



Durovan<sup>®</sup>

Innovative Bismuth Vanadate pigments

## Durovan®

### Brilliance for years

Durovan® is a comprehensive range of inorganic Bismuth Vanadate pigments (PY 184) covering the colour space between green shade and red shade yellow. All products in the range have outstanding application properties and are easy to disperse.

Durovan® offers excellent durability across the entire range. All grades offer extraordinary light and weather fastness in full shade and reduction. Furthermore, these durable products are characterized by their high opacity, excellent tinting strength and outstanding brightness. Durovan® pigments are very compatible with other colour pigments and therefore offer an excellent base to match a wide range of colour shades.

Thanks to their unique application properties, Durovan® pigments can be used in waterborne, solvent-based and solvent-free coating systems.

### Durovan® C - Series

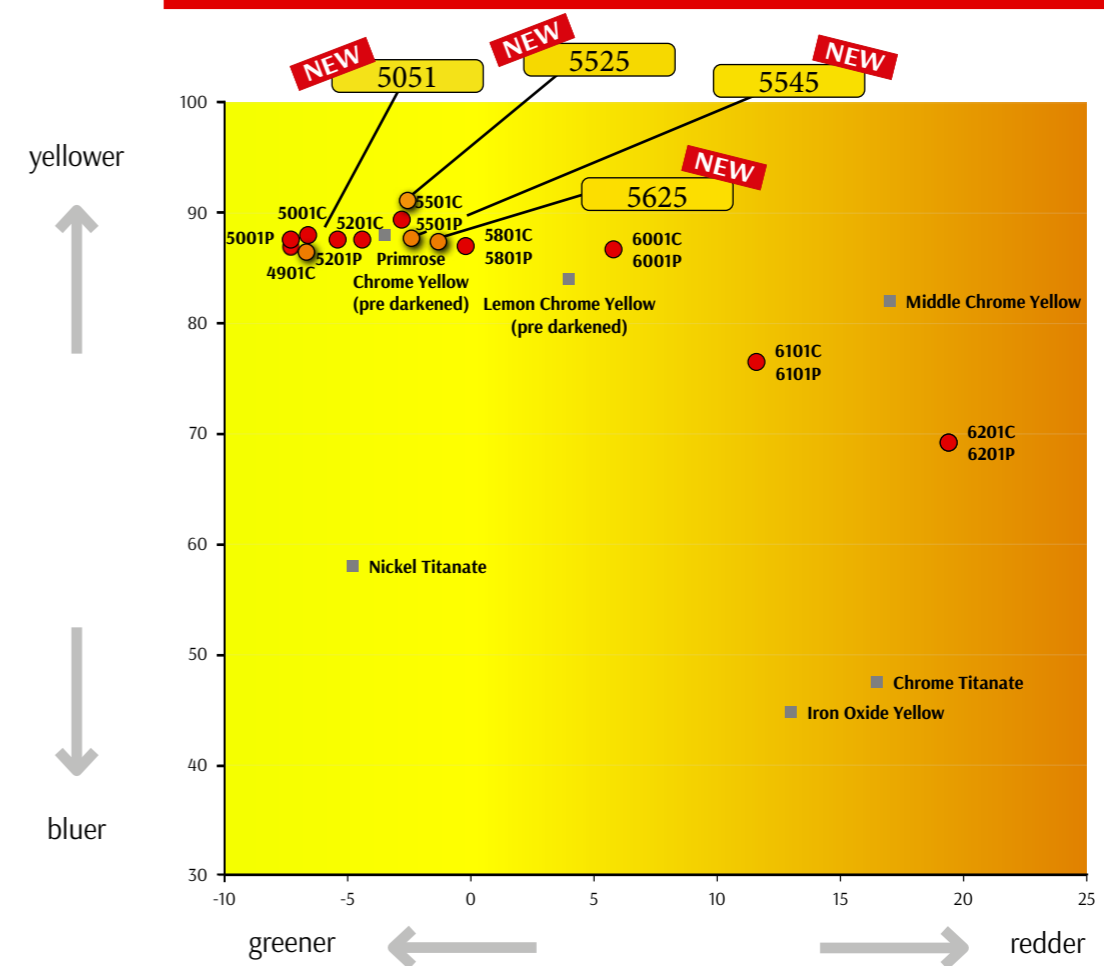
These micronized and surface-modified pigments fulfill the special requirements of the paint and coating industry. The level of pigment agglomerates has been significantly reduced through an intense milling process.

Durovan® 4901 C – Durovan® 6201 C products offer extraordinary compatibility with a wide range of coating systems. They are particularly effective in water-based systems where they offer outstanding dispersibility and colour development in combination with excellent storage stability.

### Durovan® P - Series

Durovan® -P pigments for plastics can be characterized by chemical resistance at high temperatures where aggressive fission products may negatively influence the pigment colour. The encapsulation of Durovan® -P pigments significantly reduces the direct contact between the pigment and those substances and consequently higher colour stability can be achieved.

