heubach

BRINGING LIFE TO PLASTICS
SUSTAINABLE COLOR SOLUTIONS

BRIGHTER COLORS.
BRIGHTER LIFE.

BRINGING LIFE TO PLASTICS
SUSTAINABLE COLOR SOLUTIONS

Heubach offers one of the world's most complete portfolio of organic, inorganic, and anti-corrosive pigments, pigment preparations, dyes and speciality materials.

We have a complete range of colorants – pigments, pigment preparations, and dyes as well as optical brighteners – for the plastic industry. We specialize in supplying color for all types of polymer in various market segments. Our products are tailor-made for masterbatch producers, compounders, polymer and polyvinylchloride processors, as well as resin and fiber manufacturers. Serving the market with a broad and innovative palette of vivid components enhances our position as one of the leading color solutions providers.

Heubach presents masterbatch producers, plastics processors and designers with a broad selection of support and service elements in the area of product safety and regulatory environment. Thanks to its strong product safety expertise, Heubach has earned a recognized position as a market leader in bringing solutions to ecology and safety challenges.

ORGANIC PIGMENTS FOR PLASTICS

PV FAST™

Highly fast organic pigments with outstanding heat resistance, light fastness and bleeding fastness in various polymers.

GRAPHTOL®

Organic pigments with good application properties and an attractive price-performance ratio.

OTHER GRADES

Permanent
Novoperm®
Hostaperm®
Telacol®

For further information regarding these products please contact your local Heubach sales office.

ILLUSTRATION OF THE PIGMENTS

The pigments have been illustrated using a special printing method. The standards used to obtain the matchings were injection molded HDPE color plaques with a pigment content equal to ⅓ standard depth of shade (SD ⅓) 'full shade' and with 1 % titanium dioxide in reduction.

Shade deviations in the application are possible and the prints are not suitable for colorimetry measurement or the testing of fastness properties.

TEST CONDITIONS

The values quoted for the fastness properties and the concentrations to standard depth of shade only apply for our test conditions. Any change in operating parameters, e.g. type and settings of the equipment, specific polymer substrate, concentrations, processing temperature and time can result in different values. We therefore recommend customers to conduct their own tests under the relevant working conditions before use.

STANDARD DEPTH ⅓ (SD ⅓)

The value quoted is the weight in grams (g) colorant per kg polymer required to obtain SD ⅓ according to DIN 53235. For HDPE the value relates to the pigment concentration with 1 % TiO_2, and for PVC with 5 % TiO_2.

HEAT RESISTANCE

Resistance to heat was tested according to DIN EN 12877 at SD ⅓ with 1% titanium dioxide in the injection molding process. The values quoted are the temperatures in °C at which, after a dwell time of 5 min, a color change equivalent to a ΔE*ab = 3 (DIN EN ISO 11664-4) is obtained.

*** NOTE TO HEAT RESISTANCE** - For the diarylide group of pigments a heat stability of 200°C is given due to the potential for thermal decomposition (refer to relevant safety data sheets). This applies even if the shade of the pigment would remain stable at higher temperatures.

LIGHT FASTNESS IN HDPE

The light fastness in white reduction was determined on injection molded plaques at SD ⅓ with 1% titanium dioxide in an artificial light exposure according to DIN EN ISO 4892. For the light fastness in full shade, the same pigment concentration was tested without titanium dioxide. Assessments were against the 8-step blue wool scale, where 8 refers to very good light fastness and 1 very poor light fastness.

LIGHT FASTNESS IN PLASTICIZED PVC

The light fastness in white reduction was determined at 0.1% pigment with 0.5% titanium dioxide in an artificial light exposure according to DIN EN ISO 4892. The same concentration without titanium dioxide was tested for the light fastness of transparent formulations. Assessments were against the 8-step blue wool scale.

SUITABILITY FOR LOW WARPING APPLICATIONS

Some organic pigments can have a negative influence on the dimensional stability of polyolefins. This behavior is referred to as the 'Potential to induce warpage' and is at its most extreme in HDPE injection molding applications. The influence of a pigment to induce warpage was tested for by measuring the dimensional changes in the horizontal and vertical planes of a rectangular injection molded plate in HDPE comparing colored (0.1% pigment) and uncolored plates. The plates were injection molded at 280°C. Pigments which have a heat resistance below 280°C have been injection molded at 220°C.

