



## Standard Specification for Reclaimed 1,1,2-Trichloro 1,2,2-Trifluoroethane<sup>1</sup>

This standard is issued under the fixed designation D 5248; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

### 1. Scope

1.1 This specification covers the three grades of 1,1,2-trichloro 1,2,2-trifluoroethane<sup>2</sup> 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:

- D 1064 Test Methods for Iron in Rosin Tall Oil Fatty Acids and Other Related Products<sup>3</sup>
- D 2108 Test Method for Color of Halogenated Organic Solvents and Their Admixtures (Platinum-Cobalt Scale)<sup>4</sup>
- D 2109 Test Methods for Nonvolatile Matter in Halogenated Organic Solvents and Their Admixtures<sup>4</sup>
- D 2111 Test Methods for Specific Gravity of Halogenated Organic Solvents and Their Admixtures<sup>4</sup>
- D 3401 Test Methods for Water in Halogenated Organic Solvents and Their Admixtures<sup>4</sup>
- D 3443 Test Method for Chloride in Trichlorotrifluoroethane<sup>4</sup>
- D 3444 Test Method for Total Acid Number of Trichlorotrifluoroethane<sup>4</sup>
- D 3447 Test Method for Halogenated Organic Solvents<sup>4</sup>

### D 3741 Test Method for Appearance of Admixtures Containing Halogenated Organic Solvents<sup>4</sup>

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 3447
1,1,1-trichloroethane content, wt %, max	0.02	D 3447
Color, Pt-Co, max	10	D 2108
Appearance	clear and free from suspended matter	D 3741

### 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 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

<sup>1</sup> 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 Dec. 10, 1996. Published June 1997. Originally published as D 5248 – 92. Last previous edition D 5248 – 92 (1996).

<sup>2</sup> 1,1,2-trichloro 1,2,2-trifluoroethane: CAS No. 76-13-1.

<sup>3</sup> *Annual Book of ASTM Standards*, Vol 06.03.

<sup>4</sup> *Annual Book of ASTM Standards*, Vol 15.05.

**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 3447
1,1,1-trichloroethane content, wt %, max	0.05	D 3447
Color, Pt-Co, max	10	D 2108
Appearance	clear and free from suspended matter	D 3741

**TABLE 3 Physical Properties Type III**

Property	Specification	Test Method
Specific Gravity, 20/20	1.52 to 1.57	D 2111
Chloride, ppm, max	0.2	D 3443
Acid number	not tested	D 3444
Non-volatile residue, ppm, max	25	D 2109
Water, ppm, max	100	D 3401 or D1064
1,1,2-trichloro 1,2,2-trifluoroethane content, wt %, min	98.0	D 3447
1,1,1-trichloroethane content, wt %, max	0.1	D 3447
Color, Pt-Co, max	25	D 2108
Appearance	clear and free from suspended matter	D 3741

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