# Bringing color to life

## Shade card for pigments for packaging inks

BASF
We create chemistry

# Shade card – a world of color solutions

BASF is a world leader in actively enhancing production processes and products within the printing and packaging industry.
BASF's Dispersions & Pigments division brings together all aspects of the production process – from R&D to logistics and servicing – offering integrated end-to-end solutions for the printing and packaging industry.

## BASF pigments for packaging inks

This shade card presents BASF pigments for the formulation of packaging inks.

The products shown here are an attractive selection of classical and high-performance pigments for the formulation of water-based, solvent-based and radiation-curable inks for packaging applications using all printing technologies.

BASF pigments provide excellent color strength, vibrant, durable colors with the desired rheology for packaging inks applied on various substrates, including paper/cardboard/carton, plastics, foils and films.
For creative, attractive and colorful packages that increase the perceived value of food, beverages and consumer goods at point of sale, BASF supplies organic pigments under the brands **Cinquasia®, Cromophtal®, Irgalite®, Irgazin®, Heliogen® and Paliotol®**.
These are the ideal choice for high-quality and innovative packaging inks.

**Cinquasia®** high-performance red, magenta and violet quinacridone pigments that combine outstanding color strength, excellent dispersibility and transparency with excellent fastness to light, weather, heat and chemicals indicated for aqueous, solvent-based and energy-curable inks.

**Cromophtal®** a high-grade range of organic azo-condensation, dioxazine, pteridine and benzimidazolone pigments with high transparency, high color strength and very good fastness to light, heat, solvents and chemicals. The Cromophtal® range is comprised of many color shades providing good rheology and suitable for aqueous, solvent-based and energy-curable inks used in many packaging applications.

**Heliogen®** phthalocyanine blue and green pigments with high color strength, good transparency and extremely good fastness and weatherability properties, for aqueous, solvent-based and energy-curable inks for packaging applications. Heliogen® pigments are copper phthalocyanine pigments, with the exception of Heliogen® Blue D 7490, which is copper-free.

Working together for a creative future

All the inks used to print color shade cards in this brochure, have been realized by using MIFAST high performance pigment dispersions.



mifar
HIGH PERFORMANCE PIGMENT DISPERSIONS

Reg.-Nr.: 8Z0006

**Irgalite®** offers a wide range of azo pigments with excellent color strength, good transparency and rheology for aqueous, solvent-based and energy-curable inks. Relatively good fastness with various end-use requirements for printing inks.

**Irgazin®** high-performance yellow, red and orange organic pigments from DPP and isoindolinone chemical classes are characterized by their outstanding weathering resistance and top quality coloration. Highly indicated for applications where resistance to extreme conditions, coloristic, tinctorial properties and high transparency are required. Indicated aqueous, solvent-based and energy-curable formulations for all types of printing inks.

**Paliotol®** high-performance organic yellow pigments from greenish to reddish shades, mainly based on quinophthalone and isoindoline chemical classes. With excellent fastness, good rheology and high color strength, they are indicated for various printing inks like flexographic or gravure and are suitable for aqueous, solvent-based and energy-curable ink systems.

## Solutions for a sustainable environment

BASF is dedicated to creating eco-friendly, sustainable solutions. The goal is to design products that help the global printing industry to comply with all necessary legislation while maintaining a high level of product performance.

As an example, BASF developed a new range of pigments certified for compostable packaging printing. The pigments are suitable for aqueous, solvent-based and UV curing ink systems and comply with standards such as EN 13432 in terms of heavy metals and eco-toxicity. All pigments in this range received the above pictured certifications.

BASF has also been signatory of Responsible Care®1 since 2006. This is a global chemical industry initiative aimed at achieving continuous performance improvements in the fields of environment, health and safety.

With regard to health and safety in use, BASF products are always fully up to date with the most recent regulations for use in food packaging and other sensitive applications. This makes BASF the most reliable supplier of raw materials for packaging inks.

**Choosing our pigments means you get more than just color. At BASF, we create chemistry.**

The color patterns shown in this brochure are printed by Lerchmüller AG, CH-5107 Schinznach-Dorf, with a state-of-the-art flexo printing machine MPS EF 410.

