

"Gasoline" means any petroleum distillate or petroleum distillate/oxygenate blend having a Reid vapor pressure of four pounds per square inch (207 millimeters of mercury) absolute or greater and used as an automotive fuel.

"Gas sampling valve" means a two-position heated valve used to purge the sample loop with the source gas and to insert the loop containing the source gas sample into the carrier gas stream leading to the chromatograph. Both loop and valve must be heated to a temperature that will prevent any condensation of the sample gas.

"Isokinetic sampling" means drawing a gas sample through a nozzle into a sampling train at the same velocity as that in the stack or duct.

"Laboratory standard calibrations gases" means three gas mixtures each containing known concentrations of each of the VOC in the source gas (except trace components) in the same matrix, if possible, as will be sampled. One mixture is to have greater than, one mixture is to be approximately equal to, and one mixture is to have less than the expected concentration of VOC in the source gas. These gases can be certified to \pm two percent by the manufacturer or produced locally by approved techniques if the concentration is confirmed by an independent analysis. The standards must be stable in the matrix and container over their period of use.

"LFL" means lower explosive limit.

"Modified particulate train" means a sampling train capable of collecting organic emissions at an isokinetic sampling rate.

"Needle valve" means a fine adjustment valve used to control the source gas sampling rate and constructed of corrosion-resistant material.

"Organic substance" means any chemical compound or mixture of chemical compounds of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbonates, metallic carbides, and ammonium carbonate.

"Ppm" means part per million by volume.

"Partial pressure" means the pressure exerted by a specified component in a mixture of gases.

"Performance test" or "test" means a series of test runs used for the purpose of determining emissions of air contaminants to the outdoor atmosphere.

"Petroleum solvent dry cleaning" means a process used for the cleaning of textiles and fabric products in which articles are washed in a solution of organic material produced by petroleum distillation that exists as a liquid under standard conditions, and then dried by exposure to a heated air stream.

"Probe" means glass, stainless steel or Teflon tubing as required by source gas conditions and equipped with a filter, if necessary. The probe and filter must have a heating or dilution system capable of preventing any condensation of the sample gas.

"Psia" means pounds per square inch absolute.

"Pump" means a leakless Teflon-coated diaphragm pump or equivalent with an appropriate capacity and a heating or dilution system capable of preventing any condensation of the sample.

"Pure component standards" means a gas mixture consisting of only one VOC in an inert gas. A separate mixture is required for each VOC suspected in the source gas.

"Recorder/Integrator" means a strip chart recorder and an optional integrator to calculate the results.

"Reid vapor pressure" or "RVP" means the absolute vapor pressure of a petroleum product in pounds per square inch (kilopascals) at 100 degrees Fahrenheit (\diamond F) (37.8 degrees Celsius (\diamond C)) as measured by "Method 1-Dry RVP Measurement Method" or "Method 2-Herzog Semi-Automatic Method" promulgated at 40 CFR 80, Appendix E; or any other test method approved in advance in writing by the Department and the EPA.

"Rigid sampling container" means a leak-free sampling container large enough to hold a gas sampling bag and capable of being evacuated to a pressure of 20 inches water without collapsing.

"Run" or "test run" means a single integrated measurement or procedure used for the purpose of collecting a sample of air contaminants emitted to the outdoor atmosphere during a specified time interval.

"Sample collector" means any device used to selectively separate and collect a sample of a specified contaminant from a gas stream, including, but not limited to, thimbles, filters, impingers, bubblers, cyclones, condensers, and absorbers.

"Sample line" means glass, Teflon or stainless steel tubing with Teflon or stainless steel fittings, heated if necessary to prevent condensation.

"Sampling location" means the specific position at which a sampling port is located in a stack or chimney.

"Sampling port" means an opening in a stack or chimney into which sampling or measuring devices may be inserted or through which a sample is extracted.

"Sampling rate" means the volume rate at which stack gases are drawn through a sampling train.

"Sampling train" means a combination of entrapment devices, instruments, and auxiliary apparatus arranged in a prescribed sequence to selectively separate and collect samples of specified air contaminants.

"SCFH" means standard cubic feet per hour on a wet basis unless otherwise specified in the text.

"SCFM" means standard cubic feet per minute on a wet basis unless otherwise specified in the text.

"Solvent recovery dryer" means a class of dry cleaning dryers that employs a condenser to liquify and recover solvent vapors evaporated in a closed-loop, recirculating stream of heated air.

