



## Standard Guide for Classifying and Specifying Adhesives<sup>1</sup>

This standard is issued under the fixed designation D 4800; 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 guide provides a classification system for tabulating the properties of adhesives suitable for holding parts or assemblies together. The use of this guide also provides information necessary for the development of standard specifications for adhesives.

NOTE 1—This classification system may serve many of the needs of industries using adhesives. This guide is subject to revision as the need requires; therefore, the latest revision should always be used.

1.2 *Limitations*—This classification system is intended to be a means of identifying adhesives. It is not intended for the selection of materials. Material selection should be made by those having expertise in the adhesives field after careful consideration of the design and the performance required of the part, the environment to which it will be exposed, the attachment process to be employed, the inherent properties of the material not covered in this document, and the economic factors.

1.3 This classification system is based on the premise that adhesives can be arranged into broad generic families using basic properties to arrange the materials into groups, classes, and grades.

1.4 In all cases where the provisions of this classification system would conflict with the referenced ASTM specification for a particular material, the latter shall take precedence.

1.5 The values stated in SI units, as detailed in Practice E 380, are to be regarded as the standard.

### 2. Referenced Documents

#### 2.1 *ASTM Standards:*

D 907 Terminology of Adhesives<sup>2</sup>

D 1084 Test Methods for Viscosity of Adhesives<sup>2</sup>

D 1298 Practice for Density, Relative Density (Specific Gravity), or API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method<sup>3</sup>

D 1310 Test Method for Flash Point and Fire Point of Liquids by Tag Open-Cup Apparatus<sup>4</sup>

D 2240 Test Method for Rubber Property—Durometer Hardness<sup>5</sup>

D 2583 Test Method for Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor<sup>6</sup>

D 2834 Test Method for Nonvolatile Matter (Total Solids) in Water-Emulsion Floor Polishes, Solvent-Based Floor Polishes, and Polymer-Emulsion Floor Polishes<sup>7</sup>

D 3278 Test Methods for Flash Point of Liquids by Small Scale Closed-Cup Apparatus<sup>4</sup>

D 4562 Test Method for Shear Strength of Adhesives Using Pin-and-Collar Specimen<sup>2</sup>

D 5363 Specification for Anaerobic Single-Component Adhesives (AN)<sup>2</sup>

E 380 Practice for Use of the International System of Units (SI) (the Modernized Metric System)<sup>8</sup>

#### 2.2 *Military Standards:*

MIL-STD-105 Sampling Procedures and Tables for Inspection by Attributes<sup>9</sup>

MIL-A-46146 Adhesive, Silicone, RTV, Noncorrosive (for Use with Sensitive Metals and Equipment)<sup>9</sup>

### 3. Terminology

3.1 The terms used in this guide are in accordance with Terminology D 907.

### 4. Significance and Use

4.1 The purpose of this classification system is to provide a method of identifying adhesives in order to give industry a system that can be used universally for materials. It further provides a means for specifying these materials by the use of the standards that are developed using this guide.

4.2 This classification system was developed to permit the addition of future adhesives.

### 5. Classification

5.1 Fig. 1 summarizes the classification system as detailed in this guide.

5.2 Adhesives shall be classified on the basis of their broad generic family. The generic family is identified by letter designations as found in Table 1.

<sup>1</sup> This guide is under the jurisdiction of ASTM Committee D-14 on Adhesives and is the direct responsibility of Subcommittee D14.60 on Materials Classification. Current edition approved Feb. 15, 1994. Published April 1994. Originally published as D 4800 – 87. Last previous edition D 4800 – 87.

<sup>2</sup> *Annual Book of ASTM Standards*, Vol 15.06.

<sup>3</sup> *Annual Book of ASTM Standards*, Vol 05.01.

<sup>4</sup> *Annual Book of ASTM Standards*, Vol 06.01.

<sup>5</sup> *Annual Book of ASTM Standards*, Vol 09.01.

<sup>6</sup> *Annual Book of ASTM Standards*, Vol 08.02.

<sup>7</sup> *Annual Book of ASTM Standards*, Vol 15.04.

<sup>8</sup> *Annual Book of ASTM Standards*, Vol 14.02.

<sup>9</sup> Available from Standardization Documents Order Desk, Bldg. 4 Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094, Attn: NPODS.