

Product information

23000 Series

Unleaded and lithium-free glass enamels for one-way bottles

Extended colour palette

Intermixable colour palette^[1]

Various application methods

Glossy surface appearance

23000 Series colours

Part Number	Description
23000	White
23250	Citrus yellow
23300	Iron red
23455	Green
23401	Turquoise
23402	Chrome green
23500	Blue
23600	Black
23707	Autumn brown
23730	Rust brown
23750	Chocolate brown
23900	Etch

The 23000 Series consists of an intermixable^[1] colour palette that can be blended to make an infinite variety of customized colour shades.

Extended colour range*

Part Number	Description
23202	Yellow
23301	Flaming red
23305	Dutch orange
23306	Ruby red

**The extended colour range is cadmium containing.*

End user trials are always recommended for the introduction of new colour mixtures especially when using colours from the extended colour range.

The colours of the 23000 Series can be supplied as:

- Powder
- I.R. drying, water friendly or oil based, screen print paste
- Thermoplastic screen print paste

[1] - Colours from other ranges should not be mixed with the 23000 Series.

Application

Medium Type	Water Friendly IR Medium	Thermoplastic	Spraying
Recommended medium	654 - 63	64 - 64	65 - 439
Recommended thinner	RM.454	64 - 64	Water
Powder/medium ratio	3,5 : 1	4,2 : 1	3 : 1
Viscosity	15 - 20 Pa.s	1,0 - 1,8 Pa.s	15 - 25 sec
Printing temperature	15 - 25°C	60 - 80°C	15 - 25°C
Humidity	30 - 60%	30 - 60%	n/a
Screen	61 - 100	61 - 100	n/a
Wet film thickness	20 - 25 µm	20 - 25 µm	1 - 20 g/bottle
Drying conditions	100 - 150°C	n/a	100 - 150°C

It is recommended that before decoration the glass should be at ambient temperature and completely clean and dry.

Firing

Type of Substrate	Firing Range °C	Firing Range °F
Holloware	590 - 630	1094 - 1166

Firing data based on laboratory kiln conditions

Chemical durability^[2]

Alkaline resistance

Assessment according to ASTM C675-91,

10 % NaOH, 2 hours at 88°C.

Grade: 1 to 2

Dishwasher resistance

Assessment according to Johnson Matthey test KC-50.010,

'Winterhalter' Detergent solution @1.5 g/L tested at 61°C.

White > 100 cycles

Colours: 50 cycles

[2] - Results based on selected 23000 Series enamels tested and assessed under our laboratory conditions, for performance data of products not listed in this document please consult the individual technical data sheet, available on request.

Storage and handling

It is recommended that the glass enamels are stored in tightly sealed containers away from direct sunlight at an even temperature in the range of 5-35°C (41-95°F).

Under these conditions the enamel can be stored for reasonable periods, although storage for longer than 12 months is not recommended.

Water based medium should never be stored at temperatures < 0°C.

Health and safety

Good industrial hygiene and work practices should be adhered to when handling the products mentioned in this document. For detailed health and safety requirements, please consult the appropriate Material Safety Data Sheets.