"Source operation" or "Source" means any process or any identifiable part thereof that emits or can reasonably be anticipated to emit any air contaminant either directly or indirectly into the outdoor atmosphere.

"Standard conditions" means 70 degrees Fahrenheit (♦F) (21.1 degrees Celsius (♦C)) and one atmosphere pressure (14.7 pounds per square inch absolute or 760 millimeters of mercury).

"Std" means standard.

"Surface coating formulation" means the material used to form a protective, functional, or decorative film including, but not limited to any architectural coating, paint, varnish, ink, or adhesive, applied to or impregnated into a substrate.

"Temperature sensor" means a thermometer, potentiometer with thermocouple, or other temperature sensing device calibrated with an approved standard.

"Test" or "performance test" means a series of test runs used for the purpose of determining emissions of air contaminants to the outdoor atmosphere.

"Test Run" or "run" means a single integrated measurement or procedure used for the purpose of collecting a sample of air contaminants emitted to the outdoor atmosphere during a specified time interval.

"Transfer operation" means the moving of any substance from any storage tank, manufacturing process vessel, or delivery vessel into any receiving vessel.

"Vapor" means the gaseous form of substances which, under standard conditions, are in the solid or liquid state and which can be changed to these states by either increasing the pressure or decreasing the temperature.

"Vapor pressure" means the pressure of the vapor phase of a substance, or the sum of the partial pressures of the vapor phases of individual substances in a mixture of substances, when in equilibrium with the non-vapor phase of the substance or substances.

"Velocity Meter" means an "S" type Pitot tube with a manometer or other appropriate gas flow measuring device.

"Volatile organic compound" or "VOC" means any compound of carbon (other than carbon monoxide, carbon dioxide, carbonic acid, metallic carbonates, metallic carbides, and ammonium carbonate) which participates in atmospheric photochemical reactions. For the purpose of determining compliance with emission limits or content standards, VOC shall be measured by test methods in the approved SIP (such as N.J.A.C. 7:27B-3) or 40 CFR Part 60, Appendix A, as applicable, or which have been approved in writing by the Department and are acceptable to EPA. This term excludes those compounds which EPA has excluded from its definition of VOC in the list set forth at 40 CFR 51.100(s)(1), which is incorporated by reference herein, together with all amendments and supplements. As of April 9, 1998 the compounds and classes of perfluorocarbons excluded from EPA's definition of VOC at 40 CFR 51.100(s) are set forth below:

methane

ethane

methylene chloride (dichloromethane)

1,1,1-trichloroethane (methyl chloroform)

1,1,2-trichloro-1,2,2-trifluoroethane (CFC-113)

trichlorofluoromethane (CFC-11)

dichlorodifluoromethane (CFC-12)

chlorodifluoromethane (HCFC-22)

trifluoromethane (HFC-23)

1,2-dichloro-1,1,2,2-tetrafluoroethane (CFC-114)

chloropentafluoroethane (CFC-115)

2,2-dichloro-1,1,1-trifluoroethane (HCFC-123)

1,1,1,2-tetrafluoroethane (HFC-134a)

1,1-dichloro-1-fluoroethane (HCFC-141b)

1-chloro-1,1-difluoroethane (HCFC-142b)

2-chloro-1,1,1,2-tetrafluoroethane (HCFC-124)

pentafluoroethane (HFC-125)

1,1,2,2-tetrafluoroethane (HFC-134)

1,1,1-trifluoroethane (HFC-143a)

1,1-difluoroethane (HFC-152a)

parachlorobenzotrifluoride (PCBTF)

cyclic, branched, or linear completely methylated siloxanes

acetone

perchloroethylene (tetrachloroethylene)

