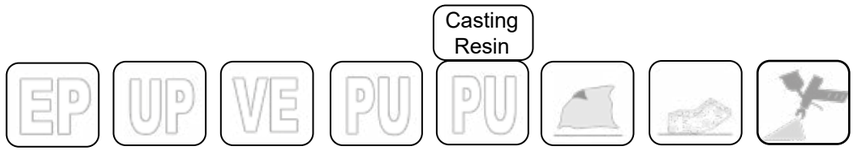
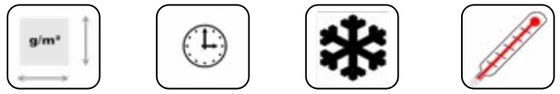
Release Agents / Additives

Mould Release Agents

Mould release agents are very important tools for the composite industry. They are used to facilitate the removal of cast parts from the moulds. Therefore, a post-treatment of the component is not necessary and it is possible to reuse the mould. Release agents often have a significant effect on the surface of the finished product and costs can be minimized by using the right release agent.
Please consult the following diagram as a support to choose the right Mould Release Agent System.

All release agents are free of Silicone and PTFE!





Products	SUITABLE FOR					APPLICATION WITH				FEATURES	POLISHABILITY	CONSUMPTION	DRYING TIME	TEMPERATURES	
	… fibre wet-out	… sticking together	… in female moulds (gelcoat)	… on top (topcoat)	… casting resin	… embed-ding	...fine-pored sponge	...spray gun				g/m²	minutes at 20°C	...APPLICATION min. (recommended) °C	… max. loadability °C
HP-BM17 * Wax Dispersion, liquid	+	+	+	-	+	++	+	++		Applicable on smooth, non-porous surfaces. Usable as primer for PVA. Residues can be cleaned with white spirit or thinner XB.	+	**30**	15	**15**	80
HP-G * Priming Wax, viscous	++	++	++	++	-	+	-	-		NO single release agent ! Primer for PVA. Residues can be cleaned with white spirit or thinner XB.	o	**30**	5 - 15	**15**	100
HP-PVA * Release Film, liquid	++	++	++	++	-	+	++	++		Generates very safe release film. Priming with HP-G (or HP-BM17 or HP-CX7) is necessary. Residues can be cleaned with water.	-	**60**	5 - 10	**15**	100
HP-CX7 * Carnauba-Wax, pasty	++	++	++	+	+	++	-	-		Polish in several layers. High-gloss release agent. Usable as primer for PVA. Residues can be cleaned with white spirit or thinner XB.	++	**15 - 20**	10 - 15	**20**	80
HP-HGR5 * High-Gloss Relase Agent	++	++	++	++	-	+	++	++		Water based – 100% free of solvents! Very good release effect with PUR (IMC). Residues can be cleaned with water.	++	20 - 25	5 - 15	15	150
BM-SS02 Silicone Spray	++	-	-	-	++	++	-	++		Release agent for GfK and silicone moulds Care agent for cured silicone moulds	-	10	/	15	150

++ = very good applicable + = applicable o = conditionally applicable - = not provided

C = in combination with + or ++

Rev. 3.5

* free of Silicone and PTFE

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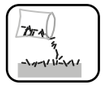
Fillers

Please consult the following diagram as a support to choose the right fillers.



Products	FIELDS OF APPLICATION							DOSAGE	BULK WEIGHT	FEATURES /BENEFITS
	… thicken / thixotroping	… anti setting	…backfilling	…coupling layer	… bonding, adhesion		…rough putty	… fine- / light-weight putty	By weight (approx.) %	approx. g/l	
HP-PK22 **Thixotroping Agent, pyrogenic silica**	++	++	C	C	C		C	C	0,5 - 5	40	Hydrophobic = does not absorb water. Density: 2,2g/cm³; BET-surface: 200m²/g Dosage depends on the viscosity and temperature.
HP-MB2 **Microballoons**	-	-	++	-	-		C	++	till 30	140 - 150	Spezific weight 0,26g/cm³ max. particle size: 200µm Melting point: > 1200°C Particle size distribution (d50): 50µm
HP-BF1 **Cotton Flocks**	C	-	++	++	++		++	C	till 30	70 - 90	Fibre length: 200 - 400µm Fibre thickness: 10 - 20 µm
HP-GS3, HP-GS6 **Chopped Glass Fibre**	-	-	++	++	++		++	-	till 10	350 - 400	Fibre length: 3 and 6mm Fibre thickness: 10 - 20 µm
BM-AL **Aluminium Powder**	+	-	++	-	-		-	-	till 50	1400	Density: approx. 2,7g/ml Bulk weight:approx. 1400g/l Particle Size: < 100µm Purity: > 99%
BM-QS **Quartz Sand**	+	-	++	-	-		-	-	as required	1500	Density: approx. 2,7g/ml Bulk weight: approx. 1400g/l Particle Size: < 100µm Purity: > 99%

++ = very good applicable

\+ = applicable

o = conditionally applicable

\- = not provided

C = in combination with + or ++

Rev. 3.5


HP-PK22


HP-MB2


HP-BF1


HP-GS6

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Additives

Liquid additives to adjust properties of resins and paints.

HP-BEL11: Liquid foaming agent

- For foaming epoxy resins and to build foam laminates or in combination with sandwich materials (such as paddles or other components).

- The foaming agent must be stirred thoroughly. Higher speed cause to a finer dispersion, what leads to a evenly distributed foam-structure.
  An additional thixotropig with (approx. 5 % by weight) HP-PK22, cause to a better foam up and a more homogeneous foam structure.

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

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

Hint:
It is able to come to demixing of HP-BEL11, because the product will not be dissolved.
We recommend tests beforehand, because there are several influencing factors for the foam build up.

HP-BEL31: Liquid thixotroping agent

- Prevents settling / sagging of resin formulations.
  Main usage in covering systems (paints, topcoats,…).
  For high thixotroping applications like pitties, we recommend HP-PK22.

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

HP-BEL51: Degassing additive

- Used to add, in order to support the vent and degassing of gelcoats

- 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.

HP-BEL71: Levelling additive

- Improve levelling properties (such as gel- or topcoats), reduces “fish-eyes” and other surface effects.
  Primarily used in covering systems, like topcoats.

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

HP-BEL81: Matting Agent

- Liquid additive for matting of resin systems on epoxy resin bases. Prevents gloss and reflections and enhanced slip resistant.
- **For small applications in terrarium or aquarium constructions.**

HP-BEL91: Light Stabilizer / Anti-Yellowing Additive

- Low-viscosity, UV-absorber for high quality surface-applications, (carbon-design, wooden coatings, casting).
  Usable in epoxy-systems and PUR-paints from HP-Textiles.

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

without HP-BEL91 with HP-BEL91

ARTICLE		HP-BEL11	HP-BEL31	HP-BEL51	HP-BEL71	HP-BEL91
Suitable for		EP	EP, UP	EP,UP,PUR	EP, UP, PUR	EP, UP, PUR
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						
resin		no	recomm.[2]	recomm.	possible	possible
mixture		recomm.	no	possible	recomm.	recomm.
Density (at 20°C)	*g/cm³*	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:

[1]The mentioned amounts are standard values. Additives or combination among themselves may cause a less transparent resin. The exact values should be determined by tests beforehand.

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

HP-Textiles
Composite Materials

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