

Resistant Onglaze Colors Series P 80

(Firing Temperature 780 – 900°C)

General information

The onglaze colors of the Series P 80 have been developed especially for porcelain.

Firing range:

800°C – 900°C
750°C – 880°C

Porcelain
Bone China / Fine China

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

The maximum color value deviation ΔE of 1,6 (Hunter) is a characteristic of high quality.

Usually we deliver our colors as powder. Standard unit: 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 powder colors

Particle size diameter is for 95% lower than 20 µm.

Heavy metal content

The colors of this Series are containing lead, but are free from cadmium. That means their cadmium-content is lower than 100 ppm. The only exceptions are of course the colors marked with **Cd-**.

Miscibility

P 80 colors are miscible within the Series.

Please note that the colors containing cadmium (**Cd-**) are an exception, as they are only to a certain extent miscible with cadmium-free colors.

The miscibility of the purple colors has to be tested individually.

Characteristics of the fired colors / Resistance

The properties of the fired colors depend significantly on the glaze into which the color is burnt. Therefore the information given in this technical data sheet has to be seen only as guideline. The tests for resistance have to be carried out by each customer in dependence on the glaze.

Heavy metal release

All colors of the Series P 80 comply with the limit values of DIN EN 1388-1-2. Due to the various influencing factors in the production of the decals, the glazing process, and firing, individual tests are necessary to assess heavy metal release.

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. P 80 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) it is always necessary to carry out an individual test.

Printing conditions

The following details are only a recommendation. The exact ratio has to be adjusted by the printer himself, depending on the medium and the kind of decoration.

The existing sample decals have been produced under the following conditions:

Pasting ratio: Color powder 10 parts
 Medium 6,5 - 8 parts

Screen fabric: Steel screens 200 mesh/inch

In principle all media and cover coats are applicable in combination with the colors.

As flux for overprinting we recommend: P 80 100

As flux for overprinting and mixing **Cd**-colors we recommend: P 80 100

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

Four-color process

	With Cd-colors	Without Cd-colors
Yellow	P 80 276 Cd-Yellow	P 80 261 Intensive-Yellow
Purple		P 80 677 Magenta
Red	P 80 374 Cd-Red	
Cyan	P 80 561 Azure, P 80 591 Cyan	P 80 561 Azure, P 80 591 Cyan
Black	P 80 956 Black	P 80 956 Black
Flux	P 80 100 Flux	P 80 100 Flux

Firing conditions

The colors can be fired at temperatures between 780°C and 900°C. Firing temperature and firing time have to be adjusted to the substrate material, 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 oily media the powders 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. Special safety guidelines of the Ordinance on Hazardous Substances and the pictographs on packaging and safety data sheets 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.

STANDARD RANGE OF BASIC COLORS	NUMBER	PANTONE
Mischweiss	P 80 161	
Deckweiss	P 80 165	
Intensiv-Gelb	P 80 261	101 C
Maisgelb	P 80 272	129 C
Cd-Gelb	P 80 276	7404 C
Cd-Orange	P 80 285	4010 C
Cd-Rot	P 80 374	3546 C
Cd-Dunkelrot	P 80 388	207 C
Eisenrot	P 80 365	1675 C
Cd-Gelbgrün	P 80 474	2277 C
Chromgrün	P 80 464	2278 C
Apfelgrün	P 80 475	348 C
Blaugrün	P 80 465	336 C
Cyan	P 80 591	3015 C
Azur	P 80 561	2985 C
Mittelblau	P 80 562	2144 C
Königsblau	P 80 565	2728 C
Cobaltblau	P 80 569	661 C
Rosa	P 80 673	4072 C
Hell-Magenta	P 80 681	7432 C
Magenta	P 80 677	4073 C
Purpur	P 80 678	7650 C
Hellbraun	P 80 727	7564 C
Dunkelbraun	P 80 762	7594 C
Taubengrau	P 80 866	2162 C
Grau	P 80 874	404 C
Schwarz	P 80 956	Black 6C