PROTAVIC® ANE 20961

28092-08-A

DEFINITION

Fast flow, fast cure capillary underfill. The rheology of **PROTAVIC® ANE 20961** in combination with its low glass transition temperature and its very low coefficient of thermal expansion makes the product perfect for high reliability underfill application, where some softness is required

It presents a good pot life at room temperature 20-22°C and a high reactivity at moderate temperature.

PRODUCT DESCRIPTION

Appearance	viscous liquid	
Odor	faint	
Colour	black	
Significant value	**Result**	**Method**
Cone and plate viscosity (5 rpm – 25°C) (mPas)	6000 ± 500	NFT 51211
Other informations		
Pot life* at 20 ± 2°C	five days	
Density	1.65 approx.	
Possible curing cycles	- 6 minutes at 165°C - 15 minutes at 150°C	
Storage stability	- 3 months at T < -20°C - 6 months T < -40°C	
Viscosity increase after 24 hours at 20 ± 2°C	no evolution measured	

- : defined as 100% viscosity increase

APPLICATION PROPERTIES

PROTAVIC® ANE 20961 adhesive combines excellent adhesive and thermal properties.
Its good latency enables it to be kept at 20 ± 2°C for five 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 high purity epoxy base.

It is 100% cross-linkable by heat at temperature of between 125 and 200°C.

METHOD OF USE

1) Take the container out of the freezer not more than 30-45 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) Preheat flip chip assembly to between 90 and 120°C (higher temperatures are possible in the case of small components, as the underfill time is reduced).
4) Apply the adhesive by dispensing, using a syringe (500 microns diameter needles may be used) on one or two sides of the chip perimeter.
5) Cure using one of the curing cycles which is compatible with the components, the substrate and the manufacturing conditions.

FIELDS OF USE

PROTAVIC® ANE 20961 adhesive excellent properties make it especially suitable for use in the microelectronics fields.

1 – PHYSICO-CHEMICAL PROPERTIES

PROPERTIES	METHODS	UNITS	RESULTS
Color			black
Density at 20°C	NFT 51201 ISO 1675		about 1.65
Shear strength	After curing 6' at 165°C (10x10 mm² Si die / Cu)	DaN/cm²	> 250
Shear Thinning Index (0.5 / 5 rpm)	NFT 51211		about 1.3

2 – THERMAL PROPERTIES

PROPERTIES	METHODS	UNITS	RESULTS
Coefficient of thermal expansion	TMA 1	ppm/°C	
- from –50°C to + 20°C			20
- from 60°C to 260°C		ppm/°C	80
Glass transition temperature	TMA 1	°C	about 40
Decomposition temperature in air	TGA 1	°C	about 350
Loss of weight between 25 and	TGA 1		
- 100°C		%	about 0.25
- 200°C		%	about 1.5
- 300°C		%	about 2.5

PRECAUTION OF USE

Refer to the attached material safety data sheet.

PACKAGING

The **PROTAVIC® ANE 20961** is supplied in 15 g or 50 g syringes.