MIGRATION - BLEED FASTNESS

Fastness to bleeding was tested in plasticized PVC by direct contact of a pigmented film (0.1 %) for 2 h at 140°C with a white-pigmented film. Staining of the white-pigmented film was evaluated against the »5 step gray scale for assessing staining according to DIN EN 20105-A03 whereby »5 denotes no bleeding.

APPLICATIONS IN OTHER POLYMERS

The suitability of a particular pigment in Polystyrene (PS), Polybutylene Terephthalate (PBT), Polycarbonate (PC) and Polyamide 6 (PA 6) is indicated using the following key:

- ● Suitable – Technically recommended for the application according to internal testing methods.
- ❍ Limited suitability – Technically suitable for the application, some restrictions may apply.
- – Not suitable – Technically unsuitable according to internal testing methods.

SD 1/3	SD 1/3 + 1% TiO_2	PRODUCT NAME Colour Index		POLYETHYLENE (HDPE)				PLASTICIZED PVC			OTHER POLYMERS			
				SD 1/3	Heat resistance	Light fastness	Warpage	SD 1/3	Light fastness	Bleed fastness	PS	PBT*	PC	PA
				g/kg	°C			g/kg						
		PV FAST YELLOW H9G Pigment Yellow 214	Full shade Reduction	2.4	280	7 6	❍	9.2	7 7	5	●	❍	–	–
		GRAPHTOL YELLOW GG * Pigment Yellow 17	Full shade Reduction	1.1	200	6-7 5-6	–	4.2	7 6-7	3	–	–	–	–
		GRAPHTOL YELLOW 3GP Pigment Yellow 155	Full shade Reduction	1.6	260	7-8 7-8	–	7.3	8 8	3-4	●	–	–	–
		PV FAST YELLOW H4G Pigment Yellow 151	Full shade Reduction	3.8	290	8 8	❍	12.0	7-8 7-8	5	❍	–	–	–
		PV FAST YELLOW H2G Pigment Yellow 120	Full shade Reduction	2.9	260	8 8	●	10.4	8 8	5	●	–	–	–
		PV FAST YELLOW HG 01 Pigment Yellow 180	Full shade Reduction	1.1	290	7-8 6-7	●	4.5	7 8	5	●	●	●	–
		PV FAST YELLOW HG Pigment Yellow 180	Full shade Reduction	1.6	290	7-8 6-7	●	5.5	7 7	5	●	●	●	–
		GRAPHTOL YELLOW GR * Pigment Yellow 13	Full shade Reduction	0.9	200	6-7 5	–	2.4	6-7 6-7	3	–	–	–	–
		PV FAST YELLOW H2GR Pigment Yellow 191	Full shade Reduction	2.3	300	6=7 6	●	9.5	6-7 5-6	5	●	●	●	–
		PV FAST YELLOW HGR Pigment Yellow 191	Full shade Reduction	3.5	300	8 7	●	11.7	7 6	5	●	●	●	–
		PV FAST YELLOW HR 02 * Pigment Yellow 83	Full shade Reduction	0.8	200	6 6-7	–	2.2	7 7-8	5	–	–	–	–
		PV FAST YELLOW HR * Pigment Yellow 83	Full shade Reduction	0.9	200	6 6-7	–	2.5	7 7-8	5	–	–	–	–
		GRAPHTOL YELLOW H2R Pigment Yellow 139	Full shade Reduction	1.1	240	8 7-8	❍	3.5	7 6-7	5	–	–	–	–
		PV FAST YELLOW H3R Pigment Yellow 181	Full shade Reduction	4.2	300	8 8	●	13.1	7-8 8	5	●	●	–	–
		GRAPHTOL ORANGE GPS * Pigment Orange 13	Full shade Reduction	1.7	200	5 4	–	5.4	5-6 4-5	3	–	–	–	–
		PV FAST ORANGE H4GL 01 Pigment Orange 72	Full shade Reduction	2.0	290	8 7-8	●	5.7	7-8 7-8	5	●	–	–	–
		PV FAST ORANGE H2GL Pigment Orange 64	Full shade Reduction	2.2	300	8 8	❍	6.0	7 7	5	●	❍	❍	–
		PV FAST ORANGE GRL Pigment Orange 43	Full shade Reduction	2.1	280	8 8	–	6.1	7-8 7-8	4-5	●	●	●	❍

