PROTAVIC® BCE 30374 M

6-28156

DEFINITION

PROTAVIC® BCE 30374 M is a hot curing pure silver-based single component electro-conductive varnish in solvent media, for gluing and coating of high temperature electronic components.

PRODUCT DESCRIPTION

Appearance	Opaque viscous liquid	
Odor	Of ether	
Color	Silver	
Guaranteed specifications	**Standards**	**Method**
Viscosity (cone and plate - 25°C)	4.500 ± 500 mPa.s	NFT 51211
Resistivity after 30mn at 180°C (mΩ.cm)	< 0.3 mΩ.cm	ECA 1
Other information		
Density	3.1 approx.	
Possible diluent	**PROTASOLVE® 434**	
Storage conditions		
Storage stability	- 6 months at T<+10°C - 1 year at T < -20°C	
Pot life – in open packing or on the machine - at 20 ± 5°C due to the evaporation of the solvent	16 hours	

APPLICATION PROPERTIES

PROTAVIC® BCE 30374 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.

METHOD OF USE

After evaporation of its solvent base, the **PROTAVIC® BCE 30374 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, aluminum, 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 electro nickel plating on its surface
- A good flexibility according to the AECQ200 bond test (SMT).

FIELDS OF USE

a) Application process

Before use, **PROTAVIC® BCE 30374 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 form oil, dust and grease.

If necessary, the viscosity of **PROTAVIC® BCE 30374 M** can be reduced by adding some diluent **PROTASOLVE® 434**.

b) Drying

PROTAVIC® BCE 30374 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. The **PROTAVIC® BCE 30374 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 + ½ hour at 180°C	ECA 1	mOhm.cm	0.05

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 - drying + 1 hour at 150°C - drying + 1 hour at 180°C	TMA 1	°C	 80 – 95 °C 90-10°C

STORAGE CONDITIONS
Storage at 10°C maximum is necessary for the conservation of the optimum properties of **PROTAVIC® BCE 30374 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 30374 M adhesive is supplied in 100 g pots.