Technical Datasheet

INEOS Composites

HETRON™ 92 Polyester Resin

HETRON 92 resin is an unpromoted, medium viscosity, flame retardant(1) resin containing styrene. This resin exhibits excellent flame retardancy, ASTM E-84 Class I rating of <25 with 3% antimony trioxide. HETRON 92 resin meets MIL-R-7575C, Grade A, Class I capability and MIL-R-21607D (SHIPS), Grade A capability. HETRON 92 resin with the addition of 10% styrene meets MIL-R-7575C, Grade A, Class 2 capability.

- Superior thermal performance in molded electrical sheet
- Good corrosion resistance to non-oxidizing acids, organic acids, and corrosive salts
- Meets NEMA GPO 2 and GPO 3 standards as electrical sheet

APPLICATIONS AND USE

HETRON 92 resin can be used for flame retardant reinforced thermosetting plastic equipment and parts manufactured with the bulk molding compound and sheet molding compound processes or the pultrusion process. HETRON 92 resin can also be used as a halogen concentrate resin to blend with non-flame retardant resins.

Recommendations for specific services and environments can be provided by contacting us a hetron@ineos.com.

TYPICAL LIQUID RESIN PROPERTIES

Property(2) at 25°C (77°F)	Value	Unit
Solids	71	%
Viscosity, Brookfield #3 spindle @ 30 rpm	2200	mPa·s (cps)
Acid Value (solids)	34	
Specific Gravity	1.33	gm/cc
Monomer	styrene	

(1) HETRON polyester resin will burn if provided with a sufficient amount of heat and oxygen. The degree of flame retardancy of the cured polyester resin is characgterized by the ASTM E-84 tunnel test. This test is performed under strictly controlled conditions where a flame spread rating is assigned according to comparisons with test set-point materials. The behavior of the cured composite under these controlled conditions can vary from an actual fire situation.
(2) Properties are typical values based on material tested in our laboratories. Typical values should not be construed as a guaranteed analysis of any specific lot or as specification items.

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TYPICAL CURING CHARACTERISTICS

SPI Gel Time - 82°C (180°F) Bath, 2% LUPERCO(3) ATC paste	Value	Unit
Gel Time	5.5	minutes
Total Time	8.0	minutes
Peak Exotherm	190 (374)	°C (°F)

TYPICAL MECHANICAL PROPERTIES

Property(2) of cured casting(4) at 25°C (77°F)	Value (SI)	Value (US)	Method
Barcol Hardness	45	45	ASTM D2583
Specific Gravity	1.4	1.4	---
Tensile Strength	55 MPa	8000 psi	ASTM D638
Tensile Modulus	3650 MPa	5.3 x 10^5 psi	ASTM D638
Tensile Elongation	1.7%	1.7%	ASTM D638
Flexural Strength	86 MPa	12,500 psi	ASTM D790
Flexural Modulus	3790 MPa	5.5 x 10^5 psi	ASTM D790
Compressive Strength	148 MPa	21,500 psi	ASTM D695
Heat Distortion Temperature	118°C	244°F	ASTM D648

(3) Registered trademark of Elf Atochem American, Inc.
(4) Catalyzed with 1% Benzoyl Peroxide, cured 2 hours at 71°C (160°F), 1 hour at 93°C (200°F), and post cured 2 hours at 138°C (280°F).

CERTIFICATES AND APPROVALS

The manufacturing, quality control and distribution of products, by INEOS Composites, comply with one or more of the following programs or standards: ISO 9001, ISO 14001 and OHSAS 18001.

STANDARD PACKAGE

Non-Returnable Drum with Net Weight of 250 Kgs (551 Lbs)
DOT Label Requirement: Flammable Liquid

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COMMERCIAL WARRANTY	Three months from date of shipment, when stored in accordance with the conditions stated below.
STORAGE	Drums - Store at temperatures below 25°C (77°F). Storage life decreases with increasing storage temperature. Avoid exposure to heat sources such as direct sunlight or steam pipes. To avoid contamination of product with water, do not store outdoors. Keep containers sealed to prevent moisture pick-up and monomer loss. Mild mixing is recommended after prolonged storage. Rotate stock. Bulk - See INEOS Composites's Bulk Storage and Handling Manual for Polyesters and Vinyl Esters. A copy of this may be obtained from INEOS Composites at +1.614.790.3333 or 800.523.6963. All other conditions being equal, higher storage temperatures will reduce product stability and lower storage temperatures will extend product stability.
Notice	All information presented herein is believed to be accurate and reliable, and is solely for the user's consideration, investigation and verification. The information is not to be taken as an express or implied representation or warranty for which INEOS Composites assumes legal responsibility. Any warranties, including warranties of merchantability, fitness for use or non-infringement of intellectual property rights of third parties, are herewith expressly excluded. Since the user's product formulations, specific use applications and conditions of use are beyond the control of INEOS Composites, INEOS Composites makes no warranty or representation regarding the results which may be obtained by the user. It shall be the sole responsibility of the user to determine the suitability of any of the products mentioned for the user's specific application. INEOS Composites requests that the user reads, understands and complies with the information contained herein and the current Material Safety Data Sheet.

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