INTERNATIONAL STANDARD

ISO 19063-1

First edition
2015-11-15

Plastics — Impact-resistant polystyrene (PS-I) moulding and extrusion materials —

Part 1: Designation system and basis for specifications

Plastiques — Polystyrènes résistants au choc (PS-I) pour moulage et extrusion —

Partie 1: Système de désignation et base de spécification

Reference number
ISO 19063-1:2015(E)

© ISO 2015



COPYRIGHT PROTECTED DOCUMENT

© ISO 2015, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

Page

Foreword ..... **iv**
Introduction ..... **v**
1 Scope **1**
2 Normative references **1**
3 Designation system **2**
3.1 General 2
3.2 Data block 1 2
3.3 Data block 2 2
3.4 Data block 3 3
3.5 Data block 4 4
3.5.1 Vicat softening temperature 4
3.5.2 Melt mass-flow rate 4
3.5.3 Charpy notched impact strength 5
3.5.4 Flexural modulus 5
3.6 Data block 5 5
4 Examples of designations **6**

© ISO 2015 – All rights reserved

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 19063-1 cancels and replaces ISO 2897-1:1997, 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 2897-1. If the existing ISO 2897-1 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 2897-1 to ISO 19063-1, any designation system according to ISO 2897-1 is to be phased out in 5 to 10 years. During this period, ISO 2897-2 will effectively be Part 2 of this International Standard.

ISO 19063 consists of the following parts, under the general title *Plastics — Impact-resistant polystyrene (PS-I) moulding and extrusion materials*:

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

© ISO 2015 – All rights reserved

Introduction

ISO 2897-1 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.

© ISO 2015 – All rights reserved

Plastics — Impact-resistant polystyrene (PS-I) moulding and extrusion materials —

Part 1: Designation system and basis for specifications

1 Scope

This part of ISO 19063 establishes a system of designation for impact-resistant polystyrene (PS-I) moulding and extrusion materials, which may be used as the basis for specifications.

The types of impact-resistant polystyrene 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) flexural 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 19063 is applicable to all impact-resistant polystyrene plastics with a two-phase polymer system comprised of a continuous phase, consisting of polystyrene and/or a copolymer of styrene with an alkyl-substituted styrene, and a dispersed elastomeric phase based on butadiene.

It applies to materials ready for normal use, unmodified or modified by colorants, additives, fillers, etc.

This part of ISO 19063 does not apply to expandable materials.

It is not intended to imply that materials having the same designation give necessarily the same performance. This part of ISO 19063 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 2897-2, 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).

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 2015 – All rights reserved

ISO 2897-2, *Plastics — Impact-resistant polystyrene (PS-I) 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 (PS-I) in accordance with ISO 1043-1 (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, impact-resistant polystyrene plastics are identified by its abbreviated term, PS-I, in accordance with ISO 1043-1.

3.3 Data block 2

In this data block, the type of filler and/or reinforcing material is represented by a single code-letter in position 1 and its physical form by a second code-letter in position 2, the code-letters being as specified in Table 1 (in accordance with ISO 1043-2). For the filler material of metal, it is represented by a two-code-letter in position 1. Subsequently (without a space), the mass content may be given by a two-figure-number in positions 3 and 4. The first figure-number is presented by 0 and the second figure-number is the figure of the mass content if the mass content of filler and/or reinforcing material is less than 10 %.

Mixtures of filler materials or forms may be indicated by combining the relevant codes using the sign “+” within parentheses followed by the total filler content outside the parenthesis. For example, a mixture of 25 % glass fibres (GF) and 10 % mineral powder (MD) would be indicated by (GF+MD)35 or (GF25+MD10).

© ISO 2015 – All rights reserved