



Macroplast ESP 4108

9 June 2010

PRODUCT DESCRIPTION

Macroplast ESP 4108 provides the following product characteristics:

Technology	Epoxy
Product Type	Epoxy adhesive
Cure	Polymerisation
Components	One-component
Application	General assembly
Appearance	Silver (solder-like when cured)

Application Areas

Macroplast ESP 4108 is a metal filled, paste adhesive designed to provide maximum resistance to impact, shear, cleavage and tensile loads. The durability, chemical resistance and high temperature performance are extremely good.

Macroplast ESP 4108 will bond to a wide variety of surfaces and performance is usually limited by the strength of the adherends themselves. In many applications it can replace traditional fixing techniques to give enhanced appearance and greater design flexibility.

TECHNICAL DATA

Macroplast ESP 4108:

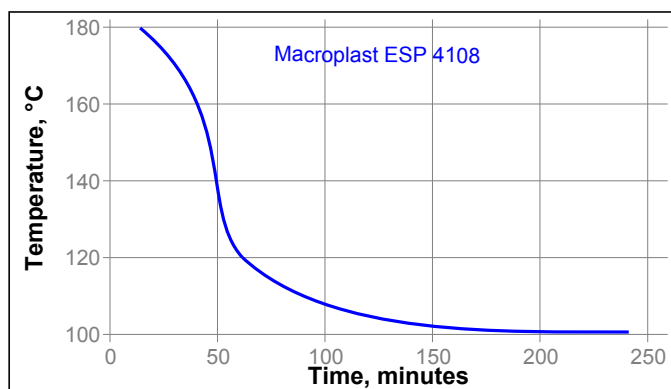
Viscosity, mPas	approx. 170,000
Specific Gravity, g/cm ³	1.5

Shear Strength (MPa) - Steel*	30
Coeff. of Thermal Expansion (mm/mm/°C)	45×10^{-6}
Maximum Gap Fill (mm)	< 0.5
Cure Time at 100 °C, minutes	240
Cure Time at 120 °C, minutes	60
Cure Time at 150 °C, minutes	45
Cure Time at 180 °C, minutes in an air circulating oven	20

*With joints involving materials such as ferrites or SMC bond strengths are generally greater than that of the substrate itself. The bond strengths measured on the more ductile metals, such as copper and its alloys, will be affected by the modulus of the metal and the thickness of the actual components.

Cure Speed vs. Time/Temperature

The actual cure time for any application is dependent on the time it takes for the adhesive to reach temperature. Larger components, or batch curing, will require a longer warm up time and the cure cycle may be extended. The use of alternative heating methods may also affect the time required to achieve full cure; Hotplates, Infra-Red lamps or Induction heating will generally give a faster cure.



Certificates and Approvals

Macroplast ESP 4108 is approved to the Waters Byelaws Scheme as being suitable for contact with potable (drinking) water.

DIRECTIONS FOR USE

Preliminary Statement:

Prior to application it is necessary to read the **Material Safety Data Sheet** for information about precautionary measures and safety recommendations. Also, for chemical products exempt from compulsory labeling, the relevant precautions should always be observed.

Pretreatment:

The substrate should be clean, dry, free of dust, oil, grease and other contaminants. An improvement of the adhesion can be achieved by grinding or sandblasting the surface.

Application:

The recommended service temperature range for this product is -40 to +180°C. Higher temperatures may be endured for short periods providing the adhesive is not unduly stressed.

The adhesive should be extruded using a bead diameter that will allow complete coverage of the bond area. Care should be taken not to include, or trap, any air within the joint. Normally it should be applied to only one surface. Assemble the parts and squeeze together with sufficient pressure to ensure the adhesive spreads to cover the entire bond area. Jig the components using a light clamping pressure and place in the oven to cure. Do not disturb the joint until the adhesive has cured. Macroplast ESP 4108 has controlled flow at its cure temperature so that it will not flow out of the joint.

Classification:

Please refer to the corresponding **safety data sheets** for details on:

Hazardous Information
Transport Regulations
Safety Regulations

Storage:

When stored in the original unopened containers at 5 to 7°C, the shelf life of this product is 9 months from the date of production. Otherwise the product might cure faster and be unusable for further processing.

ADDITIONAL INFORMATION**Disclaimer:**

The information provided herein, especially recommendations for the usage and the application of our products, is based upon our knowledge and experience. Due to different materials used as well as to varying working conditions beyond our control we strictly recommend to carry out intensive trials to test the suitability of our products with regard to the required processes and applications. We do not accept any liability with regard to the above information or with regard to any verbal recommendation, except for cases where we are liable of gross negligence or false intention.

This datasheet replaces all former versions.

Reference 0.0