Technical Datasheet

Ashland Performance Materials

HETRON®

HETRON® 197 Polyester Resin

HETRON 197 resin is a non-thixotropic, unpromoted, halogenated, flame retardant(1) clear polyester. HETRON 197 resin may be used for closed molding applications. HETRON 197 resin can be formulated into other HETRON resins of the 197 series (except HETRON 197AT resin) with the addition of styrene, thixotrope agents or promoters.

- Excellent corrosion resistance to acidic and other oxidizing environments
- High heat resistance - gases and vapor to 177°C (350°F)
- Excellent strength retention at elevated temperatures
- Good fire retardancy - Has met ASTM E-84 Class II rating with 5% antimony trioxide

APPLICATIONS AND USE

Corrosion resistant fiberglass reinforced plastic equipment including press molded and pultruded pipe, flanges, fittings, pumps, pump housings, mist eliminator blades and other equipment handling corrosive gases, vapors or liquids.

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

TYPICAL LIQUID RESIN PROPERTIES

Property(2) at 25°C (77°F)	Value	Unit
Solids	68.5	%
Viscosity, Brookfield #3 spindle @ 30 rpm	2000	mPa·s (cps)
Specific Gravity	1.20	gm/cc
Appearance	clear	
Color	<4	Gardner

(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.

TYPICAL CURING CHARACTERISTICS

Typical curing characteristics(2) are measured using 6% cobalt naphthenate (CoNaph6), dimethylaniline (DMA), and manganese naphthenate (MnNaph) and various types of catalyst in 100 phr resin.

Responsible Care*

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CAUTION: Thoroughly mix promoters with resin before adding catalyst.

LUPERSOL(3) DDM-9 Catalyst, phr	CoNaph6, phr	Gel Time, minutes	Time to First Barcol, hours	Barcol after 24 hours
1.25	0.3	18	4	40
1.25	0.5	14	3	40
1.00	0.5	15	---	---
1.50	0.5	12	---	---

LUPERCO(3) ATC Catalyst, phr	DMA, phr	Gel Time, minutes	Time to First Barcol, hours	Barcol after 24 hours
2.0	0.1	45	1.5	45
2.0	0.2	20	1.5	45

Cumene Hydroperoxide Catalyst, phr	MnNaph, phr	Gel Time, minutes	Time to First Barcol, hours	Barcol after 24 hours
1.0	0.5	180	110	45
1.0	1.0	90	10	45

TYPICAL MECHANICAL PROPERTIES

Property(2) of cured casting(4) at 25°C (77°F)	Value (SI)	Value (US)	Method
Barcol Hardness	40	40	ASTM D2583
Tensile Strength	41 MPa	6000 psi	ASTM D638
Tensile Modulus	3585 MPa	5.2 x 10^5 psi	ASTM D638
Tensile Elongation	1.3%	1.3%	ASTM D638
Flexural Strength	79 MPa	11,500 psi	ASTM D790
Flexural Modulus	3720 MPa	5.4 x 10^5 psi	ASTM D790
Heat Distortion Temperature	140°C	284°F	ASTM D648

(3) Registered trademark of Atofina Chemicals, Inc.
(4) Catalyzed with 1.0% BPO, cured 2 hours at 71°C (160°F), one hour at 93°C (200°F) and postcured for 2 hours at 138°C (280°F).

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CERTIFICATES AND APPROVALS	The manufacturing, quality control and distribution of products, by Ashland Performance Materials, comply with one or more of the following programs or standards: Responsible Care, ISO 9001, ISO 14001 and OHSAS 18001.
STANDARD PACKAGE	Non-Returnable Drum with Net Weight of 240 Kgs (529 Lbs) DOT Label Requirement: Flammable Liquid
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 Ashland's Bulk Storage and Handling Manual for Polyesters and Vinyl Esters. A copy of this may be obtained from Ashland Performance Materials 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 Ashland assumes legal responsibility. Any warranties, including warranties of merchantability 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 Ashland, Ashland makes no warranty or representation regarding the results which may be obtained by the user. It shall be the responsibility of the user to determine the suitability of any of the products mentioned for the user's specific application. Ashland requests that the user reads, understands and complies with the information contained herein and the current Material Safety Data Sheet.

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