

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 m² to resin/hardener weight, plus wastage

e.g. 1m² of 600grm biaxial E-fibreglass will require 600grms of mixed resin and hardener + a 10% wastage factor

| PACK SIZES | | | | |
|------------|--------|------------|--------|---------|
| Order Code | | Order Code | | PACK |
| Resin | | Hardener | | |
| 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 | |

* H161 is a Made to Order product and a minimum purchase quantity is applicable

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 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. 29/01/13