

Epoxy System HP-E120WSM

- Highly heat resistant multipurpose Epoxy System -

The Epoxy System **HP-E120WSM** is an unfilled, medium viscous, 2-component combination of resin and hardener, especially for laminating applications in the fibre composite with high heat resistance.

Properties:

- high static and dynamic strengths
- high heat resistance up to 150 ° C
- low tendency to yellowing
- very good impregnation / wetting properties
- good resistance to fuels
- Tempering necessary!

Fields of Application:

- special laminating- and multipurpose resin
- building of high heat resistant components
- usable for mould and tool making
- production of composites made of glass-, carbon- or aramid fabrics
- optical application 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) |
| Optimum hardening | 24h / RT // 5h / 60°C // 6h / 80°C // 2h / 120°C |
| | Heating rate 20°C /h |

Data of raw material:

| Physical Data / Resin | Value | Unit | Testing method |
|--------------------------------------|-------------|-------------------|----------------|
| Viscosity 25°C | 8000 - 9000 | mPa * s | PM.01.003 |
| Density 20°C | 1,14 - 1,16 | g/cm ³ | PM.01.002 |
| Epoxy-equivalent | 175 - 185 | g/EQ | calculated |
| Colour index | < 1 | Gardner | |
| Physical Data / Hardener | | | |
| Viscosity 25°C | 40 - 60 | mPa * s | PM.01.003 |
| Density 20°C | 0,95 - 0,97 | g/cm ³ | PM.01.002 |
| (NH)-equivalent | 45 - 50 | g/EQ | calculated |
| Colour index | < 1 | Gardner | |
| Physical Data / after curing: | | | |
| Density 20°C | approx. 1,1 | g/cm ³ | PM.01.002 |
| Tensile strength | 75 | N/mm ² | PM.01.004 |
| E-Modulus | 2800 | N/mm ² | PM.01.004 |
| Elongation at break | 4 - 5 | % | PM.01.004 |
| Flexural strength | 100 | N/mm ² | PM.01.005 |
| Glass transition temperature | 150 | °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:

The safety instructions are to be taken from the respective containers.
Keep out of the reach of children. Prevent inhalation of 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, we recommend to ensure heat dissipation to avoid heat accumulations. The quantities of the single mixtures have to be adjusted to the respective working step.

Application notes:

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 to 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 smear formation indicate insufficient stirring and mixing of the components.

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

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

Cleaning of work tools:

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. Hardened remains can only be removed by mechanical means, e.g. by sanding.

Storage:

Threaded container tops should be kept free of material remains. Do not exchange tops/lids. Close opened containers tightly. Store in a cool and dry place. Storage life at optimal storage conditions is at least 12 months. The hardener can 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.

Disposal:

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:

Further information can be found on our website by selecting *Product Info*. Please do not hesitate to contact us by telephone if you have further queries.

Information presented herein has been compiled from sources considered to be dependable and is accurate and reliable to the best of our knowledge and belief but is not guaranteed to be so. It is the user's responsibility to determine for himself the suitability of any material for a specific purpose and to adopt such safety precautions as may be necessary. We make no warranty as to the results to be obtained in using any material and, since conditions of use are not under our control, we must necessarily disclaim all liability with respect to the use of any material supplied by us. We recommend to perform preliminary tests and to check the suitability for the particular type of application.

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