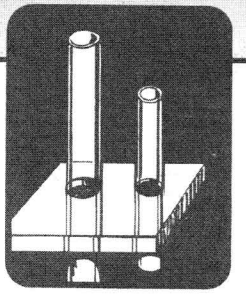
ANNUAL BOOK OF ASTM STANDARDS

2002

SECTION EIGHT

Plastics



VOLUME 08.02

Plastics (II): D 2383–D 4322

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SECTION 8

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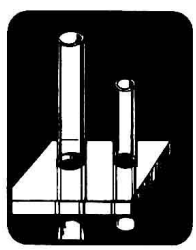

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Foreword

Organized in 1898, ASTM International has grown into one of the largest voluntary standards development systems in the world. ASTM International is a not-for-profit organization which provides a forum for producers, users, ultimate consumers, and those having a general interest (representatives of government and academia) to meet on common ground and write standards for materials, products, systems, and services.

From the work of 130 standards-writing committees, ASTM International publishes more than 11,000 standards each year. These standards and other related technical information are accepted and used throughout the world.

ASTM International Headquarters has no technical research or testing facilities; such work is done voluntarily by 30,000 technically qualified ASTM members located throughout the world. Membership in the Society is open to all concerned with the fields in which ASTM is active. A membership application may be obtained from Member and Committee Services, ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428–2959; tel. 610-832-9694 or from the ASTM website, www.astm.org under Membership.

2002 Annual Book of ASTM Standards

The 2002 *Annual Book of ASTM Standards* consists of 76 volumes, divided among 16 sections, of which this volume is one. It contains approved ASTM standards, provisional standards, and related material. These terms are defined as follows in the *Regulations Governing ASTM Technical Committees:*

Categories:

standard, n—as used in ASTM, a document that has been developed and established within the consensus principles of the Society and that meets the approval requirements of ASTM procedures and regulations.

standard, adj—as used in ASTM, a descriptive used in titles of test methods, specifications, and other documents to indicate consensus approval in accordance with ASTM procedures and regulations.

provisional standard—a document published for a limited period of time by the Society to meet a demand for more rapid issuance of specific documents, such as an emergency situation, regulatory requirements, or other special circumstances.

Discussion—Provisional standards are not full consensus documents because they require subcommittee consensus only. (See *Regulations Governing ASTM Technical Committees*, Section 14.)

Types:

The various types of ASTM documents are to provide a flexibility of form, communication, and usage for both the technical committees and the myriad users of ASTM documents. The type of ASTM document that is developed and titled is based on the technical content and intended use, not on the degree of consensus achieved. The two categories of ASTM documents (standard and provisional standard) can be of the following forms and types:

classification—a systematic arrangement or division of materials, products, systems, or services into groups based on similar characteristics such as origin, composition, properties, or use.

guide—a compendium of information or series of options that does not recommend a specific course of action.
Discussion—A guide increases the awareness of information and approaches in a given subject area.

practice—a definitive set of instructions for performing one or more specific operations or functions that does not produce a test result.

Discussion—Examples of practices include, but are not limited to: application, assessment, cleaning, collection, decontamination, inspection, installation, preparation, sampling, screening, and training.

specification—an explicit set of requirements to be satisfied by a material, product, system, or service.
Discussion—Examples of specifications include, but are not limited to, requirements for: physical, mechanical, or chemical properties, and safety, quality, or performance criteria. A specification identifies the test methods for determining whether each of the requirements is satisfied.

terminology—a document comprising definitions of terms; explanations of symbols, abbreviations, or acronyms.

test method—a definitive procedure that produces a test result.
Discussion—Examples of test methods include, but are not limited to: identification, measurement, and evaluation of one or more qualities, characteristics, or properties. A precision and bias statement shall be reported at the end of a test method. (See *Form and Style for ASTM Standards*, Section A21, Precision and Bias.)

A new edition of the Book of Standards is published annually because of additions of new standards and significant revisions to existing standards. Approximately 30 % of each volume is new or revised. Each volume contains all actions approved by the Society at least six months before the publication date. New and revised standards approved by the Society between the annual editions of any given volume are made available as separate copies. Users are cautioned to follow the most current issue of a standard except when a specific edition of a standard is cited, for example, as in a contract.

Development and Use of ASTM Standards

ASTM believes that technically competent standards result when a full consensus of all concerned parties is achieved and rigorous due process procedures are followed. This philosophy and standards development system ensure technically competent standards having the highest credibility when critically examined and used as the basis for commercial, legal, or regulatory actions.

ASTM standards are developed voluntarily and used voluntarily. Standards become legally binding only when a government body references them in regulations, or when they are cited in a contract. Any item that is produced and marked as conforming to an ASTM standard must meet all applicable requirements of that standard.

ASTM standards are used by thousands of individuals, companies, and agencies. Purchasers and sellers incorporate standards into contracts; scientists and engineers use them in laboratories; architects and designers use them in plans; government agencies reference them in codes, regulations, and laws; and many others refer to standards for guidance.

Consideration of Comments on ASTM Standards

An ASTM standard is subject to revision at any time by the responsible technical committee and must be reviewed every five years and if not revised, either reapproved or withdrawn. Your comments are invited either for revision of any standard or for the development of new standards and should be addressed to ASTM Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend. If you feel your comments have not received a fair hearing you should make your views known to the ASTM Committee on Standards, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428.

