

Technical Information

SURLYN™ 8940

Ionomer

Description			
Product Description	SURLYN™ 8940 is an ionomer of ethylene acid copolymer.		
	This polymeric material can be processed in conventional extrusion and injection equipment designed to process polyethylene and ethylene copolymer type resins, to create various shapes and sheeting.		
Restrictions			
Material Status	Commercial: Active		
Typical Characteristics			
Composition	Sodium Ionomer		
Characteristics / Benefits	Embrittlement Temperature ----- (-106C) ----- ASTM D746 Abrasion Resistance ----- 370 NBS Index ----ASTM D1630 Flexural Modulus (23C) ----- 350 MPa ----- ASTM D790 Flexural Modulus (-20C) ----- 717 MPa ----- ASTM D790 Tensile Elongation @ Break (23C) ---- 470%-----ASTM D638 / ISO 527-2 Tensile Strength @ Break (23C) ----- 33 MPa-----ASTM D638 / ISO 527-2 Tensile Strength @ Yield (23C) ----- 15 MPA ----- ASTM D638 Tensile Impact Strength (23C) ----- 485 ft-lb/in2-----ASTM D1822 Tensile Impact Strength (-40C) ----- 360 ft-lb/in2-----ASTM D1822 Hardness (Shore D) ----- 65 -----ASTM D2240 / ISO 868 Haze (0.25 inch) ----- 5% -----ASTM D1003 Notched Izod Impact (23C) ----- 19.2 ft-lb/in -----ASTM D256 Tear Strength (23C) ----- 1.48 kN/m -----ASTM D624		
Applications	Blow Molding / Injection Molding / Sheet Extrusion		
Typical Properties			
Physical	Nominal Values		Test Method(s)
*Density ()	0.95 g/cm³	ASTM D792	ISO 1183
*Melt Flow Rate (190°C/2.16kg)	2.8 g/10 min	ASTM D1238	ISO 1133
Thermal	Nominal Values		Test Method(s)
*Melting Point(DSC)	94 °C (201.2 °F)	ASTM D3418	ISO 3146
Freezing Point (DSC)	59 °C (138.2 °F)	ASTM D3418	ISO 3146
Vicat Softening Point ()	63 °C (145.4 °F)	ASTM D1525	ISO 306
Processing Information			
*Maximum Processing Temperature	285 °C (545 °F)		
General Processing Information	SURLYN™ 8940 is normally processed at melt temperatures ranging from 185°-285°C (365°-545°F). Actual processing temperatures will usually be determined by either the specific equipment or substrate or one of the other polymers in a coextrusion or coinjection.. Materials of construction used in the processing of this resin should be corrosion resistant. Stainless steels of the types 316, 15-5PH, and 17-4PH are excellent, as is quality chrome or nickel plating, and in particular duplex chrome plating. Type 410 stainless steel is satisfactory, but needs to be tempered at a minimum temperature of 600°C (1112°F) to avoid hydrogen-assisted stress corrosion cracking. Alloy steels such as 4140 are borderline in performance. Carbon steels are not satisfactory. While stainless steels can provide adequate corrosion protection, in some cases severe purging difficulties have been encountered. Nickel plating has been satisfactory, but experiments have shown that chrome surfaces have the least adhesion to acid based polymers. In recent years, the quality of chrome plating has been deteriorating due to environmental pressures, and the corrosion protection has not always been adequate. Chrome over top of stainless steel seems to provide the best combination for corrosion protection and ease of purging.		

If surface properties of the extruded resin require modification (such as, lower C.o.F. for packaging machine processing), refer to the CONPOL™ Processing Additive Resins product information guide.

After processing SURLYN™, purge the material out using a polyethylene resin, preferably with a lower melt flow rate than the SURLYN™ resin in use. The "Disco Purge Method" is suggested as the preferred purging method, as this method usually results in a more effective purging process. Information on the Disco Purge Method can be obtained via your Dow Sales Representative.

Never shut down the extrusion system with SURLYN™ in the extruder and die. Properly purge out the SURLYN™ with a polyethylene, and shut down the line with polyethylene or polypropylene in the system.

Regulatory Information

For information on regulatory compliance within or outside of the U.S.A., consult your local Dow representative.

Safety & Handling

For information on appropriate Handling & Storage of this polymeric resin, please refer to the material Safety Data Sheet.

A Product Safety Bulletin, material Safety Data Sheet, and/or more detailed information on extrusion processing and/or compounding of this polymeric resin for specific applications are available from your Dow representative.

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