

Hexcel® Redux® 810 Two-Part Epoxy Paste Adhesive

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

Material Notes:

Redux® 810 is a multi-purpose, high shear and peel strength, two-part, toughened epoxy paste adhesive with corrosion-inhibiting properties. Features: Available in cartridges with a static mixer and in tins; Easy to mix; Excellent high shear strength and very high peel properties; Corrosion-inhibiting; Toughened; Non-slump characteristic to 3mm thickness; Gap filling; Glue line control; Service temperature up to 100°C/212°F. Applications: Metal, honeycomb and fibre-reinforced composite bonding applications; Structural repair; Bonding inserts and ferrules; Bonding aluminum and composite edge members; Fabrication of honeycomb sandwich panels using the cut and fold technique.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Hexcel-Redux-810-Two-Part-Epoxy-Paste-Adhesive.php

Physical Properties	Metric	English	Comments
Density	1.02 g/cc	0.0368 lb/in ³	Part B; ASTM D1622
	@Temperature 25.0 °C	@Temperature 77.0 °F	
	1.11 g/cc	0.0401 lb/in ³	Mixed; ASTM D1622
	@Temperature 25.0 °C	@Temperature 77.0 °F	
	1.15 g/cc	0.0415 lb/in ³	Part A; ASTM D1622
	@Temperature 25.0 °C	@Temperature 77.0 °F	
Viscosity	4000 - 8000 cP	4000 - 8000 cP	Part B; 0.50mm Gap, 40mm Parallel Plate, Strain = 0.01%; Bohlin Rheometer
	@Temperature 25.0 °C	@Temperature 77.0 °F	
	80000 - 90000 cP	80000 - 90000 cP	Part A; 0.50mm Gap, 40mm Parallel Plate, Strain = 0.01%; Bohlin Rheometer
	@Temperature 25.0 °C	@Temperature 77.0 °F	
	80000 - 100000 cP	80000 - 100000 cP	Mixed; 0.50mm Gap, 40mm Parallel Plate, Strain = 0.01%; Bohlin Rheometer
	@Temperature 25.0 °C	@Temperature 77.0 °F	

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	77	77	Cured Neat Resin Property, 5 days @ 22°C/72°F, Conditioning: Dry; ISO R868
	@Temperature 22.2 °C	@Temperature 72.0 °F	
	79	79	Cured Neat Resin Property, 1 hour @ 70°C/158°F, Conditioning: Dry; ISO R868
	@Temperature 22.2 °C	@Temperature 72.0 °F	
Tensile Strength, Yield	7.398 MPa	1073 psi	Flatwise Tensile, 1 hour @ 70°C/158°F, Conditioning: Dry; EN2243-4
	@Temperature 22.2 °C	@Temperature 72.0 °F	
	8.398 MPa	1218 psi	

Mechanical Properties	Metric @ Temperature 22.2 °C	English @ Temperature 72.0 °F	Comments Flatwise Tensile, 5 days @ 22°C/72°F, Conditioning: Dry; EN2243-4
	27.50 MPa @Temperature 22.2 °C	3988 psi @Temperature 72.0 °F	Cured Neat Resin Property, 5 days @ 22°C/72°F, Conditioning: Dry; ISO R527
	40.00 MPa @Temperature 22.2 °C	5802 psi @Temperature 72.0 °F	Cured Neat Resin Property, 1 hour @ 70°C/158°F, Conditioning: Dry; ISO R527
Elongation at Break	2.47 % @Temperature 22.2 °C	2.47 % @Temperature 72.0 °F	Cured Neat Resin Property, 5 days @ 22°C/72°F, Conditioning: Dry; ISO R527
	5.53 % @Temperature 22.2 °C	5.53 % @Temperature 72.0 °F	Cured Neat Resin Property, 1 hour @ 70°C/158°F, Conditioning: Dry; ISO R527
Tensile Modulus	1.73 GPa @Temperature 72.0 °C	251 ksi @Temperature 162 °F	Cured Neat Resin Property, 1 hour @ 70°C/158°F, Conditioning: Dry; ISO R527
	2.01 GPa @Temperature 72.0 °C	291 ksi @Temperature 162 °F	Cured Neat Resin Property, 5 days @ 22°C/72°F, Conditioning: Dry; ISO R527
Compressive Yield Strength	10.0 MPa @Temperature 60.0 °C	1450 psi @Temperature 140 °F	Cured Neat Resin Property, 1 hour @ 70°C/158°F, Conditioning: Dry; ASTM D695
	10.0 MPa @Temperature 60.0 °C	1450 psi @Temperature 140 °F	Cured Neat Resin Property, 5 days @ 22°C/72°F, Conditioning: Dry; ASTM D695
	35.50 MPa @Temperature 22.2 °C	5149 psi @Temperature 72.0 °F	Cured Neat Resin Property, 1 hour @ 70°C/158°F, Conditioning: Dry; ASTM D695
	47.50 MPa @Temperature 22.2 °C	6889 psi @Temperature 72.0 °F	Cured Neat Resin Property, 5 days @ 22°C/72°F, Conditioning: Dry; ASTM D695
Poissons Ratio	0.53	0.53	Cured Neat Resin Property, 1 hour @ 70°C/158°F, Conditioning: Dry
	0.68	0.68	Cured Neat Resin Property, 5 days @ 22°C/72°F, Conditioning: Dry
Shear Strength	6.902 MPa @Temperature 100 °C	1001 psi @Temperature 212 °F	Tensile Lap Shear, 5 days @ 22°C/72°F, Conditioning: Dry; EN2243-1
	11.20 MPa @Temperature 100 °C	1624 psi @Temperature 212 °F	Tensile Lap Shear, 1 hour @ 70°C/158°F, Conditioning: Dry; EN2243-1
	16.2 MPa @Temperature 80.0 °C	2350 psi @Temperature 176 °F	Tensile Lap Shear, 5 days @ 22°C/72°F, Conditioning: Dry; EN2243-1
	16.30 MPa	2364 psi	Tensile Lap Shear, 1 hour @

