Technical Information

DF72

Performance Coatings

33 Series new – Low Fusing Glass Colors

In this Technical Information Vibrantz presents the **33 Series new**. This series comprises 17 lead containing glass colors for the application on decorative glasses.

The available colors are listed in table 1 and fig. 1.

Application

The colors of the **33 Series new** have excellent processing properties in all conventional decorating methods like screen printing, spraying and brush application. For cleaning of equipment and screens, we recommend cleaning oil 80 452.

Screen Printing (direct and indirect)

We recommend polyester screens with 68 - 90 threads/cm (175 - 230 mesh/inch) or stainless steel screens VA with 220 – 300 mesh/inch.

For further enhancement of opacity and color intensity, a white underlayer may be printed first. For this purpose 19 33130 is perfectly suited.

Spraying

Color suspensions for spraying application can be produced with oil-based media as well as with water- soluble media.

Media

For all standard methods, Vibrantz offers suitable media and covercoats. Further detailed technical information can be found in our **CerDePrint Media Guide**.

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 mixing.

We recommend to use pasted colors as soon as possible. If the paste is too thick, the viscosity has to be adjusted by addition of a medium.

Miscibility and Compatibility

All colors of the **33 Series new** are intermixable.

Firing Conditions

The firing temperature range is between 520 and 580 °C.

The optimum firing result depends on the firing temperature, on the total firing time, the soak time and not least on the glass type. To achieve an optimized firing result, we therefore recommend the user to check under his own individual conditions.

Expansion Coefficient

The expansion coefficient of the colors lies between 90 and 100 x 10-7/K.

Acid and Alkali Resistance

The alkali and acid resistance of fired color layers is influenced by the thickness of the layer, the firing conditions. The colors of the **33 Series new** are not resistant to acids and alkalis (tested with 4% acetic acid, 22 °C, 5 h, as well as with 0.5 % Calgonite solution, 77 °C, 16 h).

Heavy Metal Release

The colors of the **33 Series new** contain lead and cadmium.

They do not fulfil the limits of the EN 1388 1-2 standard.

Our safety data sheets, which are available for every product, provide you with useful advice for working with our products.

Fig. 1: Color samples of the 33 Series new


11 33641 Green


11 33642 Light Green


11 33667 Dark Green


12 33517 Cyan


12 33530 Blue


12 33602 Dark Blue


13 33440 Yellow


13 33464 Orange


14 33886 Black


15 33125 Grey


16 33310 Yellow Brown


16 33311 Red Brown


16 33444 Dark Brown


17 33395 Red


17 33417 Dark Red


77 495 Purple


77 33673 Dark Purple

While every attempt has been made to reproduce colors exactly, the samples printed here may differ slightly from the finished ceramic products.

Table 1: The colors of the 33 Series new

Product-No.	Color Shade	Pantone®-Code[1]
11 33641	Green	349 c
11 33642	Light Green	363 c
11 33667	Dark Green	3435 c
12 33517	Cyan	3015 c
12 33530	Blue	285 c
12 33602	Dark Blue	Reflex Blue c
13 33440	Yellow	116 c
13 33464	Orange	166 c
14 33886	Black	Black 6 c
15 33125	Grey	423 c
16 33310	Yellow Brown	160 c
16 33311	Red Brown	7594 c
16 33444	Dark Brown	4695 c
17 33395	Red	185 c 2 x
17 33417	Dark Red	187 c
19 33130	White	
19 33166	Semimatt	
77 495	Purple	7655 c
77 33673	Dark Purple	221 c
10 33000	Flux	

Pantone® is a registered trademark of Pantone

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

Table 2: 4-Color-Process

Product-No.	Color Shade	Pantone®-Code[1]
19 33130	White	
13 33440	Yellow	116 c
12 33517	Cyan	3015 c
17 33417	Dark Red	187 c
14 33886	Black	Black 6 c

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