

Technical Information



753 Series Resistant Glass Enamels

Product Codes and Color Shades

Product Code	Color Shade	Pantone® Code ¹
117531	Green	7741c
127531	Blue	2727c
127533	Cyan	2185c
137531	Yellow	7408c
167531	Light Brown	2021c
177531	Red	3571c
197531	White	
117532	Grass Green	2294c
127532	Cyan	2185c
127534	Intensive Blue	2728c
147531	Black	Black c
167533	Dark Brown	
197530	Etch	
107531	Flux	

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¹ The above mentioned Pantone® code is only a guideline for the color shade.

Heavy Metal Release

Colors in this series contain lead and cadmium. The leaching data utilizes DIN EN 1388-2 in laboratory conditions: Lead release: < 10 mg/dm² of the decorated surface; Cadmium release: < 1.5 mg/dm² of the decorated surface. Colors in this Series formulated to be lithium-free with controls in place to maintain upper limits of 30 ppm.

127534 cannot meet lead release requirement according to Q/0302ZFC.

Application

These enamels are recommended for the decoration of soda-line glass tumblers and bottles, which can be used for single-trip and multiple -trip.

For decorated bottles that have to withstand strong internal pressures or significant mechanical forces, it is recommended to perform preliminary trials, such as bursting pressure tests, to ensure compliance with the required standards.

Miscibility

These glass enamels are also intermixable, which allows decorators to mix and match their own shades for optimal productivity with minimal inventory.

It is recommended to perform preliminary tests before launching production with color mixtures from this system.

Additional colors are available on demand.

Firing

We recommend firing temperature 580-620°C in a cycle of 1-1.5h, with a soaking period of approx.10 min, depending on both the type of furnace and the volume of ware load. We recommend an oxidizing atmosphere to give optimal fired appearance and brightness. It is essential to maintain good ventilation and an efficient extraction of the combustion gases and the products resulting from decomposition of the medium.

Chemical Resistance

Acid resistance: ASTM C 724 (10%citric acid and 3.7% HCl, 15min; Grade 4 or better

Alkali resistance:ASTMC675(9.1%NaOH+0.9Na₃PO₄·12H₂O ,4 h; Grade 5 or better

1.	No attack apparent.
2.	Appearance of iridescence or visible stain on the exposed surface when viewed at a 45angle but not apparent at angles less than 30.
3.	A definite stain which does not blur reflected images and is visible at angles less than 30.
4.	Definite stain with a gross color change or strongly iridescent surface visible at angles less than 30 and which may blur reflected images.
5.	Surface dull or matte with chalking possible.
6.	Significant removal of enamel with pinhole evident.
7.	Complete removal of enamel in exposed area.

Expansion Coefficient (CTE)

The CTE of the colors from this series is about 85-95×10⁻⁷/°C (30-300°C) . This system is suitable for the decoration of most soda-line glasses.

Supplying Forms

Our container glass enamels from this systems can be provided in Powder form and the Thermoplastic pastes (TP) form for multi-color hot screen printing.

Storage

The colors should be stored in a dry place. Opened containers should be closed carefully. To ensure that the colors have not absorbed any humidity, we recommend drying the color powder at approx.130°C prior to pasting.

Thermoplastic paste should be stored in cool and dry conditions, not below 5 °C or above 35 °C. Partly used tins must be tightly sealed after use. If stored as recommended, the shelf life is 2 years after production date.

Limitation of Warranty and Liability

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