Mechanical Properties	Metric @ Temperature 40.0 °C	English @ Temperature 104 °F	Comments 70°C/158°F, Conditioning: 60°C / 140°F - 95% RH - 30 Days; EN2243-1
	17.50 MPa @Temperature 40.0 °C	2538 psi @Temperature 104 °F	Tensile Lap Shear, 5 days @ 22°C/72°F, Conditioning: 60°C / 140°F - 95% RH - 30 Days; EN2243-1
	22.80 MPa @Temperature 60.0 °C	3307 psi @Temperature 140 °F	Tensile Lap Shear, 1 hour @ 120°C/248°F, Conditioning: Dry; EN2243-1
	23.90 MPa @Temperature -55.0 °C	3466 psi @Temperature -67.0 °F	Tensile Lap Shear, 5 days @ 22°C/72°F, Conditioning: Dry; EN2243-1
	24.00 MPa @Temperature 80.0 °C	3481 psi @Temperature 176 °F	Tensile Lap Shear, 1 hour @ 70°C/158°F, Conditioning: Dry; EN2243-1
	25.80 MPa @Temperature 60.0 °C	3742 psi @Temperature 140 °F	Tensile Lap Shear, 5 days @ 22°C/72°F, Conditioning: Dry; EN2243-1
	29.68 MPa @Temperature 60.0 °C	4305 psi @Temperature 140 °F	Tensile Lap Shear, 1 hour @ 100°C/212°F, Conditioning: Dry; EN2243-1
	33.90 MPa @Temperature 22.2 °C	4917 psi @Temperature 72.0 °F	Tensile Lap Shear, 5 days @ 22°C/72°F, Conditioning: 60°C / 140°F - 95% RH - 30 Days; EN2243-1
	35.3 MPa @Temperature 22.2 °C	5120 psi @Temperature 72.0 °F	Tensile Lap Shear, 5 days @ 22°C/72°F, Conditioning: Salt Spray 2000 hours; EN2243-1
	35.50 MPa @Temperature 22.2 °C	5149 psi @Temperature 72.0 °F	Tensile Lap Shear, 1 hour @ 70°C/158°F, Conditioning: Salt Spray 2000 hours; EN2243-1
	35.60 MPa @Temperature 22.2 °C	5163 psi @Temperature 72.0 °F	Tensile Lap Shear, 1 hour @ 70°C/158°F, Conditioning: 60°C / 140°F - 95% RH - 30 Days; EN2243-1
	37.80 MPa @Temperature 60.0 °C	5482 psi @Temperature 140 °F	Tensile Lap Shear, 1 hour @ 70°C/158°F, Conditioning: Dry; EN2243-1
	38.10 MPa @Temperature 22.2 °C	5526 psi @Temperature 72.0 °F	Tensile Lap Shear, 1 hour @ 120°C/248°F, Conditioning: Dry; EN2243-1
	41.3 MPa @Temperature 22.2 °C	5990 psi @Temperature 72.0 °F	Tensile Lap Shear, 5 days @ 22°C/72°F, Conditioning: Dry; EN2243-1
	43.3 MPa @Temperature 22.2 °C	6280 psi @Temperature 72.0 °F	Tensile Lap Shear, 1 hour @ 100°C/212°F, Conditioning: Dry; EN2243-1
	46.60 MPa @Temperature 22.2 °C	6759 psi @Temperature 72.0 °F	Tensile Lap Shear, 1 hour @ 70°C/158°F, Conditioning: Dry; EN2243-1