## Yellow pigments colour space



## Durovan® Coatings

Easy dispersibility, shorter processing times, reduced energy input and lower process costs are powerful arguments for the use of Durovan® 4901 C – 6201 C pigments. Additionally the very fast colour development and reduced shear stress together with better batch reproducibility make a convincing case for the use of Durovan® C pigments.



### Stability & Fastness

Full shade  
Reduction [1:10 TiO<sub>2</sub>]

	Solvent resistance <sup>1</sup>	Acid resistance <sup>2</sup>	Alkali resistance <sup>2</sup>	SO <sub>2</sub> resistance <sup>3</sup>	Light fastness <sup>4</sup>	Weather fastness <sup>5</sup>
Full shade	5	5	5	5	8	4-5
Reduction [1:10 TiO <sub>2</sub> ]	5	5	5	5	8	4-5



- <sup>1</sup> Scale from 1 to 5, where 1 = severe change; 5 = no change  
Tested solvents: Water, Ethanol, Xylene, n-Butylacetate, 1-Methoxypropane-2-ol, Ethyl methyl ketone
- <sup>2</sup> Scale from 1 to 5, where 1 = severe change; 5 = no change  
Pigments were dipped into 2 % hydrochloric acid or 5 % sodium hydroxide solution.
- <sup>3</sup> Scale from 1 to 5, where 1 = severe change; 5 = no change according to DIN 50018, 2 l of SO<sub>2</sub> gas per cycle
- <sup>4</sup> Scale 1 to 8, where 1 = severe change; 8 = no change according to DIN EN ISO 105-B01. Light fastness was tested in an alkyd/melamine baking enamel system.
- <sup>5</sup> Scale: 1=severe change, 5=no change. Weather fastness was tested in alkyd/melamine system using the five-step gray scale (DIN EN ISO 20105-A02)

## Coatings - Product range

Full shade	Reduction 1:10 TiO <sub>2</sub>	Durovan®	Opacity [%]**	Density [g/ml]	Humidity [%]	Oil absorption [g/100g]	pH-Value	Residue on sieve 325 mesh [%]	Bulk density [kg/l]	Tamped density [kg/l]	Heat resistance [°C]*
		4901 C	81	5.6	<1.0	21	7-9	< 0.1	0.8	1.2	> 200
		5001 C	82	5.7	<1.0	27	6-8	< 0.1	0.7	1.3	> 200
		5011 C	82	5.7	<1.0	27	7-9	< 0.1	0.7	1.3	> 200
<b>NEW</b>		5051	84	5.6	<1.0	20	7-9	< 0.1	0.8	1.3	> 200
		5201 C	84	5.7	<1.0	24	6-8	< 0.1	0.8	1.3	> 200
		5501 C	84	5.6	<1.0	20	7-9	< 0.1	0.7	1.5	> 200
<b>NEW</b>		5525	83	5.7	<1.0	26	6-8	< 0.1	0.6	1.2	> 200
<b>NEW</b>		5545	84	5.7	<1.0	24	6-8	< 0.1	0.8	1.3	> 200
<b>NEW</b>		5625	83	5.7	<1.0	25	6-8	< 0.1	0.6	1.2	> 200
		5801 C	85	5.6	<1.0	20	7-9	< 0.1	0.7	1.5	> 200
		6001 C	83	5.4	<1.0	19	7-9	< 0.1	0.7	1.7	> 200
		6101 C	84	5.2	<1.0	18	7-9	< 0.1	0.7	1.2	> 200
		6201 C	87	4.8	<1.0	17	7-9	< 0.1	0.6	1.1	> 200

The colours are only for visualization and are not an exact reproduction.

\* HA-4 Heat resistance test for paints. Limited meaning for plastic.

\*\*Opacity in % versus titanium dioxide (TiO<sub>2</sub> = 100%)

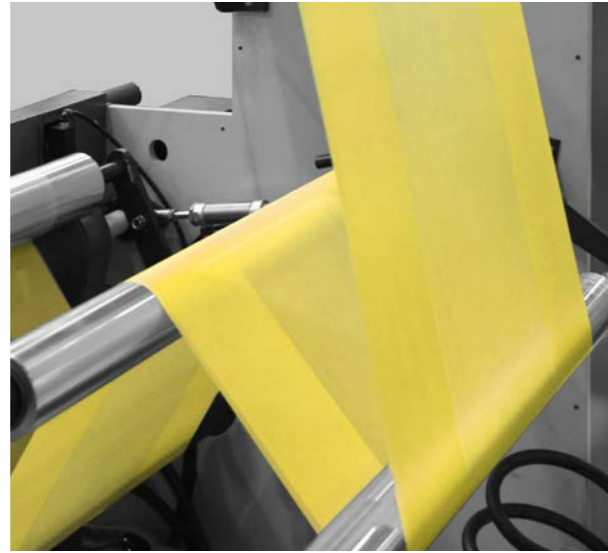


## Durovan® - Plastics

Bismuth vanadates are high quality, inorganic yellow pigments. By special coating of the pigment surface, the thermal stability can be significantly improved, so that plastics are dyeable. The Durovan® P series are powder-form bismuth vanadates suitable for the plastics sector, which exhibit high heat stability and easy dispersibility.

