PROTAVIC® BCE 30371

Formerly PROTAVIC® C 371

A 27849-08-05 B

DEFINITION

PROTAVIC® BCE 30371 is a heat curing pure silver-based single-component electroconductive paint in solvent media, for glueing and coating of electronic components. It is well suited for the end termination of surface mount components. Its flexibility gives much more reliability than with silver glass frits it replaces. The **PROTAVIC® BCE 30371** a ready to use product.

PRODUCT DESCRIPTION

Appearance	opaque viscous liquid	
Odour	solvent	
Colour	silver	
Guaranteed specifications	**Standards**	**Methods**
% Ash residue at 600°C	64 ± 2	TGA 1
Resistivity after curing : 30 minutes at 180°C (mΩ.cm)	< 0.3	ECA 1
Viscosity at 25°C at 10r.p.m (mPa.s)	6750 - 7375	NFT 51211 4/s
Viscosity at 25°C at 200r.p.m (mPa.s)	950 - 1100	NFT 51211 80/s
Other informations		
Density at 20°C	2.7 approx.	
Possible diluent	**PROTASOLVE® 434**	

STORAGE CONDITIONS

It is recommended to store the **PROTAVIC® BCE 30371** in a sealed container. Its storage stability at a temperature below + 10°C is 9 months.

Its pot life or machine pot life is about 16 hours at 20 ± 5°C because of solvent evaporation. One can add **PROTASOLVE® 434** to increase the shelf life of the product

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APPLICATION PROPERTIES

PROTAVIC® BCE 30371 possesses excellent protection properties against the environment, once it has been cross-linked due to its modified epoxy base.

After evaporation of its solvent phase, it possesses 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, multi-layer materials and thermoset plastics.

– a very high electrical conductivity and a very low ESR potential on conductive metals used in electronics (silver, gold, palladium... etc) ;

– an excellent heat resistance, around 150°C ;

– a good adesion of the electronickel plating onto the resin **PROTAVIC® BCE 30371**.

METHOD OF USE

A - Application process

Before use, **PROTAVIC® BCE 30371** has to be made completely homogeneous by stirring in its original container (with a spatula for small quantities or by rolling the container for some hours at a slow speed, 50 to 150 rpm).

PROTAVIC® BCE 30371 does not need a primary coat. It adheres by simple evaporation of the solvent system it contains. The surface to which it is applied has to be dry, free from oil, grease and dust.

The **PROTAVIC® BCE 30371** is delivered as a ready to use product.

It has a rheology especially suitable for dipping the ends of components on automatic equipment such as Chipstar or Palomar.

If necessary, the viscosity of the **PROTAVIC® BCE 30371** can be reduced by adding some diluant **PROTASOLVE® 434** which can also be used for removing erroneous deposits of **PROTAVIC® BCE 30371** before drying and polymerisation, as well as for cleaning the application equipment.

B. Drying

PROTAVIC® BCE 30371 has to be dried in a ventilated drying chamber (regulated at approximately 65°C) for the elimination of the solvent system (a few minutes to a quarter of an hour depending on the thickness deposited). An infra red drying is also possible.

On automatic machines and for a 20 to 50 µm, the in line drying is possible within 3 to 5 minutes at 90 - 110°C.

C - Polymerisation

PROTAVIC® BCE 30371 after evaporation of its solvent phase should be polymerised at 150°C minimum.

Very good adhesive and conductivity properties are obtained after a polymerisation of one hour at 150°C.

When the polymerisation temperature is not an obstacle for the component or the fabrication process, a polymerisation of 30 minutes at 180°C a curing of 30 minutes at 180°C gives optimum results.

TYPICAL PROPERTIES OF PROTAVIC® BCE 30371, POLYMERISED

A - Electrical properties - volume resistivity

CONDITIONS DE POLYMERISATION	METHOD	UNITS	TYPICAL VALUES
Drying + 1 hour at 150°C	ECA 1	mohm.cm	0,20
Drying + 30 minutes at 180°C	ECA 1	mohm.cm	0,15

B - Glass transition temperature

POLYMERISATION CONDITIONS	METHOD	UNITS	TYPICAL VALUES
Drying + 1 hour at 150°C	DSC 1	°C	80 - 95
Drying + 30 minutes at 180°C	DSC 1	°C	90 - 105

C - Thermostability in air

Thermogravimetric analysis (10°C/minute under air renewed (200 ml/minutes) of **PROTAVIC® BCE 30371** dried and polymerised 30 minutes at 180°C).

	METHOD	MEASURED VALUES
Decomposition temperature in air	TGA 1	350°C approx.

WEIGHT LOSS IN %	METHOD	MEASURED VALUES
from 25 to 100°C	TGA 1	0.13 approx.
from 25 to 200°C	TGA 1	0.21 approx.
from 25 to 300°C	TGA 1	0.77 approx.
from 25 to 400°C	TGA 1	5.71 approx.

FIELDS OF APPLICATION

Thanks to its good properties and its ease of use, **PROTAVIC® BCE 30371** is best used in consumer and professional electronics market products requiring electrically conductive glues and coating, namely for :

– the end termination of surface mounted ceramic components (resistors, tantalum capacitors) ;
– the attach of conductor wires on quartz crystal ;
– production of electroconductive coatings ;
– etc.

CONSERVATION AND STORAGE CONDITIONS

Storage at a temperature of less than 10°C is necessary for conserving all the original properties of **PROTAVIC® BCE 30371**.

Also, it is necessary to keep it 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.
During shipment temperature must not exceed 25°C by adding ice-packs in the parcels.

PRECAUTIONS TO USE

Refer to the enclosed safety data sheet.

PACKAGING

PROTAVIC® BCE 30371 is supplied in 1000 g tins or in 750 g cartridges.