

Polyolefins		Engineering polymers						PUR	Rubber	Fibers	
PE	PP	PVCp	PS	ABS	PC	POM	PES			pp	PES
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Application possibilities ● main application ○ side application



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HP REDS & HP YELLOWS

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> high performance pigments

ORGANIC PIGMENTS FOR PLASTICS

TiO ₂		Trade Name Versal®	C. I. Pigment	Chem. Type	HP Pigment
1:1	1:10				
		Yellow 9GP 01	Yellow 150	Metal Complex	●
		Yellow 5GN 01	Yellow 150	Metal Complex	●
		Yellow 2GL	Yellow 61	Monoazo, Ca	
		Yellow 2GS	Yellow 168	Monoazo, Ca	
		Yellow 6G	Yellow 94	Disazo Cond.	●
		Yellow 7GP 01	Yellow 138	Quinophthalone	●
		Yellow 8GN	Yellow 128	Disazo Cond.	●
		Yellow H4G 01	Yellow 151	Benzimidazolone	●
		Yellow 3G	Yellow 93	Disazo Cond.	●
		Yellow 3GF	Yellow 93	Disazo Cond.	●
		Yellow H3G 01	Yellow 154	Benzimidazolone	●
		Yellow HG 01	Yellow 180	Benzimidazolone	●
		Yellow 4GP	Yellow 155	Bisacetoacetarylide	
		Yellow RS/RS 01	Yellow 62	Monoazo, Ca	
		Yellow GR	Yellow 95	Disazo Cond.	●
		Yellow HGR/HGR 01	Yellow 191	Monoazo, Ca	
		Yellow 2RLP/2RLP 01	Yellow 183	Monoazo, Ca	
		Yellow H3RP	Yellow 181	Benzimidazolone	●
		Yellow 3R 01	Yellow 110	Isoindolinone	●
		Orange G 01	Orange 64	Benzimidazolone	●
		Scarlet 4RFP	Red 242	Disazo Cond.	●
		Scarlet R	Red 166	Disazo Cond.	●
		Red DP3G 01	Red 254	Diketopyrrolopyrrole	●
		Red F2RKD	Red 170	Naphthol AS	
		Red F3RKD	Red 170	Naphthol AS	
		Red 3RL	Red 48:3	BONA, Sr	
		Red F5RK	Red 170	Naphthol AS	
		Red BRN	Red 214	Disazo Cond.	●
		Red BR	Red 144	Disazo Cond.	●
		Red BRA	Red 144	Disazo Cond.	●
		Red F6RO 01	Red 57:1	BONA, Ca	
		Red 4BP 01	Red 57:1	BONA, Ca	
		Red A3BN/A3B	Red 177	Anthraquinone	●
		Red HF3C 01	Red 176	Benzimidazolone	●
		Blue ASP 01	Blue 15:1	Phthalocyanine	
		Blue LBS 01	Blue 15:3	Phthalocyanine	
		Green BGP 01	Green 7	Phthalocyanine	

Light Fastness		Oil absorption	Bulking volume	DEHT	Heat resistance	Migration
full shade	1/3					
7-8	7	55	5.2	5	300 °C	5
7-8	7	53	5.2	5	300 °C	5
7	6	91	6.3	5	240 °C	4-5
7	7	75	4.1	5	240 °C	5
7-8	7	87	6.6	5	280 °C	5
7-8	7	37	2.7	5	300 °C	5
7-8	7	80	6.9	5	260 °C	5
7-8	7-8	83	2.7	5	290 °C	5
7-8	7	63	5.2	5	280 °C	5
7-8	7	118	9.3	5	280 °C	5
7-8	7-8	55	2.3	5	270 °C	4-5
7	7	74	5.1	5	280 °C	5
7-8	7	69	6.3	5	260 °C	4-5
7	6	78	5.4	5	250 °C	5
7-8	7-8	90	4.8	5	280 °C	5
7	6-7	62	6.0	5	300 °C	5
7-8	6-7	55	2.9	5	300 °C	5
7	6-7	88	6.6	5	280 °C	5
6-7	6-7	40	3.3	4-5	280 °C	4-5
6-7	6-7	73	4.2	5	280 °C	5
7-8	7	74	5.0	5	280 °C	4-5
7-8	7	83	5.1	5	300 °C	4-5
7-8	7	47	5.8	5	300 °C	5
7-8	7	75	4.7	5	270 °C	
7	5-6	67	4.2	4-5	270 °C	
6	4	63	4.8	5	240 °C	4-5
6D	5	51	3.6	4-5	240 °C	
7-8	7-8	61	4.7	5	280 °C	4-5
7-8	7-8	78	6.3	5	280 °C	4-5
7-8	7-8	94	5.7	5	280 °C	5
4-5	4	85	3.6	5	240 °C	4-5
4-5	4	85	7.0	4-5	260 °C	4-5
7-8	7	59	3.1	5	300 °C	5
6-7	6	79	4.2	5	280 °C	5
7-8	7-8	70	3.5	5	300 °C	5
7-8	7-8	57	3.1	5	300 °C	5
7-8	7-8	45	2.5	5	300 °C	5

D - duller

Synthesis, a.s.

Synthesis is the largest Czech manufacturer of chemical specialities with more than 100 years' tradition. Synthesis respects the company objective to offer top products with high added value and specialized customer solutions, including not only production but also development activities and services. We are the leading Central European producer of organic pigments and dyes and the only producer of high performance pigments in Central Europe. Our company has experience in sales all over the world, especially in the most demanding markets in Western and Eastern Europe as well as the U.S.A.



VERSAL®

Due to the same chemical structure, identical or very close matching colour shade and other important properties a large number of pigments can be replaced by Versal pigments. The assortment VERSAL® is formed by various chemical types and can be used in wide range of application in such as coatings, printing inks, plastics, fibres, particularly if special technical properties are required. The most significant part of VERSAL® pigments (High-Performance Pigments) is above all a provision of very good fastness to light and weathering, heat resistance, fastness to solvents and chemicals and due to these excellent properties can be used in the most demanding applications.

In this pattern card VERSAL® pigments are illustrated and determined especially with respect for the plastic industry. VERSAL® pigments are technically pure products distinguished by persistent colour qualities and controlled fastness properties. All VERSAL® pigments are suitable for mutual combination.

PHYSICAL PROPERTIES AND FASTNESS

Light fastness - Xenotest

- determined by ČSN EN ISO 105-B02: 2000 (80 0147) and evaluated in 1/3 and 1/1 of standard depth and in full shade; by it degree 1 denotes the lowest fastness and degree 8 the highest one.

Fastness to plasticizers

- colouring of plasticizer (diethylhexylterephthalate) after 24 h at 20 °C according to ISO grey scale is determined; degree 1 denotes the lowest fastness, degree 5 the highest one.

Heat resistance

- the values quoted indicate up to what temperature the pigments do not significantly alter, these are guide values which can be influence by the binder used and the period of exposure to high temperature (EN 12877-2).

Migration fastness

- assessmant of bleeding into a white polyvinylchloride sheet for 24 h at 70 °C against ISO grey scale, by it degree 1 denotes the lowest fastness, degree 5 the highest one, no data means that the pigment is not recommended for dyeing PVC.

