BAKELITE® EPR 04908
BAKELITE® EPH 04908
new name: EPIKOTE™ Resin 04908
new name: EPIKURE™ Curing Agent 04908

Features

- Certified by German Lloyd
- Low viscosity
- Extended potlife
- Low exothermic heat

Application

Low viscous resin system designed for infusion applications with excellent wetting and adhesion characteristics on fibreglass, carbon- or aramid-fibres, particularly in boats and yacht-building and production of rotor blades. This system make it possible to manufacture construction elements of a superior quality, with outstanding surface characteristics and good resistance to thermal deformation and weathering.

Product physical properties: (at time of manufacturing)			
Property	**Unit**	**EPR 04908**	**EPH 04908**
Viscosity at 25°C	mPa·s	500 ± 250	10 ± 5
Epoxy equivalent weight	g/equiv.	165 ± 3	
Amine equivalent weigth	g/equiv.		50
Density at 20°C	g/cm^3	1.15 ± 0.02	0.93 ± 0.02
Refractive index at 25°C		1.540 ± 0.003	1.468 ± 0.003
Mixing viscosity at 25°C	mPa·s	130 ± 10	
Pot life at 25°C	minutes	300 ± 50	
T_G (TMA)	°C	82	

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Processing Details

Mixing ratio

EPR 04908	100 parts by weight
EPH 04908	30 parts by weight

Mixing tolerance

The maximum allowable mixing tolerance is ±2pbw, but it is particularly important to observe the recommend mixing ratio as exactly as possible. Adding more or less hardener will not effect a faster or slower reaction - but an incomplete curing which cannot correct in any way.
Resin and hardener must be mixed very thoroughly. Mix until no clouding is visible in the mixing container. Pay special attention to the walls and the bottom of the mixing container.

Processing temperature

A good processing temperature is in the range between 25°C and 35°C. Higher processing temperatures are possible but will shorten the pot life. A rise in temperature of 10°C reduces the pot life by approx. 50%. Different temperatures during processing have no significant effect on the strength of the hardened product.
Do not mix large quantities at elevated processing temperatures. The mixture will heat up fast because of the dissipating reaction heat (exothermic reaction). This can result in temperatures of more than 200°C in the mixing container.

Exemplify curing cycle:

4- 6h at 80°C

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Properties of the cured, non-reinforced resin system: (curing: 4h at 70°C + 6h at 80°C)		
Property	**Unit**	**Value**
Density	g/cm^3	1.15
Tensile strength	MPa	74
Tensile strain	%	9.4
Modulus in tensile	MPa	2900
Flexural strength	MPa	112
Modulus in flexure	MPa	3100
Water absorption after 24h 23°C	pbw	0,180
Water absorption after 168h 23°C	pbw	0,432

Properties of the cured, reinforced resin system (curing: 4h at 70°C + 6h at 80°C)		
Property	**Unit**	**Value**
Tensile strength	MPa	447
Flexural strength	MPa	588
Modulus in flexure	MPa	23400
ILSS	MPa	40
T_G (DMTA)	°C	89

The values are measured on laminates made with glass fabric 181/Interglas 91745.

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Shelf life

The resin and hardener can be stored at 20- 25°C for at least 12 months in their carefully sealed original containers.
It is rarely possible that the resin or the hardener crystallize at temperatures below 15°C. The crystallisation is visible as a clouding or solidification of the content of the container. Before processing, the crystallisation must be removed by warming up. Slow warming up to 50- 60°C in a water bath or oven and stirring or shaking will clarify the contents in the container without any loss of quality. Use only completely clarify products. Before warming up, open containers slightly to permit equalization of pressure. Caution during warm up! Do not warm up over open flame!

Precautions

When handling epoxy resins and hardeners, will you please observe the APME documentation “Epoxy resins and curing agents”.

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