Technical Data Sheet

# DOWLEX™ IP 10 Polyethylene Resin

## Overview

- High Density Polyethylene Resin (HDPE)
- For reusable cases, injection molding, caps and closures
- Excellent processability, easier flow
- Complies with U.S. FDA 21 CFR 177.1520 (c) 3.2a
- Complies with Canadian HPFB No Objection (With Limitations)
- Complies with EU, No 10/2011

Consult the regulations for complete details.

DOWLEX™ IP 10 Polyethylene Resin is an improved processing high density resin specifically designed for reusable case applications including: poultry, fast food, automotive, retail, fresh produce, beverages, food service and chemicals, including plastics. Excellent injection processability is achieved with this resin due to its easy flow at low temperatures. Excellent stiffness in this resin is useful for lightweight caps and closures applications.

## Additive

- Antiblock: No
- Slip: No
- Processing aid: No

## Properties[1]

| Physical | Nominal Value (English) | Unit | Nominal Value (SI) | Unit | Test Method[2] |
|---|---|---|---|---|---|
| Density | 0.960 | g/cm³ | | | ASTM D792 |
| Melt Index (190°C/2.16 kg) | 10 | g/10 min | | | ASTM D1238 |
| Environmental Stress-Cracking Resistance (ESCR) | | | | | ASTM D1693 |
| 122°F (50°C), 100% Igepal, F50 | 8.00 | hr | | | |
| **Mechanical** | **Nominal Value (English)** | **Unit** | **Nominal Value (SI)** | **Unit** | **Test Method** |
| Tensile Strength | | | | | ASTM D638 |
| Yield | 4200 | psi | 29.0 | MPa | |
| Break | 2700 | psi | 18.6 | MPa | |
| Tensile Elongation | | | | | ASTM D638 |
| Yield | 7.0 | % | | | |
| Break | 1200 | % | | | |

1. These are typical properties only and are not to be construed as specifications. Users should confirm results by their own tests.
2. ASTM: American Society for Testing and Materials

## Properties (Cont.)

| Mechanical | Nominal Value (English) | Unit | Nominal Value (SI) | Unit | Test Method |
|---|---|---|---|---|---|
| Flexural Modulus – 2% Secant | 168000 | psi | 1160 | MPa | ASTM D790B |
| **Impact** | **Nominal Value (English)** | **Unit** | **Nominal Value (SI)** | **Unit** | **Test Method** |
| Tensile Impact Strength[3] | 50.0 | ft-lb/in$^2$ | 105 | kJ/m$^2$ | ASTM D1822 |
| **Hardness** | **Nominal Value (English)** | **Unit** | **Nominal Value (SI)** | **Unit** | **Test Method** |
| Durometer Hardness (Shore D) | 55 | | 55 | | ASTM D2240 |
| **Thermal** | **Nominal Value (English)** | **Unit** | **Nominal Value (SI)** | **Unit** | **Test Method** |
| Deflection Temperature Under Load 66 psi (0.45 MPa), Unannealed | 178 | °F | 81.1 | °C | ASTM D648 |
| Brittleness Temperature | < -150 | °F | < -101 | °C | ASTM D746 |
| Vicat Softening Temperature | 266 | °F | 130 | °C | ASTM D1525 |
| Melting Temperature (DSC) | 270 | °F | 132 | °C | Dow Method |
| Peak Crystallization Temperature (DSC) | 247 | °F | 119 | °C | Dow Method |
| **Additional Information** | | | | | |
| Plaque molded and tested in accordance with ASTM D4976. | | | | | |

3. Type S

## Product Stewardship

The Dow Chemical Company and its subsidiaries ("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

NOTICE REGARDING MEDICAL APPLICATION RESTRICTIONS: Dow will not knowingly sell or sample any product or service ("Product") into any commercial or developmental application that is intended for:

a. long-term or permanent contact with internal bodily fluids or tissues. "Long-term" is contact which exceeds 72 continuous hours;
b. use in cardiac prosthetic devices regardless of the length of time involved ("cardiac prosthetic devices" include, but are not limited to, pacemaker leads and devices, artificial hearts, heart valves, intra-aortic balloons and control systems, and ventricular bypass-assisted devices);
c. use as a critical component in medical devices that support or sustain human life; or
d. use specifically by pregnant women or in applications designed specifically to promote or interfere with human reproduction.

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.**

**Contact:**
www.dow.com/contact