

KINETIX R246 is a solvent free, low viscosity epoxy resin specifically formulated for use with H126, H128, H160, H161 and H162 hardeners to cure at room temperature, or low elevated temperature, and is suitable for fibre composite boat construction.

The low viscosity of this system is an aid in both, hand lamination or impregnation machine operations. The relatively low activity of R246 offers extended working times \* which is another benefit for large laminating projects.

\* In comparison with R240 resin, R246 mixed with associated amine hardeners, will produce significantly longer working times, typically in the order of 100%.

Cured mechanical properties are excellent. Notably, the cured HDT (heat distortion test) with each hardener is raised some 5-10°C. Toughness is retained.

### MIX RATIO

25 parts hardener to 100 parts resin by weight

**Note: Care should be taken when dispensing and mixing. Do not attempt to control the cure time by altering the hardener ratio. Contact ATL Composites for specific information.**

### UNCURED PROPERTIES

	R246 Resin	H126 Super Fast	H128 Fast **	H160 Medium	H161 Slow	H162 Super Slow **
Physical State	Clear liquid	Clear pale brown liquid	Clear pale yellow liquid	Clear pale brown liquid	Clear pale yellow liquid	Clear pale yellow liquid
Viscosity mPas @ 25°C	750-900	160	60	30	25	20
Specific Gravity g/ml @ 25°C	1.10	0.99	0.95	0.95	0.94	0.93

\*\*Post cure required before handling or removal from mould / framework – H128 exhibits brittle behaviour, while H162 will exhibit plastic like properties. Care should be taken when removing peel-ply or secondary bonding prior to post-cure.

### CURE CHARACTERISTICS

	H126 Super Fast	H128 Fast**	H160 Medium	H161 Slow*	H162 Super Slow**
Pot Life -100g @ 25°C	40 mins	55 mins	120 mins	190 mins	300 mins
Thin laminate open time* @ 25°C	4 hrs	4 hrs 20mins	8 hrs 45mins	9 hrs 20mins	10 hrs
Demold time @ 25°C	9hrs 25 mins	9hrs 35mins	28 hrs	33hrs30mins	28 hrs
Mix viscosity mPas @ 25°C	460	400	300	260	240
Shore D Hardness -1 day @ 25°C	73	68	59	74	68
- 2 weeks @ 25°C	79	83	74	80	77
HDT after 24 hours @ 25°C	47°C	50°C	38°C	42°C	44°C
2 weeks @ 25°C	53°C	53°C	46°C	47°C	48°C
+16 hours @ 40°C	65°C	61°C	53°C	57°C	58°C
+16 hours @ 50°C	70°C	71°C	57°C	60°C	63°C
+ 8 hours @ 60°C	79°C	80°C	63°C	62°C	65°C
+ 8 hours @ 80°C	96°C	97°C	65°C	68°C	71°C
+4hours @100°C	97°C	97°C	65°C	71°C	73°C
+3hours @120°C	97°C	97°C	67°C	74°C	77°C
Ultimate HDT	97°C	98°C+	68°C	75°C	77°C+

\* Laminate - 2 layers of 400g biaxial @ 25°C/ fibre fraction 50%

## MONITORING OF CURE

A laminator wishing to monitor progress of cure has a number of on the spot options open to him. Small test aliquots of mixed resin can be placed in waxed lids during lamination. These should be subjected to the same cure conditions as the actual laminate, and later compared with standard samples which are known to be fully cured.

The samples should be flat on the bottom and approximately 2 to 3 mm thick. Allowance should be made for the possible effect of foam core insulating the curing resin, and reducing the cure of the inner layer.

A better alternative means of comparison is to meter the development of Heat Distortion Temperature (HDT) by immersing the aliquots in a vessel of warming water and noting the temperature at which the resin becomes rubbery. Providing sample thickness is kept constant, this simple technique gives surprisingly reproducible results.

## CAUTION

When cured these resins, like all plastics, undergo a transition to a rubbery state when heated above their HDT. Operators should be constantly aware that a partly cured resin will not have developed full HDT, and that components should not be heated above this temperature when they are not supported by vacuum and a mould. Be aware, for example, that heating will cause a considerable build up of pressure in gases in a low density core, and this will always tend to lift a laminate.

Care should also be taken to avoid heating unsupported laminates above the HDT of bonding resins and foam cores.

## CALCULATING RESIN/HARDENER FOR A FIBREGLASS LAMINATE

As a rough rule for the amount of resin/hardener required to achieve proper wetting out and consolidation of a laminate, use a 1:1 ratio of fibreglass weight per m<sup>2</sup> to resin/hardener weight, plus wastage

e.g. 1m<sup>2</sup> of 600grm biaxial E-fibreglass will require 600grms of mixed resin and hardener + a 10% wastage factor

PACK SIZES				
Order Code		Order Code		PACK
<b>Resin</b>		<b>Hardener</b>		
RC 246	4 kg	HC 126	1 kg	5 kg
		HC 128	1 kg	
		HC 160	1 kg	
		HC 161	1 kg	
		HC 162	1 kg	
RD 246	18 kg	HD 126	4.5 kg	22.5 kg
		HD 128	4.5 kg	
		HD 160	4.5 kg	
		HD 161	4.5 kg	
		HD 162	4.5 kg	
RF 246	192 kg	HF 126	48 kg	240 kg
		HF 128	48 kg	
		HF 160	48 kg	
		HF 161	48 kg	
		HF 162	48 kg	

## STORAGE

KINETIX R246 and associated hardeners will keep for 2 years if kept in original containers at room temperature (15°C to 32°C), and out of direct sunlight. Containers should be tightly sealed to prevent moisture absorption.

## HEALTH & SAFETY

KINETIX R246 and associated hardeners have moderate sensitising potential, and should be kept out of the eyes and off the skin.

- Use with good ventilation and adequate safety equipment including impervious gloves and safety glasses.
- If skin contact occurs, remove contaminated clothing immediately, and wash the affected area thoroughly with ATL's 845 hand cleaner and water, avoiding the use of solvents except in the case of massive contamination.
- If eye contact occurs, immediately flush with running water for at least 15 (fifteen) minutes and seek medical advice.
- If swallowed:

**Resins** - DO NOT induce vomiting, and contact a doctor or the Poisons Information Centre.

**Hardeners** - DO NOT induce vomiting, give plenty of milk or water and contact a doctor or the Poisons Information Centre.

NOTE Our products are intended for sale to industrial and commercial customers. We request that customers inspect and test our products before use and satisfy themselves as to contents and suitability. Nothing herein shall constitute a warranty, express or implied, including any warranty of merchantability or fitness, nor is protection from law or patent to be inferred. All patent rights are reserved. The exclusive remedy for all proven claims is replacement of our materials and in no event shall we be liable for special or consequential damages. 27/05/04