- 3,3-dichloro-1,1,1,2,2-pentafluoropropane (HCFC-225ca)
- 1,3-dichloro-1,1,2,2,3-pentafluoropropane (HCFC-225cb)
- 1,1,1,2,3,4,4,5,5-decafluoropentane (HFC 43-10mee)
- difluoromethane (HFC-32)
- ethylfluoride (HFC-161)
- 1,1,1,3,3,3-hexafluoropropane (HFC-236fa)
- 1,1,2,2,3-pentafluoropropane (HFC-245ca)
- 1,1,2,3,3-pentafluoropropane (HFC-245ea)
- 1,1,1,2,3-pentafluoropropane (HFC-245eb)
- 1,1,1,3,3-pentafluoropropane (HFC-245fa)
- 1,1,1,2,3,3-hexafluoropropane (HFC-236ea)
- 1,1,1,3,3-pentafluorobutane (HFC-365mfc)
- chlorofluoromethane (HCFC-31)
- 1-chloro-1-fluoroethane (HCFC-151a)
- 1,2-dichloro-1,1,2-trifluoroethane (HCFC-123a)
- 1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxy-butane (C₄F₉OCH₃)
- 2-(difluoromethoxymethyl)-1,1,1,2,3,3,3-heptafluoropropane ((CF₃)₂CF₂OCH₃)
- 1-ethoxy-1,1,2,2,3,3,4,4,4-nonafluorobutane (C₄F₉OC₂H₅)
- 2-(ethoxydifluoromethyl)-1,1,1,2,3,3,3-heptafluoropropane ((CF₃)₂CF₂OC₂H₅)
- methyl acetate

perfluorocarbon compounds which fall into these classes:

cyclic, branched, or linear, completely fluorinated alkanes

cyclic, branched, or linear, completely fluorinated ethers with no unsaturations

cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations

sulfur containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine

If there is any conflict between the list at 40 CFR 51.100(s)(1) and the list set forth above, the list at 40 CFR 51.100(s)(1) shall control.

“Zero gas” means air or gas which contains less than 1 ppm of equivalent carbon or methane.

Amended by R.1992 d.102, effective March 2, 1992 (operative March 28, 1992).
See: 23 N.J.R. 1858(b), 24 N.J.R. 792(a).

New definition for “ASTM” and “volatile organic compounds (VOC); amended others to comport with “VOS” to “VOC” changes. Amended by R.1994 d.313, effective June 20, 1994 (operative July 26, 1994).

See: 25 N.J.R. 3339(a), 26 N.J.R. 2600(a).

Administrative Correction.

See: 27 N.J.R. 1406(a).

Administrative change.

See: 31 N.J.R. 639(b).

7:27B-3.2 Sampling and analytical protocol: acceptable test methods

(a) When N.J.A.C. 7:27-8, 7:27-16, 7:27-17, or 7:27-23 requires a source emissions test, the applicant shall submit a written protocol to the Department at least 30 days prior to the date of the test, to the following address:

Chief, Bureau of Technical Services
Division of Environmental Quality
Department of Environmental Protection
PO Box 411
380 Scotch Road
Trenton, New Jersey 08625-0411

(b) The written protocol shall include a detailed description of the following:

1. Sampling location;
2. Sampling equipment;
3. Sampling and analytical procedures for the tests;
4. Data reporting forms; and
5. Quality assurance procedures.

(c) Any alternative test method, analytical method, instrumentation, source, test period, or data reporting forms shall be submitted in writing with the test protocol for approval at the discretion of the Department at least 30 days prior to the test, to the address set forth in (a) above.

(d) Any changes from the procedures and methods set forth in the protocol may be approved verbally prior to the test at the discretion of the Department; however, the applicant shall note the request and the Department’s response in the final test report submitted by the applicant to the Department.

(e) Any Departmental approval pursuant to (c) or (d) above shall be confirmed in writing by the Department.

(f) The Department may itself employ such alternative procedures when warranted by test conditions or other circumstances.

(g) The applicant shall give notice to the Department at least 48 hours prior to the test in order to afford the opportunity for a Departmental observer(s) to be present.

(h) Performance tests shall be conducted in accordance with test methods set forth hereinafter.

(i) For determining the quality and quantity of VOC from source operations, the prescribed test procedures shall be as follows:

1. For a single known VOC: Procedures for the Direct Measurement of VOC Using a Flame Ionization Detector or a Photoionization Detector or a Non-Dispersive Infrared Analyzer (N.J.A.C. 7:27B-3.7).
2. For a mixture of known VOC in known proportion: Procedures for the Direct Measurement of VOC Using a Flame Ionization Detector, a Photoionization Detector or a Non-Dispersive Infrared Analyzer (N.J.A.C. 7:27B-3.7).
3. For a mixture of known VOC in unknown proportions: Procedures for the Direct Measurement of VOC Using a Gas Chromatograph with a Flame Ionization Detector or other suitable detector (N.J.A.C. 7:27B-3.8).
4. For a mixture containing unknown VOC: A procedure has not been included in the test methods, but an analysis using a gas chromatograph with a mass spectrometer will be required and conducted in accordance with established procedures by a qualified operator. Prior to any such test, the Department must receive and approve a written protocol from the operator.
5. For a known or unknown VOC in a stack where condensation is present, isokinetic sampling will be required. A procedure has not been included in these test methods, but sampling using an approved modified particulate train will be required, which shall be submitted for Departmental review pursuant to N.J.A.C. 7:27B-3.2(c), (d), and (e).

