



Standard Test Method for Solvents Analysis in Hazardous Waste Using Gas Chromatography¹

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1. Scope

1.1 This test method is used to determine qualitatively and quantitatively the presence of the following compounds in waste samples using gas chromatography. This test method is designed for use as a screening method with a typical reporting level of 0.1 %.

Dichodifluoromethane	Tetrahydrofuran
Trichlorofluoromethane	Acetone
1,1,2-Trichloro-1,2,2-trifluoroethane	Methyl Ethyl Ketone
Methanol	MIBK
Ethanol	Cyclohexanone
Isopropanol	Ethyl Acetate
<i>n</i> -Propanol	Propyl Acetate
Isobutanol	Butyl Acetate
<i>n</i> -Butanol	Benzene
<i>tert</i> -Butanol	Toluene
Methylene Chloride	Ethylbenzene
Chloroform	Xylenes
Carbon Tetrachloride	Styrene
1,1-Dichloroethane	Chlorobenzene
1,2-Dichloroethane	Dichlorobenzenes
1,2-Dichloropropane	Nitrobenzene
1,1-Dichloroethylene	Fluorobenzene
1,2-Dichloroethene	<i>n</i> -Propyl Benzene
1,1,1-Trichloroethane	Isopropyl Benzene
Tetrachloroethylene	Isobutyl Benzene
Trichloroethylene	<i>n</i> -Butyl Benzene
Tetrachloroethane	2-Ethoxyethanol
Cyclopentane	2-Butoxyethanol
Pentane	2-Ethoxyethanol Acetate
Hexane	2-Methoxyethanol
Heptane	Bromoform
Cyclohexane	Carbitol
<i>Is</i> ooctane	Ethyl Ether
Nitropropane	1,4-Dioxane
Ethanolamine	Diacetone Alcohol
Nitromethane	Acetonitrile
Ethylene Chloride	Pyridine
Benzyl Chloride	Toluidine
	Ethylene Glycol
	Propylene Glycol

1.1.1 This compound list is a compilation of hazardous solvents and other constituents that are routinely seen in hazardous waste samples.

1.2 The scope of this test method may be expanded to include other volatile and semivolatile organic constituents.

1.2.1 Hydrocarbon mixtures such as kerosene and mineral spirits.

1.2.2 High-boiling organics, defined here as compounds which boil above *n*-Hexadecane.

1.2.3 Other organics that the analyst is able to identify, either through retention time data or gas chromatography/mass spectrometric (GC/MS) analysis.

1.3 Gas chromatographic methods are recommended for use only by, or under close supervision of, an experienced analyst.

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards*:²

D1193 Specification for Reagent Water

2.2 *EPA Document*:

Gas Chromatography/Mass Spectrometry Method 8260, Test Methods for Evaluating Solid Waste Physical/Chemical Methods, SW-846, Third Edition, Final Update 1, July 1992³

3. Summary of Test Method

3.1 Waste samples are analyzed by direct injection, or by carbon disulfide, *M*-Pyrol, or other suitable solvent extraction and injection of the extract into a gas chromatograph. Detection is achieved using a detector which is specific for the needed application, for example, flame ionization detector (FID), electron capture detector (ECD), thermal conductivity detector (TCD), photoionization detector (PID), or mass selective detector (MSD). This test method may be expanded to utilize other detector types not previously mentioned.

¹ This test method is under the jurisdiction of ASTM Committee D34 on Waste Management and is the direct responsibility of Subcommittee D34.01.06 on Analytical Methods.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.