

PRO-SET®

Technical Data

INF-114

INF-210

INFUSION EPOXY

The New
Standard

EPOXIES for
Laminating
Infusion
Tooling
Assembly

Wessex Resins & Adhesives

Cupernham House
Cupernham Lane
Romsey, Hampshire
SO51 7LF, UK
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+44(0)1794 521111

ISO9001:2008 Certified

REV 1 / July 2013

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& Adhesives

COMBINED FEATURES

Very low viscosity for rapid saturation of fibreglass, Kevlar and carbon fibre laminate with resin infusion and VARTM processes.

Fast cure speed hardener provides approximately 75 - 90 minutes of working time at 25°C. A typical laminate will be gelled in 2 to 3 hours.

This combination is formulated specifically for resin infusion and VARTM processes. Do not use in open mould 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.

HANDLING PROPERTIES

Property	Standard	Units	21°C	25°C	29°C
150g Pot Life	ASTM D2471	minutes	32	27	21
500g Pot Life	ASTM D2471	minutes	30	25	20
Viscosity Mixed	ASTM D2196	mPas	304	241	188
Viscosity (resin)	ASTM D2196	mPas	1433		
Viscosity (hardener)	ASTM D2196	mPas	16		

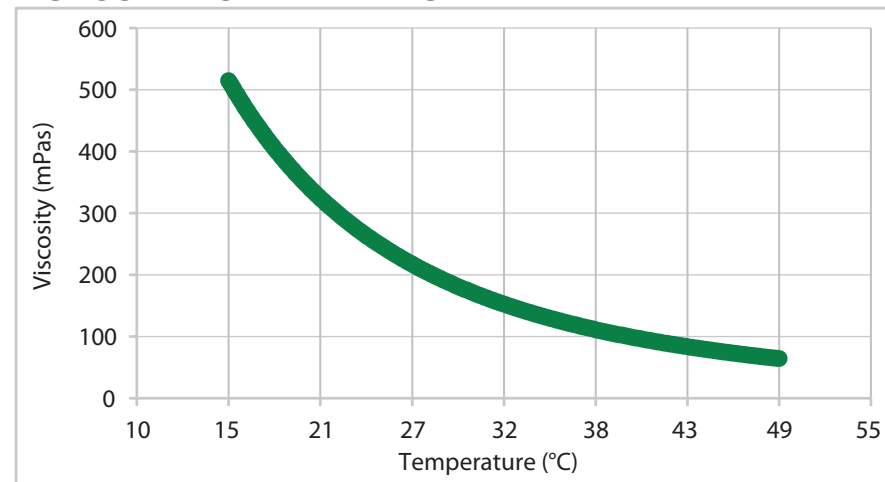
MIX RATIO

Method	Resin:Hardener	Resin:Hardener
Weight	3.65:1	100:27.4
Weight Range	3.92:1-3.56:1	100:25.5-100:28.1
Volume	3.00:1	100:33.3
Volume Range	3.23:1-2.94:1	100:30.9-100:34.0

DENSITY

State	Units	21°C
Cured	gcm ⁻³	1.14
Resin	gcm ⁻³	1.14
Hardener	gcm ⁻³	0.94

VISCOSITY VS TEMPERATURE



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

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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	86	86	86	86	86
Compression Yield	ASTM D895	MPa	101	110	102	103	103
Tensile Strength	ASTM D638	MPa	60	70	76	76	78
Tensile Modulus	ASTM D638	GPa	3.84	3.59	3.49	3.42	3.14
Tensile Elongation	ASTM D638	%	2.0	2.6	4.7	4.9	5.7
Flexural Strength	ASTM D790	MPa	93	110	128	130	133
Flexural Modulus	ASTM D790	GPa	3.33	3.64	3.37	3.38	3.23

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	74	75	88	96	103	
Tg DMA Onset Storage Modulus	ASTM E1640*1	°C	64	63	75	83	92	
Tg DSC Onset - 1st Heat	ASTM E1356	°C	61	61	76	80	85	
Heat Deflection Temperature	ASTM D648	°C	57	58	67	73	79	
Tg DSC Ultimate	ASTM E1356	°C	85*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.

