



Technical Data Sheet

SURLYN™ PC-2000 CIR Ionomer

Product Description

SURLYN™ PC-2000 CIR Ionomer is an ionomer of ethylene acid copolymer.

The resin can be processed via injection molding equipment designed to process polyethylene and ethylene copolymer type resins.

Produced using circular feedstocks made from mixed plastic waste. Certified on a mass balance basis by the International Sustainability & Carbon Certification (ISCC).

Sustainability Attribute:



Material Status

Developmental: Active

Composition

Sodium Ionomer

Typical Properties

Physical	Unit	Result	Test Method(s)	
*Density	g/cm ³	0.97	ASTM ¹ D792	ISO ² 1183
*Melt Flow Index(190°C/2.16kg)	g/10 min	4.5	ASTM D1238	ISO 1133
Thermal				
*Melting Point (DSC)	°C (°F)	84 (183.2)	ASTM D3417	ISO 3146
Vicat Softening Point	°C (°F)	53 (127.4)	ASTM D1525	ISO 306
*Maximum Processing Temperature	°C (°F)	285 (545)		

1. ASTM: American Society for Testing and Materials
2. ISO: International Standardization Organization



General Processing Information

SURLYN™ PC-2000 CIR Ionomer is normally processed at melt temperatures ranging from 160–260°C (320– 500°F) .. Actual processing temperatures will usually be determined by either the specific equipment.

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 CON POL™ 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.

FDA Status Information

SURLYN™ PC-2000 CIR Ionomer complies with Food and Drug Administration Regulation 21 CFR 177.1330(a)- - Ionomeric resins, subject to the limitations and requirements therein. This Regulation describes polymers that may be used in contact with food, subject to the finished food-contact article meeting the extractive limitations under the intended conditions of use, as shown in paragraph (c) of the Regulation.

The information and certifications provided herein are based on data we believe to be reliable, to the best of our knowledge. The information and certifications apply only to the specific material designated herein as sold by Dow and do not apply to use in any process or in combination with any other material. They are provided at the request of and without charge to our customers. Accordingly, Dow cannot guarantee or warrant such certifications or information and assumes no liability for their use.

Regulatory Information

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



Safety and 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.

Product Stewardship

Dow has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Dow products - from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Customer Notice

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to ensure that Dow products are not used in ways for which they are not intended or tested. Dow personnel are available to answer your questions and to provide reasonable technical support. Dow product literature, including safety data sheets, should be consulted prior to use of Dow products. Current safety data sheets are available from Dow.

Medical Applications Policy

Any and all medical application use of Dow materials, whether a device, a component, or any type of primary or secondary packaging of a medically related object or substance, needs to be reviewed and approved by Dow before any Dow material can be tested in such application.

Dow requests that customers considering use of Dow products in medical applications notify Dow so that appropriate assessments may be conducted. Dow does not endorse or claim suitability of its products for specific medical applications. It is the responsibility of the medical device or pharmaceutical manufacturer to determine that the Dow product is safe, lawful, and technically suitable for the intended use. DOW MAKES NO WARRANTIES, EXPRESS OR IMPLIED, CONCERNING THE SUITABILITY OF ANY DOW PRODUCT FOR USE IN MEDICAL APPLICATIONS.

For further information contact your Dow sales or technical representative to request a Medical Application Review Request Form. Additional details of Dow's Medical Applications Policy are available at:

<https://www.dow.com/en-us/support/product-safety.html>

Tobacco and Marijuana Policy

Dow does not support or intend for its products to be used, directly or indirectly, in the production of tobacco, the manufacture of tobacco products, the manufacture and use of electronic cigarettes (including vaping devices), the production of marijuana, or the manufacture of marijuana products intended for human consumption, where the Dow product (or its residues) may be present in the finished product or be alleged to facilitate the delivery of nicotine, other tobacco components, marijuana, or marijuana components.



**Harmful
Applications
Policy**

Dow does not intend for its products to be used in applications specifically intended to harm humans.