Lerchmüller
Ihr Partner für Printmedien

# Color shades

## BASF pigments for packaging inks

| Products | Printed on paper | Printed on metal foil |
|---|---|---|
| **Paliotol® Yellow D 0960**<br>P.Y. 138<br>quinophthalone | | |
| **Cromophtal® Yellow L 0990**<br>(old name: Cromophtal® Yellow 8GN)<br>P.Y. 128<br>azo condensation | | |
| **Cromophtal® Yellow D 1040**<br>(old name: Cromophtal® Yellow 3G)<br>P.Y. 93<br>azo condensation | | |
| **Cromophtal® Yellow L 1061 HD**<br>(old name: Irgazin® Yellow 2088)<br>P.Y. 151<br>benzimidazolone | | |
| **Paliotol® Yellow D 1155***<br>P.Y. 185<br>isoindoline | | |
| **Irgalite® Yellow D 2175**<br>(old name: Irgalite® Yellow D541G)<br>P.Y. 14<br>diarylide o-toluidine | | |

Color patterns are flexo-printed at a concentration of 6 % pigment on black & white HI-FI coat paper and vinyl-lacquered aluminium; 30 m/min printing speed

Fullshade (100 %):
1st print run at 120 lines/cm (9 gr/m²)
2nd print run at 100 lines/cm (10 gr/m²)

Graduation (75 %):
one print run adjusted to measured optical density

| Applications | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| offset | metal deco | gravure | flexo | screen | digital-inkjet | digital electrophotography | Solvent | Water | UV | Properties |
| ■■ | ■■ | ■■ | ■■ | ■■ | ■ | | ■■ | ■■ | ■■ | diarylide free greenish yellow; excellent fastness, good transparency, high heat stability (above 200 °C) and highest brilliant greeninsh yellow; higher color strength and fastness than P.Y. 97 |
| ■■ | ■■ | ■■ | ■■ | ■■ | | | ■■ | ■■ | ■■ | value-in-use green shade yellow, highest transparency and good flow property |
| ■■ | ■■ | ■■ | ■■ | ■■ | | ■■ | ■■ | ■■ | ■■ | high-performance process yellow; greenish shade, high color strength, transparency, good viscosity; greener and higher fastness than P.Y. 180; alternative to P.Y. 13 and P.Y. 14 in metal deco ink |
| ■ | ■■ | ■ | ■ | ■■ | ■ | ■ | ■■ | ■ | ■■ | green-shade yellow with high opacity and good rheology |
| ■ | ■■ | ■ | ■ | ■ | ■ | ■■ | ■ | | ■■ | high color strength, greenish yellow, high gloss, transparency, good dispersibility and excellent rheology; diarylide, halogen and heavy metal free pigment; higher chroma and light fastness than P.Y. 180 and P.Y. 74 |
| ■ | | ■■ | ■■ | ■ | | | ■■ | ■ | ■ | diarylide yellow, mainly used in Asia |

■ limited suitable ■■ recommended

* DINCertco and Vincotte certified the products according to EN 13432

# Color shades

## BASF pigments for packaging inks

| Products | Printed on paper | Printed on metal foil |
|---|---|---|
| **Cromophtal® Yellow D 1500**<br>(old name: Cromophtal® Yellow GR)<br>P.Y. 95<br>azo condensation | | |
| **Irgalite® Yellow D 1745**<br>(old name: Irgalite® Yellow B3BO)<br>P.Y. 83<br>diarylide | | |
| **Paliotol® Yellow D 1819**<br>P.Y. 139<br>isoindoline | | |
| **Irgazin® Yellow L 2060**<br>(old name: Irgazin® Yellow 3RLTN)<br>P.Y. 110<br>isoindolinone | | |
| **Cromophtal® Orange K 2960**<br>(old name: Cromophtal® Orange GP)<br>P.O. 64<br>benzimidazolone | | |
| **Irgalite® Orange D 2980**<br>(old name: Irgalite® Orange F2G)<br>P.O. 34<br>diarylide pyrazolone | | |

Color patterns are flexo-printed at a concentration of 6 % pigment on black & white HI-FI coat paper and vinyl-lacquered aluminium; 30 m/min printing speed

Fullshade (100 %):
1st print run at 120 lines/cm (9 gr/m²)
2nd print run at 100 lines/cm (10 gr/m²)

