



# PROTAVIC INTERNATIONAL WORLDWIDE

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# PROTAVIC<sup>®</sup> ANA 10199 R

6-28143

## DEFINITION

Fast flow, fast cure capillary reworkable underfill. The rheology of the **PROTAVIC<sup>®</sup> ANA 10199 R** in combination with its fineness make the product perfectly adapted to high reliability small gap underfill applications.

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	
Color	White	
<b>Guaranteed specifications</b>	<b>Standards</b>	<b>Method</b>
Cone and plate viscosity (5 rpm - 25°C)	5 000 ± 1.500 mPa.s	NFT 51211
<b>Other information</b>		
Density	1.4 approx.	
Possible curing cycles	10 minutes at 100°C	
Storage stability	6 months at T 0°C - +5°C	

## APPLICATION PROPERTIES

The **PROTAVIC<sup>®</sup> ANA 10199 R** adhesive combines excellent adhesive and thermal properties.

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

It is 100% cross-linkable by heat at temperature of between 80 and 150°C.

It may be removed by thermal treatment at temperature between 280 - 300°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 re-absorption 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 (very small 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

The **PROTAVIC® ANA 10199 R** adhesive excellent properties make it especially suitable for use in the microelectronics fields.

### 1- PHYSICO-CHEMICAL PROPERTIES

Properties	Methods	Units	Results
Color			White
Density at 20°C	NFT 51201 ISO 1675	None	About 1.4
Shear strength	-10'/100°C	daN/cm <sup>2</sup>	> 100
Shear strength after treatment	-4'/300°C	daN/cm <sup>2</sup>	< 5
Shear thinning index (0.5 / 5 rpm)	NFT 51211	None	About 1
Shore A hardness	NFT 51109	None	About 86
Hegmann fineness	ISO 1524	Microns	About 5

### 2- THERMAL PROPERTIES

Properties	Methods	Units	Results
Glass transition temperature	TMA 1	°C	Below 0
Decomposition temperature in air	TGA 1	°C	About 430
Loss weight between 25 and - 100°C - 200°C - 300°C	TGA 1	% % %	About 0.1 About 0.5 About 1.8

## PRECAUTION IN USE

Refer to the attached material safety data sheet.

## **PACKAGING**

**PROTAVIC® ANA10199 R** adhesive is supplied in 10 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.*