K R I T I L E N® masterbatches

WHITE MASTERBATCHES

TECHNICAL INFORMATION

KRITILEN WHITE masterbatches are concentrates of Titanium Dioxide (TiO2) in a polymer carrier. They offer a convenient way of incorporating TiO2 in thermoplastics to provide white color, without contamination by dust. They have perfect dispersion and optimized flow properties, resulting to maximum hiding power and easy processing.

Titanium Dioxide used in all KRITILEN WHITE masterbatches (unless otherwise specified) is of the RUTILE COATED type, which ensures high opacity, coloring strength, dispersibility and excellent UV-stability. Certain types of KRITILEN WHITE masterbatches contain a combination of TiO2 with other white pigments, for an optimized cost/performance. Different TiO2 crystal structure can also be used upon request.

KRITILEN WHITE masterbatches may have either a milky or a bluish white undertone. Certain types contain as filler a fine Calcium Carbonate, which provides economy as well as technical benefits in many applications.

All KRITILEN WHITE masterbatches (unless otherwise specified) are approved for food contact. They are supplied in regular pellet form, in PE valve-bags on pallets.

SELECTION GUIDE

a) Injection & blow molding

WHITE 120, 121, 125, 126, 135, 136 & PP920 are mainly used for these applications. They contain an amount of Calcium Carbonate, which offers dimensional stability, rigidity and stiffness to the final products, as well as faster mould cooling, i.e. increased output.

WHITE 135, 136, 140 & 1410 are also widely used for injection & blow-moulding.

Due to the relatively low level of pigment that thick articles require to obtain the necessary opacity, it is generally advisable to use masterbatches with low to medium pigment content, so that the addition level of the masterbatch does not fall below 1 %, to ensure correct mixing and homogenization with the polymer.

For applications requiring anti-static properties to facilitate production and/or for end use purposes, there are 3 specially designed grades, WHITE 1503, PP9351 & PP9352 with different types/levels of anti-static additives. Typical applications are PP thermoformed items for food packaging and buckets for food products & paints.

b) Films

For relatively thick LDPE films (shopping bags, silage films, heavy duty bags etc. with a thickness of 40-200 mic.) the most suitable products are those containing 40-60 % TiO2, i.e. WHITE 140, 1410, 150, 1530, 160, 161, 162 & 163.
In case the polymer used does not contain slip, it is possible to add slip with WHITE 1606 (most suitable for LDPE) or 1609 (most suitable for HDPE), which contain different types/levels of slip additives.

For thin LDPE, LLDPE & HDPE film production, masterbatches with high content of TiO2 and the best possible dispersion, such as WHITE 160, 161, 162, 163, 1701, 1703, 170,172,173 & 175 are preferable. For high-output and/or high temperature extrusion, especially of HDPE, the following special grades offer additional advantages: i) WHITE 1681 and WHITE 1682 contain PPA (polymer processing aid), which facilitates extrusion, reduces die build-up, melt-fracture and surface defects ii) WHITE 1707 contains a special type of Titanium Dioxide with very low volatiles content and prevents die build-up, burned particles and lacing.

For stretch silage film, WHITE 1610 combines 60 % of specially selected TiO2 with a proven UV-stabilizer for this application (1 year lifetime at a thickness of 20-25 mic.).

For outdoor applications requiring increased weather resistance, WHITE 1619 and WHITE 1705 which contain a durable TiO2, are recommended.

c) PP & PS thermoforming & injection molding

WHITE PS & PP masterbatches are recommended for PS & PP products, where they ensure better dispersion and homogenization than PE based masterbatches and do not affect the mechanical properties of the end product. Such products are WHITE PP950, PP952, PP9505, PS730, PS7305, PS734, PS741, PS745, PS750, PS751 & PS755.

d) PP tapes

Use of WHITE 120, 121, 125 or 126, which contain a relatively high amount of calcium carbonate, is both economic and technically sound, as they contribute to anti-fibrilation properties.

e) PP fibers

WHITE PPF979 is specially designed for BCF, CF and stapled fibers as well as for spun-bonded products. Due to its excellent dispersion and specially adjusted flow properties, it allows for smooth and long production runs.

f) PVC cables

For PVC cables and other plasticized PVC products, WHITE PV81010 & PV81013 are designed according to RAL shades which are standard in the cables industry.

g) PET sheets and bottles

For PET extrusion and blow molding applications WHITE PP958, PET634 and PT91638 are recommended, due to their small pellet size (micro granules) which ensures the proper mixing and homogenization with the base polymer.