Due to the good weather resistance, the Durovan® P pigments are also suitable for outdoor use.

The poor solubility of the pigments results in a high migration fastness, so that these pigments can also be used for coloring food packaging and consumer goods.



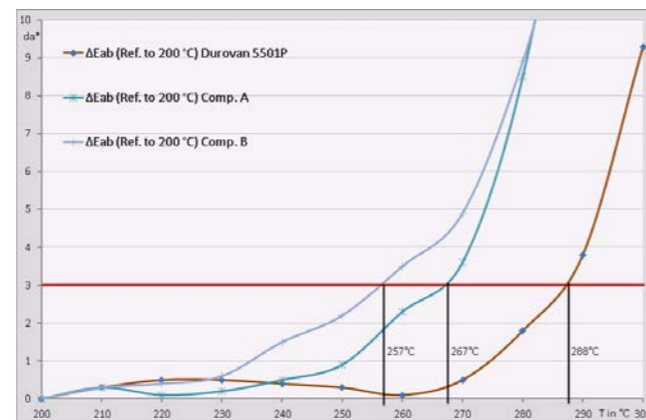
## Thermal stability

### Heat stability in ABS



R- PVC	>200
F-PVC	200
LD-PE	250
HD-PE	275
PP	260
PS	270
ABS	280

### Heat stability in HDPE



The heat stability depends on the respective processing conditions (preliminary tests recommended).

Fastness properties	Light fastness	8
	Weather fastness	4-5
	Acid resistance	5
	Alkali resistance	5
	Ammonium Sulphide	Excellent
	Hydrogen Peroxide	Excellent
	Solvent resistance	5

For explanation, please see page 3.



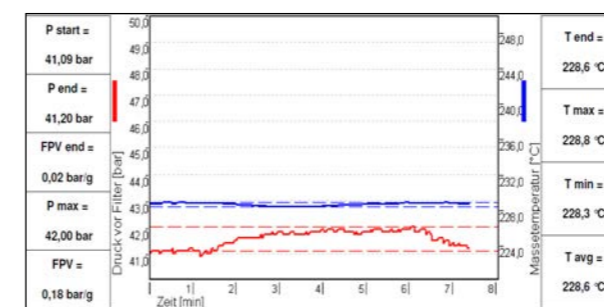
Full shade	Durovan®	Density [g/ml]	Humidity [%]	Oil Absorption [g/100g]	pH-Value	Residue on Sieve 325 mesh [%]	Bulk Density [kg/l]	Bubble foil [grains per 0.4 m²]	Pressure filter test (25 µm)¹ [bar/ g pig.]
	<b>5001 P</b>	5.6	0.5	21	8	< 0.1	0.7	<100	0.20
	<b>5201 P</b>	5.6	0.5	20	8	< 0.1	0.7	<100	0.20
	<b>5501 P</b>	5.7	0.5	19	8	< 0.1	0.6	<100	0.22
	<b>5801 P</b>	5.7	0.5	18	8	< 0.1	0.6	<100	0.20
	<b>6001 P</b>	5.2	0.5	15	8	< 0.1	0.8	<100	0.20
	<b>6101 P</b>	4.8	0.5	15	8	< 0.1	0.7	<100	0.20
	<b>6201 P</b>	4.8	0.5	17	8	< 0.1	0.8	<100	0.21

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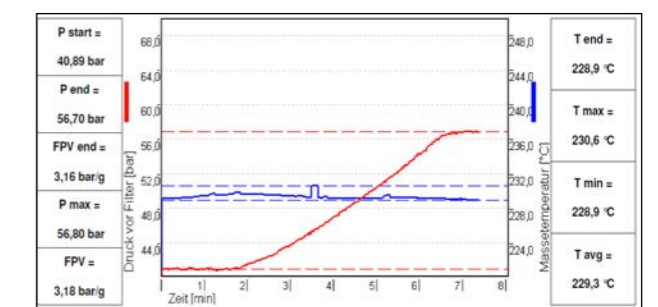
¹ LD-PE, 5% Pigment, 230°C

## Filter pressure test in HDPE

### Durovan® 5501 P



### Competitor



## Habich supports your creativity


Habich GmbH is a globally recognized manufacturer of special inorganic pigments. Our product portfolio includes, in addition to inorganic coloured pigments and coloured pigment preparations, a broad range of inorganic corrosion protection pigments, pigment slurries and pigment pastes.


As a 6th generation Austrian family business we stand for reliability and sustainability in our business relationships. For more than 175 years, customer satisfaction and customer success are our main objectives. Flexibility and innovative strength characterize our abilities.

Thanks to our highly motivated, chemically and technically trained employees we also can provide tailor made solutions to meet any situation.



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