(j) Whenever a direct analysis at the source is not possible, the samples shall be taken in accordance with the procedure described at N.J.A.C. 7:27B-3.9.

(k) Whenever a volume flow rate must be determined to establish mass emission rates of VOC or for any other reason, the methods prescribed in N.J.A.C. 7:27B-1, AIR TEST METHOD 1 (N.J.A.C. 7:27B-3.18 Reference 1), or other flow determining method which shall be submitted for Departmental review pursuant to N.J.A.C. 7:27B-3.2(c), (d), and (e).

Amended by R.1992 d.102, effective March 2, 1992 (operative March 28, 1992).

See: 23 N.J.R. 1858(b), 24 N.J.R. 792(a).
"VOS" replaced by "VOC".

7:27B-3.3 Operating conditions during the test

Insofar as practical, the source operation will be tested while operating at normal routine conditions and, as necessary, at other conditions including, but not limited to, design, maximum and fluctuating rates.

7:27B-3.4 Sampling facilities

(a) The following sampling facilities shall be provided by the party responsible for the emissions:

1. Sampling ports installed at locations specified by the Department and of a size large enough to accommodate the sampling equipment;
2. Safe sampling platforms and safe access thereto conforming with laws and regulations concerning safe construction and safe practice (N.J.A.C. 7:27B-3.18, Reference 2);
3. Utilities as needed for sampling and testing equipment, which may include electrical power and water;
4. Any other facilities exclusive of instrumentation and sensing devices as may be necessary for the Department to accurately determine the emissions of VOC from the source operation;
5. Facilities, as necessary, for representative sampling of raw materials and for the determination of the amount of raw materials being used during the test run; and
6. The facilities installed may be either permanent or temporary, at the discretion of the party responsible for their provision.

Amended by R.1992 d.102, effective March 2, 1992 (operative March 28, 1992).

See: 23 N.J.R. 1858(b), 24 N.J.R. 792(a).
"VOS" replaced by "VOC".

7:27B-3.5 Source operations and applicable test methods

The following chart sets forth the applicable test methods, shown by section designation, for the various source operations that are regulated by N.J.A.C. 7:27-8, 7:27-16, 7:27-17, and 7:27-23:

Applicable Test Methods

Source Operation	Vapor Pressure	Efficiency of Control Apparatus	Leaks From Source	Emissions From Source	VOC Content	Leak Tightness of Delivery Vessel	Recovered Solvent Flow Rate
Storage of VOC	3.6	3.7 3.8 3.9	3.14				
Transfer Operations Open Top Tanks and Surface Cleaners	3.6 3.6	3.16 3.7 3.8	3.15	3.11 3.7 3.8		3.13	

Source Operation	Vapor Pressure	Efficiency of Control Apparatus	Leaks From Source	Emissions From Source	VOC Content	Leak Tightness of Delivery Vessel	Recovered Solvent Flow Rate
		3.9		3.9			
Surface Coating Operations		3.7 3.8 3.9		3.7 3.8 3.9	3.10		
Source Operations Other than Storage Tanks, Open Top Tanks and Surface Outers	3.6	3.7 3.8 3.9	3.14	3.7 3.8 3.9			
Cutback and Emulsified Asphalt					3.12		
Petroleum Solvent Dry Cleaners				3.7 3.8 3.9	3.17		3.17

Amended by R.1992 d.102, effective March 2, 1992 (operative March 28, 1992).
 See: 23 N.J.R. 1858(b), 24 N.J.R. 792(a).
 Reference to N.J.A.C. 7:27-23 added; "VOS" replaced by "VOC".

7:27B-3.6 Procedures for the determinations of vapor pressures of a single known VOC or mixtures of known and/or unknown VOC

(a) The vapor pressure of a single known volatile organic substance shall be determined as follows: