
INTERNATIONAL STANDARD**2897**

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Plastics — Designation of impact-resistant polystyrenes

Matières plastiques — Désignation des polystyrènes résistants au choc

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FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up 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.

Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 2897 was drawn up by Technical Committee ISO/TC 61, *Plastics*, and circulated to the Member Bodies in September 1972.

It has been approved by the Member Bodies of the following countries:

Austria	Israel	Sweden
Belgium	Japan	Switzerland
Brazil	Netherlands	Thailand
Canada	New Zealand	Turkey
Czechoslovakia	Poland	United Kingdom
Egypt, Arab Rep. of	Portugal	U.S.A.
Germany	Romania	U.S.S.R.
Hungary	South Africa, Rep. of	
India	Spain	

The Member Body of the following country expressed disapproval of the document on technical grounds:

France

Plastics – Designation of impact-resistant polystyrenes

1 SCOPE AND FIELD OF APPLICATION

1.1 This International Standard specifies a method of designation, and general requirements, for impact-resistant polystyrene moulding and extrusion materials; it is intended to be the basis for a full specification to be published later.

1.2 The types of impact-resistant polystyrene moulding and extrusion materials are differentiated from one another by appropriate levels of selected specific properties. Impact-resistant polystyrene itself is described by general characteristics selected for reference purposes.

1.3 These types are uncoloured or coloured materials comprising polymers of styrene (possibly copolymerized with small amounts of an alkylstyrene) modified with butadiene-based rubber to obtain greater toughness, indicated by values of impact strength exceeding that for normal polystyrene as designated by ISO 1622. Lubricants, softeners, antioxidants and other additives may be present but are not further specified here.

1.4 Other properties may be necessary to specify materials for particular purposes.

2 REFERENCES

ISO 178, *Plastics – Determination of flexural properties of rigid plastics.*

ISO/R 179, *Plastics – Determination of the Charpy impact resistance of rigid plastics (Charpy impact flexural test).*

ISO/R 180, *Plastics – Determination of the Izod impact resistance of rigid plastics (Izod impact flexural tests).*

ISO/R 291, *Plastics – Standard atmospheres for conditioning and testing.*

ISO 293, *Plastics – Compression moulding test specimens of thermoplastic materials.*

ISO 306, *Plastics – Determination of the Vicat softening temperature of thermoplastics.*

ISO/R 1133, *Plastics – Determination of the melt flow rate of thermoplastics.*

ISO 1622, *Plastics – Designation for polystyrene moulding and extrusion materials.*

ISO 2557, *Plastics – Amorphous thermoplastic moulding materials – Preparation of test specimens with a defined level of shrinkage.¹⁾*

ISO 2561, *Plastics – Determination of residual styrene monomer in polystyrene by gas chromatography.*

3 DESIGNATION

3.1 Materials are codified as "SB" (to indicate polystyrene modified with butadiene) and in terms of their individual combinations of range or "cell" values of softening point, melt flow, impact strength and modulus of elasticity; for example, 132(I)4, by reference to 4.2 means:

1 – Vicat softening point ≤ 80 °C;

3 – melt flow index $> 8,0$ to 16 g/10 min;

2(I) – Izod impact strength > 30 to 60 J/m (a Charpy value is designated by 2(C));

4 – modulus of elasticity $> 2,5 \times 10^9$ N/m².

Thus, this material would be designated "SB 132(I)4". (Not every combination of range or "cell" number for each principal property is achievable at this time.)

By agreement between the supplier and the purchaser a grading of "X" may be used to indicate that a particular property has been excluded from the designation.

3.2 Impact-resistant polystyrenes are those two-phase materials in which the outer (or "continuous") phase consists of styrene polymer (possibly copolymerized with small amounts of an alkylstyrene) and the inner (or "dispersed") phase consists of an elastomer, based on butadiene, to increase resistance to impact.

1) At present at the stage of draft.