Dow Packaging & Speciality Plastics
Product Data Sheet

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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Published August 2019

Version: 128.0
Last modified at 8/31/2019 6:29 PM