



Designation: D1239 – 22a

# Standard Test Method for Resistance of Plastic Films to Extraction by Chemicals<sup>1</sup>

This standard is issued under the fixed designation D1239; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

## 1. Scope\*

1.1 This test method for resistance of plastic films to chemicals covers the measurement of the weight loss of film after immersion in chemicals.

NOTE 1—There is no known ISO equivalent to this standard.

NOTE 2—Film is defined as sheeting having nominal thickness not greater than 0.25 mm (0.010 in.), in accordance with Terminology D883.

1.2 The values stated in SI units are to be regarded as standard. The values stated in other units are nominal values given for information only.

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

1.4 *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:<sup>2</sup>

D543 Practices for Evaluating the Resistance of Plastics to Chemical Reagents

D882 Test Method for Tensile Properties of Thin Plastic Sheeting

D883 Terminology Relating to Plastics

D1600 Terminology for Abbreviated Terms Relating to Plastics

<sup>1</sup> This test method is under the jurisdiction of ASTM Committee D20 on Plastics and is the direct responsibility of Subcommittee D20.19 on Film, Sheeting, and Molded Products.

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<sup>2</sup> 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. Terminology

3.1 *Definitions*—For definitions of technical terms pertaining to plastics used in this test method, refer to Terminology D883. For abbreviations used in this test method, refer to Terminology D1600.

## 4. Significance and Use

4.1 This test method is intended to be a rapid empirical test to determine the loss of the plasticizer or other extractable components from the plastic film when immersed in liquids commonly used in households.

## 5. Apparatus

5.1 *Balance*—An analytical balance, capable of weighing to 0.0001 g.

NOTE 3—An analytical balance capable of weighing to 0.001 g can be used when the specimen thickness is greater than 0.05 mm (0.002 in.) and the extracted weight loss of the specimen exceeds 0.005 g.

5.2 *Containers*—Container with a diameter of at least 65 mm (2.5 in.) and a minimum volume to hold one specimen plus 400 mL of solvent in accordance with 9.2.

## 6. Materials

6.1 *Distilled Water*—Freshly prepared distilled or deionized water.

6.2 *Soap Solution (1 %)*—Dissolve 12 g of dehydrated pure white soap flakes (dried for 1 h at 105°C) in 1200 mL of distilled water. This is sufficient solution to test three specimens.

6.3 *Cottonseed Oil*—Household cooking grade.

6.4 *Mineral Oil, USP*—Heavy grade, sp gr 0.875 to 0.905.

6.5 *Kerosine*.

6.6 *Ethyl Alcohol (50 %)*, as described in Test Method D543.

6.7 Any other standard or supplementary reagent listed in Test Method D543.

## 7. Test Specimen

7.1 The test specimens for plastic films shall be in the form of squares  $50 \pm 0.25$  mm (2 in.) on each side. At least three specimens of each sample shall be tested with each chemical reagent.

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