



**IROGRAN A 85 P 4394**  
Thermoplastic Polyurethane

**INTRODUCTION**

IROGRAN A85P 4394 is a high performance polyether based thermoplastic polyurethane intended for extrusion and injection moulding applications.

IROGRAN A85P 4394 is part of the HUNTSMAN technical extrusion product range and offers a specially designed, flexible material with a broad processing window particularly suitable for the preparation of tubing, cable jacketing and technical mouldings.

**PERFORMANCE FEATURES**

- High tensile strength
- Excellent wear performance
- Excellent hydrolysis & microbial resistance
- Good low temperature flexibility

**Table 1: Typical Physical Properties**

Physical Properties							
Property	Key	DIN	Unit	Value	ASTM	Unit	Value
Hardness	M	53505	Shore A	85	D-2240	Shore A	85
Hardness	M	53505	Shore D	36	D-2240	Shore D	36
Tensile Strength	M	53504	MPa	45	D-412	psi	5500
Elongation @ break	M	53504	%	640	D-412	%	610
100% Modulus	M	53504	MPa	6.0	D-412	psi	940
300% Modulus	M	53504	MPa	12.0	D-412	psi	1690
Tear Resistance	M	53515	N/mm	70	D-624	pli	400
Abrasion	M	53516	mm <sup>3</sup>	35	D-395		
Compression Set 24hrs @ 23°C	M	53517	%	25	D-395	%	25
Compression Set 24hrs @ 70°C	M	53517	%	45	D-395	%	45
Mold Shrinkage	M		cm/cm	0.006	D-955	in/in	0.006
Specific Gravity	M	53479	g/cm <sup>3</sup>	1.12	D-792		1.12
TMA Low	E	Huntsman	°C	165	Huntsman	°F	329
TMA High	E	Huntsman	°C	195	Huntsman	°F	383

E = 0.025" extruded film cut to ASTM requirements  
M = Injection moulded parts to meet DIN & ASTM requirements



## PRODUCT DATA

# IROGRAN A 85 P 4394

## Thermoplastic Polyurethane

### POLYMER SELECTION

Before selecting this product it is necessary that the user ensures the product performance will meet all operational and end use requirements. Having satisfied these requirements, should changes be contemplated in method of application, materials, service conditions or any other change that could affect the ultimate performance of the end product, then further tests and trials should be carried out. For assistance with particular problems and applications, please contact the IROGRAN TPU Technical Service Department.

### 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 Safety Data Sheet, which will be provided by HUNTSMAN.

### SUPPLY & STORAGE

IROGRAN A 85 P 4394 is supplied in the form of pellets. Standard packaging is a 25 kg moisture guarded sack, 40 per pallet and shrink-wrapped. Additionally the product may be supplied in fiber drums or cardboard gaylord boxes.

IROGRAN A 85 P 4394 has a minimum expected shelf life of 12 months from the date of shipment when stored in a cool and dry place in the manufacturer's original packaging.

### PHYSICAL FORM

Type: Pellet  
Bulk Density: 673 kg/m<sup>3</sup> [42 lb/ft<sup>3</sup>]

### MATERIAL PREPARATION

IROGRAN TPU grades are supplied pre-dried in moisture guarded sacks. To ensure trouble free processing it is preferable to dry IROGRAN TPU. The recommended drying conditions are:

- 3 hours at 100-110°C in circulating air
- 3 hours at 80-90°C in dehumidified air
- Dew point: -22°F / -30°C

For further advice on the use of additives during the processing please contact the IROGRAN TPU Technical Service Department.

### PROCESSING PARAMETERS

Table 2: Typical Processing Parameters			
Processable by:	Extrusion Injection Moulding		
Melt Volume rate [190°C/21.6 kg]	65 cm <sup>3</sup> /10 min		
<b>Extrusion</b>			
Temperature Profile	°C	°F	
Feed Zone	25-40	77-104	
Barrel	160-200	320-392	
Adapter	175-200	347-392	
Die Head	175-205	347-401	
<b>Injection Moulding</b>			
Temperature Profile	°C	°F	
Heating Zone	170-210	338-410	
Nozzle	200-210	392-410	
Melt Temperature	190-205	374-401	
Mould Temperature	20-70	68-158	

The address of your nearest technical centre is:

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