KRITILEN WHITE MASTERBATCHES

POLYETHYLENE RANGE

KRITILEN WHITE	Carrier Resin	White Pigments %	White Pigment types	Undertone	Additives	Filler	Injection moulding	Blow-moulding	Films / Sheets	Thin films	PP tapes
120	PE	20	TiO2	B		♦	•	•	o		•
121	PE	20	TiO2	M		♦	•	•	o		•
125	PE	25	TiO2	B		♦	•	•	o		•
126	PE	25	TiO2	M		♦	•	•	o		•
135	PE	35	TiO2	B		♦	•	•	o		o
136	PE	35	TiO2	M		♦	•	•	o		o
140	PE	40	TiO2	B		♦	•	•	•		o
1410	PE	40	TiO2	M		♦	•	•	•		o
150	PE	50	TiO2	B		♦	•	•	•	o	o
1530	PE	50	TiO2	M		♦	•	•	•	o	o
1503	PE	50	TiO2	B	AT		•	•	•	•	o
160	PE	60	TiO2	B		♦	o	o	•	•	o
161	PE	60	TiO2	M			o	o	•	•	o
162	PE	60	TiO2	M		♦	o	o	•	•	o
163	PE	60	TiO2	B			o	o	•	•	o
1606	PE	60	TiO2	B	slip	♦			•	•	o
1609	PE	60	TiO2	B	slip	♦			•	•	o
1610	PE	60	TiO2	M	UV				•	•	o
1619	PE	60	TiO2 durable	M			o	o	•	•	o
1681	PE	70	TiO2	B	PPA			o	•	•	o
1682	PE	70	TiO2	B	PPA	♦		o	•	•	o
1701	PE	75	TiO2, other	B			o	o	•	•	o
1703	PE	75	TiO2, other	M			o	o	•	•	o
1705	PE	70	TiO2 durable	M			o	o	•	•	o
170	PE	70	TiO2	B			o	o	•	•	o
172	PE	70	TiO2	M			o	o	•	•	o
173	PE	70	TiO2	B*			o	o	•	•	o
175	PE	75	TiO2	M			o	o	•	•	o
1707	PE	70	TiO2	M			o	o	•	•	o

AT : anti-static PPA : polymer processing aid • : recommended o : can be used
B : bluish M : milky * : extra bluish ♦ : yes

Modified versions of the above products can be produced upon request, e.g. with another base resin, white pigments type/content or containing different types/levels of additives.

KRITILEN WHITE MASTERBATCHES

PP – PS – PVC-PET PRODUCT RANGE

KRITILEN WHITE	Carrier Resin	White Pigments %	White Pigments types	Undertone	Additives	Filler	Injection moulding	Blow-moulding	Sheets	PP tapes	PP fibers
PP920	PPH	20	TiO2	M		♦	•	•		•	
PP9502	PPH	50	TiO2	B		♦	•	•	•	o	
PP950	PPH	50	TiO2	B			•	•	•	o	
PP952	PPH	50	TiO2	B		♦	•	•	•	o	
PP9505	PPH	50	TiO2	B*		♦	•	•	•		
PP953	PPH	50	TiO2	M			•	•	•	o	
PP9351	PPH	35	TiO2	M	AT		•	•	o	o	
PP9352	PPH	35	TiO2	M	AT	♦	•	•	o	o	
PP958	PPH	50	TiO2	B			•	•	•		
PPF979	PPH	70	TiO2	M							•
PS720	PSGP	20	TiO2	B		♦	•		o		
PS7305	PSGP	25	TiO2	B		♦	•		•		
PS730	PSGP	30	TiO2	B		♦	•		•		
PS734	PSGP	30	TiO2	M		♦	•		•		
PS741	PSGP	40	TiO2	B		♦	•		•		
PS745	PSGP	45	TiO2	B			o		•		
PS7452	PSGP	45	TiO2	B		♦	o		•		
PS750	PSGP	50	TiO2	B			o		•		
PS751	PSGP	50	TiO2	B		♦	o		•		
PS755	PSGP	50	TiO2	M			o		•		
PS760	PSGP	60	TiO2	M					•		
PV 81013	p-PVC	40	TiO2			♦					
PV 89010	p-PVC	30	TiO2			♦					
PT634	PET	40	TiO2	M			•	•	•		
PT 91638	PET	70	TiO2	M			•	•	•		

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