JM

Technical data

XC1 1101

Unleaded passive coating
for electrical ceramics

RoHS compliant

Bismuth-free & Lead-free formulation

High chemical resistance

Johnson Matthey
Inspiring science, enhancing life

Information

XC1 1101 is an unleaded, cadmium-free overglaze developed for power resistor applications.

The product is compatible with alumina, steatite and cordierite substrates and fires to a smooth, uniform glossy surface which is highly resistant to acid attack.

XC1 1101 can be supplied as powder or pre-dispersed in a water-miscible slurry for high-build dipping operations.

Typical data

Thermal Expansion Coefficient	7.0 x $10^{-6}K^{-1}$
Typical firing window	700 - 850°C
Tg	510°C
Substrate	Alumina, cordierite or steatite
Physical form	Finely ground powder or Slurry
Fired surface appearance	Glossy
Colour	Green [Approximate colour shade = RAL6002*]
Recommended application	Dipping or brushing

Typical chemical resistance

HCl Acid Resistance [3.7 % HCl, 2 hours at room temperature]	1
H_2SO_4 Acid Resistance [0.1N H_2SO_4, 72 hours at room temperature]	1
Alkali Resistance [0.1N NaOH, 3 hours at room temperature]	1

Processing recommendation

Two to three individually fired layers are recommended for superior performance. XC1 1101 can be applied to the resistors by dipping or brushing.

Wet coatings should be allowed to dry for 5-10 min at 80°C prior to firing

Dried coatings can be fired in air at a peak temperature of 700 – 850°C with a total cycle time of 45 to 90 minutes.

RoHS directive

Re: Directive 2002/95/EC of the European Parliament and of the Council of 27th January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

XC1 1101 does not contain any additions of lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) or polybrominated diphenylethers (PBDE).

Storage and handling

It is recommended that the product is 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 material can be stored for reasonable periods, although storage for longer than 12 months is not recommended.

Health and safety

Good industrial hygiene and work practices should be adhered to when handling this product.

For detailed Health and safety requirements, please consult the appropriate product safety data sheet.

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Technical data

XC1 1102

Hermetic coating
for ceramic substrates

High temperature applications

Bismuth-free formulation

RoHS compliant

High chemical resistance

Johnson Matthey
Inspiring science, enhancing life

Information

XC1 1102 is a RoHS compliant hermetic coating designed for applications including filtration and separation of gases, liquids and particles.

The product is compatible with ceramic substrates and can be supplied in the form of fine ground powder or slurry.

Typical data

Thermal Expansion Coefficient	8.0 x $10^{-6}K^{-1}$
Typical firing window	700 - 800°C
Tg	455°C
Substrate	Ceramic
Physical form	Finely ground powder or Slurry
Particle size	d99 < 18 µm
Density	5.49 g/cm^3
Recommended application	Dipping or brushing

Processing recommendation

Typically, a dispersion is prepared by diluting XC1 1102 powder in water (powder/water ratio 2:1). The slurry can be applied to the substrate by dipping or brushing. Drying is not required.

A single layer is sufficient for superior performance.

Coated substrates can be fired at a peak temperature of 550°C for 30 min.

RoHS directive

Re: Directive 2002/95/EC of the European Parliament and of the Council of 27th January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

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Storage and handling

It is recommended that the product is 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 material can be stored for reasonable periods, although storage for longer than 12 months is not recommended.

Health and safety

Good industrial hygiene and work practices should be adhered to when handling this product.

For detailed Health and safety requirements, please consult the appropriate product safety data sheet.

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