

BEL Series

- additives for resin formulations -



Liquid additives to adjust properties of **resins** and **paints**.

Features & Benefits of the several types:

BEL11

Liquid **foaming agent**

To foam up of epoxy resins and to build foam laminates or in combination with sandwich materials (such as paddles or other components).

BEL31

Liquid **thickening agent** (rheology additive)

Prevents settling / sagging of resin formulations.

Main usage in covering systems (paints, topcoats,...).

For high thixotroping applications like pitties, we recommend HP-PK22.

BEL51

Defoamer

Used to add, in order to prevent the mixture from any formation and bubbling during the application.

BEL71

Levelling additive

Improve levelling properties (such as gel- or topcoats), reduces "fish-eyes".

Main usage in covering systems, like topcoats.

BEL91

Light stabilizer and **yellowing-inhibitor**

Low-viscosity, UV-absorber for high quality surface-applications. (carbon-design, wooden coatings, casting).

Usable in epoxy-systems and PUR-paints by HP-Textiles.

		BEL11 foaming agent	BEL31 thickening agent	BEL51 defoamer	BEL71 levelling additive	BEL91 light-stabilizer
suitable for		EP, PUR	EP, UP	EP, UP, PUR (for paints, too)		
dosage (based on total formulation)	[weight-%]	0.5 - 4 ¹	0.2 - 2 ¹	0.2 - 0.8 ¹	0.5 - 1.5 ¹	0.2 - 4 ¹
Add-on						
<i>resin</i>		no	recomm. ²	recomm.	possible	possible
<i>mixture</i>		recomm.	no	possible	recomm.	recomm.
density (at 20°C)	[g/cm ³]	0.98 - 1.02	1.14 - 1.18	0.79 - 0.83	0.93 - 0.97	0.94 - 0.98
Active ingredient based on		active foaming agent	carbonyl diamides	polysiloxanes	polyacrylic acids	amines
Opaque?		not specified	Overdosing may cause to less transparency.			no opacity

*Please note:

¹The mentioned amounts are standard values. Additives or combination among themselves may cause to less transparency. The exact values should be determined by tests beforehand.

²The thixotropy will generate after a medium reaction time. That is why we recommend predispensing into resin component.

Please note the further information on the next site.

Application Instructions:

BEL11 - (liquid foaming agent):

The foaming agent must be stirred thoroughly. Higher speed cause to a finer dispersion, what leads to an evenly distributed foam-structure.

An additional thixotropy with (approx. 5 % by weight) PK22, cause to a better foam up and a more homogeneous foam structure.

Guide formulation for an epoxy-foaming resin, based on E40D:

	quantities (g)
E40D (resin)	: 100 g
E40D (hardener)	: 50 g
PK22 (thixo-agent)	: 7,5 g
corresponds to 5% by weight	
BEL11 (foaming agent)	: 4,5 g
corresponds to 3% by weight	

Further information regarding guide formulation:

Even after a few minutes starts the foam expansion and forms to a fine, homogeneous foam.

All in all, it comes to a volume increase of approx. 200 up to 300% of the start volume.

Hint: It is able to come to demixing of BEL 11, because the product will not be dissolved.

We recommend tests beforehand, because there are several influencing factors for the foam build up.

Caution: The hydrogen produced by BEL11 is flammable and can lead to the formation of explosive oxyhydrogen mixtures if there is insufficient ventilation. Do not use in closed rooms.

BEL31 – (liquid thickening agent, rheology additive):

After approx. 1-2h, it will generate a thixotropy. Because of this reaction time, we recommend predispersing into resin component. After mixing with resin, the viscosity will build up slowly.

BEL51 - (defoamer):

It is possible to add this product to the mixed product (resin with hardener).

To prevent air bubbles, we recommend to add it to the resin component, before adding to the hardener.

BEL71 - (levelling additive):

It should admit to the mixed product (resin with hardener).

BEL91 - (light stabilizer and yellowing-inhibitor):

It should admit to the mixed product (resin with hardener).

Safety instructions / further information:

The safety instructions are to be taken as being of greatest importance. Do not allow children to handle. Further application information can be obtained from our website, by selecting Product Info on our homepage. Please do not hesitate to contact us by telephone if you have further queries.

Storage:

Threaded container tops should be kept free of material remains.

With optimal storage conditions, shelf-life should be beyond 12 months.

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 tests be performed for trials and suitability for the particular type of application.

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