



IROGRAN A 85 P 4380

Thermoplastic Polyurethane

INTRODUCTION

IROGRAN A 85 P 4380 is a flame-retardant, halogen-free, thermoplastic polyether-polyurethane intended for extrusion and injection moulding applications.

Additional characteristics of the product are excellent microbial resistance, high low-temperature flexibility, especially suitable for cable jackets.

PERFORMANCE FEATURES

- Excellent hydrolysis resistance
- High microbial resistance
- Low-adhesion surfaces
- Flame retardant
- Halogen-free
- Good melt flow
- UL 94 Classification V2

APPLICATIONS

- Cables
- Hoses
- Profiles
- Cable Bushings

Table 1: Typical Physical Properties

Physical Properties							
Property	Key	DIN / ISO	Unit	Value	ASTM / ISO	Unit	Value
Hardness	M	ISO 868	Shore A	87	D-2240	Shore A	87
Hardness	M	ISO 868	Shore D	36	D-2240	Shore D	36
Tensile Strength	M	53504	MPa	35	D-412	psi	3625
Elongation @ break	M	53504	%	550	D-412	%	550
100% Modulus	M	53504	MPa	6.5	D-412	psi	1015
300% Modulus	M	53504	MPa	10	D-412	psi	1450
Tear Resistance	M	ISO 34-1	N/mm	50	D-624	Pli	460
Abrasion	M	ISO 4649	mm ³	35	ISO 4649	in ³	0.0021
Compression Set 24hrs @ 23°C	M	ISO 815	%	25	D-395	%	25
Compression Set 24hrs @ 70°C	M	ISO 815	%	40	D-395	%	40
Mold Shrinkage	M		%	0.8	D-955	in/in	0.008
Density	M	ISO 1183-1	kg/m ³	1.14	D-792	kg/m ³	1.14
TMA Low	E	Huntsman	°C	159	Huntsman	°F	318
TMA High	E	Huntsman	°C	186	Huntsman	°F	366

E = 0.025" extruded film cut to ASTM requirements.

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



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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 4380 is supplied in the form of opaque pellets in 25 kg moisture guarded sacks, 40 per pallet and shrink-wrapped or in containers of 750 kg.

IROGRAN A 85 P 4380 has an expected shelf life of minimum 12 months after shipment date. The product should be stored in a dry and cool place in the manufacturer's original packaging.

PHYSICAL FORM

Type: Pellet
Bulk Density: 700 kg/m³ [41 lb/ft³]

The address of your nearest technical centre is:

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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 using:	Extrusion Injection Moulding		
Melt Volume Rate [190°C/21,6 kg]	50 cm ³ /10 min		
Extrusion			
Temperature Profile	°C	°F	
Feed Zone	25-40	77-104	
Barrel	165-190	329-374	
Adapter	175-195	347-383	
Die Head	175-200	347-392	
Nozzle	170-200	338-392	
Injection Moulding			
Temperature Profile	°C	°F	
Heating Zone	175-195	347-383	
Nozzle	180-200	356-392	
Melt Temperature	170-195	338-383	
Mould Temperature	20-70	68-158	