Mechanical Properties	Metric	English	Comments
	48.90 MPa	7092 psi	Tensile Lap Shear, 1 hour @ 70°C/158°F, Conditioning: Dry; EN2243-1
	@Temperature -55.0 °C	@Temperature -67.0 °F	
Peel Strength	1.40 kN/m	8.00 pli	Bell Peel, 5 days @ 22°C/72°F, Conditioning: Dry; EN2243-2
	@Temperature 100 °C	@Temperature 212 °F	
	1.58 kN/m	9.00 pli	Bell Peel, 1 hour @ 70°C/158°F, Conditioning: Dry; EN2243-2
	@Temperature 100 °C	@Temperature 212 °F	
	5.08 kN/m	29.0 pli	Bell Peel, 1 hour @ 70°C/158°F, Conditioning: Dry; EN2243-2
	@Temperature 80.0 °C	@Temperature 176 °F	
	5.61 kN/m	32.0 pli	Bell Peel, 5 days @ 22°C/72°F, Conditioning: Dry; EN2243-2
	@Temperature 80.0 °C	@Temperature 176 °F	
	8.41 kN/m	48.0 pli	Bell Peel, 1 hour @ 70°C/158°F, Conditioning: Dry; EN2243-2
	@Temperature 60.0 °C	@Temperature 140 °F	
	9.29 kN/m	53.0 pli	Bell Peel, 1 hour @ 70°C/158°F, Conditioning: Dry; EN2243-2
	@Temperature 22.2 °C	@Temperature 72.0 °F	
	12.4 kN/m	71.0 pli	Bell Peel, 5 days @ 22°C/72°F, Conditioning: Dry; EN2243-2
	@Temperature 60.0 °C	@Temperature 140 °F	
	13.1 kN/m	75.0 pli	Bell Peel, 5 days @ 22°C/72°F, Conditioning: Dry; EN2243-2
	@Temperature 22.2 °C	@Temperature 72.0 °F	

Thermal Properties	Metric	English	Comments
Glass Transition Temp, Tg	42.8 °C	109 °F	Tg onset, 60°C/140°F-95%RH, 30days; Cured Neat Resin Property, 5 days @ 22°C/72°F
	43.9 °C	111 °F	Tg onset, 60°C/140°F-95%RH, 30days; Cured Neat Resin Property, 1 hour @ 70°C/158°F
	52.8 °C	127 °F	Tg tan d, 60°C/140°F-95%RH, 30days; Cured Neat Resin Property, 5 days @ 22°C/72°F
	53.9 °C	129 °F	Tg tan d, 60°C/140°F-95%RH, 30days; Cured Neat Resin Property, 1 hour @ 70°C/158°F
	58.9 °C	138 °F	Tg onset, Dry, Cured Neat Resin Property, 5 days @ 22°C/72°F
	70.0 °C	158 °F	Tg tan d, Dry, Cured Neat Resin Property, 5 days @ 22°C/72°F
	72.2 °C	162 °F	Tg onset, Dry, Cured Neat Resin

Thermal Properties	Metric	English	Property, 1 hour @ 70°C/158°F Comments
	88.9 °C	192 °F	Tg tan d, Dry, Cured Neat Resin Property, 1 hour @ 70°C/158°F

Processing Properties	Metric	English	Comments
Cure Time	2.00 min	0.0333 hour	EN 2243-1
	@Temperature 120 °C	@Temperature 248 °F	
	5.00 min	0.0833 hour	EN 2243-1
	@Temperature 100 °C	@Temperature 212 °F	
	20.0 min	0.333 hour	EN 2243-1
	@Temperature 70.0 °C	@Temperature 158 °F	
	300 min	5.00 hour	EN 2243-1
	@Temperature 40.0 °C	@Temperature 104 °F	

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