Technical Information

ALBIPOX® F 091

ALBIPOX® F 091 is a high performance elastomer modified epoxy resins specially designed for composites with superior mechanical properties.

By the modification with SiO_2 nanoparticles and elastomer components a three phase system is formed in the cured resin. Embedded in the continuous resin matrix are elastic domains (µm size) and hard domains (nm size), thus superior performance can be achieved.

A cured resin compared with a similar unmodified resin exhibits various improved properties:

- Improved toughness (fracture energy, fracture toughness, impact resistance)
- Significant higher energy absorption at sudden mechanical impact
- Superior mechanical properties at low temperatures
- Improved adhesion to fabrics (glass, aramide or carbon fibres)
- No reduced thermodimensional stability

Using ALBIPOX® F 091 toughened epoxy resin systems with excellent price/performance ratio can be formulated.

ALBIPOX® F 091 is silicone-free, solvent-free and does not contain softeners. It is of medium viscosity, enabling the use in formulations for injection methods (e. g. RIM, RTM).

The product is typically used as delivered; depending on the respective application it can be blended with up to 20 % standard epoxy resins. It is suitable for the combination with all epoxy resins, no restriction or incompatibilities exist.

All conventional epoxy hardeners can be used.

Fields of Application

ALBIPOX® F 091 is used whenever a drastic improvement in toughness over the whole temperature range is required but a high viscosity is not acceptable.

This product is especially suitable for composites made by using injection methods in combination with amine curing agents.

Application Recommendations

In the formulation to be improved the epoxy resin used is replaced by ALBIPOX® F 091. The amount of hardener is reduced corresponding to the new epoxy equivalent weight. For some non stochiometric hardeners like dicyandiamide a change of the hardener amount is unnecessary. Fillers and other ingredients of the formulation are used as usual.

If the product viscosity is too high for the formulating procedure, we recommend too preheat the product to 60 – 80 °C.

Technical data ALBIPOX® F 091 (no specification)

Property	Unit	Typical Values
Appearance		yellowish, viscous resin
Base resin		DGEBA/F
Density @ 20 °C	[kg/m³]	1 147
Viscosity @ 25 °C	[mPas]	15 000
Epoxy equivalent weight		220
Shelf life	[months]	6*
Packaging		180 kg steel drum, 25 kg can

*if stored in the original unopened container

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