Using the Annual Book of ASTM Standards

The standards are assembled in each volume in alphanumeric sequence of their ASTM designation numbers. Volumes 03.06, 04.09, 05.05, 05.06, and 06.03 are assembled first by committee, then in alphanumeric sequence. Each volume has a table of contents, listing the standards in alphanumeric sequence by ASTM designation; and a list by subjects, categorizing the standards according to subject. A subject index of the standards in each volume appears at the back of each volume.

Availability of Individual Standards

Each ASTM standard is available as a separate copy from ASTM International. Standards can be ordered from the ASTM website at www.astm.org, in the store section. Standards can also be ordered from Customer Services

at 610–832–9585, Monday through Friday, 8:30 AM to 4:30 PM Eastern Standard Time.

Caveat Statements and Policies in Standards

ASTM caveat statements on Safety Hazards and Fire Hazards are required to appear in standards where appropriate. They are located in the scope section of applicable standards. The caveats on General Statement of ASTM Policy and Patents are contained in all standards and located at the end of each standard. For more information on the caveats see Section F2 of the *Form and Style for ASTM Standards.*

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ANNUAL BOOK OF ASTM STANDARDS

Listed by Subjects

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List by Subjects

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PLASTICS

A complete Subject Index appears at the end of this volume.

Since the standards in this volume are arranged in alphanumeric sequence, no page numbers are given in this list by subjects.

PLASTICS

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*D 2238 – 92(1999)	Absorbance of Polyethylene Due to Methyl Groups at 1378 cm^{-1}
*D 4094 – 00	Acid Content of Ethylene-Acrylic Acid Copolymers
D 2124 – 99$^{\epsilon 1}$	Analysis of Components in Poly(Vinyl Chloride) Compounds Using an Infrared Spectrophotometric Technique
D 6247 – 98	Analysis of Elemental Content in Polyolefins By X-Ray Fluorescence Spectrometry
*§D 1895 – 96	Apparent Density, Bulk Factor, and Pourability of Plastic Materials
*D 5630 – 01	Ash Content in Plastics
*§D 1603 – 01	Carbon Black In Olefin Plastics
*D 3594 – 93(2000)	Copolymerized Ethyl Acrylate In Ethylene-Ethyl Acrylate Copolymers
D 792 – 00	Density and Specific Gravity (Relative Density) of Plastics by Displacement
*§D 1505 – 98$^{\epsilon 1}$	Density of Plastics by the Density-Gradient Technique
*D 4883 – 99	Density of Polyethylene by the Ultrasound Technique
*D 4275 – 96	Determination of Butylated Hydroxy Toluene (BHT) in Polymers of Ethylene and Ethylene–Vinyl Acetate (EVA) Copolymers By Gas Chromatography
*D 4218 – 96(2001)	Determination of Carbon Black Content in Polyethylene Compounds By the Muffle-Furnace Technique
*D 5017 – 96	Determination of Linear Low Density Polyethylene (LLDPE) Composition by Carbon-13 Nuclear Magnetic Resonance
D 5815 – 95(2001)$^{\epsilon 1}$	Determination of Phenolic Antioxidants and Erucamide Slip Additives in Linear Low-Density Polyethylene Using Liquid Chromatography (LC)
*D 1996 – 97	Determination of Phenolic Antioxidants and Erucamide Slip Additives in Low Density Polyethylene Using Liquid Chromatography (LC)
D 6042 – 96	Determination of Phenolic Antioxidants and Erucamide Slip Additives in Polypropylene Homopolymer Formulations Using Liquid Chromatography (LC)
*D 5524 – 94(2001)$^{\epsilon 1}$	Determination of Phenolic Antioxidants in High Density Polyethylene Using Liquid Chromatography
*D 5508 – 94a(2001)$^{\epsilon 1}$	Determination of Residual Acrylonitrile Monomer in Styrene-Acrylonitrile Copolymer Resins and Nitrile-Butadiene Rubber by Headspace-Capillary Gas Chromatography (HS-CGC)
*D 5507 – 99	Determination of Trace Organic Impurities in Monomer Grade Vinyl Chloride by Capillary Column/Multi-Dimensional Gas Chromatography
D 4001 – 93(1999)	Determination of Weight-Average Molecular Weight of Polymers by Light Scattering
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*D 4603 – 96	Determining Inherent Viscosity of Poly(Ethylene Terephthalate) (PET)
D 6474 – 99	Determining Molecular Weight Distribution and Molecular Weight Averages of Polyolefins by High Temperature Gel Permeation Chromatography
D 4443 – 95	Determining Residual Vinyl Chloride Monomer Content in PPB Range in Vinyl Chloride Homo- and Co-Polymers by Headspace Gas Chromatography

*Adopted by American National Standards Institute.

§Approved for use by agencies of the Department of Defense and, if indicated on the standard, replaces corresponding Federal or Military document. Consult the DoD Index of Specifications and Standards for the specific year of issue which has been adopted by the Department of Defense.

‡Adopted by or under consideration for adoption by the Boiler and Pressure Vessel Committee of the American Society of Mechanical Engineers. The ASME Boiler and Pressure Vessel Code Specifications are identical with or based upon these ASTM Specifications.

†Although this standard has been officially withdrawn from Society approval, a brief description is included for information only.

Cellular Materials - Plastics and Elastomers

Durability of Plastics

Environmentally Degradable Plastics