Graduation (75 %):
one print run adjusted to measured optical density

| Applications | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| offset | metal deco | gravure | flexo | screen | digital-inkjet | digital electrophotography | Solvent | Water | UV | Properties |
| ■■ | ■■ | ■ | ■ | ■■ | | | ■■ | ■■ | ■■ | high strength, good transparency and viscosity; process yellow shade for high performance offset ink; mid-shade yellow with good rheology |
| ■ | ■ | ■■ | ■ | ■ | | | ■■ | | ■ | diarylide yellow with good fastness properties mainly used in Asia |
| ■■ | ■■ | ■■ | ■■ | ■■ | ■ | ■ | ■■ | ■ | ■■ | reddish yellow with high heat stability (processing temperatures above 200 °C), transparency and gloss; good rheology in NC inks; chlorine and heavy metal free |
| ■■ | ■■ | ■■ | ■■ | ■■ | ■ | | ■ | ■ | ■■ | reddish yellow, semi-opaque with excellent viscosity |
| ■■ | ■■ | ■ | ■■ | ■■ | | ■ | ■■ | ■ | ■■ | high strength, reddish orange benzimidazolone with good flow and high opacity |
| ■■ | ■■ | ■■ | ■■ | ■ | | | ■■ | ■■ | ■■ | strong yellow shade with good flow properties; excellent strength and high transparency; good soap, light and solvent fastness |

■ limited suitable ■■ recommended

# Color shades

## BASF pigments for packaging inks

| Products | Printed on paper | Printed on metal foil |
|---|---|---|
| **Cromophtal® Scarlet D 3430**<br>(old name: Cromophtal® Scarlet RT)<br>P.R. 166<br>azo condensation | | |
| **Cromophtal® Scarlet D 3540**<br>(old name: Cromophtal® Scarlet RN)<br>P.R. 166<br>azo condensation | | |
| **Cromophtal® Red D 3635**<br>(old name: Cromophtal® Red BT)<br>P.R. 144<br>azo condensation | | |
| **Cromophtal® Red D 3890**<br>(old name: Cromophtal® Red BRN)<br>P.R. 144<br>azo condensation | | |
| **Irgazin® Red D 3656 HD**<br>(old name: Cromophtal® Red 2030 (SA))<br>P.R. 254<br>DPP | | |

Color patterns are flexo-printed at a concentration of 6 % pigment on black & white HI-FI coat paper and vinyl-lacquered aluminium; 30 m/min printing speed

Fullshade (100 %):
1st print run at 120 lines/cm (9 gr/m²)
2nd print run at 100 lines/cm (10 gr/m²)

Graduation (75 %):
one print run adjusted to measured optical density



| Applications | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| offset | metal deco | gravure | flexo | screen | digital-inkjet | digital electrophotography | Solvent | Water | UV | Properties |
| ■■ | ■■ | ■■ | ■■ | ■■ | | | ■■ | ■■ | ■■ | high-performance lake red C shade; excellent dispersibility with high color strength, gloss and transparency |
| ■■ | ■■ | ■■ | ■■ | ■■ | | | ■■ | ■■ | ■■ | high-performance lake red C shade; excellent dispersibility |
| ■■ | ■■ | ■■ | ■■ | ■■ | | | ■■ | ■■ | ■■ | high strength yellow-shade red; transparent with excellent stability |
| ■■ | ■■ | ■ | ■ | ■■ | | | ■■ | ■ | ■■ | mid-shade red with excellent light fastness |
| ■■ | ■■ | ■■ | ■■ | ■■ | | | ■■ | ■■ | ■■ | opaque, versatile mid-shade red; high value in use with high coloration |

■ limited suitable ■■ recommended

# Color shades

## BASF pigments for packaging inks

| Products | Printed on paper | Printed on metal foil |
|---|---|---|
| **Irgalite® Red D 3785**<br>(old name: Irgalite® Red C2B)<br>P.R. 48:2<br>azo 2B toner (Ca) | | |
| **Irgalite® Rubine D 4240**<br>(old name: Irgalite® Rubine 4BGL)<br>P.R. 57:1<br>4B toner (Ca) | | |
| **Irgalite® Rubine D 4242**<br>(old name: Irgalite® Rubine 4BL)<br>P.R. 57:1<br>4B toner (Ca) | | |
| **Irgalite® Rubine D 4280**<br>(old name: Irgalite® Rubine 4BV)<br>P.R. 57:1<br>4B toner (Ca) | | |
| **Cinquasia® Pink D 4450**<br>(old name: Cromophtal® Pink PT (SA))<br>P.R. 122<br>quinacridone | | |
| **Cinquasia® Magenta L 4540**<br>(old name: Cinquasia® Magenta RT-355-D)<br>NA<br>quinacridone | | |

