

# Fast-firing Inglaze Colors

## I.02 series **leadfree**

### General

Leadfree series I.02 inglaze colors have been created especially for fast firing.

Firing range:

1180 °C – 1260 °C	Porcelain
1000 °C – 1150 °C	Bone China / Fine China

The colors show a high intensity, a homogenous surface and a high level of gloss after firing. There is also a good mechanic and chemical resistance of fired decorations.

The maximum color value deviation  $\Delta E$  of 16 (Hunter) is a characteristic of high quality.

Usually we deliver our colors as powder. The standard unit is 5 kg.

If the customer wishes he can get the colors also ready for spraying, screen printing, tampon printing or in thermoplastic form.

### Characteristics of the color powders

Particle size diameter is for 95% lower than 20  $\mu\text{m}$ .

### Heavy metal content

The Pb- and Cd- content of the colors is under 600ppm.  
Exceptions are the colors marked with **Cd-**.

### Miscibility

I.02 colors are all miscible within the series.

There are only the following exceptions:

Cadmium-free colors and those containing cadmium (**Cd-**) are only to a certain extent miscible with each other.

The miscibility of the purple-containing color I 677.02 has to be tested individually.

The color White I 165.02 is not suitable for mixing with Blue on the basis of Co-Al (I 565.02, I 542.02, I 566.02).

### Characteristics of the fired I.02 colors / Resistance

The characteristics of the fired colors are not only dependent on the colors itself, but to a great extent also on the glaze in which they are burnt in. Therefore the information given in this technical data sheet can only be seen as recommendation. The tests for resistance have to be carried out regarding the glaze itself.

### Heavy metal release / resistance according to DIN EN 1388-1-2

Because of the various factors that influence the production of the decals, the glaze and the firing process, individual tests are necessary.

### Resistance to acids

The fired decoration is exposed to a vinegar suspension for 24 hours. After that the stability of the decal's gloss and color are tested. I.02 colors are for the most part stable concerning gloss and color intensity. This, however, depends on layer thickness, firing conditions and glaze.

### Dishwasher durability

The colors / decorations show a good durability in industrial dishwashers. As there is a variety of test conditions (dishwasher types and washing-up liquids as well as firing conditions and glaze) individual test results have always to be considered.

### Printing conditions

The printing conditions given here are only suggestions. The exact ratio has to be determined by the printer himself depending on the medium and the decoration.

The present decals are produced under the following printing conditions:

Pasting ratio:	Color powder:	10	parts
	Medium:	5,5 – 6,5	parts

Screen: 270 steel

Generally all media and lacquers currently obtainable can be used in combination with our I.02 colors.

As <b>flux for overprinting</b> we recommend:	<b>096</b>
As <b>flux for mixing</b> with colors we recommend:	<b>090</b>
As <b>flux for overprinting and mixing Cd-colors</b> we recommend:	<b>095</b>

Concerning the color layer a maximum thickness of 25 µm has to be observed before firing to avoid cracks and chips.

#### Firing conditions

The I.02 colors can be fired at temperatures between 1000 °C and 1260 °C. The firing temperature and period have to be adjusted to the substrate, the glaze and the kiln.

#### Storage

The color powders have to be stored in a dry place, in sealed containers. When they are processed with oils they have to be completely dry. If powders have absorbed humidity this leads to cheesy pastes that cannot be processed perfectly.

#### Safety

Ceramic colors are chemical products. Therefore guidelines valid for handling chemicals and the pictographs on the packing have to be observed.

#### Information

The information of this publication is based on our current knowledge and experience. In view of the variety of factors that may influence the processing and application of our products, this information does not release the processors from the responsibility of carrying out their own tests and experiments. Neither does it imply any legally binding assurance of certain properties or of suitability for a special purpose. It is the responsibility of those to whom we supply our products to ensure that any proprietary rights and existing laws and legislation are observed.