



# PROTAVIC INTERNATIONAL WORLDWIDE

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## DEFINITION

**PROTAVIC<sup>®</sup> ACH 20130** electrically conductive adhesive is designed for BGA packaging. **PROTAVIC<sup>®</sup> ACH 20130** presents excellent properties of flexibility, good adhesion and moisture resistance, no voids which allow packages to withstand 260°C Pb-free reflow temperature. Its specific reactivity combines both latency at room temperature and fast curing cycle.

## PRODUCT DESCRIPTION

Appearance	Viscous liquid slight	
Odor	Dark gray	
Color	Viscous liquid slight	
<b>Guaranteed specifications</b>	<b>Standards</b>	<b>Method</b>
Cone and plate viscosity (5 rpm - 25°C)	9 000 ± 1 500 mPa.s	NFT 51211
<b>Other information</b>		
Pot life* at 20 ± 2°C	1 day	
Thixotropy index	5.0	
Density	2.8 approx.	
Volume resistivity	2mΩ.cm	
Possible curing cycles	- 30 minutes at 175°C	
Storage stability	- 1 year T<-20°C	

\* : defined as 100% viscosity increase.

## APPLICATION PROPERTIES

**PROTAVIC<sup>®</sup> ACH 20130** adhesive features excellent hot/wet adhesive properties. Its good latency enables it to be kept at 20±2°C for 1 day with a little increase of viscosity, so the viscosity remains virtually unchanged throughout the working day. The long pot life and the absence of solvent ensure that the product remains at a reasonably constant viscosity and facilitate application **PROTAVIC<sup>®</sup> ACH 20130** may

be oven cure at moderate temperature (175°C) and also snap cured when heated at 220-230°C.

## METHOD OF USE

- 1) Take the package out of the freezer not more than 1 hour before use in order to prevent any re-absorption of moisture.
- 2) Work on clean surface 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 (by dispensing)
- 4) Cure using one of the curing cycles compatible with the components, the substrate and the manufacturing conditions.

## FIELDS OF USE

The excellent properties of **PROTAVIC® ACH 20130** adhesive make it especially suitable for use in structural sticking where softness, void-free bondline, moisture resistance and thermal resistance are required.

## TYPICAL PROPERTIES

The properties set out below were determined following measurements carried out in the laboratory over a small number of tests. They are values given by way of guidance, and do not constitute a guarantee. It will be for the user, in all cases to carry out their own tests to determine whether **PROTAVIC® ACH 20130** resin can be used for the particular application the user has in mind.

Properties		Methods	Results
SHORE D hardness		NFT 51109	75D
Weight loss by TGA	At 200°C At 300°C	TGA 1	0.6 % 0.9 %
Tg by TMA		TMA 1	5°C
Coefficient of thermal expansion $\alpha_1$ $\alpha_2$		TMA 1	99 ppm/°C 147 ppm/°C
Volume resistivity		ECA 1	2mΩ.cm
Moisture absorption (168 hours at 85°C/85% Hr)		R 0802	0.4%

Properties	Methods	Results
Young modulus	Dynamic mechanical thermal analysis	1.34 Gpa at 25°C 150 MPa at 100°C 75 MPa at 250°C

Die shear strength at 25°C oven cure (30 minutes at 175°C)	12.7 kg/die	2x2 mm <sup>2</sup> (80x80mil <sup>2</sup> ) Si die on Ag plated Cu frame
Die shear strength at 250°C	5.8 kg/die 10.9 kg/die	3.5x3.5 mm <sup>2</sup> (140x140mil <sup>2</sup> ) Si die on Ag plated Cu frame 6.35x6.35 mm <sup>2</sup> (250x250mil <sup>2</sup> ) Si die on Ag plated Cu frame
Die shear strength at 250°C after 24 hours at 85°C and 85% RH.	2.7 kg/die 6.8 kg/die	3.5x3.5 mm <sup>2</sup> (140x140mil <sup>2</sup> ) Si die on Ag plated Cu frame 6.35x6.35 mm <sup>2</sup> (250x250mil <sup>2</sup> ) Si die on Ag plated Cu frame

#### PRECAUTION IN USE

Refer to the attached material safety data sheet.

#### PACKAGING

**PROTAVIC<sup>®</sup> ACH 20130** adhesive is supplied in 25 g and 80 g syringes.

*The information contained in this data sheet corresponds to the present state of our knowledge ; it is intended for your guidance but we are not bound by it since we are not in a position to exercise control over the manner in which our products are used. Moreover, the attention of the user is drawn to the risks that could possibly occur should a product be used for an application other than that for which it is intended.*