Color patterns are flexo-printed at a concentration of 6 % pigment on black & white HI-FI coat paper and vinyl-lacquered aluminium; 30 m/min printing speed

Fullshade (100 %):
1st print run at 120 lines/cm (9 gr/m²)
2nd print run at 100 lines/cm (10 gr/m²)

Graduation (75 %):
one print run adjusted to measured optical density

| Applications | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| offset | metal deco | gravure | flexo | screen | digital-inkjet | digital electrophotography | Solvent | Water | UV | Properties |
| ■■ | ■ | ■■ | ■■ | ■ | | | ■■ | ■■ | ■■ | mid-shade red with high strength, good flocculation resistance |
| | | ■■ | ■■ | | | ■ | ■■ | | ■■ | strong, transparent with good flow; bluer shade with exceptional gloss |
| | | ■■ | ■■ | | | | ■■ | | | strong, transparent with good flow and gloss; mid-shade rubine |
| | | ■■ | ■■ | ■ | | | | ■■ | ■ | no. 1 process magenta offer; strong, high transparency with excellet non-gelling properties |
| ■■ | ■■ | ■■ | ■■ | ■ | ■ | ■ | ■■ | ■■ | ■■ | blue magenta quinacridone pigment; high color strength, excellent bleeding resistance |
| ■■ | ■ | ■■ | ■■ | ■ | ■■ | ■ | ■■ | | ■■ | yellow shade magenta pigment; excellent rheology and viscostability in UV inkjet inks, combined with high color strength, transparency |

■ limited suitable ■■ recommended

# Color shades

## BASF pigments for packaging inks

| Products | Printed on paper | Printed on metal foil |
|---|---|---|
| **Cromophtal® Violet D 5700*** (old name: Cromophtal® Violet B) P.V. 37 dioxazine violet | | |
| **Cromophtal® Violet D 5800** (old name: Cromophtal® Violet GT) P.V. 23 dioxazine violet | | |
| **Heliogen® Blue D 6700 T** P.B. 15:6 Cu phthalocyanine blue | | |
| **Heliogen® Blue D 7079** P.B. 15:3 Cu phthalocyanine blue | | |
| **Heliogen® Blue D 7086** P.B. 15:3 Cu phthalocyanine blue | | |

Color patterns are flexo-printed at a concentration of 6 % pigment on black & white HI-FI coat paper and vinyl-lacquered aluminium; 30 m/min printing speed

Fullshade (100 %):
1st print run at 120 lines/cm (9 gr/m²)
2nd print run at 100 lines/cm (10 gr/m²)

Graduation (75 %):
one print run adjusted to measured optical density

| Applications | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| offset | metal deco | gravure | flexo | screen | digital-inkjet | digital electrophotography | Solvent | Water | UV | Properties |
| ■■ | ■■ | ■■ | ■■ | ■ | ■ | ■ | ■■ | ■ | ■■ | strong, red-shade dioxazine violet with good dispersibility; high-performance replacement for basic dye complexes |
| ■■ | ■■ | ■■ | ■■ | ■■ | ■ | ■ | ■■ | ■ | ■■ | all-round product with high compatibility in almost all solvent based systems; best reddish shade; high transparency, high gloss, multi-purpose |
| ■■ | ■■ | ■■ | ■■ | ■■ | | | ■■ | ■■ | ■■ | highly transparent phthalocyanine blue; unique shade, most reddish Cu phthalocyanine grade; abrasion free |
| ■■ | ■■ | ■■ | ■■ | ■■ | | | ■ | ■■ | ■■ | readily dispersable, high color strength, good flow properties |
| ■■ | ■■ | ■■ | ■■ | ■■ | ■ | ■ | ■ | ■■ | ■■ | standard process cyan blue with high strength and transparency |

