



IROGRAN A 85 P 4854

Thermoplastic Polyurethane

INTRODUCTION

IROGRAN A 85 P 4854 is a flame-retardant, halogen-free polyether based thermoplastic polyurethane intended for extrusion and injection moulding applications.

IROGRAN A 85 P 4854 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 cable jacketing where enhanced fire retardency is required.

PERFORMANCE FEATURES

- High tensile strength
- Excellent wear performance
- Excellent hydrolysis & microbial resistance
- Good low temperature flexibility
- Halogen free
- Flame retardant
- Matt surface
- UL 94 Classification V0

Table 1: Typical Physical Properties

Physical Properties							
Property	Key	DIN / ISO	Unit	Value	ASTM / ISO	Unit	Value
Hardness	M	ISO 868	Shore A	83	D-2240	Shore A	83
Hardness	M	ISO 868	Shore D	33	D-2240	Shore D	33
Tensile Strength	M	53504	MPa	25	D-412	psi	3626
Elongation @ break	M	53504	%	670	D-412	%	670
100% Modulus	M	53504	MPa	3.5	D-412	psi	508
300% Modulus	M	53504	MPa	7.5	D-412	psi	1088
Tear Resistance	M	ISO 34-1	N/mm	35	D-624	pli	200
Abrasion	M	ISO 4649	mm ³	40	ISO 4649	in ³	0.0024
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	125	Huntsman	°F	257
TMA High	E	Huntsman	°C	180	Huntsman	°F	356

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 TPU is supplied in the form of pellets in 20 or 25 kg moisture guarded sacks, 40 per pallet and shrink-wrapped or in containers of 750 kg.

IROGRAN TPU 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: 680 kg/m³ [40 lb/ft³]

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 80-90°C in circulating air.
- 3 hours at 60-70°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 Index [190°C/21,6 kg]	150 cm ³ /10 min		
Extrusion			
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	
Nozzle	170-205	338-401	
Injection Moulding			
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	

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