



PROTAVIC[®] ACE 30510

28126-08

DEFINITION

A silver filled, fast curing, **solvent-free**, single component electroconductive adhesive with a high silver content for LED applications.

It has a pot life of 2 days and its rheology is well suited to application by microdispenser.

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

Its reactivity enables it to be cured at 150°C in less than 2 hours.

Its outstanding features are : high ionic purity, high thermal conductivity and good adhesion on current surfaces.

PRODUCT DESCRIPTION

Appearance	paste	
Odor	faint	
Color	silver	
Guaranteed specifications	Standards	Method
Cone and plate viscosity (5 rpm – 25°C)	20 000 ± 10 000 mPa.s	NFT 51211
Resistivity (mΩ.cm)	≤ 0.5	ECA 1
Other information		
Silver ratio	About 87%	
Pot life* at 20 ± 2°C	2 days%	
Density	About 5	
Thixotropic index (0.5 rpm / 5 rpm)	About 1.5	
Possible curing cycles	60 to 120 minutes at 150°C 5 to 10 min at 180°C about 60 seconds at 200°C	
Storage stability	3 months at T < -20°C 6 months at T < -40°C	
Viscosity increase after 24 hours at 20±2°C	less than 25 %	

* : defined as 100% viscosity increase.

APPLICATION PROPERTIES

PROTAVIC[®] ACE 30510 adhesive combines the excellent adhesive properties of epoxy resins with the good electrical and thermal conductivity of high level pure silver.

Its high silver content makes PROTAVIC[®] ACE 30510 perfectly adapted in the case where a high thermal conductivity is requested.

Its good latency enables it to be kept at 20 ± 2°C for 2 days, so the viscosity remains virtually unchanged throughout the working day.

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

It is 100% cross-linkable by heat at temperature of between 150 and 200°C.

Its high thermal stability enables solder-free reflow without lack of conductivity or adhesion.

Its fast-curing at 200°C without the formation of bubbles and its low expansion lead to fast attachments with a good reliability of the parts glued together.

METHOD OF USE

- 1) Take the container out of the freezer not more than 20 to 30 minutes before use in order to prevent any reabsorption of moisture.
 - 2) Work on clean surfaces or clean all surfaces in order to remove any dirt or grease. Do not deposit the adhesive on a substrate which has just been cleaned with chlorinated solvents.
 - 3) Apply the adhesive with :
 - a microdispenser. Use needles with an internal diameter of between 0.3 and 1.0 mm.
 - a screen printing machine. Use polyester or stainless steel screen with a 80 to 325 mesh size (strands per inch).
 - 4) Cure using one of the curing cycles which is compatible with the components, the substrate and the manufacturing conditions.
- It is possible to cure in a tunnel furnace in 60 seconds with a 200°C flow temperature.

FIELDS OF USE

PROTAVIC® ACE 30510 adhesive excellent properties make it especially suitable for use in the microelectronics fields.

1- PHYSICO-CHEMICAL PROPERTIES

properties	Methods	Units	Results
Colour			bright silver
Density at 20°C	NFT 51201 ISO 1675		5
Ionic chlorine content	S 86005	ppm	< 5

2- ELECTRICAL and THERMAL PROPERTIES

properties	Methods	Units	Results
Electrical resistivity	ECA 1	mΩ.cm	typically 0.1
thermal conductivity	R 0505	W/m°K	7.0

3- THERMAL PROPERTIES

properties	Methods	Units	Results
Coefficient of thermal expansion - from -40°C to +60°C - from 100 to 250°C	TMA 1	ppm/°C ppm/°C	50 - 60 160 - 170
Glass transition temperature	TMA 1	°C	80 - 85
Decomposition temperature in air	TGA 1	°C	440 - 450
loss of weight between 25 and - 100°C - 200°C - 300°C	TGA 1	% % %	< to 0.1 ≈ 0.45 ≈ 0.80

PRECAUTION IN USE

Refer to the attached material safety data sheet

PACKAGING

PROTAVIC ACE 30510 adhesive is supplied in 50 g syringes.

BJG