■ limited suitable ■■ recommended

* DINCertco and Vincotte certified the products according to EN 13432

# Color shades

## BASF pigments for packaging inks

| Products | Printed on paper | Printed on metal foil |
|---|---|---|
| **Heliogen® Blue D 7088**<br>(old name: Irgalite® Blue GLO)<br>P.B. 15:3<br>Cu phthalocyanine blue | | |
| **Heliogen® Blue D 7092**<br>P.B. 15:3<br>Cu phthalocyanine blue | | |
| **Heliogen® Blue D 7110 F**<br>(old name: Irgalite® Blue GLVO)<br>P.B. 15:4<br>Cu phthalocyanine blue | | |
| **Heliogen® Blue D 7490***<br>P.B. 16<br>metal free phthalocyanine blue | | |
| **Heliogen® Green D 8725**<br>P.G. 7<br>Cu phthalocyanine green, halogenated | | |
| **Heliogen® Green D 8730**<br>P.G. 7<br>Cu phthalocyanine green, halogenated | | |

Color patterns are flexo-printed at a concentration of 6 % pigment on black & white HI-FI coat paper and vinyl-lacquered aluminium; 30 m/min printing speed

Fullshade (100 %):
1st print run at 120 lines/cm (9 gr/m²)
2nd print run at 100 lines/cm (10 gr/m²)

Graduation (75 %):
one print run adjusted to measured optical density


| Applications | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| offset | metal deco | gravure | flexo | screen | digital-inkjet | digital electrophotography | Solvent | Water | UV | Properties |
| ■■ | ■■ | ■■ | ■■ | ■■ | ■ | ■ | ■ | ■■ | ■ | greenish shade, excellent flow, multi-purpose; excellent dispersibility and high color strength |
| ■■ | ■■ | ■ | ■ | ■ | | | ■ | ■ | ■■ | super dispersion and low viscosity |
| | ■■ | ■■ | ■■ | ■ | ■■ | ■ | ■■ | ■ | ■■ | industrial standard P.B. 15:4, benchmark for gravure ink; greenish shade blue; suitable for most solvent based resin systems; best rheology, gloss, transparency, performance and color strength |
| ■■ | ■■ | ■■ | ■■ | ■■ | | | ■ | ■■ | ■■ | first choice when metal free inks are required |
| ■ | | ■■ | ■■ | ■■ | | | ■■ | | ■■ | green with excellent flow, multi-purpose; excellent dispersibility and high color strength |
| ■■ | ■■ | ■■ | ■■ | ■■ | ■ | ■ | ■ | ■■ | ■■ | universal grade for all ink types |

■ limited suitable ■■ recommended

* DINCertco and Vincotte certified the products according to EN 13432

# Physical data and fastness properties

| Current name | Former name | Colour index | Chemistry |
|---|---|---|---|
| Paliotol® Yellow D 0960 | | P.Y. 138 | quinophthalone |
| Cromophtal® Yellow L 0990 | Cromophtal® Yellow 8GN | P.Y. 128 | azo condensation |
| Cromophtal® Yellow D 1040 | Cromophtal® Yellow 3G | P.Y. 93 | azo condensation |
| Cromophtal® Yellow L 1061 HD | Irgazin® Yellow 2088 | P.Y. 151 | benzimidazolone |
| Paliotol® Yellow D 1155 | | P.Y. 185 | isoindoline |
| Irgalite® Yellow D 2175 | Irgalite® Yellow D541G | P.Y. 14 | diarylide o-toluidine |
| Cromophtal® Yellow D 1500 | Cromophtal® Yellow GR | P.Y. 95 | azo condensation |
| Irgalite® Yellow D 1745 | Irgalite® Yellow B3BO | P.Y. 83 | diarylide |
| Paliotol® Yellow D 1819 | | P.Y. 139 | isoindoline |
| Irgazin® Yellow L 2060 | Irgazin® Yellow 3RLTN | P.Y. 110 | isoindolinone |
| Cromophtal® Orange K 2960 | Cromophtal® Orange GP | P.O. 64 | benzimidazolone |
| Irgalite® Orange D 2980 | Irgalite® Orange F2G | P.O. 34 | diarylide pyrazolone |
| Cromophtal® Scarlet D 3430 | Cromophtal® Scarlet RT | P.R. 166 | azo condensation |
| Cromophtal® Scarlet D 3540 | Cromophtal® Scarlet RN | P.R. 166 | azo condensation |
| Cromophtal® Red D 3635 | Cromophtal® Red BT | P.R. 144 | azo condensation |
| Cromophtal® Red D 3890 | Cromophtal® Red BRN | P.R. 144 | azo condensation |
| Irgazin® Red D 3656 HD | Cromophtal® Red 2030 (SA) | P.R. 254 | DPP |
| Irgalite® Red D 3785 | Irgalite® Red C2B | P.R. 48:2 | azo 2B toner (Ca) |
| Irgalite® Rubine D 4240 | Irgalite® Rubine 4BGL | P.R. 57:1 | 4B toner (Ca) |
| Irgalite® Rubine D 4242 | Irgalite® Rubine 4BL | P.R. 57:1 | 4B toner (Ca) |
| Irgalite® Rubine D 4280 | Irgalite® Rubine 4BV | P.R. 57:1 | 4B toner (Ca) |
| Cinquasia® Pink D 4450 | Cromophtal® Pink PT (SA) | P.R. 122 | quinacridone |

