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TECHNICAL DATA SHEET PS (high-impact polystyrene)

Plastic sheets from high-impact polystyrene (HIPS) combine good impact strength, improved crack resistance, low temperature resistance, good water resistance, excellent formability and easy machinability. Surface aspect of sheets can be gloss, mat, smooth and embossed. A co-extrusion method in sheet manufacturing makes possible to join two layers of different colors or add a top layer of gloss surface, as well as to manufacture sheets of different light transmission rate (polystyrene for lighting purposes). UV-stability of sheets can be also provided. In order to preserve gloss surface quality, a protective thermoforming film is applied which can be easily removed from the sheet or part formed.

		Unit	Test method, ISO	Values
Density		g/sm ³	1183	1,05
Yield stress		mPa	527	20
Tensile strain at break		%	527	25
Charpy unnotched impact strength	23°C	kJ/m ²	179/1epA	35
Charpy unnotched impact strength	-30°C	kJ/m ²	179/1epA	30
Charpy notch impact strength	23°C	kJ/m ²	179/1epA	3
Heat deflection temperature ,(HDT)	1.80 MPa	°C	75-2Ae	65
Vicat softening temperature	50H/50°C	°C	306/B50	84

All above values apply to thermoplastics immediately after extrusion, with no aging effect.

Chemical fastness:

resistance to alkalies and acids (except nitric and acetic acids), to oils and fats; does not dissolve in lower alcohols, aliphatic hydrocarbons, phenols, ethers. It

can be dissolved in intrinsic monomers, aromatic and chlorinated hydrocarbons, esters, acetone.

Physical properties:

good impact strength in a wide temperature range (from -30 to -40°C).

Operation temperature:

within - 40 °C to +65-70°C

Processing methods:

- cementing (by solvent-based adhesives (toluene, dichloromethane, butyl acetate), containing up to 20% polystyrene);
- welding (thermal, thermal impulse, ultrasonic)
- forming;
- blanking;
- typographical printing.

Scope of application:

construction, production of outdoor advertisement, parts of household & industrial refrigerators, retail/store equipment, cases/housings of devices and instrumentation, bath screens. Sheets from lighting polystyrene can be used for making light diffusers and lightboxes. Sheets of 0.48 and 0.7 mm thickness with mat surface are used for lithographic (offset) printing and magnet card manufacture.

Form of delivery

Thickness: from 0.48 to 10 mm.

Width: up to 2,100 mm

Surface aspect:

gloss, embossed, mat.