* Please refer Note to Heat Resistance on page 1

SD 1/3	SD 1/3 + 1% TiO_2	PRODUCT NAME Colour Index		POLYETHYLENE (HDPE)				PLASTICIZED PVC			OTHER POLYMERS			
				SD 1/3	Heat resistance	Light fastness	Warpage	SD 1/3	Light fastness	Bleed fastness	PS	PBT*	PC	PA
				g/kg	°C			g/kg						
		GRAPHTOL ORANGE RL * Pigment Orange 34	Full shade Reduction	1.7	200	6-7 5	–	4.6	7 6	2-3	–	–	–	–
		PV FAST ORANGE 6RL Pigment Orange 68	Full shade Reduction	2.2	300	8 7-8	●	9.1	7 7-8	5	●	●	●	●
		GRAPHTOL RED HFG Pigment Orange 38	Full shade Reduction	2.3	280	7 6	❍	8.9	8 6-7	4	–	–	–	–
		PV FAST SCARLET 4RF Pigment Red 242	Full shade Reduction	2.3	300	7-8 7	–	8.8	8 7-8	5	●	●	●	–
		PV FAST RED B Pigment Red 149	Full shade Reduction	1.3	280	8 7-8	●	5.2	7 7	5	●	●	●	❍
		GRAPHTOL RED LG Pigment Red 53:1	Full shade Reduction	1.6	270	4 2	❍	7.1	3-4 2-3	4-5	●	–	●	–
		GRAPHTOL RED LC Pigment Red 53:1	Full shade Reduction	1.7	250	4 2	●	7.2	3-4 2-3	4-5	●	–	●	–
		GRAPHTOL RED BB * Pigment Red 38	Full shade Reduction	1.0	200	6 4	–	3.3	7-8 4	3	–	–	–	–
		PV FAST RED D3G Pigment Red 254	Full shade Reduction	1.5	300	8 8	●	6.2	7-8 8	5	❍	❍	–	–
		GRAPHTOL RED F3RK 70 Pigment Red 170	Full shade Reduction	2.2	270	8 7	●	7.8	7 7	2	–	–	–	–
		PV FAST RED HB Pigment Red 247	Full shade Reduction	2.4	300	7 6-7	–	9.6	6-7 6-7	5	●	●	●	–
		PV FAST RED BNP Pigment Red 214	Full shade Reduction	1.5	300	8 7-8	–	5.7	8 8	5	●	●	●	–
		GRAPHTOL FIRE RED 3RLP Pigment Red 48:3	Full shade Reduction	2.0	240	7 6	●	7.5	6-7 5-6	5	●	–	–	–
		GRAPHTOL RED HF2B Pigment Red 208	Full shade Reduction	1.3	250	7 6-7	–	5.1	7-8 6-7	4-5	–	–	–	–
		GRAPHTOL RED F5RK Pigment Red 170	Full shade Reduction	1.7	250	7-8 7	❍	–	– –	–	–	–	–	–
		GRAPHTOL RED P2B Pigment Red 48:2	Full shade Reduction	1.2	240	6-7 5	●	5.0	6 5-6	5	●	–	–	–
		PV FAST RED HF4B Pigment Red 187	Full shade Reduction	1.9	260	7-8 7	●	7.7	7 7-8	5	●	●	●	–
		GRAPHTOL CARMINE HF4C Pigment Red 185	Full shade Reduction	1.3	250	6-7 6-7	●	4.5	7-8 7	5	●	–	–	–

