



PROTAVIC[®] BCE 30375 M

A 6-28130-08

DEFINITION

A silver filled, fast curing, single component electroconductive ink for the coating of electronic compounds. It is well suited for the end termination of surface mount components.

It exhibits an excellent thermal stability and a low humidity uptake: **it is perfectly adapted for the lead-free solder reflow.**

Its outstanding features are: high ionic purity, good flexibility and good adhesion on common lead frames.

PRODUCT DESCRIPTION

appearance	liquid
odour	faint
colour	silver

Guaranteed specifications	Standards	methods
viscosity (100 rpm - 25°C)	2600 ± 1000 mPa.s	NFT 51211
viscosity (250 rpm - 25°C)	2000 ± 650 mPa.s	NFT 51211
Silver content	65 ± 2 %	TGA 1

Other informations		
Resistivity after 5 min. at 200°C (mΩ.cm)	≈ 0.1 mΩ.cm	ECA 1
density	2.7 approx.	
possible diluent	PROTASOLVE 434	
Storage stability	- 6 months at T ≤ 0°C	

APPLICATION PROPERTIES

PROTAVIC[®] BCE 30375 M adhesive combines the excellent adhesive properties of epoxy resins with the good electrical conductivity of pure silver.

It possesses excellent properties in terms of adhesion and protection against harmful environmental factors, due to its epoxy base.

After solvent removal, the product exhibits a high thermal stability enables solder-free reflow without lack of conductivity or adhesion.

METHOD OF USE

After evaporation of its solvent base, **PROTAVIC[®] BCE 30375 M** presents a fast curing speed for a single component product, especially in a thin coating, giving a flexible hard film, which possesses:

- An excellent adhesion to tantalum, graphite, ceramic, quartz, aluminium, glass, metals, enamels, multilayer materials and thermoset plastics;
- A very high electrical conductivity on conductive metals used in electronics (silver, gold, palladium...etc);
- An excellent heat resistance, making the product able to pass the soldering step at high temperature (about 260°C);
- A good adhesion of the electronickel plating on its surface.

FIELDS OF USE

a) Application process

Before use, **PROTAVIC BCE 30375 M** has to be re-homogenized by stirring in its original container (by rolling the containers for some hours at a slow speed, 50 to 150 rpm).

The surface of the substrate has to be perfectly clean, free from oil, dust and grease.

If necessary, the viscosity of **PROTAVIC BCE 30375 M** can be reduced by adding some diluent **PROTASOLVE 434**.

b) Drying

PROTAVIC® BCE 30375 M has to be dried in a ventilated drying chamber (regulated at 65°C or higher temperature) for the elimination of the solvent system (a few minutes to a quarter of an hour, depending on the thickness of the ink and the drying temperature). An Infra Red drying is also possible.

On automatic machines and for 20 to 50 µ thickness, the drying time may be 3 to 5 minutes at 90 - 110°C.

On the quality of the drying step depend the physical-chemical properties of the product.

c) Polymerization

The polymerization step occurs after the solvent removal. **PROTAVIC® BCE 30375 M** exhibits very good adhesive and conductive properties after a polymerization of one hour at 150°C.

When the polymerization temperature is not an obstacle for the component or the manufacturing process, a polymerization of 30 minutes at 180°C followed by a post curing step (30 minutes at 180°C) gives optimum results.

1- ELECTRICAL PROPERTIES

properties	Methods	Units	Results
drying + 1 hour at 150°C	ECA 1	mOhm.cm	0.21
drying + 1/2 hour at 180°C	ECA 1	mOhm.cm	0.16
drying + 1/2 hour at 180°C + 5 minutes at 260°C	ECA 1	mOhm.cm	0.09

2- THERMAL PROPERTIES

properties	Methods	Units	Results
Coefficient of thermal expansion - from -50°C to +50°C	TMA 1	ppm/°C	60 - 65
Glass transition temperature	TMA 1	°C	80 - 100°C

STORAGE CONDITIONS

A storage at 0°C maximum is necessary for the conservation of the optimum properties of **PROTAVIC BCE 30375 M**. It is necessary to store the product in its original sealed container in order to avoid the loss of solvent by evaporation.

If necessary, it is always possible to compensate for that loss by evaporation by adding **PROTASOLVE 434** exclusively.

PRECAUTION IN USE

Refer to the attached material safety data sheet

PACKAGING

PROTAVIC® BCE 30375 M adhesive is supplied in 700 g cartridges, in 1 kg pots or in 2,5 kg plastic pots...