



Standard Specification for Dibutyl Phthalate¹

This standard is issued under the fixed designation D608; 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 dibutyl phthalate (99 % grade).

1.2 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.

1.3 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

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

D268 Guide for Sampling and Testing Volatile Solvents and Chemical Intermediates for Use in Paint and Related Coatings and Material

D1209 Test Method for Color of Clear Liquids (Platinum-Cobalt Scale)

D1296 Test Method for Odor of Volatile Solvents and Diluents

D1364 Test Method for Water in Volatile Solvents (Karl Fischer Reagent Titration Method)

D1476 Test Method for Heptane Miscibility of Lacquer Solvents

D1613 Test Method for Acidity in Volatile Solvents and Chemical Intermediates Used in Paint, Varnish, Lacquer, and Related Products

D1617 Test Method for Ester Value of Solvents and Thinners

D4052 Test Method for Density, Relative Density, and API

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.

Gravity of Liquids by Digital Density Meter
D5386 Test Method for Color of Liquids Using Tristimulus Colorimetry
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 of³

3. Properties

3.1 Dibutyl phthalate (99 % grade) shall conform to the following requirements:

Apparent specific gravity: 20/20°C	1.046 to 1.050
or 25/25°C	1.043 to 1.047
Color, Pt-Co scale, max ^A	20
Odor ^B	nonresidual
Water, max, weight %	0.2 ^C
Acidity (free acid as phthalic acid), max, weight %	0.01 ^D
Ester value, max, weight %	not less than 99.0

^A Instrumental Pt-Co color determined by Test Method D5386 have been shown to have no statistically significant difference from Pt-Co color determined by Test Method D1209. However, it is not known whether dibutyl phthalate was part of the sample set included in the interlaboratory study.

^B Optional as agreed upon between supplier and consumer.

^C This quantitative limit ensures that the material is miscible without turbidity with 19 volumes of 99 % heptane at 20°C.

^D Equivalent to 0.067 mg of KOH per gram of sample.

4. Sampling

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

5. Test Methods

5.1 The properties enumerated in this specification shall be determined in accordance with the following ASTM methods:

5.1.1 *Apparent Specific Gravity*—Determine the apparent specific gravity at 20 or 25°C by a convenient method that is accurate to the third decimal place. See Guide D268 or Test Method D4052.

³ Available from U.S. Government Printing Office Superintendent of Documents, 732 N. Capitol St., NW, Mail Stop: SDE, Washington, DC 20401, http://www.access.gpo.gov.

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



- 5.1.2 *Color*—Test Method **D1209**.
- 5.1.3 *Odor*—Test Method **D1296**.
- 5.1.4 *Water*—Test Methods **D1364** and **D1476**.
- 5.1.5 *Acidity*—Test Method **D1613**.
- 5.1.6 *Ester Value*—Test Method **D1617**.

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

7. Keywords

- 7.1 dibutyl phthalate ; plasticizer

6. Packaging and Package Marking

6.1 Package size shall be agreed upon between the purchaser and the supplier.

SUMMARY OF CHANGES

Committee D01.35 has identified the location of selected changes to this standard since the last issue (D608 – 90 (2001)) 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 **3.1**.
- (4) Added new Notes A and B in **3.1**.
- (5) Added Test Method **D5386** to the list of Referenced Documents.
- (6) Added keyword.

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