Technical Datasheet V1 - 19.04.2017

RESOLTECH 1500

Hardener 1504

Structural Epoxy infusion system

- **Thermally stable up to 140°C (284°F) when fully post cured**
- **Resistant to thermal cycling damage**
- **Low initial mixed viscosity for easier infusion; 250 cP at 23°C (73.4°F)**
- **Long pot-life and gel time; capable of infusing large or complex moulds**
- **Ambient curing and low shrinkage for accurate mould manufacture**




RESOLTECH 1500 / 1504 is an **epoxy infusion system** with an **extremely low viscosity** that enables **structural composite parts & tools manufacturing** with glass of carbon fibre.

The system is compatible with RESOLTECH´s range of 140°C tooling gelcoat, laminating and repair systems.

RESOLTECH 1500 / 1504 is a low shrinkage ambient curing system, which provides a simple way to produce high accuracy moulds. Thanks to its low viscosity and its **exceptional wetting ability** this system is designed for infusion and **cures at ambient temperatures**, it should then be **mid-cured at 60°C (140°F) for 8 hours** to guarantee the strength needed for demoulding**.**
It can then be **post cured off the plug** to give a material that is thermally stable up to 140°C (284°F).

Like all RESOLTECH systems, 1500 / 1504 is a state of the art chemistry epoxy system, formulated **without any CMR components** and caring about the **H&S working conditions**.

Resin 1500

Hardener 1504

MIXING RATIO

System	1500 / 1504
Mixing ratio by weight	100 / 30

The mixing ratio must be respected neither excess nor default.
The mixture should be thoroughly stirred to ensure full homogeneity.

APPLICATION

Thermosetting products generate heat when curing. The amount of heat generated varies with the temperature and the quantity of mixed resin. It is therefore recommended to only mix the necessary amount usable within the given pot life.
Keeping the mixture in flat open containers reduces the risks of exothermic reaction as the mixture will heat up more in a mass than in a film.
It is recommended to have workshop temperature conditions between 18 - 25°C in order to facilitate the mixing and fibers reinforcement impregnation. A lower temperature will increase the viscosity of the mix as well as its pot life. On the contrary, a higher temperature will reduce the viscosity and the pot life of the mix.

PHYSICAL CARACTERISTICS

Visual aspect

1500 : Opalescent slightly yellow liquid
1504 : Colourless limpid liquid
Mix : Colourless to slightly yellow opalescent liquid

Density at 23°C (ISO 1675, ±0.05)

References	1500	1504
Density	1.11	0.92
Mix density	1.07	

Viscosity at 23°C (ISO 12058.2, ±15%)

References	1500	1504
Viscosity (mPa.s)	1500	16
Mix viscosity (mPa.s)	250	

Resin 1500

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REACTIVITY

System	1500 / 1504
Reactivity on 70mL (~4cm thickness) at 23°C	6h30min
Time at exothermic peak on 70mL	6h20min
Temperature at exothermic peak on 70mL	43°C
Reactivity on 500mL at 23°C	3h10min
Reactivity in 2mm film at 23°C	7h40min

Measurements made with Rheotech®

CURING & POST CURING

The table displayed below indicates glass transition temperature measurements according to different post-curing cycles. In any case, **it is mandatory to perform a post-curing for 8 hours at 60°C minimum before releasing.**

System	1500 / 1504		
Curing cycles	8h60°C	16h60°C	3h50°C+3h100°C+3h150°C
T_G	81°C	85°C	141°C
Shore D Hardness	90	91	94

System	1500 / 1504	
Curing cycles	2h120°C ($0.2°C.min^{-1}$)	2h130°C ($0.2°C.min^{-1}$)
T_G	124°C	131°C

T_G measurements made with Kinetech® (DMA type)
Hardness according to ISO 868

Resin 1500

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MECHANICAL PROPERTIES

System	1500 / 1504	
Curing cycles	8h60°C	3h50°C+3h100°C+3h150°C
Flexural modulus	3.33 GPa	3.23 GPa
Flexural max. strength	86.3 MPa	149.3 MPa
Elongation at max. strength	2.5 %	7.5 %

Tests realized on pure resin samples
Flexion according to ISO 178

PACKAGING

Available kits of 1500 / 1504 :

- 1.3 kg : (1+0.3) kg
- 6.5 kg : (5+1.5) kg
- 32.5 kg : (25+7.5) kg
- 260 kg : (200+2x30) 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.

Resinas Castro S.L.
Pol. Ind. A Granxa, C/Cíes 190
36400 O Porriño – Pontevedra – España
Tlf.: +34 986 342 953 // Mobile: +34 669 75 48 33
info@castrocomposites.com www.castrocomposites.com