Designation: D1901 – 10 (Reapproved 2015)

Standard Test Method for Relative Evaporation Time of Halogenated Organic Solvents and Their Admixtures[1]

This standard is issued under the fixed designation D1901; 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 U.S. Department of Defense.

1. Scope

1.1 This test method covers the measurement of the relative evaporation time of halogenated organic solvents and their admixtures. This test method is not applicable in the presence of excessive drafts or high-velocity air currents.

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

1.3 *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]

B209 Specification for Aluminum and Aluminum-Alloy Sheet and Plate

3. Terminology

3.1 *Definitions:*

3.1.1 *admixture*—a blend of a halogenated hydrocarbon with a nonhalogenated hydrocarbon (for example, mineral spirits).

4. Summary of Test Method

4.1 The evaporation rate is determined by measuring the time required for complete evaporation of a thin film of the solvent from a sheet-metal panel in comparison with a reference standard solvent.

5. Significance and Use

5.1 This test method gives valid comparisons of the evaporation rates of the subject materials. These comparisons are required for the determination of the suitability of a proposed material for specific cleaning applications.

6. Apparatus

6.1 *Test Panel*—A 1 by 100 by 150-mm panel of aluminum, AA Alloy 6061,[3] Temper T4 or T6, having a horizontal scribe mark across the width of the panel 25 mm from one 100-mm edge.

6.2 *Support Base* to hold the panel at 60 ± 1° from the horizontal.

6.3 *Stopwatch,* or electric interval timer.

6.4 *Graduate,* 10-mL, with pouring lip.

7. Reagents

7.1 *Perchloroethylene,* initial boiling point 121°C, boiling range 2°C, purity 99 %.

7.2 *p-Xylene,* 99 %.

8. Procedure

8.1 Place a clean, water-break-free test panel on the support base at an angle of 60 ± 1° from the horizontal, with the scribe mark at the lower end of the panel (Note 1). Using the graduate, pour 10 mL of the material under test over the test panel, being sure to get complete coverage of the entire exposed surface. As soon as the 10 mL of test material has been poured, observe the upper edge of the panel for a break in the continuity of coverage. Start the timing at the first sign of a break in liquid film coverage on the upper edge of the panel. Stop the timing when the last portion of film has receded below the scribe mark (Note 2). This interval between the first sign of incomplete coverage and the receding of the last portion of film below the scribe mark is referred to as the "dry time."

[1] This test method is under the jurisdiction of ASTM Committee D26 on Halogenated Organic Solvents and Fire Extinguishing Agents and is the direct responsibility of Subcommittee D26.04 on Test Methods.

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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] Aluminum Association alloy designation in accordance with ASTM Specification B209, for Aluminum-Alloy Sheet and Plate, *Annual Book of ASTM Standards*, Vol 02.02.