



Designation: D883 – 24

Standard Terminology Relating to Plastics¹

This standard is issued under the fixed designation D883; 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 terminology covers definitions of technical terms used in the plastics industry. Terms that are generally understood or adequately defined in other readily available sources are not included.

1.2 When a term is used in an ASTM document for which Committee D20 is responsible it is included only when judged, after review, by Subcommittee D20.92 to be a generally usable term.

1.3 Definitions that are identical to those published by another standards body are identified with the abbreviation of the name of the organization; for example, IUPAC is the International Union of Pure and Applied Chemistry.

1.4 A definition is a descriptive phrase or a single sentence with additional information included in discussion notes.

NOTE 1—It is recommended that definitions be reviewed periodically.

1.4.1 When a new definition is added to this terminology standard, or the wording of a definition is revised, the date of the change shall be appended to the new or revised definition.

1.5 For literature related to plastics terminology, see [Appendix X1](#).

1.6 Subsections [1.6.1 – 1.6.5](#) contain references to specific terminology standards that are relevant to specific plastic products or applications. In case of conflict between a definition contained in Terminology D883 and one contained in another standard, the definition given in Terminology D883 shall prevail.

1.6.1 For terms related to thermal insulation, the applicable definitions are contained in Terminology [C168](#).

1.6.2 For terms related to electrical or electronic insulating materials, the applicable definitions are contained in Terminology [D1711](#).

1.6.3 For terms relating to fire, the applicable definitions are contained in Terminology [E176](#) and ISO 13943. In case of

conflict between Terminology [E176](#) and ISO 13943, the definitions given in Terminology [E176](#) shall prevail.

1.6.4 For terms relating to precision and bias and associated issues, the applicable definitions are contained in Terminology [E456](#).

1.6.5 For terms related to plastic piping systems, the applicable definitions are contained in Terminology [F412](#).

1.7 *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

[C162 Terminology of Glass and Glass Products](#)

[C168 Terminology Relating to Thermal Insulation](#)

[D638 Test Method for Tensile Properties of Plastics](#)

[D747 Test Method for Apparent Bending Modulus of Plastics by Means of a Cantilever Beam \(Withdrawn 2019\)](#)³

[D790 Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials](#)

[D882 Test Method for Tensile Properties of Thin Plastic Sheeting](#)

[D907 Terminology of Adhesives](#)

[D1003 Test Method for Haze and Luminous Transmittance of Transparent Plastics](#)

[D1711 Terminology Relating to Electrical Insulation](#)

[D4703 Practice for Compression Molding Thermoplastic Materials into Test Specimens, Plaques, or Sheets](#)

[E176 Terminology of Fire Standards](#)

[E308 Practice for Computing the Colors of Objects by Using the CIE System](#)

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

¹ This terminology is under the jurisdiction of ASTM Committee [D20](#) on Plastics and is the direct responsibility of Subcommittee [D20.92](#) on Terminology.

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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 The last approved version of this historical standard is referenced on www.astm.org.

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

F412 Terminology Relating to Plastic Piping Systems

2.2 ISO Standards:

ISO 13943 Fire Safety—Vocabulary (2023)⁴

3. Terminology

3.1 Definitions:

A-stage, *n*—an early stage in the preparation of certain thermosetting resins in which the material is still soluble in certain liquids, and may be liquid or capable of becoming liquid upon heating.

DISCUSSION—Sometimes referred to as Resol. (See also **B-stage** and **C-stage**.) (1978)⁵

acetal plastics, *n*—plastics based on polymers having a pre-dominance of acetal linkages in the main chain. (See also **polyoxymethylene**.) (1985)

acrylic plastics, *n*—plastics based on polymers made with acrylic acid or a structural derivative of acrylic acid. (1982)

addition polymerization—polymerization in which monomers are linked together without the splitting off of water or other simple molecules. (1983)

adiabatic extrusion—a method of extrusion in which, after the extrusion apparatus has been heated sufficiently by conventional means to plastify the material, the extrusion process can be continued with the sole source of heat being the conversion of the drive energy, through viscous resistance of the plastic mass in the extruder. (1978)

aging, *n*—(1) the effect on materials of exposure to an environment for an interval of time. (2) the process of exposing materials to an environment for an interval of time. (1973)

alkyd plastics, *n*—plastics based on alkyd resins. (1980)

alkyd resin, *n*—a polyester convertible into a crosslinked form; requiring a reactant of functionality higher than two, or having double bonds. (1982)

alloy, *n*—(in plastics), two or more immiscible polymers united, usually by another component, to form a plastic resin having enhanced performance properties.

allyl plastics, *n*—plastics based on allyl resins. (1978)

allyl resin, *n*—a resin made by polymerization of chemical compounds containing the allyl group. (1978)

amino plastics, *n*—plastics based on amino resins. (1978)

amino resin, *n*—a resin made by polycondensation of a compound containing amino groups, such as urea or melamine, with an aldehyde, such as formaldehyde, or an aldehyde-yielding material. (1985)

apparent density—See **density, apparent**.

aromatic polyester, *n*—a polyester derived from monomers in which all the hydroxyl and carboxyl groups are linked directly to aromatic nuclei. (1986)

artificial weathering, *n*—exposure to laboratory conditions, which may be cyclic, involving changes in temperature, relative humidity, radiant energy, and any other elements found in the atmosphere in various geographical areas.

DISCUSSION—The laboratory exposure conditions are usually intensified beyond those encountered in actual outdoor exposure in an attempt to achieve an accelerated effect. (1980)

average injection velocity, *n*—the mean value of the velocity of the molten plastic flow front within a cavity during the injection time that is calculated from the shot volume and injection time.

DISCUSSION—The average injection velocity is calculated as follows:

$$V_{av} = \frac{V_s}{t_i \times A_c \times n}$$

where:

V_{av}	=	average injection velocity, mm/s,
V_s	=	shot volume, mm ³ ,
t_i	=	injection time, s,
A_c	=	cross section of the cavity, mm ² , and
n	=	number of cavities.

This calculation is valid for molds containing a single cavity or those containing identical multi-specimen cavities only and not for family molds.

B-stage, *n*—an intermediate stage in the reaction of certain thermosetting resins in which the material swells when in contact with certain liquids and softens when heated, but may not entirely dissolve or fuse.

DISCUSSION—The resin in an uncured thermosetting molding compound is usually, in this stage, sometimes referred to as Resitol. (See also **A-stage** and **C-stage**.) (1978)

bag molding, *n*—a method of molding or laminating which involves the application of fluid pressure, usually by means of air, steam, water or vacuum, to a flexible barrier material which transmits the pressure to the material being molded or bonded.

DISCUSSION—The process is usually employed for forming shapes from preformed laminates comprising a fibrous sheet impregnated with an A-stage or a B-stage thermosetting resin. (1986)

binder, *n*—in a reinforced plastic, the continuous phase which holds together the reinforcement.

DISCUSSION—During fabrication, the binder, which may be either thermoplastic or thermoset, usually undergoes a change in state. (1978)

biodegradable plastic, *n*—See **degradable plastic**.

blister, *n*—an imperfection, a rounded elevation of the surface of a plastic, with boundaries that may be more or less sharply defined, somewhat resembling in shape a blister on the human skin. (1983)

block copolymer, *n*—an essentially linear copolymer in which there are repeated sequences of polymeric segments of different chemical structure. (1982)

blocking, *n*—unintentional adhesion between plastic films or between a film and another surface. (1983)

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

⁵ Date indicates year of introduction or latest review or revision.