

Permabond ES550 Epoxy Resin

Category : Polymer , Adhesive , Thermoset , Epoxy , Epoxy Adhesive

Material Notes:

PERMABOND ES550 is a single-part epoxy paste which is slump-resistant (does not flow) during cure. The adhesive is toughened for maximum impact resistance, along with excellent peel and shear strength. ES550 is ideal for bonding a wide range of materials including metals, ferrites, ceramics and composites. Features & Benefits: Excellent adhesive strength Excellent resistance to vibration Easy to use – no mixing required High shear and peel strength Good impact strength High temperature resistance Good resistance to chemicals
Information provided by Permabond.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Permabond-ES550-Epoxy-Resin.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.50 g/cc	1.50 g/cc	Uncured
Viscosity	1.00e+6 - 2.00e+6 cP @Temperature 25.0 °C	1.00e+6 - 2.00e+6 cP @Temperature 77.0 °F	Uncured
Storage Temperature	2.00 - 7.00 °C	35.6 - 44.6 °F	

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	80	80	
Adhesive Bond Strength	<= 14.0 MPa	<= 2030 psi	Steel to Ferrite, Substrate Failure, Shear
	14.0 - 27.0 MPa	2030 - 3920 psi	Zinc, Shear; ASTM D1002
	17.0 - 31.0 MPa	2470 - 4500 psi	Aluminum, Shear; ASTM D1002
	27.0 - 41.0 MPa	3920 - 5950 psi	Steel, Shear; ASTM D1002
Impact	20 - 30	20 - 30	kJ/m^2 Adhesive Impact Strength

Thermal Properties	Metric	English	Comments
CTE, linear	45.0 $\mu\text{m/m-}^\circ\text{C}$	25.0 $\mu\text{in/in-}^\circ\text{F}$	
Thermal Conductivity	0.550 W/m-K	3.82 BTU-in/hr-ft ² -°F	

Processing Properties	Metric	English	Comments
Cure Time	<= 3.00 min	<= 0.0500 hour	Induction
	30.0 min	0.500 hour	Oven

Processing Properties	@Temperature 150 °C Metric	@Temperature 302 °F English	Comments
	45.0 min	0.750 hour	Oven
	@Temperature 130 °C	@Temperature 266 °F	
Shelf Life	12.0 Month	12.0 Month	

Descriptive Properties	Value	Comments
Appearance	Silver-grey	Uncured
Maximum Gap Fill (mm)	3	
Strength Retention	100% at 0°C	Relative to 0°C
	25% at 200°C	Relative to 0°C
	65% at 150°C	Relative to 0°C
	85% at 100°C	Relative to 0°C
	95% at 50°C	Relative to 0°C

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