

## Product Information



Dow Automotive

# PULSE\* 2000EZ PC/ABS

## Engineering Resin

<u>Properties (1)</u>	<u>ISO Test Method</u>	<u>S.I. Units</u>	<u>Value</u>
<b>PHYSICAL PROPERTIES</b>			
Specific Gravity	1183 B		1.14
Water Absorption @ 73°F (23°C), 24 hr.	62	%	0.15
Mold Shrinkage	294		0.005-0.007
<b>MECHANICAL PROPERTIES</b>			
		mm/mm	
Tensile Modulus	527-2	MPa	2330
Tensile Yield Strength	527-2	MPa	57
Ultimate Tensile Strength	527-2	MPa	47
Elongation at Yield	527-2	%	4.5
Elongation at Break	527-2	%	90
Flexural Modulus	178	MPa	2400
Flexural Strength	178	MPa	90
Notched Izod Impact Strength (23°C) (-30°C) (-40°C)	180-4A	kJ/m <sup>2</sup>	63 47
<b>THERMAL PROPERTIES</b>			
DTUL (0.45 MPa) – unannealed	75A	°C	130
DTUL (1.8 MPa) – unannealed	75A	°C	106
Vicat Softening Temperature 1Kg/120°C/h 5Kg/50°C/h	306A 306B	°C	142 129
<b>RHEOLOGICAL PROPERTIES</b>			
Melt Flow Rate (MFR) 260°C 5 kg	1133	g/10 min.	24

(1) Typical properties; not to be construed as specifications.

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## SAFETY AND HANDLING CONSIDERATIONS

Material safety data sheets for PC/ABS Resins are available from Dow Plastics, a business group of The Dow Chemical Company and its subsidiaries. MSD sheets are provided to help customers satisfy their own handling, safety, and disposal needs, and those that may be required by locally applicable health and safety regulations, such as OSHA (USA), MAK (Germany) or WHMIS (Canada). MSD sheets are updated regularly, therefore, please request and review the most current MSD sheet before handling or using any product.

The following comments are general and apply only to Polycarbonate Resins as supplied:

Various additives and processing aids used in fabrication and other materials used in finishing steps have their own safe use profile and must be investigated separately.

## HAZARDS AND HANDLING PRECAUTIONS

PC/ABS Resins have a very low degree of toxicity and under normal conditions of use should pose no unusual problems from ingestion, eye, or skin contact. However, caution is advised when handling, storing, using, or disposing of these resins and good housekeeping and controlling of dusts are necessary for safe handling of product. Workers should be protected from the possibility of contact with molten resin during fabrication.

Handling and fabrication of plastic resins can result in the generation of vapors and dusts. Dusts resulting from sawing, filing, and sanding of plastic parts in post-molding operations may cause irritation to eyes and the upper respiratory tract. In dusty atmospheres, use an approved dust respirator.

Pellets or beads may present a slipping hazard.

Processing improperly dried resin can result in the production of bisphenol A. Good general ventilation of the polymer processing area is recommended.

Processing may release fumes which may include polymer fragments and other decomposition products. Fumes can be irritating. At temperatures exceeding melt

temperature, polymer fragments can occur. Good general ventilation should be sufficient for most conditions. Local exhaust ventilation may be necessary for some operations.

Use safety glasses. If there is a potential for exposure to particles which could cause mechanical injury to the eye, wear chemical goggles. If vapor exposure causes eye discomfort, use a full-face respirator. No other precautions other than clean body-covering clothing should be needed for handling Polycarbonate Resins. Use gloves with insulation for thermal protection, when needed.

## COMBUSTIBILITY

PC/ABS Resins will burn, and once ignited, may burn rapidly under the right conditions of heat and oxygen supply. Do not permit dust to accumulate. Dust layers can be ignited by spontaneous combustion or other ignition sources. When suspended in air dust can pose an explosion hazard. Dense black smoke is produced when product burns. Toxic fumes are released in fire situations.

Firefighters should wear positive-pressure, self-contained breathing apparatus and full protective equipment. Water or water fog are the preferred extinguishing media. Foam, alcohol resistant foam, carbon dioxide, or dry chemicals may also be used. Soak thoroughly with water to cool and prevent re-ignition.

## DISPOSAL

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. For unused or uncontaminated material, the preferred options include sending to a licensed recycler, reclaimer, incinerator or other thermal destruction device. For used, or contaminated material, the disposal options remain the same although additional evaluation is required (see, for example, in the USA 40 CFR, Part 261, "Identification and Listing of Hazardous Waste"). All disposal methods must be in compliance with Federal, State/Provincial and local laws and regulations.

As a service to its customers, Dow can provide lists of companies which recycle, reprocess, or manage chemicals or

plastics, and companies that manage used drums. Contact the nearest Dow Customer Service Center for further details.

## ENVIRONMENT

Generally speaking, in the environment lost pellets are not a problem except under unusual circumstances - when they enter the marine environment. They are inert and benign in terms of their physical environmental impact, but if ingested by waterfowl or aquatic life, they may mechanically cause adverse effects. Spills should be minimized and they should be cleaned up when they happen. Plastics should not be discarded into the ocean or any other body of water.

## PRODUCT STEWARDSHIP

The Dow Chemical Company 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 of our Product Stewardship philosophy by which we assess the health and environmental information on our products and then take appropriate steps to protect employee and public health and the environment. Our Product Stewardship program rests with every individual involved with Dow products from initial concept and research to the manufacture, sale, distribution, and disposal of each product.

## CUSTOMER NOTICE

Dow encourages its customers and potential users of Dow products to review their applications for such products from the standpoint of human health and environmental quality. To help ensure that Dow products are not used in ways for which they were not intended or tested, Dow personnel will assist customers in dealing with ecological and product safety considerations. Your Dow sales representative can arrange the proper contacts. Dow literature, including Material Safety Data Sheets, should be consulted prior to the use of Dow products. These are available from the nearest Dow Customer Service Center.

**For additional information in the U.S. and Canada, call 1-800-441-4DOW (4369)**

**In Mexico, call 95-800-441-4369**

**In Europe, call the Dow Information Centre**

**In the Netherlands ++31-20-6916268**

NOTICE REGARDING LONG-TERM MEDICAL IMPLANT APPLICATIONS: The Dow Chemical Company does not recommend any medical grade resin or film product for long-term medical implant applications in humans, i.e., for more than 72 hours (or 30 days, for PELLETHANE\* polyurethane elastomers). Further, Dow does not recommend the use of any resin (or film) product for use in cardiac prosthetic devices regardless of the time period that the device will be wholly or partially implanted in the body. Such applications include, but are not limited to, pacemaker leads and devices, cardiac prosthetic devices such as artificial hearts, heart valves, intra-aortic balloons and control systems, and ventricular bypass assist devices. Dow does not recommend any non-medical grade resin (or film) product for use in any human implant applications.

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