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Plastics — Acrylonitrile-butadiene-styrene (ABS) moulding and extrusion materials —

Part 1: Designation system and basis for specifications

Plastiques — Acrylonitrile-butadiène-styrène (ABS) pour moulage et extrusion —

Partie 1: Système de désignation et base de spécifications

Reference number
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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 61, *Plastics*, Subcommittee SC 9, *Thermoplastic materials*.

This first edition of ISO 19062-1 cancels and replaces ISO 2580-1:2002, which has been technically revised to introduce a new designation system.

The revised designation system is published under a new ISO number, as many existing documents refer to ISO 2580-1. If the existing ISO 2580-1 would be replaced by the new designation system, these documents would refer to the incorrect designation system.

In order to give users time to switch from ISO 2580-1 to ISO 19062-1, any designation system according to ISO 2580-1 is to be phased out in 5 to 10 years. During this period, ISO 2580-2 will effectively be Part 2 of this International Standard.

ISO 19062 consists of the following parts, under the general title *Plastics — Acrylonitrile-butadiene-styrene (ABS) moulding and extrusion materials*:

— *Part 1: Designation system and basis for specifications*

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Introduction

ISO 2580-1 is complex and does not fit with daily practice anymore. In practice, ISO 1043 (all parts) and ISO 11469 are, in combination, “improperly” being used as a designation system for, e.g. marking. The aim of this International Standard is to simplify the data block system and to connect more to ISO 1043 (all parts) and ISO 11469, where the first two blocks are used for generic identification and marking of products.

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Plastics — Acrylonitrile-butadiene-styrene (ABS) moulding and extrusion materials —

Part 1: Designation system and basis for specifications

1 Scope

This part of ISO 19062 establishes a system of designation for acrylonitrile-butadiene-styrene (ABS) moulding and extrusion materials, which may be used as the basis for specifications.

The types of ABS plastic are differentiated from each other by a classification system based on appropriate levels of the designatory properties:

a) Vicat softening temperature;

b) melt mass-flow rate;

c) Charpy notched impact strength;

d) tensile modulus;

and on information about composition, intended application and/or method of processing, important properties, additives, colorants, fillers, and reinforcing materials.

This part of ISO 19062 is applicable to all acrylonitrile-butadiene-styrene materials consisting of a continuous phase based mainly on copolymers of styrene (and/or alkyl-substituted styrene) and acrylonitrile and a dispersed elastomeric phase based mainly on polybutadiene, plus other components, in such quantities as specified in the text.

It applies to ABS materials ready for normal use in the form of powder, granules, pellets or chips, unmodified or modified by colorants, additives, fillers, etc.

This part of ISO 19062 does not apply to materials

a) with a Charpy notched impact strength of less than three kilojoules per square metre,

b) containing less than 50 % by mass of butadiene in the elastomer of the elastomeric phase, and

c) containing less than 15 % by mass of acrylonitrile in the continuous phase.

It is not intended to imply that materials having the same designation give necessarily the same performance. This part of ISO 19062 does not provide engineering data, performance data, or data on processing conditions which may be required to specify a material for a particular application and/or method of processing.

If such additional properties are required, they will be determined in accordance with the test methods specified in ISO 2580-2, if suitable.

In order to specify a thermoplastic material for a particular application or to ensure reproducible processing, additional requirements may be given in data block 5 (see 3.1).

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2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 1043-1, *Plastics — Symbols and abbreviated terms — Part 1: Basic polymers and their special characteristics*

ISO 1043-2, *Plastics — Symbols and abbreviated terms — Part 2: Fillers and reinforcing materials*

ISO 2580-2, *Plastics — Acrylonitrile-butadiene-styrene (ABS) moulding and extrusion materials — Part 2: Preparation of test specimens and determination of properties*

3 Designation system

3.1 General

The designation system for thermoplastics is based on the following standardized pattern:

Designation						
Description block (optional)	**Identity block**					
	International Standard number block	**Individual-item block**				
		Data block 1	**Data block 2**	**Data block 3**	**Data block 4**	**Data block 5**

The designation consists of an optional description block, reading “Thermoplastics”, and an identity block comprising the International Standard number and an individual-item block. For unambiguous designation, the individual-item block is subdivided into five data blocks comprising the following information:

— Data block 1: Identification of the plastic by its abbreviated term (ABS) in accordance with ISO 1043-1 and information about the composition of the polymer (see 3.2);

— Data block 2: Fillers or reinforcing materials and their nominal content (see 3.3);

— Data block 3: First letter: Intended application and/or method of processing (see 3.4);

Letters 2 to 8: Important properties, additives, and supplementary information (see 3.4);

— Data block 4: Designatory properties (see 3.5);

— Data block 5: For the purpose of specifications, a fifth data block may be added containing additional information (see 3.6).

The first character of the individual-item block shall be a hyphen. The data blocks shall be separated from each other by commas.

If a data block is not used, this shall be indicated by doubling the separation sign, i.e. by two commas (,,).

3.2 Data block 1

In this data block, after the hyphen, acrylonitrile-butadiene-styrene plastics are identified by its abbreviated term, ABS, in accordance with ISO 1043-1 and after the hyphen, a single-figure code-number indicating the composition, as specified in Table 1, and a code-letter indicating the nature of any additional monomer, as specified in Table 2.

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