

# RESOLTECH 3100

## Hardener 3102

### Structural Toughened Epoxy Adhesive

- Structural toughened epoxy high peel resistance adhesive for demanding applications
- Room temperature curing
- Excellent impact damage resistance



RESOLTECH 3100 / 3102 epoxy adhesive is a rubber toughened, high performance adhesive that will enable bonding with very high mechanical resistance and high peel-resistance.

Its room temperature cure makes this epoxy adhesive an easy product to work with.

It will enables structural bondings of all types of composite materials, steel, aluminium, and will resist in a large range of operating temperatures from  $-50^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$ , with a maximum service temperature of  $120^{\circ}\text{C}$  and very good resistance to thermal shocks.

It is a solvent less adhesive with no contraction upon curing.

# Resin 3100

## Hardener 3102

### MIXING RATIO

<b>System</b>	<b>3100 / 3102</b>
<b>Mixing ratio by weight</b>	100 / 20

The mixing ratio must be accurately followed. It is not possible to change the ratio, it would result in lower mechanical properties. The mixture should be mechanically stirred during no less than 5 minutes to ensure full homogeneity. Keeping the mixture in flat open containers reduces the risks of exothermic reaction.

### PHYSICAL CHARACTERISTICS

#### Visual aspect

- 3100 : Slightly yellow opalescent liquid
- 3102 : Transparent liquid
- Mix : Slightly yellow opalescent liquid

#### Densities according to ISO 1675 ( $\pm 0.05$ )

References	3100	3102
Density at 23°C	1.13	0.98
Mixed density at 23°C	1.10	

#### Viscosities according to ISO 2555 ( $\pm 15\%$ )

References	3100	3102
Viscosity at 23°C(mPa.s)	30 000	15
Mixed viscosity at 23°C (mPa.s)	1 600	

### REACTIVITY

<b>System</b>	<b>3100 / 3102</b>
<b>Pot life on 70mL at 23°C (4cm thickness)</b>	1h20min
<b>Temperature at exothermic peak on 70mL at 23°C</b>	172°C

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### APPLICATION

The standard procedure of working with epoxy systems applies to the RESOLTECH 3100 / 3102 :

- Mixing the resin and hardener should be done above 5 °C.
- It is recommended to proceed to a small test before industrial size application.
- It is recommended to deglaze, clean and degrease the support prior to application.

RESOLTECH 3100 / 3102 is a room temperature cure adhesive formulated for a large range of bonding applications and will provide superior adherence onto composites, steel & aluminium. It is suitable for core bonding and also for composite to composite bonding.

All surfaces should be clean, dust-free and degreased. Good surface preparations will ensure long lasting bondings and optimum mechanical resistances.

For steel bonding, ensure the surfaces are clean, degreased and sanded.

For aluminium alloy or fibrocement bonding, an etching treatment is required prior to bonding.

For bonding onto porous materials, ensure the surface is dry and dust free.

For polyester or vinylester ensure that laminates are fully cured before bonding. When bonding epoxy laminates, the use of a Peel Ply as the last stage in their manufacture is a minimum requirement, optimum surface preparation consists in sanding with high grit abrasive is recommended.

- Assemble and maintain parts in contact during hardening with clamps, vacuum or masking tape. Do not over-clip, being solvent-less, epoxies do not need pressure, just maintaining the parts together. Overly clamping will induce the risk of eliminating most of the adhesive film resulting in a poor bonding of the parts.
- Cleaning of the materials should be done before polymerization with acetone, methylethylcetone (MEK) or equivalent.

### MECHANICAL PROPERTIES

RESOLTECH 3100 / 3102 do not require a post cure, although a post cure at an elevated temperature (60°C for example) will improve mechanical properties and accelerate the cure.

- Service temperature -50°C to +80°C (+120°C peak)
- T<sub>G</sub> after 14 days at 23°C 46°C
- T<sub>G</sub> after 8h at 60 °C 66°C
- Maximum T<sub>G</sub> 70°C

Hardness according to ISO 868 after 14 days at 23°C 80 Shore D

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### Flexural properties according to ISO 178

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System	3100 / 3102	
Curing cycle	14 days at 23°C	8h at 60°C
Flexural modulus (GPa)	2.86	2.56
Maximum flexural strength (MPa)	83.6	85.2
Elongation at max. strength (%)	4.0	5.4

### Tensile properties according to ISO 527

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System	3100 / 3102	
Curing cycle	14 days at 23°C	16h at 60°C
Flexural modulus (GPa)	2.60	2.54
Maximum flexural strength (MPa)	45.9	52.9
Elongation at max. strength (%)	3.6	4.2

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### PACKAGING

3100 / 3102 kits available :

- (1+0.2) kg
- (5+1) kg
- (25+5) kg
- (200+20) kg

### TRANSPORT & STORAGE

Keep containers sealed and away from heat and cold preferably between 10°C and 30°C in a well ventilated area. Our products are guaranteed in their original packaging (check expiry date stated on the label).

### HEALTH & SAFETY

Skin contact must be avoided by wearing protective nitrile gloves & overalls or other protective clothing. Eye protection should be worn to avoid risk of resin, hardener, solvent or dust entering the eyes. If this occurs flush the eye with water for 15 minutes, holding the eyelid open, and seek medical attention. Ensure adequate ventilation in work areas. Respiratory protection should be worn with ABEKP coded filters. RESOLTECH issues full Material Safety Data Sheet for all hazardous products. Please ensure that you have the correct MSDS to hand for the materials you are using.

Nota : The data provided in this document is the result of tests and is believed to be accurate. We do not accept any responsibility over the mishandling of these products and our liability is limited strictly to the value of the products we manufacture and supply.