

Decorative		Industrial				Automotive		Powder Coating			Specialty	
air drying	water-based	baking varnish	water-based	epoxy	PUR	OEM	car refinish	polyester	hybrid	epoxy	coil coating	LCD
●	●		○	○								
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●	●	●	●	●	●			●	●	●	●	○

Application possibilities    ● main application    ○ side application



Versal® | organic pigments for paints



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TiO <sub>2</sub>		Trade Name Versal®	C. I. Pigment	Chem. Type	HP Pigment	Opacity
1:1	1:10					
		Yellow 10G	Yellow 3	Monoazo		medium
		Yellow 7G	Yellow 138	Quinophthalone	●	medium
		Yellow 8GN	Yellow 128	Disazo Cond.	●	low
		Yellow H4G	Yellow 151	Benzimidazolone	●	high
		Yellow 3G	Yellow 93	Disazo Cond.	●	medium
		Yellow 5GD	Yellow 155	Bisacetoacetarylide	●	high
		Yellow 4G	Yellow 155	Bisacetoacetarylide	●	medium
		Yellow 4GN	Yellow 155	Bisacetoacetarylide	●	medium
		Yellow H3G	Yellow 154	Benzimidazolone	●	medium
		Yellow 5GXW	Yellow 74	Monoazo		medium
		Yellow 2GXS	Yellow 74	Monoazo		high
		Yellow 2GXD	Yellow 74	Monoazo		high
		Yellow GR	Yellow 95	Disazo Cond.	●	low
		Yellow 5RD	Yellow 139	Isoindoline	●	high
		Yellow 6RD	Yellow 139	Isoindoline	●	high
		Orange RA	Orange 73	Diketopyrrolopyrrole	●	high
		Orange HLD	Orange 36	Benzimidazolone	●	high
		Scarlet 4RF	Red 242	Disazo Cond.	●	low
		Red HF3S	Red 188	Naphthol AS		medium
		Scarlet DPEK	Red 255	Diketopyrrolopyrrole	●	high
		Scarlet R	Red 166	Disazo Cond.	●	medium
		Red FGRD	Red 112	Naphthol AS		high
		Red DP3G	Red 254	Diketopyrrolopyrrole	●	high
		Red DP2G	Red 254	Diketopyrrolopyrrole	●	high
		Red F2RKD	Red 170	Naphthol AS		high
		Red F3RKD	Red 170	Naphthol AS		high
		Red F5RK	Red 170	Naphthol AS		low
		Red 3RL	Red 48:3	BONA, Sr		medium
		Red BRN	Red 214	Disazo Cond.	●	medium
		Red BR	Red 144	Disazo Cond.	●	medium
		Red A2BN	Red 177	Anthraquinone	●	medium
		Red A2B	Red 177	Anthraquinone	●	low
		Blue ASG	Blue 15:1	Phthalocyanine		medium
		Blue LBS	Blue 15:3	Phthalocyanine		medium
		Green BG	Green 7	Phthalocyanine		medium

Light		Weathering		Xylene	Acetone	Butylacetate	Ethanol	Water	HCl 2.5 %	NaOH 2.5 %
full shade	1/3	full shade	1/3							
7	6-7	4-5	4	2	2-3	2	3	5	5	5
7-8	7	4-5	4	5	3	5	5	5	5	4-5
7-8	7	4	3-4	5	3-4	4-5	5	5	5	5
7-8	7-8	5	4	4-5	4-5	5	5	5	5	3
7-8	7	4-5	4	5	5	5	5	5	5	5
7-8	7	4-5	4	4-5	4	4-5	5	5	5	5
7-8	7	4-5	4	4-5	4	4-5	4-5	5	5	5
7-8	7	4-5	4	4-5	4	4-5	5	5	5	5
7-8	7-8	5	4-5	5	4-5	5	4-5	5	5	5
6-7	5-6	4-5	2-3	3	3	3	4	5	5	5
7	6	4-5	4	2-3	2-3	2-3	3	5	5	5
7	6	4-5	4	3	3	3	4	5	5	5
7-8	7-8	4-5	4	5	5	5	5	5	5	5
7-8	7	4-5	4	4-5	4-5	4-5	4-5	5	5	3
7-8	7	4-5	4	5	5	5	5	5	5	3
7-8	7	4-5	4	5	4	4	4-5	5	5	5
7-8	7	4	3-4	4-5	4-5	4-5	4-5	5	5	5
7-8	7	4	3-4	4	3-4	4	4-5	5	5	5
6-7	6	3-4	3	4	4	4	4-5	5	5	5
7-8	7-8	4-5	4-5	5	4	4-5	4-5	5	5	5
7-8	7	4	3-4	4-5	5	4-5	5	5	5	5
7-8	6-7	4-5	3	2-3	3	3	3-4	5	5	5
7-8	7	4-5	4	5	4	5	5	5	5	5
7-8	7	4-5	4	4-5	3	4	4	5	5	5
7-8	7	4	3	4-5	4	4-5	4-5	5	5	5
7	5-6	4	2	4-5	4	4-5	4-5	5	5	5
6D	5	3D	2	4-5	3	4	4	5	5	5
6	4	3-4D	1-2	5	5	5	4-5	4-5	4	4
7-8	7-8	4D	3-4	4	4-5	4-5	5	5	5	5
7-8	7-8	4D	3-4	4-5	4-5	4-5	5	5	5	5
7-8	7	4	3	5	4	4-5	4-5	5	5	5
7-8	7	4	3	5	4	4-5	4-5	5	5	5
7-8	7-8	4-5	4-5	5	5	5	5	5	5	5
7-8	7-8	4-5	4-5	5	5	5	5	5	5	5
7-8	7-8	4-5	4-5	5	5	5	5	5	5	5

D - duller

## Synthesis, a.s.

Synthesis is the largest Czech manufacturer of chemical specialities with more than eighty 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 paint industry. VERSAL® pigments are technically pure products distinguished by persistent colour qualities and controlled fastness properties. All VERSAL® pigments are suitable for mutual combination.**

## APPLICATION 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.

### Weathering fastness - Xenotest

- determined by ČSN EN ISO 105-B04: 1998 (80 0171) and evaluated in 1/3 and 1/1 of standard depth and in full shade; by it degree 1 denotes the lowest fastness, degree 5 the highest one.

### Fastness to solvents

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