

Hexcel® HexFlow® RTM 120/HY 2954 120°C Epoxy System for RTM Two Component System

Category : Polymer , Thermoset , Epoxy , Epoxy Cure Resin

Material Notes:

RTM 120/HY2954 is a two component system, developed for the manufacture of high performance Aerospace and Industrial composite parts using the Advanced Resin Transfer Moulding Process.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Hexcel-HexFlow-RTM-120HY-2954-120C-Epoxy-System-for-RTM-Two-Component-System.php

Physical Properties	Metric	English	Comments
Density	0.940 - 0.950 g/cc	0.0340 - 0.0343 lb/in³	HY2954 cycloaliphatic amine hardener; ISO 1675
	@Temperature 25.0 °C	@Temperature 77.0 °F	
	1.10 - 1.20 g/cc	0.0397 - 0.0434 lb/in³	RTM 120 bisphenol epoxy resin containing reactive diluent; ISO 1675
	@Temperature 25.0 °C	@Temperature 77.0 °F	
Viscosity	70 - 120 cP	70 - 120 cP	HY2954 cycloaliphatic amine hardener; DIN 53015
	100 - 140 cP	100 - 140 cP	
	>= 100 cP	>= 100 cP	Initial Mix Viscosity (Hoeppler)
	@Temperature 60.0 °C	@Temperature 140 °F	
	200 cP	200 cP	Initial Mix Viscosity (Hoeppler)
	@Temperature 40.0 °C	@Temperature 104 °F	
	500 - 700 cP	500 - 700 cP	Initial Mix Viscosity (Hoeppler)
	@Temperature 25.0 °C	@Temperature 77.0 °F	

Mechanical Properties	Metric	English	Comments
Tensile Strength, Yield	71.0 - 77.0 MPa	10300 - 11200 psi	Cure: 1h/80°C/140°C; ISO R 527-1966
	822 MPa	119000 psi	Tensile Warp, Dry/RT; Pr EN 2561
	829 MPa	120000 psi	Tensile Warp, Wet; Pr EN 2561
	@Temperature 80.0 °C	@Temperature 176 °F	
Elongation at Break	4.5 - 5.5 %	4.5 - 5.5 %	At rupture; ISO R 527-1966
Tensile Modulus	66.0 GPa	9570 ksi	Tensile Warp, Dry/RT; Pr EN 2561
	57.0 GPa	8270 ksi	

Mechanical Properties	Metric @ Temperature 80.0 °C	English @ Temperature 176 °F	Tensile Warp, Wet; Pr EN 2561 Comments
Compressive Yield Strength	648 MPa	94000 psi	Compression Warp, Dry/RT; Pr EN 2850
	689 MPa	99900 psi	Compression Weft, Dry/RT; Pr EN 2850
	401 MPa @Temperature 80.0 °C	58200 psi @Temperature 176 °F	Compression Warp, Wet; Pr EN 2850
	475 MPa @Temperature 80.0 °C	68900 psi @Temperature 176 °F	Compression Weft, Wet; Pr EN 2850
Compressive Modulus	61.0 GPa	8850 ksi	Compression Warp, Dry/RT; Pr EN 2850
Fracture Toughness	0.700 MPa-m ^{1/2}	0.637 ksi-in ^{1/2}	PM 258-0/90
Shear Strength	68.0 MPa	9860 psi	I.L.S. Warp, Dry/RT; Pr EN 2563
	51.0 MPa @Temperature 80.0 °C	7400 psi @Temperature 176 °F	I.L.S. Warp, Wet; Pr EN 2563

Thermal Properties	Metric	English	Comments
Glass Transition Temp, Tg	26.7 - 30.6 °C	80.0 - 87.0 °F	Cure: 4h/80°C; Post cure: None
	50.6 - 54.4 °C	123 - 130 °F	Cure: 1 h/80°C; Post cure: 4 h/120°C
	57.2 - 61.1 °C	135 - 142 °F	Cure: 20 min./120°C; Post cure: 4 h/145°C
	57.8 - 61.7 °C	136 - 143 °F	Cure: 1 h/80°C; Post cure: 4 h/160°C
Flash Point	>= 175 °C	>= 347 °F	HY2954 cycloaliphatic amine hardener
	>= 185 °C	>= 365 °F	RTM 120 bisphenol epoxy resin containing reactive diluent

Optical Properties	Metric	English	Comments
Gardner Color Number	<= 2.0	<= 2.0	RTM 120 bisphenol epoxy resin containing reactive diluent
	<= 3.0	<= 3.0	HY2954 cycloaliphatic amine hardener

Processing Properties	Metric	English	Comments
Gel Time	3.00 - 4.00 min @Temperature 140 °C	3.00 - 4.00 min @Temperature 284 °F	

Processing Properties	7.00 - 9.00 min Metric	7.00 - 9.00 min English	Comments
	@Temperature 120 °C	@Temperature 248 °F	
	10.0 - 12.0 min	10.0 - 12.0 min	
	@Temperature 110 °C	@Temperature 230 °F	
	16.0 - 18.0 min	16.0 - 18.0 min	
	@Temperature 100 °C	@Temperature 212 °F	
	35.0 - 45.0 min	35.0 - 45.0 min	
	@Temperature 80.0 °C	@Temperature 176 °F	
	90.0 - 120 min	90.0 - 120 min	
	@Temperature 60.0 °C	@Temperature 140 °F	

Descriptive Properties	Value	Comments
Color	Clear liquid	HY2954 cycloaliphatic amine hardener; As-supplied form
	Clear, Pale yellow liquid	RTM 120 bisphenol epoxy resin containing reactive diluent; As-supplied form
Epoxy Content (Eq/kg)	5.7-6	ISO 3001

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