

ALCHEMIX[®] EP 4505 / H83

*Two Part Epoxy System with Excellent High Temperature Properties
85 – 90 Shore D Hardness*

ALCHEMIX EP 4505 / H83 is a two part epoxy system formulated to cure to a high gloss surface under extreme conditions. ALCHEMIX EP 4505 / H83 exhibits outstanding heat resistance coupled with excellent heat degradation properties. The product has excellent electrical characteristics and a high level of flame retardancy. The very low exotherm during cure enables both large and small volume mixes with only minimal shrinkage.

Special Features

- Excellent high temperature properties
- Gloss finish
- Low exotherm
- Excellent flame retardancy

Mix Ratio

	EP 4505 : H83
By Weight	100 : 8.8
By Volume	100 : 16.7

Product Data

Property	Units	EP 4505	H83	Mix
Material	-	Epoxy Resin	Formulated polyamine	-
Appearance	-	Black viscous liquid	Straw coloured liquid	Black liquid
Viscosity (25°C)	mPa.s	15000 – 25000	100 – 200	4000 – 6000
Density (25°C)	g/cm ³	1.80 – 1.85	0.94 – 0.99	1.68 – 1.73
Pot life (200g, 25°C)	Hours	-	-	2 – 3
Initial Cure (25°C)	Hours	-	-	24
Full Cure (25°C)	Days	-	-	7

Cured Properties

Properties	Standard	Units	Result (Full Cure)
Hardness	BS 2782: Part 3: Method 365B	Shore D	80 – 90
Compressive Strength	BS 2782: Part 3: Method 345A	MPa	75 – 85
Tensile Strength	BS 2782: Part 3: Method 320B	MPa	55 – 65
Coefficient of Thermal Expansion	TMA	$10^{-6} K^{-1}$	20 – 25
Heat Deflection Temperature	TMA	°C	85 – 95
Maximum Operating Temperature (Continuous)	Alchemie STM 24	°C	160
Maximum Operating Temperature (Short Term)	Alchemie STM 24	°C	200
Minimum Operating Temperature	Alchemie STM 24	°C	-20

Method of Use

Before use ensure that ALCHEMIX EP 4505 is completely homogenized. ALCHEMIX EP 4505 should be mixed with HARDENER H83 according to the indicated mixing ratio. Both components should be thoroughly mixed, care should be taken to avoid air entrapment and make certain that material at bottom and sides of container is thoroughly stirred into centre. After thorough mixing the material should be poured into place. To avoid air entrapment, pour the material slowly, and into one place in the casting. Mixing and pouring must be completed within the stated pot life. There is no need to vacuum EP 4505 / H83.

Full cure will take 7 days. To improve the physical properties of the system, the product should be post cured at 40°C for 2 hours, 60°C for 2 hours and then 80°C for 2 hours.

Storage

ALCHEMIX EP 4505 and HARDENER H83 should be stored in original, unopened containers between 15 and 25°C.

If stored under the above conditions, ALCHEMIX EP 4505 / H83 will have a shelf life of 12 months, from the date of production.

Packaging

ALCHEMIX EP 4505 can be supplied in 5kg, 20kg or 200kg containers.
HARDENER H83 can be supplied in 1kg, 5kg or 20kg containers.
ALCHEMIX EP 4505 / H83 can be supplied in 500g or 1kg twinpacks for easy application.

(Please contact Alchemie Ltd for bulk supply)

Further Information

Please contact our Technical Department for any further advice on the use of this product.

All data listed relates to typical values. This data should not be considered a product specification.

Our technical advice, whether verbal, or in writing is given in good faith, but without warranty – this also applies where proprietary rights of third parties are involved. It does not release you from the obligation to test the products supplied by us as to their suitability for the intended process and use.

Before using this product users should familiarize themselves with the relevant MSDS provided by Alchemie Ltd.

Alchemie Limited

Alchemie Ltd develop, formulate and distribute Epoxy Resins, Polyurethane Resins, Silicones, Model Boards and Sheet Wax for use in the following applications:

- Electrical encapsulation
- Rapid Prototyping
- Prototypes
- Casting
- Gel Coating
- Laminating
- Model Making
- Master Models
- Flexible and rigid mould making

We offer fast service, technical support, development expertise, innovative products, diverse knowledge and experience.

We are a well-established company, with a high level of investment and experience. We implement BS EN ISO 9001.

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