Campine flame retardant masterbatches

Campine is a leading producer of flame retardant masterbatches. During this operation we develop and produce complete flame retardant systems and transform dry powders into granulates. Campine has extensive knowledge on how to integrate high levels of FR additives into thermoplastics. In addition to our existing product portfolio, we also offer the possibility for custom compounding.

We offer two types of flame retardant (FR) masterbatches (MB):

- Monobatches: these MBs contain 1 active FR substance in a polymer matrix
- FR product solutions: these are MBs containing a combination of FR substances in a polymer matrix.

1. Monobatches

Compared to powder, the use of MB's granulates offer advantages at different levels in the production process. First of all, MBs are **dust free**, **contributing to the health and safety** of the operators at the production lines. In addition, **less cleaning time**, **less product-loss** and a **better dispersion**, will create for our customers the opportunity for cost savings and superior product-quality.

Campine offers monobatches based on antimony-trioxide (ATO), Melamine Cyanurate (Mecy), Magnesium hydroxide ($Mg(OH)_2$ or Zincborate (ZnB). Below is an overview of the standard products, indicating the type of polymer and the concentration of the active substance. Monobatches based on other active ingredients (e.g. MPP or ATH or...) or based on different polymer types, can be developed upon customers needs.

Monobatches ATO

Product Name	Polymer	ATO	Mecy	ZnB	Mg(OH)2	typical particle size
CAMPINE EVA 260615	EVA	80%				0,5 cm
CAMPINE EVA 262215	EVA	90%				0,5 cm
CAMPINE PA 261738	PA6	80%				0,5 cm
CAMPINE PBT 261618	PBT	80%				0,5 cm
CAMPINE PE 260116	LDPE	80%				0,5 cm
CAMPINE PE 260950	LDPE	90%				0,5 cm
CAMPINE PP 262316	PP	80%				0,5 cm
CAMPINE PP 262815	PP	90%				0,5 cm
CAMPINE PS 262615	HIPS	80%				0,5 cm
CAMPINE SAN 261015	SAN	80%				0,5 cm
CAMPINE HIPS GR6546	HIPS	85%				0,5 cm
CAMPINE PA66 GR5771	PA66	80%				0,5 cm
CAMPINE GR6452	EBA	80%				0,5 cm

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Monobatches Mecy – ZnB – Mg(OH)2

Product Name	Polymer	ATO	Mecy	ZnB	Mg(OH)2	typical particle size
MASTERTEK 374115	PA6		50%			0,5 cm
MASTERTEK 374510	PBT		50%			0,5 cm
MASTERTEK 8405910	PA6			50%		0,5 cm
MASTERTEK 9706634	LDPE				65%	0,5 cm

Monobatches ATO – micronised

Next to the standard MB in granules, Campine also offers micronized monobatches. They are dust-free and free flowing and are typically used for dry-blending with other materials in powder format.

Product Name	Polymer	ATO	Mecy	ZnB	Mg(OH)2	typical particle size
CAMPINE SAN 261015 - M	SAN	80%				200 micron
CAMPINE PP 262316 - M	PP	80%				400 micron
CAMPINE PE 260915 - M	LDPE	90%				200 micron
CAMPINE PVC 1706518	PVC	78%				400 micron

2. FR product solutions

These MBs are often application- and customer-specific and developed to reach a certain FR norm. Campine has extensive expertise in flame retardants and extrusion. The customer has extensive knowledge on his production-process and on the final application. It is important to realize that only a close co-operation between all parties will lead to a successful development.
In many cases an existing FR MB can be used as a reference or a starting point but will need modification to fulfill all customer requirements. The below lists are only a snapshot of our complete product portfolio and should serve as a basis for discussion or for a first trial.

Conventional flame retardant masterbatches are based on **halogenated** substances. These are effective in low doses and have a good price / performance ratio. During the last years however, society has been pushing for a substantial reduction in the use of halogens. Campine also offers a range of **low halogen** and **halogen-free** products.

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Halogenated MB

Product Name	Active Share %	Polymer - Application	Typical dosage	Remark
MASTERTEK 350530	80	PP/PE - Film / Foam	3 - 8% depending on the application and the FR norm	
MASTERTEK 4205570	80	PP/PE - Tubes /Pipes/ Injection	3 - 8% depending on the application and the FR norm	
MASTERTEK 368315	55	PP/PE - Tubes /Pipes/ Injection	3 - 8% depending on the application and the FR norm	
MASTERTEK 5205730	66	PP/PE - Tubes /Pipes/ Injection	3 - 8% depending on the application and the FR norm	
GR6466		TPV flexible tubes / membranes	This is a ready to use TPV compound - Black	UL94 V0 - 1,6mm
MASTERTEK 3380-N02-NA		TPV flexible tubes / membranes	This is a ready to use TPV compound - Natural	UL94 V0 - 1,6mm
GR6615		TPE window profiles	This is a ready to use TPE compound - Natural	UL94 V0 - 1,6mm
MASTERTEK 370740	55	HIPS Electricity cupboards	6 - 10% depending on the application and the FR norm	
MASTERTEK 7305530	45	XPS insulation	1,5 - 4% depending on the FR norm and the foam thickness	Polymeric FR
MASTERTEK 7305563	40	XPS insulation	1,5 - 4% depending on the FR norm and the foam thickness	Polymeric FR
MASTERTEK 7405934	45	XPS insulation	1,5 - 4% depending on the FR norm and the foam thickness	
MASTERTEK 4205398	81	hot melts / rubber applications	3 - 8% depending on the application and the FR norm	

Low halogen and halogen-free MB

Product Name	Active Share %	Polymer - Application	Typical dosage	Remark
MASTERTEK 381515	25	PP - Tubes /Pipes	2 - 8% depending on the application and the FR norm	Ultra low halogen
MASTERTEK 9105619	65	PE - Tubes /Pipes/ Injection	30 -35% depending on the application and the FR norm	Halogen Free
GR6047	66	PP - Tubes /Pipes/ Injection	30 -35% depending on the application and the FR norm	Halogen Free
GR5681	55	PE - film	4 - 8% depending on FR norm and film structure	Halogen Free

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