

FBRMAKRES 11564 / FBRMAKHARD 13486 / FBRMAKHARD 13487

WARM CURING EPOXY SYSTEM INFUSION
SYSTEM

FBRMAKRES 11564

FBRMAKHARD 13486 (formulated amine hardener)

FBRMAKHARD 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 FBRMAKHARD 13486 facilitates the production of very large industrial parts.

PROCESSING

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

PRODUCT DATA**FBRMAKRES 11564**

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

FBRMAKHARD 13486

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

FBRMAKHARD 13487

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

TYPICAL SYSTEM DATA**PROCESSING DATA MIX RATIO**

Components	Parts by weight	Parts by volume
FBRMAKRES 11564	100	100
FBRMAKHARD 13486	34	41
FBRMAKRES 11564	100	100
FBRMAKHARD 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.

POT LIFE

(25°C)	[g]	[Min]
FBRMAKRES 11564 /	100	560-620
FBRMAKHARD 13486	1000	180-230
FBRMAKRES 11564 /	100	130-160
FBRMAKHARD 13487	1000	75-100

STORAGE

Provided that FBRMAKRES 11564 and FBRMAKHARD 13486 or FBRMAKHARD 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.

ÖZELLİKLERİ

	25 °C, 4 days	: 48-52 °C
Glass Transition Temperature	50 °C, 12 hours	: 65-70 °C
	80 °C, 4 hours	: 80-85 °C
	100 °C, 2 hours	: 80-85 °C
Tensile Stress (80 °C, 8 hours)	70-75 MPa	
Tensile Complex Modulus (80 °C, 8 hours)	2850-3000 MPa s	
Bending Stress (80 °C, 8 hours)	110-125 MPa	
Bending Modulus (80 °C'de 8 saat)	2800-3000 MPa	