

## PRODUCT DESCRIPTION

<b>Technology</b>	Epoxy Resin
<b>Product Type</b>	Structural Adhesive Flange Bonding
<b>Additional Information</b>	High crash resistant

TEROSON EP 5089 is a heat curing, solvent free, one component adhesive, based on toughened Epoxy resins. It has been specially developed to provide high peel and impact peel resistance over a wide temperature range. The high viscosity of the product makes it wash-off resistant in all automotive pre-treatment lines. Due to its nanoparticles and toughened epoxy resins, TEROSON EP 5089 performs well to typical torsional and crash forces.

## APPLICATION AREAS

TEROSON EP 5089 is used in the automotive body shop for structural and hem flange bonding. It is special designed for bare steel, zinc coated surfaces and aluminum alloys used in the automotive industry, where high strength and corrosion protection properties are required. TEROSON EP 5089 is used for adhesive bonds also in combination with other joining techniques, such as spot welding, which require higher shear strength and specially impact peel (crash) resistance.

## TECHNICAL DATA (Typical Test Results)

Uncured	
Colour	purple
Density	approx. 1.2 g/cm <sup>3</sup>
Consistency	pasty
Solids	> 99 %
Viscosity (DIN 54458)	250 Pa.s
Equipment	Plate/Plate 25 mm Ø
Temperature	45 °C
Deformation	10 %
Frequency	10 Hz

Cured (25 min, at 175 °C)	
Material Data:	
E-Modulus	1.6 GPa
Tensile strength	35 MPa
Elongation at break	10 %
Poisson rate	0.4
Shear strength (DIN EN 1465)	> 20 MPa
layer thickness	0.2 mm
bonding area	25 x 10 mm
substrate	HDG/EGS 0.75 mm
Impact-Peel	> 25 N/mm

Corrosion resistance

salt spray test (35°C, salt solution 5%, 1,000 hours)	no loss of adhesion, no corrosion
In service temperature range	-40 to 90 °C

## APPLICATION

TEROSON EP 5089 is applied from pails or drums using high pressure pumps with a compression ratio minimum 50:1. For the best application the use of volume controlled dispensers is preferred. The heated application pistol can be used either manually or on a fixed jig. More commonly is attached to an automatic application system (robot, CNC). It is recommended to switch off heating during a shutdown of more than 1 hour. The pressure should be switched off after 15 minutes of non-production. Independent heating circuits should have the lowest temperature at the follower plate and the highest temperature at the application nozzle. To ensure an optimal wetting to the substrate TEROSON EP 5089 should be applied at elevated temperatures. The material is applied directly to oily sheet metal no more than 3 g/m<sup>2</sup>. If required, we will provide you with the additional information on suitable application equipment.

### Recommended material temperature:

Follower plate and pump:	25 to 35 °C
Temperature at the nozzle:	35 to 55 °C

## CURING

TEROSON EP 5089 is cured while passing the EC oven, e.g. 15 minutes at 175 °C. The minimum curing cycle is 10 min at 150 °C. These are effective metal temperatures.

## CLEANING

Fresh, uncured material can be removed with the aid of ethylacetate or gasoline. Cured adhesive can only be removed mechanically.

## STORAGE:

Frost sensitive	no
Recommended storage temperature	5 to 25 °C
Shelf life	6 months

\* If constantly stored below 7 °C, shelf life could be extended up to 12 months.

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