



Designation: ~~C813 – 90 (Reapproved 2009)~~ C813 – 90 (Reapproved 2014)

Standard Test Method for Hydrophobic Contamination on Glass by Contact Angle Measurement¹

This standard is issued under the fixed designation C813; 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 detection of hydrophobic contamination on glass surfaces by means of contact angle measurements. When properly conducted, the test will enable detection of fractions of monomolecular layers of hydrophobic organic contaminants. Very rough or porous surfaces may significantly decrease the sensitivity of the test.

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

D1193 Specification for Reagent Water

3. Terminology

3.1 *Definitions:*

3.1.1 *advancing angle*—the largest angle observable when a liquid droplet is increased in size.

3.1.2 *hydrophilic*—having a strong affinity for water; wettable.

¹ This test method is under the jurisdiction of ASTM Committee C14 on Glass and Glass Products and is the direct responsibility of Subcommittee C14.02 on Chemical Properties and Analysis.

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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.

3.1.2.1 *Discussion*—

Hydrophilic surfaces exhibit zero contact angles.

3.1.3 *hydrophobic*—having little affinity for water; nonwetable.

3.1.3.1 *Discussion*—

Hydrophobic surfaces exhibit contact angles appreciably greater than zero: generally greater than 45° for the advancing angle.

3.1.4 *receding angle*—the smallest angle observable when a liquid droplet is decreased in size.

3.1.5 *sessile drop*—a drop of liquid sitting on the upper side of a horizontal surface.

3.1.5.1 *Discussion*—

See Fig. 1.