* Please refer Note to Heat Resistance on page 1

SD 1/3	SD 1/3 + 1% TiO_2	PRODUCT NAME Colour Index		POLYETHYLENE (HDPE)				PLASTICIZED PVC			OTHER POLYMERS			
				SD 1/3	Heat resistance	Light fastness	Warpage	SD 1/3	Light fastness	Bleed fastness	PS	PBT*	PC	PA
				g/kg	°C			g/kg						
		GRAPHTOL CARMINE HF3C Pigment Red 176	Full shade Reduction	1.4	270	7 7	●	5.4	7-8 7	5	●	–	●	–
		PV FAST RED E3B Pigment Violet 19	Full shade Reduction	3.0	300	8 8	❍	13.1	8 8	5	●	❍	●	❍
		PV FAST RED E5B Pigment Violet 19	Full shade Reduction	2.4	300	8 8	❍	11.4	7 7	5	●	❍	●	❍
		GRAPHTOL RUBINE L4B Pigment Red 57:1	Full shade Reduction	1.0	260	6 4	–	4.5	6 3-4	5	❍	–	–	–
		PV FAST PINK E Pigment Red 122	Full shade Reduction	2.1	300	8 8	●	7.7	7-8 7-8	5	●	❍	●	❍
		PV FAST PINK E 01 Pigment Red 122	Full shade Reduction	2.1	300	8 8	●	8.1	7 7	5	●	❍	●	❍
		PV FAST PINK E2B Pigment Red 122	Full shade Reduction	2.1	300	8 8	●	8.8	7-8 7-8	5	●	❍	●	❍
		GRAPHTOL BORDEAUX HF3R Pigment Violet 32	Full shade Reduction	1.0	250	7 6	-	3.6	7-8 7	5	–	–	–	–
		PV FAST VIOLET BLP Pigment Violet 23	Full shade Reduction	0.6	280	8 7-8	–	2.9	7-8 7-8	4	●	–	–	❍
		PV FAST VIOLET RL Pigment Violet 23	Full shade Reduction	0.6	280	8 7-8	-	2.5	7-8 7-8	4	●	–	–	❍
		GRAPHTOL BLUE AN 01 Pigment Blue 15	Full shade Reduction	-	200	- -	-	3.6	8 8	4	–	-	-	-
		PV FAST BLUE A4R Pigment Blue 15:1	Full shade Reduction	0.8	300	8 8	–	3.6	8 8	4	●	❍	❍	❍
		PV FAST BLUE A2R Pigment Blue 15:1	Full shade Reduction	0.8	300	8 8	–	3.3	8 8	5	●	❍	❍	❍
		PV FAST BLUE BG Pigment Blue 15:3	Full shade Reduction	1.1	300	8 8	-	4.0	8 8	5	●	●	●	●
		PV FAST GREEN GNX Pigment Green 7	Full shade Reduction	2.0	300	8 8	–	8.9	8 8	5	●	●	●	❍
		PV FAST BROWN HFR Pigment Brown 25	Full shade Reduction	1.8	290	8 8	-	7.5	8 8	4-5	–	–	–	–
		PV FAST BROWN RL Pigment Brown 41	Full shade Reduction	1.9	300	8 8	-	6.9	8 8	4	●	–	–	–

* Please refer Note to Heat Resistance on page 1

POPULAR PIGMENTS IN INDIA SUBREGION

Below products have been designed/selected especially considering the customer requirements in the India subregion with respect to shade, strength, heat stability and their performance in critical application.

