

TYPE

Solid epoxy resin

SPECIAL PROPERTIES AND USE

Type 1 resin for solventborne coatings, anticorrosion primers, additional binder for stoving paints, e.g. based on saturated polyesters or acrylates

FORM OF DELIVERY (f.o.d.)

75 % in xylene (75X)

PRODUCT DATA

Determined per batch:

Non-Volatile Matter DIN EN ISO 3251
non-volatile matter
(1 h; 125 °C; 1 g; ethyl acetate)

[%] 73 - 77

Dynamic Viscosity DIN EN ISO 3219
dynamic viscosity
(100 1/s; 23 °C)

[mPa.s] 7800 - 13000

Epoxy-Equivalent VLN 305
epoxy equivalent
(form of delivery)

[g/mol] 600 - 700

Epoxy-Equivalent VLN 305
epoxy equivalent
(non volatile matter)

[g/mol] 450 - 525

Iodine Colour Number DIN 6162
iodine colour number

<= 3

Not continually determined:

Density (Liquids) DIN EN ISO 2811-2
density
approx.
(20 °C)

[g/cm³] 1,07

Flash Point DIN EN ISO 1523
flash point
approx.

[°C] 26

DILUTABILITY

| | | | |
|------------------------------|---|-----------------------|---|
| special white spirit 100/140 | ○ | methoxypropyl acetate | ● |
| xylene | ○ | methoxypropanol | ● |
| acetone | ● | ethanol | ○ |
| methyl ethyl ketone | ● | butanol | ○ |
| methyl isobutyl ketone | ● | isopropanol | ○ |

● = unlimited dilutability
● = substantial dilutability

⊙ = limited dilutability
○ = very limited or no dilutability

COMPATIBILITY

| | 90 | 75 | 50 | 25 | 10 |
|-------------------|----|----|----|----|----|
| % Beckopox EP 301 | 90 | 75 | 50 | 25 | 10 |
| % other binder | 10 | 25 | 50 | 75 | 90 |

Epoxy resins

| | | | | | |
|---------------------------------|---|---|---|---|---|
| Beckopox EM 440, EM 441 | ○ | ○ | ○ | ○ | ○ |
| Beckopox EP 116, EP 117 | ● | ● | ● | ● | ● |
| Beckopox EP 128, EP 140, EP 151 | ● | ● | ● | ● | ● |
| Epoxy type 4, 7, 9 | ● | ● | ● | ● | ● |

Other binders

| | | | | | |
|-------------------------|---|---|---|---|---|
| Viacryl SC 341 | ● | ● | ● | ○ | ○ |
| Resamin HF 480 | ● | ● | ● | ○ | ○ |
| Phenodur PR 285, PR 308 | ● | ● | ● | ○ | ○ |
| Phenodur PR 373, PR 401 | ● | ● | ● | ○ | ○ |
| Butvar B-98 | ● | ● | ○ | ● | ● |
| dibutyl phthalate | ● | ● | ● | ● | ● |

● = definite compatibility

○ = very limited or no compatibility

SUGGESTED USES AND PROCESSING

Beckopox EP 301/75X is an unmodified epoxy resin with a relatively low melting interval, which finds use primarily in solvent based two-component coatings. When used in cold-curing and heat-curing coating systems the resin is preferably cured with polyamines, polyamidoamines or amine adducts. Respective the curing agent used impact-resistant films with high chemical and corrosion resistance can be obtained.

Important uses are:

- anticorrosion primers
- zinc galvanizing paints and
- high durability coatings

In addition Beckopox EP 301 in solution together with suitable hardeners is used for the pre-impregnation of textile glass fabric for manufacturing low and high pressure composites.

Two-component coating systems

When formulating solvent based coatings Beckopox EP 301 is mainly cured with polyamidoamines such as Beckopox EH 651 or with polyamines, e.g. Beckopox EH 631, EH 624 or EH 625.

To formulate cold-curing low solvent (high solids) systems it is recommended to use some quantities of the liquid resin Beckopox EP 116 or Beckopox EP 140 along with the respective Beckopox hardener in the formulation.

Adhesives

Beckopox EP 301 together with liquid epoxy resins such as Beckopox EP 140 and suitable curing agents give high strength adhesive bonds.

Curing with isocyanates

In some special cases it may be of interest to use Beckopox EP 301/75X as combination partner with other resins in a two-component system using an isocyanate for crosslinking. The hydroxyl value of Beckopox EP 301 (100 %) is approx. 120 representing a hydroxyl content of approx 3.6 %.

Stoving systems

In combination with saturated polyesters or thermosetting acrylates, Beckopox EP 301 improves chemical resistance and adhesion on various metals. A minimum stoving temperature of approx 150 °C should be achieved.

STORAGE

At temperatures up to 25 °C storage stability packed in original containers amounts to at least 365 days.

DISTINGUISHING FEATURES

Beckopox EP 301 is the most commonly used of solid epoxy resins. Compared with the higher molecular weight epoxies type 4, 7 and 9, it has the lowest viscosity and the lowest epoxy equivalent weight. The resin is used mainly in solvent based cold-curing coating systems.

SAFETY AT WORK AND ENVIRONMENTAL PROTECTION

When handling and processing epoxy resins and hardeners, the rules and regulations established by local authorities should be observed. A Material Safety Data Sheet is available on request.