

## Epoxy System HP-E120WSI

- Highly heat resistant Epoxy System -

The Epoxy System **HP-E120WSI** is an unfilled, low viscous 2-component combination of resin and hardener, especially for applications in the fibre composite with high heat resistance.

### Properties:

- high static and dynamic strength
- very good dimensional stability under heat up to 125°C
- very good wet-out and impregnation properties
- low-yellowing
- Tempering necessary!

### Field of Application:

- Usable as a laminating and vacuum-infusion resin (IMC/MTI, RI, VARI...)
- building of highly heat resistant components
- production of composites made of glass-, carbon- or aramid fabrics
- optical applications such as visible carbon parts

### Processing data:

Mixing ratio (by weight)	100 parts resin / 26 parts hardener
Pot life 20°C (working time approx.)	120 minutes (100g)
Pot life 25°C (working time approx.)	80 minutes (100g)
Optimal curing cycle	24h / RT // 5h / 60°C // 6h / 80°C // 2h / 120°C
	Heating rate 20°C / h

### Data of raw material:

Physical Data / Resin	Value	Unity	Testing method
Viscosity 25°C	600 - 800	mPa * s	PM.01.003
Density 20°C	1,14 - 1,16	g/cm <sup>3</sup>	PM.01.002
Epoxy-equivalent	170 - 180	g/EQ	calculated
Colour index	< 1	Gardner	
<b>Physical Data / Hardener</b>			
Viscosity 25°C	40 - 60	mPa * s	PM.01.003
Density 20°C	0,95 - 0,97	g/cm <sup>3</sup>	PM.01.002
(NH)-equivalent	45 - 50	g/EQ	calculated
Colour index	< 1	Gardner	
<b>Physical Data / after curing:</b>			
Density 20°C	Approx. 1,1	g/cm <sup>3</sup>	PM.01.002
Tensile strength	75	N/mm <sup>2</sup>	PM.01.004
E-Modulus	2900	N/mm <sup>2</sup>	PM.01.004
Elongation at break	5 - 6	%	PM.01.004
Flexural strength	110	N/mm <sup>2</sup>	PM.01.005
Glass transition temperature (T <sub>g</sub> ) max.	125	°C	PM.01.011 *1)
Hardness	86 D	Shore	PM.01.009

Specifications with unreinforced resin, after curing for 24h at RT // 5h / 60°C // 6h / 80°C // 2h / 120°C

\*1) extra curing 2h / 160°C

### Safety instructions:

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The safety instructions are to be taken from the respective containers. Keep out of the reach of children. Prevent inhalation of the fumes and contact with bare skin. Wear suitable protective gloves and safety goggles. Do not eat, drink or smoke while using. Energy is released during hardening and it is recommended to ensure a heat dissipation to avoid heat accumulations. The quantities of single mixtures have to be adjusted to the respective working step.

### Application notes:

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We recommend to perform preliminary tests to check the suitability for the particular type of application. The system should only be used in the mentioned temperature conditions. The relative air humidity should not be above 70%. In respect of the safety instructions the epoxy resin and hardener should be mixed in a suitable mixing vessel in accordance with characteristics given in the data sheet. Deviating from the mixing recommendations can lead to incomplete hardening and through that to a loss of performance. Ensure that the edges are well mixed using a stirring stick or a propeller type mixer. Localized signs of streaks indicate insufficient stirring and mixing of the components.

Tip: Often it is advisable to heat the single components to 40°C in a water bath in (a closed container) before mixing. The same applies for a mixed system whereby the viscosity is reduced.

A subsequent tempering can be done in accordance to the steps mentioned above. The laminate should be hold in position by a counter-form or by vacuum compression during tempering. For adhesive applications it is sufficient to fix the single parts, high pressing power is not necessary.

### Cleaning of work tools:

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Unhardened product remains can be removed from tools by means of acetone or Thinner XB. Tools should be given a good airing after being cleaned with these solvents, in order to prevent the solvent from being retained until the tool is used again in a process. Hardened remains can only be removed by mechanical means, e.g. by grinding.

### Storage:

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Threaded container tops should be kept free of material remains. Do not exchange tops/lids. Close opened containers tightly. Store cool and dry. . With optimal storage conditions, shelf-life should be beyond 12 months. The hardener may crystallise at low temperatures. This process is reversible, e.g. by heating the container to 40°C in a water bath. Make sure that the hardener becomes completely fluid again.

### Disposal:

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Do not allow to enter drains, waterways or soil. Uncured product residues are hazardous waste. The cured system is construction site waste / household waste.

### Further information:

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Further information can be obtained from our website, by selecting Product Info on the homepage. Please do not hesitate to contact us by telephone if you have further queries.

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With the newest printing of this data sheet the previous version loose validity!