



Designation: D1823 – 24

Standard Test Method for Apparent Viscosity of Plastisols and Organosols at High Shear Rates by Extrusion Viscometer¹

This standard is issued under the fixed designation D1823; 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 test method covers the measurement of plastisol and organosol viscosity at high shear rates by means of an extrusion viscometer.

1.2 Apparent viscosity at low shear rates is covered in Test Method [D1824](#).

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

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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

NOTE 1—This standard and ISO 4575-2007 address the same subject matter, but differ in technical content.

1.5 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 ASTM Standards:²

[D883 Terminology Relating to Plastics](#)

[D1475 Test Method for Density of Liquid Coatings, Inks, and Related Products](#)

[D1755 Specification for Poly\(Vinyl Chloride\) Resins](#)

[D1824 Test Method for Apparent Viscosity of Plastisols and Organosols at Low Shear Rates](#)

[E1 Specification for ASTM Liquid-in-Glass Thermometers](#)

[E456 Terminology Relating to Quality and Statistics](#)

[E691 Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method](#)

[E2935 Practice for Evaluating Equivalence of Two Testing Processes](#)

2.2 ISO Standard:

[ISO 4575-2007 Poly Vinyl Chloride Pastes—Determination of Apparent Viscosity Using the Severs Rheometer](#)³

3. Terminology

3.1 For definitions of terms used in this test method and associated with plastics issues refer to the terminology contained in [D883](#).

3.2 For terms relating to precision and bias and associated issues, the terms used in this test method are in accordance with the definitions in Terminology [E456](#).

3.3 Definitions:

3.3.1 *organosol*, *n*—a suspension of a finely divided polymer in a plasticizer, together with a volatile organic liquid.

3.3.2 *plasticizer*, *n*—a substance incorporated in a material to increase its workability, flexibility, or distensibility.

3.3.3 *plastisol*, *n*—a liquid suspension of a finely divided PVC polymer or copolymer in a plasticizer.

3.3.4 *poly(vinyl chloride)*, *n*—a polymer prepared by the polymerization of vinyl chloride as the sole monomer (vinyl chloride content in monomer not less than 99 %).

3.3.5 *viscosity*, *n*—the property of resistance of flow exhibited within the body of a material.

3.3.5.1 *Discussion*—In testing, the ratio of the shearing stress to the rate of shear of a fluid. Viscosity is usually taken to mean “Newtonian viscosity,” in which case the ratio of shearing stress to rate of shearing strain is constant. In non-Newtonian behavior which is the usual case with plastics materials, the ratio varies with the shearing rate. Such ratios are often called the “apparent viscosities” at the corresponding shear rates. (See **viscosity coefficient**.) (IUPAC symbol: η .) (ISO)

¹ This test method is under the jurisdiction of ASTM Committee [D20](#) on Plastics and is the direct responsibility of Subcommittee [D20.15](#) on Thermoplastic Materials (Section D20.15.08).

Current edition approved April 1, 2024. Published April 2024. Originally approved in 1961. Last previous edition approved in 2016 as D1823 – 16. DOI: 10.1520/D1823-24.

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 American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

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