| Physical data | | | | Resistance to solvents | | | | |
|---|---|---|---|---|---|---|---|---|
| density | bulk volume (L/Kg) | specific surface ($m^2/g$) | oil absorption (g/100 g) | water | ethanol | ethyl acetate | methyl-ethyl ketone (MEK) | Print light fastness |
| 1.82 | 2.5 | 24 | 28 | 4 - 5 | 4 - 5 | 4 - 5 | 4 | 7 |
| 1.49 | 4 | 82 | 62 | 5 | 4 - 5 | 4 - 5 | 4 - 5 | 7 - 8 |
| 1.45 | 3.8 | 82 | 65 | 5 | 5 | 5 | 4 - 5 | 7 |
| 1.54 | 3.2 | 26 | 50 | 5 | 4 - 5 | 5 | 4 - 5 | 7 - 8 |
| 1.49 | 4 | 36 | 52 | 4 - 5 | 4 - 5 | 4 - 6 | 4 - 5 | 7 |
| 1.6 | 4.4 | 18 | 23 | 5 | 5 | 3 | 3 | 4 |
| 1.41 | 4.3 | 57 | 70 | 5 | 5 | 4 - 5 | 4 - 5 | 6 - 7 |
| 1.5 | 4.1 | 11 | 33 | 5 | 5 | 4 | 4 | 7 |
| 1.6 | | 55 | 51 | 4 - 5 | 3 | 2 - 3 | 2 - 3 | 7 |
| 1.8 | 2.2 | 27 | 38 | 5 | 4 - 5 | 4 | 3 - 4 | 7 - 8 |
| 1.6 | 2.8 | 27 | 60 | 5 | 4 - 5 | 5 | 5 | 7 |
| 1.4 | 6.2 | 61 | 64 | 5 | 4 | 4 | 3 | 6 |
| 1.42 | 3.7 | 54 | 46 | 5 | 4 - 5 | 4 | 3 - 4 | 7 - 8 |
| 1.49 | 5.1 | 29 | 55 | 5 | 4 - 5 | 4 - 5 | 4 - 5 | 7 - 8 |
| 1.5 | 4.3 | 68 | 52 | 5 | 4 - 5 | 4 | 3 - 4 | 7 |
| 1.49 | 3.5 | 34 | 63 | 5 | 4 - 5 | 4 - 5 | 4 - 5 | 7 - 8 |
| 1.67 | 5.6 | 27 | 42 | 5 | 4 - 5 | 4 - 5 | 4 - 5 | 7 - 8 |
| 1.68 | 4.4 | 49 | 52 | 5 | 3 - 4 | 4 | 3 - 4 | 6 |
| 1.64 | 2.8 | 65 | 72 | 2 | 3 | 4 | 4 | 6 |
| 1.63 | 2.8 | 69 | 72 | 4 | 4 | 4 - 5 | 4 | 6 |
| 1.63 | 2.5 | 86 | | 5 | | | | 5 - 6 |
| 1.47 | 6.8 | 63 | 65 | 5 | 3 | 3 - 4 | 3 - 4 | 7 - 8 |

