



Standard Specification for Reclaimed 1,1,2-Trichloro 1,2,2-Trifluoroethane¹

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1. Scope

1.1 This specification covers the three grades of 1,1,2-trichloro 1,2,2-trifluoroethane² typically needed in various industries. It may be used as a reference document by purchasers or by persons establishing in-house, 1,1,2-trichloro 1,2,2-trifluoroethane recovery programs.

2. Referenced Documents

2.1 ASTM Standards:³

- D 1064 Test Methods for Iron in Rosin Tall Oil Fatty Acids and Other Related Products
- 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 3401 Test Methods for Water in Halogenated Organic Solvents and Their Admixtures
- D 3443 Test Method for Chloride in Trichlorotrifluoroethane
- D 3444 Test Method for Total Acid Number of Trichlorotrifluoroethane
- D 3741 Test Method for Appearance of Admixtures Containing Halogenated Organic Solvents
- D 6806 Practice for Analysis of Halogenated Solvents and Their Admixtures by Gas Chromatography

3. Classification

3.1 *Type I*—Generally recognized for use in precision applications.

3.2 *Type II*—Use for less demanding precision applications.

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.

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² 1,1,2-trichloro 1,2,2-trifluoroethane: CAS No. 76-13-1.

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

TABLE 1 Physical Properties Type I

Property	Specification	Test Method
Specific Gravity, 20/20	1.54 to 1.57	D 2111
Chloride, ppm, max	0.1	D 3443
Acid number	0.003	D 3444
Non-volatile residue, ppm, max	10	D 2109
Water, ppm, max	25	D 3401 or D1064
1,1,2-trichloro 1,2,2-trifluoroethane content, wt %, min	99.5	D 6806
1,1,1-trichloroethane content, wt %, max	0.02	D 6806
Color, Pt-Co, max	10	D 2108
Appearance	clear and free from suspended matter	D 3741

3.3 *Type III*—General-purpose technical grade.

4. Properties

4.1 Reclaimed 1,1,2-trichloro 1,2,2-trifluoroethane Type I shall meet the requirements prescribed in Table 1.

4.2 Reclaimed 1,1,2-trichloro 1,2,2-trifluoroethane Type II shall meet the requirements prescribed in Table 2.

4.3 Reclaimed 1,1,2-trichloro 1,2,2-trifluoroethane Type III shall meet the requirements prescribed in Table 3.

5. Keywords

5.1 1,1,2-trichloro 1,2,2-trifluoroethane; CFC 113; Type I; Type II; Type III

TABLE 2 Physical Properties Type II

Property	Specification	Test Method
Specific Gravity, 20/20	1.53 to 1.57	D 2111
Chloride, ppm, max	0.2	D 3443
Acid number	not tested	D 3444
Non-volatile residue, ppm, max	20	D 2109
Water, ppm, max	50	D 3401 or D1064
1,1,2-trichloro 1,2,2-trifluoroethane content, wt %, min	99.0	D 6806
1,1,1-trichloroethane content, wt %, max	0.05	D 6806
Color, Pt-Co, max	10	D 2108
Appearance	clear and free from suspended matter	D 3741