



Techn. Information Version: 1.02.2011	Unleaded Inglaze –Fast-fire Colours Serie „IB“ Firing Temperature: 1000 – 1280°C	Page: 1/5
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General Information

The "IB" series is an unleaded palette of fast-fire inglaze colours with high chemical durability against acids, alkali, dishwasher machines and good resistance against abrasion.

"IB" – Colours are mainly used for colourful decorations of tableware for private and gastronomic usages. The firing range for decorations on porcelain is between 1160 – 1280°C, the optimum results regarding gloss and colour intensity are obtained between 1180 – 1230°C.

The colours of „IB“ series may also be used for the decoration of sanitary ware. Tiles may be fired in a range between 900 – 1000 °C, soft glazes like Bone China in a range between 1000 – 1100°C.

Resistance

Dishwasher Durability

(The durability of decorations on tableware in dishwasher machines is determined by long term tests.)

Under usage of a typical commercially available cleaner and rinse agent the majority of the colours do not show a visible attack.

Calgonite-Test:

For the Calgonite test the test pieces are treated with a 0,5 % Calgonite solution in water at 77 °C for a period of 2 x 16 hours. The surface is inspected for changes of colour shade and gloss.

Most colours of the IB series do not show any visible attack, except Black IB 4640, Dark Green IB 1623 and Blue IB 2640, which show a slightly matt surface.

Acid resistance tests :

3 % hydrochloric acid 5 hours at room temperature: no visible attack

4% acetic acid 24 hours at room temperature: no visible attack

Lead and Cadmium Release:

The colours are produced without addition of lead. The maximum lead content is 600 ppm.

The colours Yellow IB 3620, Orange IB 7600, Light Red IB 7610 and Dark Red IB 7630 contain Cadmium Inclusion Pigments. The Cadmium release is below the limits according to DIN 51031 resp. DIN 51032 resp. EN 1388-1 resp. EN 1388-22.

Please Note:

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Version: 1.02.2011

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Colours Serie „IB“**

Firing Temperature: 1000 – 1280°C

Page:

2/5

Miscibility

"IB" series colours are mostly intermixable between each other, which allows to produce a wide range of colour shades.

Gold containing Purple IB 7677 is only mixable within certain limits. We do not recommend mixing cadmium-containing colours (yellow to red), with IB 7670 pink, IB 7622 lila and IB 2620 light-blue. Mixtures with White IB 9610 are possible.

For lightening up the colours we recommend to add the fluxes IB 9600, IB 9601 and IB 9602.

Processing

Because of a fine and even particle-sizes distribution, colours of the „IB“ series have excellent processing properties for different methods of decorating. The d90 value ranges from 10-15 microns.

„IB“ series is suitable for:

- application by brush
- direct screen print
- indirect screen printing
- lining
- spraying

Suitable application media:

Brush Application:

a)

Turpentine oil and 0000/3 Dammarcoat or 21 New Bodied oil

addition according to the need

b)

Screen printing paste (based on 0405)

addition according to prepare a paste, thinning with turpentine oil to painting consistency

c)

0509 Screen printing oil, compatible with water

addition according to prepare a paste, then thinning with water to application viscosity

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Lining:

0513 Lining medium, compatible with water

Orientation recipe:

Colour: 100 g
 Oil 0513: 32 g
 Water: 60 g

Spraying:

0000/2 Spraying oil

Preparation:

Colour powder: 55 – 65 % in weight
 Spraying oil: 45 – 35 % in weight

Please grind finely, for instance in a ball mill

Direct Screen Printing Process:

a)
0405 Screen printing medium, oily

Ratio of pasting:

Colour powder: 60 – 70 % in weight
 Printing oil: 40 – 30 % in weight

b)
0509 Screen printing medium, compatible with water

Ratio of pasting:

Colour powder: 60 – 70 % in weight
 Printing oil: 40 – 30 % in weight

Recommended screen:

Polyester: 77 – 150 threads/ cm
 Steel: 200 – 400 mesh

depending on decoration and colour

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Indirect Screen Print Process (Decals)

a)
0729 and 0729 thix, Screen printing oil for transfers, low solid content

for automatic screen printing

Ratio of pasting:

Colour powder: 55 – 35 % in weight
 Oil: 65 – 45 % in weight

b)
0782 and 0782 thix, Screen printing oil for transfers, high solid content

For automatic screen printing

Ratio of pasting:

Colour powder: 55 – 65 % in weight
 Oil: 45 – 35 % in weight

Covercoats:

0601 and 0601 thix, fluid and thixotropic

for manual or automatic screen printing

Polyester 30 threads/cm

Firing

Colours of „IB“-series may be fired from 1000 – 1280 ° C.

For Hard Porcelain the optimum temperature is between 1180 – 1230° C and 60 – 90 minutes firing cycle.

On Soft Glazes the firing temperature may be adjusted lower.

In each case the firing temperature may be adapted (to the object temperature and firing cycle) to the items to be decorated and the type of kiln.

Up to about 450°C organic media and covercoats decompose. Therefore the kiln should have an effective exhaust. A fast increase of temperature, short peak time and a slow cooling down is advantageous to the items.

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Security Advices

Ceramic colours are chemical products. For their handling and processing you have to consider specific security advices according to the danger.

While processing it is most important to follow health and safety rules such as:

- Do not eat, drink or smoke while being at work.
- Do not inhale dust.
- Keep it away from food-stuff, beverage and fodder.
- In case of contact with skin: Wash off and rinse with water and soap.
- If having inhaled: Rinse mouth with cold water.

For more information please see the Material Safety Data Sheet.

Forms of Delivery

Colour powder: Minimum purchase quantity per colour shade: 5 kg

Screen printing paste: Minimum purchase quantity per colour shade: 5 kg

Storage

Colour powder grants the advantage of unlimited durability if stored in dry condition.

The powders are a little hygroscopic.

Before being mixed with oily media, they should be dried at about 120°C, because moistness leads to „cheesy“ pastes, which cannot be printed well.

Please provide proper colour mixing by using a triple roll mill or a dissolver.

Even in closed containers the pasted colours have a limited shelf-life. We recommend storing the pastes at room-temperature.

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