative Code titled "Incorporated by reference."]