



Designation: D 5396 – 004

Standard Specification for Reclaimed Perchloroethylene^{1,2}

This standard is issued under the fixed designation D 5396; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This specification covers the grade of perchloroethylene typically needed in various industries for noncritical applications, such as in metal cleaning formulations. It is not recommended for dry cleaning applications (see Specification D 4081). It may be used as a reference document by purchasers or by persons establishing in-house perchloroethylene recovery programs.

¹ This specification is under the jurisdiction of ASTM Committee D26 on Halogenated Organic Solvents and Fire Extinguishing Agents and is the direct responsibility of Subcommittee D26.02 on Vapor Degreasing.

Current edition approved Jan. 10, 2000⁴. Published April 2000. ~~Originally published as D 5396 – 93, approved in 1993. Last previous edition approved in 2000 as D 5396 – 9400.~~ March 2004.

² Tetrachloroethylene: CAS #127-18-4.

2. Referenced Documents

2.1 ASTM Standards:³

- D 2108 Test Method for Color of Halogenated Organic Solvents and Their Admixtures (Platinum-Cobalt Scale)
 D 2109 Test Methods for Nonvolatile Matter in Halogenated Organic Solvents and Their Admixtures
 D 2111 Test Methods for Specific Gravity of Halogenated Organic Solvents and Their Admixtures
 D 2942 Test Method for Total Acid Acceptance of Halogenated Organic Solvents (Nonreflux Methods)
 D 2988 Test Method for Water-Soluble Halide Ion in Halogenated Organic Solvents and Their Admixtures
 D 2989 Test Method for Acidity-Alkalinity of Halogenated Organic Solvents and Their Admixtures
 D 3401 Test Methods for Water in Halogenated Organic Solvents and Their Admixtures
 D 3447 ~~41~~ Test Method for ~~Purity Appearance~~ of Admixtures Containing Halogenated Organic Solvents
 D-3741 ~~Test Method~~ 4081 Specification for ~~Appearance of Admixtures Containing Halogenated Organic Solvents~~³
~~Drycleaning-Grade Perchloroethylene~~
 D-4081 ~~Specification~~ 6806 Practice for ~~Drycleaning-Grade Perchloroethylene~~³
 D-5320 ~~Test Methods for Determination Analysis of 1,1,1-Trichloroethane~~ Halogenated Organic Solvents and Methylene Chloride Content in Stabilized Trichloroethylene and Tetrachloroethylene³ Their Admixtures by Gas Chromatography
 E 1064 Test Method for Water in Organic Liquids by Coulometric Karl Fischer Titration

2.2 Other Documents:

- 29 CFR 1910.1200 Department of Labor, OSHA Regulations, Hazard Communication⁴
 49 CFR 100 to 199 Department of Transportation Hazardous Materials Regulations⁴

3. Classification

- 3.1 *Type I*—Generally recognized for use in precision applications.
 3.2 *Type II*—Use for less demanding precision applications.
 3.3 *Type III*—General-purpose technical grade.

4. Properties

- 4.1 Reclaimed perchloroethylene, Type I, shall meet the requirements of Table 1.
 4.2 Reclaimed perchloroethylene, Type II, shall meet the requirements of Table ~~2-1~~.
 4.3 Reclaimed perchloroethylene, Type III, shall meet the requirements of Table ~~3-1~~.

5. Packaging and Package Marking

5.1 Industrial or commercial quantities shall be packaged and labeled in accordance with DOT regulations as found in 49 CFR 100 to 199, in accordance with state and local regulations, and in accordance with OSHA regulations found in 29 CFR 1919.1200.

6. Keywords

- 6.1 halogenated solvent; perchlor.; perchloroethylene, Types I, II, and III; perk; reclaimed

³ 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*, Vol 15.05, volume information, refer to the standard's Document Summary page on the ASTM website.

⁴ *Code of Federal Regulations*, available from the Superintendent of Documents, Government Printing Office, Washington, DC 20402.

TABLE 1 Properties, Type I

Property	Specification			Specific Test Method
	Type I	Type II	Type III	
Specific gravity, 25/25	1.60 to 1.62	1.60 to 1.62	1.59 to 1.62	D 2111
Chloride, ppm, max	1.0	1.0	1.0	D 2988
Nonvolatile residue, ppm, max	10	20	25	D 2109
Water, ppm, max	25	50	100	D 3401 or E 1064
Assay, weight %	99.5	99.0	97.0	D-3447
Assay, weight %	99.5	99.0	97.0	D 6806
1,1,1-Trichloroethane content, weight %, max	0.02	0.05	0.5	D-5320
1,1,1-Trichloroethane content, weight %, max	0.02	0.05	0.5	D 6806
Color, Pt-Co, max	10	10	25	D 2108
Appearance	clear and free from suspended matter	clear and free from suspended matter	clear and free from suspended matter	D 3741
Acid acceptance, as NaOH, weight %, min	0.16	0.16	0.16	D 2942
Acidity, as HCl, ppm, max	1.0	1.0	1.0	D 2989

ASTM International takes no position respecting the validity of any patent rights asserted in connection with any item mentioned in this standard. Users of this standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, are entirely their own responsibility.

This standard is subject to revision at any time by the responsible technical committee and must be reviewed every five years and if not revised, either reapproved or withdrawn. Your comments are invited either for revision of this standard or for additional standards and should be addressed to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend. If you feel that your comments have not received a fair hearing you should make your views known to the ASTM Committee on Standards, at the address shown below.

This standard is copyrighted by ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, United States. Individual reprints (single or multiple copies) of this standard may be obtained by contacting ASTM at the above address or at 610-832-9585 (phone), 610-832-9555 (fax), or service@astm.org (e-mail); or through the ASTM website (www.astm.org).