SD 1/3	SD 1/3 + 1% TiO_2	PRODUCT NAME Colour Index		POLYETHYLENE (HDPE)				PLASTICIZED PVC			OTHER POLYMERS			
				SD 1/3	Heat resistance	Light fastness	Warpage	SD 1/3	Light fastness	Bleed fastness	PS	PBT*	PC	PA
				g/kg	°C			g/kg						
		PERMANENT YELLOW DHG E-IN Pigment Yellow 12	Full shade Reduction	0.9	200	6-7 5	-	2.4	6-7 6-7	3	-	-	-	-
		PV FAST YELLOW HGR-IN Pigment Yellow 191	Full shade Reduction	3.5	300	8 7	●	11.7	7 6	5	●	●	●	-
		TELACOL YELLOW T-HGR-IN Pigment Yellow 191	Full shade Reduction	3.5	300	8 7	●	11.7	7 6	5	●	●	●	-
		PERMANENT ORANGE G-IN Pigment Orange 13	Full shade Reduction	1.7	200	5 4	-	5.4	5-6 4-5	3	-	-	-	-
		PERMANENT ORANGE G4R-IN Pigment Orange 13	Full shade Reduction	1.7	200	8 8	-	5.4	5-6 4-5	3	-	-	-	-
		PV FAST ORANGE H2GL-IN Pigment Orange 64	Full shade Reduction	2.2	300	6-7 5	❍	6.9	7 7	5	●	❍	❍	-
		PERMANENT ORANGE RI70 Pigment Orange 34	Full shade Reduction	1.7	200	4 2	-	4.6	7 6	2-3	-	-	-	-
		PERMANENT LAKE RED LCY-CN09 Pigment Red 53:1	Full shade Reduction	1.7	250	4 2	–	7.2	3-4 2-3	4-5	●	–	●	-
		GRAPHTOL RED LC-IN Pigment Red 53:1	Full shade Reduction	1.7	250	4 2	-	7.2	3-4 2-3	4-5	●	-	●	-
		GRAPHTOL RED LG-IN Pigment Red 53:1	Full shade Reduction	1.6	270	4 2	❍	7.1	3-4 2-3	4-5	●	-	●	-
		GRAPHTOL RED D3G-IN Pigment Red 254	Full shade Reduction	1.5	300	8 8	–	6.2	7-8 7	5	❍	❍	–	-
		NOVOPERM RED RT172D-IN Pigment Red 170	Full shade Reduction	2.2	270	8 8	❍	7.8	7-8 7	2	-	-	-	-
		NOVOPERM RED F5RK-IN Pigment Red 170	Full shade Reduction	1.7	250	7-8 7	❍	-	7-8 7	-	-	-	-	-
		GRAPHTOL RED LY01-IN Pigment Red 48:2	Full shade Reduction	1.2	240	6-7 5	●	5.2	6 5-6	5	●	-	-	-
		PERMANENT RED LB01-IN Pigment Red 48:2	Full shade Reduction	1.2	240	6-7 5	●	5.2	6 5-6	5	●	-	-	-
		GRAPHTOL RED F2Y-IN Pigment Red 48:2	Full shade Reduction	1.2	240	6-7 5	●	5.2	6-7 5-6	5	●	-	-	-
		PERMANENT RUBINE L4B01-CN09 Pigment Red 57:1	Full shade Reduction	1.0	260	6 4	-	4.5	6 3-4	5	❍	-	-	-
		PERMANENT RUBINE L5B01-CN09 Pigment Red 57:1	Full shade Reduction	1.0	260	6 4	-	4.5	6 3-4	5	❍	-	-	-
		PERMANENT RUBINE L5B01-IN Pigment Red 57:1	Full shade Reduction	1.0	260	6 4	-	4.5	6 3-4	5	❍	-	-	-
		HOSTAPERM VIOLET RL SPEC Pigment Violet 23	Full shade Reduction	0.6	260	8 7-8	-	2.5	7-8 7	4	●	-	-	❍
		HOSTAPERM VIOLET RL 02 Pigment Violet 23	Full shade Reduction	0.6	260	8 7-8	-	2.5	7-8 7-8	4	●	-	-	❍
		GRAPHTOL BLUE AN 01-IN Pigment Blue 15:0	Full shade Reduction	1.7	200	6-7 5	-	3.6	7 6	4	-	-	-	-
		GRAPHTOL BLUE BRE 01 Pigment Blue 15:0	Full shade Reduction	1.7	200	6-7 5	-	4.6	7 6	4	-	-	-	-
		HOSTAPERM BLUE CBR Pigment Blue 15:0	Full shade Reduction	1.7	200	6-7 5	-	4.6	7 6	4	-	-	-	-
		PV FAST BLUE A6R Pigment Blue 15:1	Full shade Reduction	0.8	300	8 8	-	3.6	8 8	4	●	❍	❍	❍
		PV FAST BLUE B2G Pigment Blue 15:3	Full shade Reduction	1.1	300	8 8	-	4.0	8 8	5	●	●	●	●
		PV FAST GREEN GNX 02 Pigment Green 7	Full shade Reduction	2.0	300	8 8	-	8.9	8 8	5	●	●	●	❍

POLYMER-SOLUBLE DYES **FOR PLASTIC APPLICATIONS**

Heubach Business Unit Pigments presents and promotes an extensive range of organic dyestuffs under the trade names Solvaperm, Hostasol and Polysynthren which are specifically selected for their suitability and performance in the coloration of plastics.

