

## F-RES 11564 / F-HARD 13486 / F-HARD 13487

WARM CURING EPOXY SYSTEM INFUSION SYSTEM

F-RES 11564

F-HARD 13486 (formulated amine hardener) F-

HARD 13487 (formulated amine hardener)

### APPLICATION

Industrial composites

### PROPERTIES

Laminating system with low viscosity and high flexibility. The reactivity may easily be adjusted to demands through the combination of both hardeners. The long pot life of F-HARD 13486 facilitates the production of very large industrial parts.

### PROCESSING

- ❖ Resin Transfer Moulding (RTM, SCRIMP)
- ❖ Wet lay-up
- ❖ Filament Winding

### PRODUCT DATA

#### F-RES 11564

- ❖ Aspect Viscosity at 25 °C
- ❖ Density at 25 °C
- ❖ Epoxy index
- ❖ Clear liquid
- ❖ 1250- 1450 [mPa s]
- ❖ 1,1 - 1,2 [g/cm<sup>3</sup>]
- ❖ 5,8 - 6.05 [Eq/kg]

#### F-HARD 13486

- ❖ Aspect Viscosity at 25 °C
- ❖ Density at 25 °C
- ❖ Amine value
- ❖ Clear colorless to slightly yellow liquid
- ❖ 10 - 20 [mPa s]
- ❖ 0.94 - 0,95 [g/cm<sup>3</sup>]
- ❖ 8.55 - 9.30 [Eq/kg]

#### F-HARD 13487

- ❖ Aspect Viscosity at 25 °C
- ❖ Density at 25 °C
- ❖ Amine value
- ❖ Clear colorless to slightly yellow liquid
- ❖ 30 - 70 [mPa s]
- ❖ 0,98 - 1,0 [g/cm<sup>3</sup>]
- ❖ 9.30 - 10.20 [Eq/kg]

### TYPICAL SYSTEM DATA PROCESSING DATA MIX RATIO

Components	Parts by weight	Parts by volume
F-RES 11564	100	100
F-HARD 13486	34	41
F-RES 11564	100	100
F-HARD 13487	34	41

We recommend that the components are weighed with an accurate balance to prevent mixing inaccuracies which can affect the properties of the matrix system.

The components should be mixed thoroughly to ensure homogeneity. It is important that the side and the bottom of the vessel are incorporated into the mixing process. When processing large quantities of mixture the pot life will decrease due to exothermic reaction. It is advisable to divide large mixes into several smaller containers.

<b>Tensile Stress</b>	(80 °C 8 hours)	70-75 MPa
<b>Tensile Complex Modulus</b>	(80 °C 8 hours)	2850-3000 MPa
<b>Bending Stress</b>	(80 °C 8 hours)	110-125 MPa
<b>Bending Modulus</b>	(80 °C 8 hours)	2800-3000 MPa

<b>POT LIFE (25°C)</b>	<b>[g]</b>	<b>[Min]</b>
F-RES 11564	<b>100</b>	560-620
F-HARD 13486	<b>1000</b>	180-230
F-RES 11564	<b>100</b>	130-160
F-HARD 13487	<b>1000</b>	75-100

#### STORAGE

Provided that F-RES 11564 and F-HARD 13486 or F-HARD 13487 are stored in a dry place in their original, properly closed containers at the storage temperatures mentioned in the MSDS they will have the shelf lives indicated on the labels. Partly emptied containers should be closed immediately after use.

#### Mechanical Properties After Curing Glass

##### Transition Temperature

<b>25 °C 4 days</b>	48-52 °C
<b>50 °C 12 hours</b>	65-70 °C
<b>80 °C 4 hours</b>	80-85 °C
<b>100 °C 2 hours</b>	80-85 °C

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