COOREATE
Cooperate & Create

D Series

Leaded Borosilicate Glass Enamels

Markets and industries

Enamels for the decoration of decorating borosilicate glass.

COLOR	PART NUMBER	PANTONG
RED	D 10150*	485C
IRON RED	D 11150	484C
DARK RED	D 12150*	201C
ORANGE	D 13150*	Orange C
YELLOW	D 20150*	102C
YELLOW	D 21150*	396C
YELLOW	D 21250	128C
WHITE	D 30150	
GREEN	D 40150	347C
BLUE GREEN	D 50250	322C
BLUE	D 50150	2175C
BROWN	D 60150	4695C
BLACK	D 70150	

* cadmium containing colors

Chemical composition

Enamels of D series contain lead. And some colors like red, yellow and orange have to use cadmium pigments to satisfy the requirements by customers.

Firing conditions

Firing from room temperature to 620~640°C in a long cycle of 45 min to 1.5 hour, keep warm for about 10 minutes; from 630°C to 700°C in a short cycle.

Expansion coefficient

Under the testing equipment, the average value is 60 x10^{-7}/°C.

Chemical resistance

Alkaline resistance assessment according to ASTM C675-91,
9.1 % sodium hydroxide, 0.9 % trisodium phosphate, 2 hours at 88°C. Grade: 1 to 2 cycle.
Acid resistance assessment according to ASTM C724-91,
10 % citric acid, 3.7% hydrochloric acid, 15mins at 22±2°C, Grade: 4.

Limitation of Warranty and Liability
We believes that the information shared in this document is accurate at the time of its publication. It is not a product specification, either in whole or in part. Users are responsible for determination of the suitability of this product and for testing in specific applications. Please test first before use. Nothing in this document shall be construed as a license for use that infringes upon any property rights of any third party. Please refer to the Safety Data Sheet (SDS) for safe use, handling and disposal information.

D 系列

含铅硼硅玻璃釉料

市场行业

用于装饰硼硅玻璃的釉料。

颜色	编号	潘通色卡号
红色	D 10150*	485C
铁红色	D 11150	484C
深红色	D 12150*	201C
橘红色	D 13150*	Orange C
黄色	D 20150*	102C
黄色	D 21150*	396C
黄色	D 21250	128C
白色	D 30150	
绿色	D 40150	347C
蓝绿色	D 50250	322C
蓝色	D 50150	2175C
棕色	D 60150	4695C
黑色	D 70150	

*颜色中含镉

化学成分

D 系列釉料含铅元素。为满足客户需求，某些颜色像红色、黄色和桔色使用含镉的颜料。

焙烧工艺

经过 45 分钟到 1.5 小时，从室温升温到 620~640°C 后，保温 10 分钟左右;
或者经过快烤 630℃~700℃。

膨胀系数

在检测设备测试下，平均数值在 60×10^{-7}/℃。

耐化学性

耐碱性评估根据 ASTM 标准 C675-91，9.1%氢氧化钠，0.9%磷酸钠，88°C 下 2 小时。等级: 1 至 2 个循环。
耐酸性根据 ASTM 标准 C724-91，10%柠檬酸，3.7%盐酸，22±2°C 下 15 分钟，等级: 4。

保证和责任限制
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COOREATE
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DX Series

Unleaded Borosilicate Glass Enamels

Markets and industries

Enamels for the decoration of decorating borosilicate glass.

COLOR	PART NUMBER	PANTONG
RED	DX 10151*	485C
IRON RED	DX 11151	484C
DARK RED	DX 12151*	201C
ORANGE	DX 13151*	Orange C
YELLOW	DX 20151*	102C
YELLOW	DX 21151*	396C
YELLOW	DX 21251	128C
WHITE	DX 30151	
GREEN	DX 40151	347C
BLUE	DX 50151	2175C
DARK BLUE	DX 50251	293C
BROWN	DX 60151	4695C
BLACK	DX 70151	

* cadmium containing colors

Chemical composition

Enamels of DX series do not contain heavy metals like Pb, Cd, Hg and Cr^{6+} except some colors like red, yellow and orange which have to use cadmium pigments to satisfy the requirements by customers.

Firing conditions

Firing from room temperature to 630~650°C in a long cycle of 45 min to 1.5 hour, keep warm for about 10 minutes; from 630°C to 700°C in a short cycle.

Expansion coefficient

Under the testing equipment, the average value is 60 $x10^{-7}$/°C.

Chemical resistance

Alkaline resistance assessment according to ASTM C675-91,
9.1 % sodium hydroxide, 0.9 % trisodium phosphate, 2 hours at 88°C. Grade: 0 to 1 cycle.
Acid resistance assessment according to ASTM C724-91,
10 % citric acid, 3.7% hydrochloric acid, 15mins at 22±2°C, Grade: 7.

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DX 系列

无铅硼硅玻璃釉料

市场行业

用于装饰硼硅玻璃的釉料。

颜色	编号	潘通色卡号
红色	DX 10151*	485C
铁红色	DX 11151	484C
深红色	DX 12151*	201C
橘红色	DX 13151*	Orange C
黄色	DX 20151*	102C
黄色	DX 21151*	396C
黄色	DX 21251	128C
白色	DX 30151	
绿色	DX 40151	347C
蓝绿色	DX 50251	322C
蓝色	DX 50151	2175C
棕色	DX 60151	4695C
黑色	DX 70151	

*颜色中含镉

化学成分

DX 系列釉料不含铅、镉、汞、+6 价铬等重金属，除了为满足客户需求而含镉的一些颜色，像红色、黄色和桔色。

焙烧工艺

经过 45 分钟到 1.5 小时，从室温升温到 630~650°C 后，保温 10 分钟左右；
或者经过快烤 630℃~700℃。

膨胀系数

在检测设备测试下，平均数值在 60×10^{-7}/℃。

耐化学性

耐碱性评估根据 ASTM 标准 C675-91，9.1%氢氧化钠，0.9%磷酸钠，88°C 下 2 小时。等级: 0 至 1 个循环。
耐酸性根据 ASTM 标准 C724-91，10%柠檬酸，3.7%盐酸，22±2°C 下 15 分钟，等级: 7。

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