SOLVAPERM®

High-performance polymer-soluble dyes suitable for a wide range of polymers. They produce brilliant, transparent colorations with outstanding heat resistance and good light fastness.

POLYSYNTHREN®

Extender-free polymer-soluble dyes for brilliant and transparent colorations, mainly but not only for polyester spin dyeing. Excellent fastness properties.

HOSTASOL™

Fluorescent polymer-soluble dyes show a pronounced edge fluorescence in transparent colorations. In combination with other colorants, they can produce very intense, brilliant shades.

DYES AND THEIR MAIN FIELDS OF APPLICATION

SHADE	PRODUCT NAME	C.I. NAME	PS	SAN	ABS	PC	PET/PBT	PMMA	PA	PVC-R
	SOLVAPERM YELLOW 3G	S.Y.93	■	■	-	■	-	■	-	●
	SOLVAPERM YELLOW 2G	S.Y.114	■	■	■	■	■	■	●	●
	SOLVAPERM ORANGE 3G	S.O.60	■	■	■	■	■	■	●	●
	SOLVAPERM RED 2G	S.R.179	■	■	■	■	■	■	■	●
	SOLVAPERM RED G	S.R.135	■	■	■	■	■	■	●	●
	SOLVAPERM RED PFS	S.R.111	■	■	■	■	■	■	●	●
	SOLVAPERM RED BB	S.R.195	■	■	■	■	■	■	■	●
	SOLVAPERM RED VIOLET R	S.V.59 D.V.26	■	■	■	■	■	■	●	●
	SOLVAPERM VIOLET RSB	S.V.13	■	■	■	■	■	■	-	●
	SOLVAPERM BLUE 2B	S.B.104	■	■	■	■	■	■	●	●
	SOLVAPERM GREEN GSB	S.G.3	■	■	■	■	■	■	-	●
	SOLVAPERM GREEN G	S.G.28	■	■	■	■	■	■	-	●
	SOLVAPERM BLACK PCR	S.G.28	●	●	●	●	●	●	-	●
	POLYSYNTHREN YELLOW GG	S.Y.133	-	-	-	■	■	●	-	-
	POLYSYNTHREN YELLOW NG	P.Y.147	●	●	●	■	■	●	-	-
	POLYSYNTHREN YELLOW RL	P.Y.192	-	-	-	-	●	-	■	-
	POLYSYNTHREN RED GG	S.R.212	-	-	-	■	■	-	-	-
	POLYSYNTHREN RED GFP	S.R.135	■	■	■	■	■	■	●	-
	POLYSYNTHREN VIOLET G	S.V.49	●	●	●	■	■	■	-	-
	POLYSYNTHREN BLUE R	S.B.122	■	■	■	■	■	■	-	-
	POLYSYNTHREN BLUE RLS	S.B.45	■	■	■	■	■	■	-	-
	POLYSYNTHREN BROWN 3RL	P.O.70	●	●	●	■	■	●	-	-
	POLYSYNTHREN BROWN R	S.Br.53	■	■	■	■	■	■	-	-
	POLYSYNTHREN BLACK H	S.Bl.27	■	●	●	■	●	■	■	-
	HOSTASOL YELLOW 3G	S.Y.98	■	■	■	■	■	■	●	-
	HOSTASOL RED GG	S.O.63	■	■	■	■	■	■	●	-
	HOSTASOL RED 5B	Vat Red 41	■	●	●	■	●	■	-	-

