



Standard Specification for High-Flash Aromatic Naphthas¹

This standard is issued under the fixed designation D 3734; 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 two types of aromatic hydrocarbon solvents, normally petroleum distillates, having high flash points, moderately low volatility, and a distillation range of approximately 50°F (30°C). These solvents are used primarily by the coatings industry and are commonly referred to as high-flash aromatic naphthas.

1.2 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:

- D 56 Test Method for Flash Point by Tag Closed Tester²
- D 86 Test Method for Distillation of Petroleum Products²
- D 156 Test Method for Saybolt Color of Petroleum Products (Saybolt Chromometer Method)²
- D 268 Guide for Sampling and Testing Volatile Solvents and Chemical Intermediates for Use in Paint and Related Coatings and Material³
- D 611 Test Methods for Aniline Point and Mixed Aniline Point of Petroleum Products and Hydrocarbon Solvents²
- D 849 Test Method for Copper Corrosion by Industrial Aromatic Hydrocarbons³
- D 891 Test Methods for Specific Gravity, Apparent, of Liquid Industrial Chemicals⁴
- D 1133 Test Method for Kauri-Butanol Value of Hydrocarbon Solvents³
- D 1209 Test Method for Color of Clear Liquids (Platinum-Cobalt Scale)³
- D 1296 Test Method for Odor of Volatile Solvents and Diluents³
- D 1319 Test Method for Hydrocarbon Types in Liquid Petroleum Products by Fluorescent Indicator Absorption²
- D 3278 Test Methods for Flash Point of Liquids by Set-flash Closed-Cup Apparatus⁵
- D 4052 Test Method for Density and Relative Density of

Liquids by Digital Density Meter⁶

E 300 Practice for Sampling Industrial Chemicals⁴

2.2 U.S. Federal Specification:

PPP-C-2020 Chemicals, Liquid, Dry, and Paste: Packaging of⁷

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 100°F (38°C).

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

NOTE 1—Aromatic 100 consists primarily of C₉ aromatic hydrocarbons.

NOTE 2—Aromatic 150 consists primarily of C₁₀ 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.

5. Sampling

5.1 The material shall be sampled in accordance with Practice E 300.

6. Test Methods

6.1 The properties enumerated in this specification shall be determined in accordance with the following ASTM test methods (see Guide D 268):

6.1.1 *Aromatics*—Test Method D 1319.

6.1.2 *Color*—Test Method D 156 (Saybolt color) or Test Method D 1209 (platinum-cobalt scale). In case of dispute, the Saybolt color limit is controlling.

6.1.3 *Corrosion*—Test Method D 849.

6.1.4 *Distillation*—Test Method D 86.

6.1.5 *Flash Point*—Test Methods D 56, D 3278 (alternative).

6.1.6 *Kauri-Butanol Value*—Test Method D 1133.

6.1.7 *Mixed Aniline Point*—Test Methods D 611.

6.1.8 *Odor*—Test Method D 1296. Samples of the particular

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

Current edition approved Jan. 10, 1996. Published March 1996. Originally published as D 3734 – 78. Last previous edition D 3734 – 91.

² Annual Book of ASTM Standards, Vol 05.01.

³ Annual Book of ASTM Standards, Vol 06.04.

⁴ Annual Book of ASTM Standards, Vol 15.05.

⁵ Annual Book of ASTM Standards, Vol 06.01.

⁶ Annual Book of ASTM Standards, Vol 05.02.

⁷ Available from Standardization Documents Order Desk, Bldg. 4 Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094.

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

	Type I	Type II
Commerical 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	90	90
Copper corrosion, ½ h at 100°C	no iridescence, discoloration, or gray or black deposit on copper strip	
Distillation, °F (°C):		
Initial boiling point, min	300 (149)	350 (177)
50 % recovered, max	335 (168)	385 (196)
Dry point, max	355 (179)	420 (216)
Flash point, °F (°C), min	100 (38)	142 (61)
Kauri-butanol value, min	87	85
Mixed aniline point, max	60	65
Odor	characteristic, as agreed between purchaser and supplier	
Apparent specific gravity, 60/60°F (15.6/15.6°C):		
min	0.865	0.880
max	0.882	0.910
Apparent specific gravity, 77/77°F (25/25°C):		
min	0.857	0.873
max	0.874	0.903

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 D 891 or D 4052. In case of dispute, apparent specific gravity at 60/60°F (15.6/15.6°C) 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

The American Society for Testing and Materials 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 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, 100 Barr Harbor Drive, West Conshohocken, PA 19428.