Designation: D801 – 02 (Reapproved 2013)

Standard Test Methods for Sampling and Testing Dipentene[1]

This standard is issued under the fixed designation D801; 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 These test methods cover procedures for sampling and testing dipentene and related terpene solvents, consisting chiefly of monocyclic terpene hydrocarbons distilling above the range for turpentine.

1.2 The procedures given in these test methods appear in the following order:

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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 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

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

D890 Test Method for Water in Liquid Pine Chemicals

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

D6166 Test Method for Color of Pine Chemicals and Related Products (Instrumental Determination of Gardner Color)

D6387 Test Methods for Composition of Turpentine and Related Terpene Products by Capillary Gas Chromatography

E300 Practice for Sampling Industrial Chemicals

3. Significance and Use

3.1 The testing procedures described in these test methods have been in use for many years and emphasize the physical properties rather than the chemical composition of dipentene. These procedures were sufficient when dipentene was used primarily as a solvent. Currently, however, dipentene finds application as a chemical raw material and a knowledge of its chemical composition is therefore important. Test Methods D6387 describe a capillary gas chromatography method which is suitable for determining both the major and minor components found in dipentene.

4. Sampling

4.1 Sample the material in accordance with the procedure described in Guide D268 and Practice E300. If a sample from close to the bottom of a tank shows a decided difference in color or appearance from samples taken at other depths, take an extra bottom sample and examine it separately from the composite sample. In such case the composite sample shall not include any portion of such bottom sample.

5. Detection and Removal of Separated Water

5.1 Draw a portion of the dipentene by means of a glass or metal container with a removable stopper or top,[3]or with a thief, from the lowest part of the container, or by opening the bottom valve of the level tank car. If water is found to be present, draw it all out, record the quantity, and deduct it from the total volume of liquid delivered.

6. Appearance

6.1 Examine a portion of the sample after agitation to determine its clarity and freedom from foreign matter and separated water.

[1] These test methods are under the jurisdiction of ASTM Committee D01 on Paint and Related Coatings, Materials, and Applications and are the direct responsibility of Subcommittee D01.34 on Pine Chemicals and Hydrocarbon Resins.

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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] Detailed description of equipment suitable for such sampling is given in Practice E300.

7. Color

7.1 Compare the color of the sample in any suitable or designated apparatus with the accepted or specific color standard. Accepted color standards are the Gardner color scale found in Test Method D6166 and the platinum-cobalt scale found in Test Method D1209.

8. Odor

8.1 Compare the odor of the sample with an agreed upon water-free reference sample kept in the dark in a completely filled well-stoppered bottle. In the absence of such a reference sample, compare with samples of known purity similarly preserved.

8.2 The use of an odor panel made up of personnel trained to smell terpenic odors is recommended.

9. Specific Gravity

9.1 Determine the specific gravity at 15.6/15.6°C by any convenient method, reporting the value to the nearest 0.0005. Correct determinations made at any other temperature, using apparatus standardized at 15.6°C by adding to or subtracting from the observed reading 0.00082 for each degree Celsius that the temperature of the liquid is above or below 15.6°C.

10. Refractive Index

10.1 Determine the refractive index with an instrument having a resolution of ±0.0001 at 20°C, if possible. If tested at any other temperature, correct the reading obtained to 20°C by adding or subtracting 0.00045 for each degree Celsius that the temperature at which the determination was made is respectively above or below 20°C.

11. Composition

11.1 Determine the component concentration of dipentene using gas chromatography. The referenced method (Test Methods D6387) employs capillary column technology.

12. Flash Point

12.1 Determine the flash point by any acceptable means agreed upon between the producer and the customer.

13. Moisture

13.1 The recommended method for the determination of dissolved water uses the Karl Fischer reagent and is described in Test Method D890. This method is more rapid than the distillation method described in 13.2 and is applicable to oxidized products.

13.2 *Alternative Method—Distillation:*

13.2.1 The azeotropic distillation method described in the procedure section of Test Method D890 can be used for moisture analysis of dipentene.

14. Precision and Bias

14.1 Some of the procedures described in these test methods were developed many years ago and were once used widely for the sampling and testing of dipentene. Currently these test methods are less widely used and it is not considered practical to determine the precision and bias of the individual test methods at this time.

14.2 Where reference is made to other ASTM test methods, these test methods should be examined to determine their precision and bias.

15. Keywords

15.1 dipentene; gas chromatography; sampling