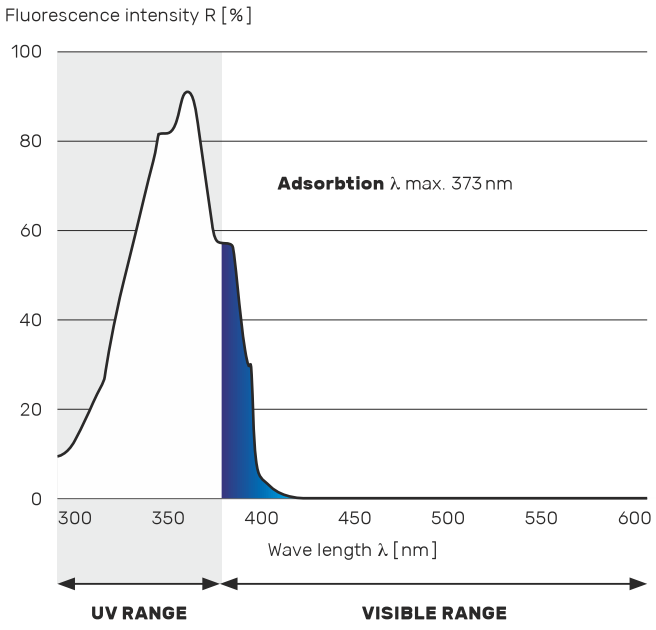
■ Suitable ● Limited suitability - Not suitable

OPTICAL BRIGHTENERS
FOR PLASTICS AND SYNTHETIC FIBERS

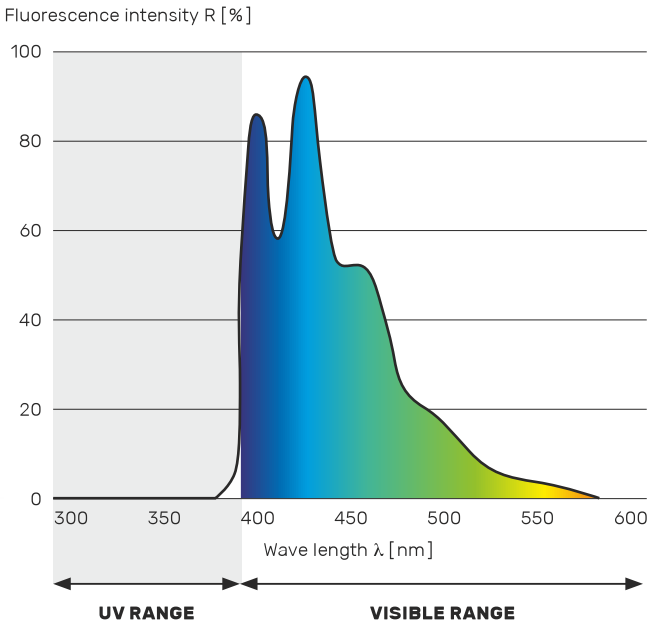
OBAs function by absorbing light in the UVA range (320–400 nm) and re-emitting light in the visible blue range (400–480nm).

The mechanism involves the excitation of the brightener molecule by UV light that raises its energy level from the ground state to a higher excited state. As the molecule returns to a lower state it releases energy in the form of fluorecense.

