



# LOCTITE<sup>®</sup> ESP109

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## Description:

Loctite ESP109 is designed to provide maximum resistance to impact, shear, cleavage and tensile loads. The durability, chemical resistance and high temperature performance are extremely good. ESP109 will bond to a wide variety of surfaces, including oily steel, and performance is usually limited by the strength of the substrates themselves. In many applications it can replace traditional fixing techniques to give enhanced appearance and greater design flexibility. It is electrically non-conductive.

Physical Properties	
Colour	Cream
Viscosity (mPa.s)	150,000
Specific Gravity	1.62

## Storage:

When stored in the original unopened containers at 5-7°C, the shelf life of this product is 12 months from the date of manufacture.

Typical Performance:	
Shear Strength(MPa) - Steel*	30
Coeff. of Thermal Expansion (mm/mm/°C)	45 x 10 <sup>-6</sup>
Maximum Gap Fill (mm)	< 1

## Service Temperature:

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

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.

## Handling:

Full information can be obtained from the Material Safety Data Sheet (MSDS). Users are reminded that all materials, whether innocuous or not, should be handled according to the principles of good industrial hygiene.

Cure Time at:-	100°C	120°C	150°C	180°C
Minutes* (in an air circulating oven)	240	60	45	20

\*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.

## Directions for Use:

Surfaces should be clean, dry and grease free before applying the adhesive. Where ultimate performance is required then the surfaces should be shot blasted, or lightly abraded, in the presence of **Loctite SIP**.

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.

The information given and the recommendations made herein are based on our experience and are believed to be accurate. No guarantee as to, or responsibility for, their accuracy can be given or accepted, however, and no statement herein is to be treated as a representation or warranty. In every case we urge and recommend that purchasers, before using any product, make their own tests to determine, to their own satisfaction, its suitability for their particular purposes under their own operating conditions.

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