# Physical data and fastness properties

| Current name | Former name | Colour index | Chemistry |
|---|---|---|---|
| Cinquasia® Magenta L 4540 | Cinquasia® Magenta RT-355-D | NA | quinacridone |
| Cromophtal® Violet D 5700 | Cromophtal® Violet B | P.V. 37 | dioxazine violet |
| Cromophtal® Violet D 5800 | Cromophtal® Violet GT | P.V. 23 | dioxazine violet |
| Heliogen® Blue D 6700 T | | P.B. 15:6 | Cu phthalocyanine blue |
| Heliogen® Blue D 7079 | | P.B. 15:3 | Cu phthalocyanine blue |
| Heliogen® Blue D 7086 | | P.B. 15:3 | Cu phthalocyanine blue |
| Heliogen® Blue D 7088 | Irgalite® Blue GLO | P.B. 15:3 | Cu phthalocyanine blue |
| Heliogen® Blue D 7092 | | P.B. 15:3 | Cu phthalocyanine blue |
| Heliogen® Blue D 7110 F | Irgalite® Blue GLVO | P.B. 15:4 | Cu phthalocyanine blue |
| Heliogen® Blue D 7490 | | P.B. 16 | metal free phthalocyanine blue |
| Heliogen® Green D 8725 | | P.G. 7 | Cu phthalocyanine green, halogenated |
| Heliogen® Green D 8730 | | P.G. 7 | Cu phthalocyanine green, halogenated |

# Test methods

## BASF pigments for packaging inks

### Density (DIN 51757)
Density was determined at 20 °C using the helium pycnometer and is expressed in g/cm$^3$. Helium was used as the test gas since air and nitrogen can be absorbed into the pigment surfaces.

### Bulk volume
Bulking volume was measured by tamping a specified weight of pigment to constant volume under moderate pressure. The test was based on our internal standard operating procedure.

### Specific surface
Specific surface was measured by the nitrogen adsorption method described by BET and is expressed by m$^2$/g (Brunauer, Emmet, Teller, “Journal Amer. Chem. Soc.” 57, 1954)

### Oil absorption (DIN 53199)
Oil absorption was determined by the spatula method as expressed in grams of linseed oil per 100 grams of pigment.

### Light fastness ISO 12040:1997 (E)
A test piece was exposed, along with blue wool references, to xenon arc light. Light fastness was evaluated by noting the blue wool standard, which had undergone the same color change as the test print equivalent to ISO Gray Scale 3 and ISO Gray Scale 4 for higher light fastness. Determined for full shade.

### Solvent resistance
Pigment is weighed into a filter which is then inserted into the respective solvent for 24h at room temperature. The test was based on our internal standard operating procedure.

| Physical data | | | | Resistance to solvents | | | | |
|---|---|---|---|---|---|---|---|---|
| density | bulk volume (L/Kg) | specific surface ($m^2/g$) | oil absorption (g/100 g) | water | ethanol | ethyl acetate | methyl-ethyl ketone (MEK) | Print light fastness |
| 1.57 | 2.3 | 75 | 66 | 5 | 4 | 4 - 5 | 4 - 5 | 7 - 8 |
| 1.35 | 2.9 | 61 | 52 | 5 | 4 - 5 | 4 - 5 | 4 | 7 - 8 |
| 1.46 | 2.8 | 58 | 49 | 5 | 4 - 5 | 4 | 4 | 7 - 8 |
| 1.57 | | 58 | 40 | 5 | 5 | 5 | 5 | 7 - 8 |
| 1.59 | | 62 | 59 | 5 | 5 | 5 | 5 | 7 - 8 |
| 1.62 | | 68 | 34 | 5 | 4 - 5 | 5 | 4 - 5 | 7 - 8 |
| 1.62 | 3.4 | 51 | 42 | 5 | 4 - 5 | 4 - 5 | 4 | 7 - 8 |
| 1.63 | | 70 | 56 | 5 | 4 - 5 | 5 | 4 - 5 | 7 - 8 |
| 1.59 | 2.8 | 49 | 41 | 5 | 3 | 4 - 5 | 4 | 7 - 8 |
| 1.45 | | 72 | | 4 | 4 | 4 - 5 | 4 | 7 - 8 |
| 2.1 | | 61 | | 5 | 2 | 3 | 3 | 7 - 8 |
| 2.2 | | 60 | 28 | 5 | 5 | 4 | 4 | 7 - 8 |

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