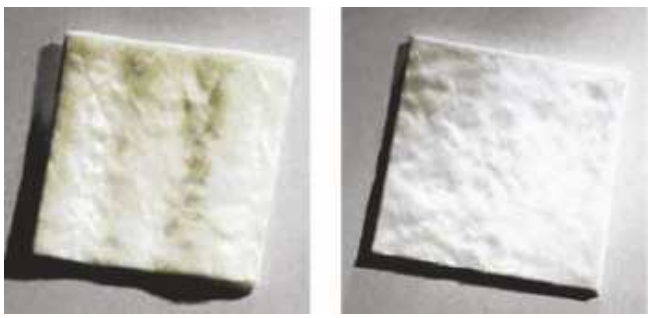
EXCITATION CURVE



EMISSION CURVE

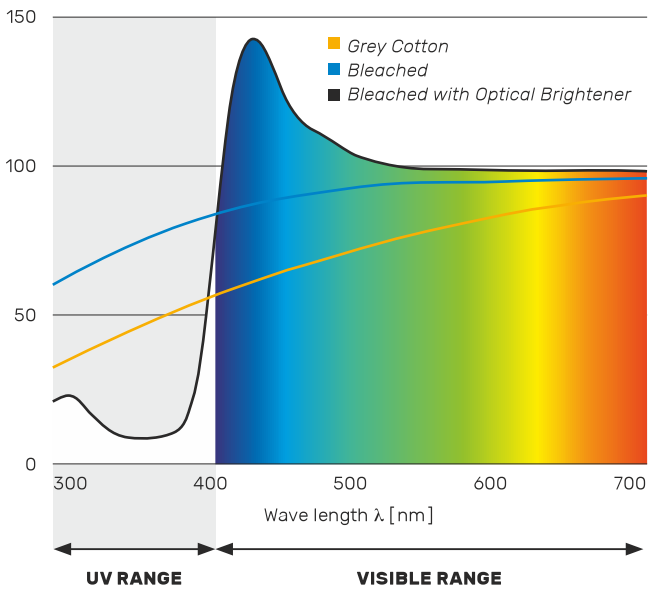


The OBA has the ability to increase reflectance and impart a blue tint. It enables a higher degree of whiteness to be achieved in polymers. Their ability to hide the inherent »yellowness« of discolored (natural and recycled) polymers facilitates color improvement in various resins. Optical brighteners work in all colored plastics, however, they are more effective in lighter shades.



The OBA is highly soluble in the polymer and therefore effective at low dosages (100–1000 ppm).

REFLECTION [%]



TELALUX® OPTICAL BRIGHTENERS

The Telalux grades are fluorescent whitening agents developed for brightening (whitening) of white plastics. They are suitable for all plastics and fibers.

The optical brighteners give brilliant transparent effects in glass-clear plastics. In pigmented white plastics they give brilliant, high white effects with different shades depending on the nature of their structure. They have excellent resistance to heat and possess good light and weather fastness.

OPTICAL BRIGHTENERS FOR PLASTICS

PRODUCT NAME	SHADE	GENERAL REMARKS	FDA (21 § 178.3297)
TELALUX® KS	Neutral	PO, PVC, PS PBT and other polymers / PET fibers	Yes
TELALUX KSC	Neutral	PVC and other polymers	–
TELALUX KCB	Blue	PO, PVC, PS and other polymers	–
TELALUX KSN	Neutral – bluish violet	PO, PVC, PS and other polymers / PET fibers	–
TELALUX KS1	Neutral – violet	PO, PVC, PS, PBT and other polymers / PET fibers	Yes
TELALUX NSM	Neutral	PAN fiber (only for dry spinning): PUR	–
TELALUX OB	Neutral – violet	PO, PVC, PS, PBT and other polymers / PET and PA fibers	–
TELALUX OB1	Neutral – violet	PO, PS, PBT and other polymers / PET fibers	–

OVERVIEW OF THE TELALUX RANGE AND AREAS OF APPLICATION OPTICAL BRIGHTENERS FOR PLASTICS AND SYNTHETIC FIBERS

PRODUCT NAME	PET PBT	PE	PP	PS	SAN	ABS	PC	PMMA	PA	PVC-U	PVC-P	EVA	PUR
TELALUX KS	■	■	■	■	■	■	■	■	■	■	●	-	●
TELALUX KSC	-	-	-	-	-	-	-	-	-	■	■	-	-
TELALUX KCB	■	■	■	■	■	■	■	■	■	■	■	■	-
TELALUX KSN	■	■	■	■	■	■	■	■	■	■	●	-	-
TELALUX KS1		-	-	●	●	●	-	-	■	-	-	-	-
TELALUX NSM	-	-	-	-	-	-	-	-	-	-	-	-	■
TELALUX OB	■	■	■	■	■	■	■	■	■	■	■	■	■
TELALUX OB1	■	-	-	●	●	●	-	-	■	-	-	-	-

■ Suitable ● Limited suitability - Not suitable

HEUBACH COLORANTS INDIA LIMITED
Formerly Clariant Chemicals (India) Limited

Reliable Tech Park, Off Thane-Belapur Road
Airoli, Navi Mumbai - 400 708, Maharashtra

gagan.saxena@clariant.com / 88601 64951
pinak.chowdhury@clariant.com / 98302 69562
vishakha.nanodkar@clariant.com / 9892345200

www.heubach.com

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