Designation: D3734 – 05 (Reapproved 2010)

Standard Specification for High-Flash Aromatic Naphthas[1]

This standard is issued under the fixed designation D3734; 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.

This standard has been approved for use by agencies of the Department of Defense.

1. Scope*

1.1 This specification covers two types of aromatic hydrocarbon solvents, normally petroleum distillates, having high flash points, moderately low volatility, and a distillation range of approximately 30°C (50°F). These solvents are used primarily by the coatings industry and are commonly referred to as high-flash aromatic naphthas.

1.2 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.3 The following applies to all specified limits in this standard; for purposes of determining conformance with this standard, an observed value or a calculated value shall be rounded off "to the nearest unit" in the last right-hand digit used in expressing the specification limit, in accordance with the rounding-off method of Practice E29.

1.4 For specific hazard information and guidance, see the supplier's Material Safety Data Sheet for materials listed in this specification.

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D56 Test Method for Flash Point by Tag Closed Cup Tester
D86 Test Method for Distillation of Petroleum Products at Atmospheric Pressure
D156 Test Method for Saybolt Color of Petroleum Products (Saybolt Chromometer Method)
D268 Guide for Sampling and Testing Volatile Solvents and Chemical Intermediates for Use in Paint and Related Coatings and Material
D611 Test Methods for Aniline Point and Mixed Aniline Point of Petroleum Products and Hydrocarbon Solvents
D849 Test Method for Copper Strip Corrosion by Industrial Aromatic Hydrocarbons
D891 Test Methods for Specific Gravity, Apparent, of Liquid Industrial Chemicals
D1133 Test Method for Kauri-Butanol Value of Hydrocarbon Solvents
D1209 Test Method for Color of Clear Liquids (Platinum-Cobalt Scale)
D1296 Test Method for Odor of Volatile Solvents and Diluents
D1319 Test Method for Hydrocarbon Types in Liquid Petroleum Products by Fluorescent Indicator Adsorption
D3278 Test Methods for Flash Point of Liquids by Small Scale Closed-Cup Apparatus
D4052 Test Method for Density, Relative Density, and API Gravity of Liquids by Digital Density Meter
E29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications
E300 Practice for Sampling Industrial Chemicals

2.2 *U.S. Federal Specification:*

PPP-C-2020 Chemicals, Liquid, Dry, and Paste: Packaging of[3]

3. Classification

3.1 High-flash aromatic naphthas shall be of the following types, as specified:

3.1.1 *Type I*—Aromatic 100 (Note 1), having a flash point not less than 38°C (100°F).

3.1.2 *Type II*—Aromatic 150 (Note 2), having a flash point not less than 61°C (142°F).

NOTE 1—Aromatic 100 consists primarily of C_9 aromatic hydrocarbons.

NOTE 2—Aromatic 150 consists primarily of C_{10} aromatic hydrocarbons.

4. Properties

4.1 The physical and chemical properties of high-flash aromatic naphthas shall conform to the requirements specified in Table 1.

[1] This specification is under the jurisdiction of ASTM Committee D01 on Paint and Related Coatings, Materials, and Applications and is the direct responsibility of Subcommittee D01.35 on Solvents, Plasticizers, and Chemical Intermediates.

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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 Standardization Documents Order Desk, DODSSP, Bldg. 4, Section D, 700 Robbins Ave., Philadelphia, PA 19111-5098, http://dodssp.daps.dla.mil.

***A Summary of Changes section appears at the end of this standard**

TABLE 1 Physical and Chemical Properties of High-Flash Aromatic Naphthas

	Type I	Type II
Commercial reference	Aromatic 100	Aromatic 150
Appearance	clear and free of suspended matter and undissolved water.	
Color	not darker than +28 on the Saybolt scale, or 10 on the platinum-cobalt scale.	
Aromatics, volume %, min	95	95
Copper corrosion, ½ h at 100°C	no iridescence, discoloration, or gray or black deposit on copper strip	
Distillation, °C (°F):		
Initial boiling point, min	149 (300)	177 (350)
50 % recovered, max	168 (335)	196 (385)
Dry point, max	183 (362)	216 (420)
Flash point, °C (°F), min	38(100)	61 (142)
Kauri-butanol value, min	87	85
Mixed aniline point, max	65	65
Odor	characteristic, as agreed between purchaser and supplier	
Apparent specific gravity, 15.6/15.6°C (60/60°F):		
min	0.865	0.880
max	0.882	0.910
or		
Apparent specific gravity, 25/25°C (77/77°F):		
min	0.857	0.873
max	0.874	0.903

5. Sampling

5.1 The material shall be sampled in accordance with Practice E300.

6. Test Methods

6.1 The properties enumerated in this specification shall be determined in accordance with the following ASTM test methods (see Guide D268):

6.1.1 *Aromatics*—Test Method D1319.

6.1.2 *Color*—Test Method D156 (Saybolt color) or Test Method D1209 (platinum-cobalt scale). In case of dispute, the Saybolt color limit is controlling.

6.1.3 *Corrosion*—Test Method D849.

6.1.4 *Distillation*—Test Method D86.

6.1.5 *Flash Point*—Test Methods D56, D3278 (alternative).

6.1.6 *Kauri-Butanol Value*—Test Method D1133.

6.1.7 *Mixed Aniline Point*—Test Methods D611.

6.1.8 *Odor*—Test Method D1296. Samples of the particular types of products being tested, having odor characteristics agreed to between the purchaser and the supplier, are to be used as reference standards for comparison.

6.1.9 *Apparent Specific Gravity*—Test Methods D891 or D4052. In case of dispute, apparent specific gravity at 15.6/15.6°C (60/60°F) is controlling.

7. Packaging and Package Marking

7.1 Package size shall be agreed upon by the purchaser and the supplier.

7.2 Packaging shall conform to applicable carrier rules and regulations or when specified shall conform to Fed. Spec. PPP-C-2020.

8. Keywords

8.1 aromatic naphthas; high-flash; solvents

SUMMARY OF CHANGES

Committee D01.35 has identified the location of selected changes to this standard since the last issue (D3734 – 01) that may impact the use of this standard.

(1) Added reference to Practice E29 in Scope section.

(2) Added Practice E29 to list of Referenced Documents.

(3) Changed specs limits for apparent specific gravity in Table 1.