

Product Data Sheet**IROGRAN® A 85 E 4993**

Polyester-based Thermoplastic Polyurethane

PRODUCT DESCRIPTION

IROGRAN® A 85 E 4993 is a polyester-based Thermoplastic Polyurethane (TPU) for melt calendering. Key features are abrasion resistance, excellent wear performance, good low temperature performance, high elasticity and glossy surface.

APPLICATIONS

Thin wall extrusion profiles, textile lamination and calendering applications.

TYPICAL PHYSICAL PROPERTIES

Properties	Key	NORM	Value	Unit
Hardness (after 3 sec.)	M	ISO 7619	86	Shore A
Hardness (after 3 sec.)	M	ISO 7619	36	Shore D
Density	M	ISO 1183-1	1,21	g/cm ³
Tensile strength	M	DIN 53504	35	MPa
Elongation @ break	M	DIN 53504	600	%
Tensile stress @ 100% elongation	M	DIN 53504	5,9	MPa
Tensile stress @ 300% elongation	M	DIN 53504	11,2	MPa
Tear strength	M	ISO 34-1	65	N/mm
Abrasion	M	ISO 4649	25	mm ³
Bayshore rebound resilience	M	ASTM D 2632	35	%
Compression set at 70h @ 23°C	M	ISO 815	25	%
Compression set at 24h @ 70°C	M	ISO 815	50	%
Mold shrinkage	M	ISO 294-4	0,9	%
Softening range low	E	Huntsman TMA	145	°C
Softening range high	E	Huntsman TMA	160	°C

M = Injection molded parts to meet DIN & ASTM requirements. Parts tempered for 20 hrs @ 100 °C prior to testing

E = Extruded film cut to ASTM requirements. Parts at room temperature aged prior to testing.

HEALTH & SAFETY ADVICE

Before undertaking any trials with this product it is essential that all personnel are aware of the necessary precautions that must be taken. These are detailed in the relevant Material Safety Data Sheet (MSDS), which will be provided by Huntsman.

SUPPLY & STORAGE

IROGRAN® A 85 E 4993 is supplied in bags, drums or octabins. Please contact your customer service to confirm this.

IROGRAN® A 85 E 4993 has a minimum expected shelf life of 12 months after shipment date. The product should be stored in a dry and cool place in the manufacturer's original packaging.

MATERIAL PREPARATION

IROGRAN® A 85 E 4993 is supplied pre-dried, however to ensure trouble-free processing it is preferable to dry before use. The recommended drying conditions are:

- 3 hours at 80-90°C in circulating air
- 3 hours at 70-80°C in dehumidified air
- Dew point: -30°C

PHYSICAL FORM

Type: Transparent pellets

PROCESSING PARAMETERS

Melt Volume Rate 190°C / 10kg ISO 1133-1 = 65 cm³/10min

Processing Parameter:	Extrusion
Temperature Profile	°C
Feed Zone:	25 - 40
Barrel:	170 - 195
Die Head:	175 - 205
Nozzle:	175 - 200
Processing Parameter:	Calendering
Temperature Profile	°C
Front Roll:	160 - 180
Rear Roll:	160 - 180

For further information, please contact your nearest sales office: http://www.huntsman.com/PU_customer_service

While the information and recommendations in this publication are, to the best of our knowledge, information and belief, accurate at the date of publication, nothing herein is to be construed as a warranty, express or otherwise. In all cases, it is the responsibility of the user to determine the applicability of such information and recommendations and the suitability of any product for its own particular purpose. Nothing in this publication is to be construed as recommending the infringement of any patent or other intellectual property right, and no liability from an such infringement is assumed. Nothing in this publication is to be viewed as a license under any intellectual property right. Except where explicitly agreed otherwise, the sale of products referred to in this publication is subject to the general terms and conditions of Huntsman International LLC or of its affiliated companies. Huntsman Polyurethanes is an international business unit of Huntsman International LLC. Huntsman Polyurethanes trades through Huntsman affiliated companies in different countries such as Huntsman International LLC in the USA and Huntsman Holland BV in Western Europe.