

PRO-SET®

Technical Data

M1052

LAM-229

BIO BASED LAMINATING EPOXY

The New
Standard

EPOXIES for
Laminating
Infusion
Tooling
Assembly

Wessex Resins & Adhesives

Cupernham House
Cupernham Lane
Romsey, Hampshire
SO51 7LF, UK
pro-set.co.uk
+44(0)1794 521111

ISO9001:2015 Certified

REV 1 / Apr 2020

©2020 Wessex Resins
& Adhesives

COMBINED FEATURES

Low viscosity for quick wet out of synthetic composite fabrics; especially effective with Kevlar® and carbon fibre.

Slow cure speed hardener provides 4 to 5 hours of working time at 25°C. A typical laminate will be gelled in 6 to 7 hours.

Optimized for hand wet out and machine impregnation in contact moulding, vacuum bagging and Light RTM applications.

Room temperature cure properties suitable for many composite components and structures.

Tg as high as 92°C with proper post cure providing excellent temperature stability and great part cosmetics.

Cost effective, high performance epoxy formulation for synthetic composite manufacturing.

The bio based content of PRO-SET M1052 resin is 34% as measured according to the ASTM D6866-18 test method.

HANDLING PROPERTIES

Property	Standard	Units	21°C	25°C	29°C
150g Pot Life	ASTM D2471	minutes	199	100	86
500g Pot Life	ASTM D2471	minutes	121	73	67
Viscosity Mixed	ASTM D2196	mPas	568	449	335
Viscosity (resin)	ASTM D2196	mPas	1520		
Viscosity (hardener)	ASTM D2196	mPas	32		

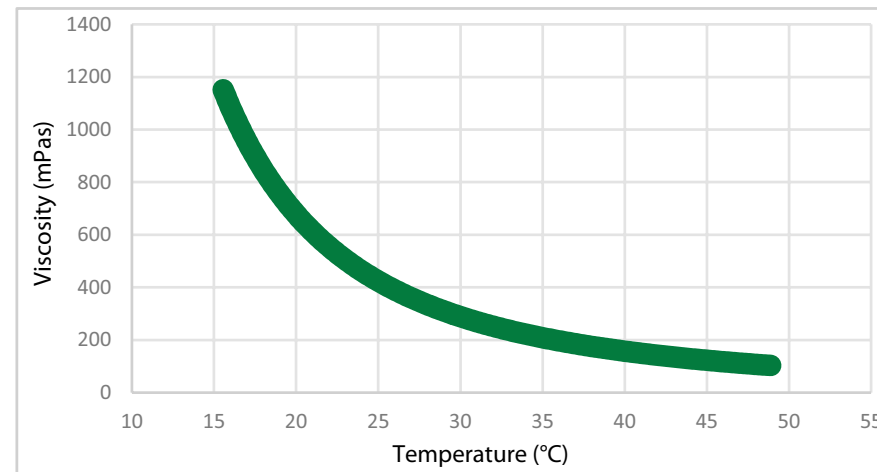
MIX RATIO

Method	Resin:Hardener	Resin:Hardener
Weight	3.5:1	100:28.6
Weight Range	3.96:1-3.24:1	100:25.2-100:30.8
Volume	3.00:1	100:33.3
Volume Range	3.47:1-2.84:1	100:28.9-100:35.3

DENSITY

State	Units	21°C
Cured	gcm ⁻³	1.16
Resin	gcm ⁻³	1.15
Hardener	gcm ⁻³	0.97

VISCOSITY VS TEMPERATURE



Test specimens were neat epoxy (without fibre reinforcement).
Typical values not to be construed as specification.

M1052 / LAM-229

BIO BASED LAMINATING EPOXY

MECHANICAL PROPERTIES

Property	Standard	Units	22°C x 4 Weeks	25°C x 2 Weeks	RT Gelation + 49°C x 8 hrs	RT Gelation + 60°C x 8 hrs	RT Gelation + 82°C x 8 hrs
Hardness	ASTM D2240	Shore D	85	86	86	87	88
Compression Yield	ASTM D695	MPa	110	108	95	95	95
Tensile Strength	ASTM D638	MPa	58	51	69	69	69
Tensile Modulus	ASTM D638	GPa	3.92	3.79	3.54	3.47	3.21
Tensile Elongation	ASTM D638	%	1.7	1.5	3.5	3.9	6.0
Flexural Strength	ASTM D790	MPa	92	89	118	118	118
Flexural Modulus	ASTM D790	GPa	3.54	3.48	3.47	3.25	2.99

THERMAL PROPERTIES

Property	Standard	Units	22°C x 4 Weeks	25°C x 2 Weeks	RT Gelation + 49°C x 8 hrs	RT Gelation + 60°C x 8 hrs	RT Gelation + 82°C x 8 hrs	
Tg DMA Peak Tan Delta	ASTM E1640*1	°C	70	69	82	91	104	
Tg DMA Onset Storage Modulus	ASTM E1640*1	°C	62	61	71	79	92	
Tg DSC Onset - 1st Heat	ASTM E1356	°C	60	58	65	74	84	
Heat Deflection Temperature	ASTM D648	°C	53	54	66	72	81	
Tg DSC Ultimate	ASTM E1356	°C	89*2					

*1 1Hz, 3°C per minute.

*2 Additional post cure may be required; contact Technical Department for details.

Test specimens were neat epoxy (without fibre reinforcement).

These are typical properties and cannot be construed as a specification. The end users should test the products to ensure the products are suitable for the intended application. Any information, data, advice or recommendation published by Wessex Resins or obtained from Wessex Resins by other means and whether relating to Wessex Resins' materials or other materials, is given in good faith and believed to be reliable.

REV 1 / Apr 2020