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COMBINED FEATURES

Very low viscosity for rapid saturation of fibreglass, Kevlar and carbon fibre laminate with resin infusion and VARTM processes.

Medium cure speed hardener provides 3 to 4 hours of working time at 25°C. A typical laminate will be gelled in 8 hours.

This combination is formulated specifically for resin infusion and VARTM processes. Do not use in open mould applications.

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

Tg as high as 91°C with proper post cure providing excellent temperature stability and great part cosmetics.

Cost Effective - High Performance epoxy formulation for synthetic composite manufacturing.

HANDLING PROPERTIES

Property	Standard	Units	21°C	25°C	29°C
150g Pot Life	ASTM D2471	minutes	131	122	72
500g Pot Life	ASTM D2471	minutes	101	85	63
Viscosity Mixed	ASTM D2196	mPas	296	245	196
Viscosity (resin)	ASTM D2196	mPas	1433		
Viscosity (hardener)	ASTM D2196	mPas	14		

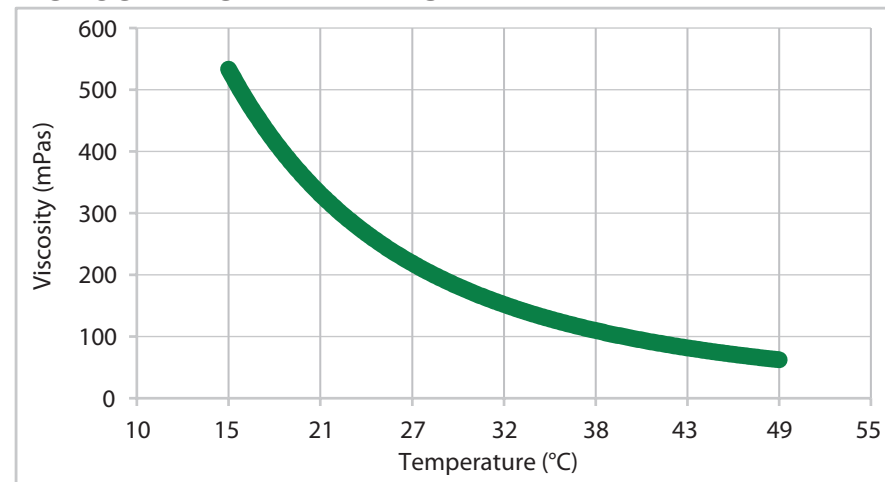
MIX RATIO

Method	Resin:Hardener	Resin:Hardener
Weight	3.65:1	100:27.4
Weight Range	3.81:1-3.45:1	100:26.3-100:29.0
Volume	3.00:1	100:33.3
Volume Range	3.13:1-2.84:1	100:31.9-100:35.3

DENSITY

State	Units	21°C
Cured	gcm ⁻³	1.14
Resin	gcm ⁻³	1.14
Hardener	gcm ⁻³	0.93

VISCOSITY VS TEMPERATURE



Test specimens were neat epoxy (without fibre reinforcement).
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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	86	86	85	85	85
Compression Yield	ASTM D895	MPa	101	105	94	94	94
Tensile Strength	ASTM D638	MPa	54	59	66	68	70
Tensile Modulus	ASTM D638	GPa	3.61	3.68	3.69	3.52	3.36
Tensile Elongation	ASTM D638	%	1.7	2.0	2.6	3.9	5.3
Flexural Strength	ASTM D790	MPa	85	103	118	121	125
Flexural Modulus	ASTM D790	GPa	3.34	3.33	3.43	3.41	3.2

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	70	80	91	102	
Tg DMA Onset Storage Modulus	ASTM E1640*1	°C	63	63	69	80	91	
Tg DSC Onset - 1st Heat	ASTM E1356	°C	59	59	66	74	81	
Heat Deflection Temperature	ASTM D648	°C	54	55	62	71	78	
Tg DSC Ultimate	ASTM E1356	°C	85*2					

*1 1Hz, 3°C per minute.

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

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