

# TEROSON EP 4554

October 2016

## PRODUCT DESCRIPTION

|                     |                     |
|---------------------|---------------------|
| <b>Technology</b>   | Epoxy Resin         |
| <b>Product Type</b> | Structural Adhesive |

TEROSON EP 4554 is a heat curing, solvent free, one component adhesive, based on toughened Epoxy resins. It demonstrates high strength on many substrates and good corrosion protection. Due to its special rheology it shows a good wash-off resistance and wetting to oily surfaces. After curing TEROSON EP 4554 adheres very well on bare metal, zinc coated substrates and also on aluminium alloys. TEROSON EP 4554 is free of plastisizers and PVC.

### Application Areas:

TEROSON EP 4554 is used in the automotive body shop for structural bonding. Due to its high strength and high peel resistance, it can be used as structural adhesive, also in combination with other joining techniques. The special epoxy resin provides a high fatigue resistance and excellent corrosion protection.

## TECHNICAL DATA

(Typical Test Results)

### Uncured

|                       |                               |
|-----------------------|-------------------------------|
| Colour                | blue                          |
| Density               | approx. 1.5 g/cm <sup>3</sup> |
| Consistency           | paste                         |
| Solids                | > 99 %                        |
| Viscosity (DIN 54458) | 80 Pas                        |
| Equipment             | Plate/Plate 25 mm Ø           |
| Temperature           | 45 °C                         |
| Frequency             | 10 Hz                         |
| Deformation           | 10 %                          |

### Cured (25 min, at 175 °C)

#### Material Data:

|                                                             |                                      |
|-------------------------------------------------------------|--------------------------------------|
| E-Modulus                                                   | 2 GPa                                |
| Tensile strength                                            | > 30 MPa                             |
| Elongation at break                                         | 2 %                                  |
| Poisson rate                                                | 0.38                                 |
| Shear strength (DIN EN 1465)                                | > 30 MPa                             |
| Bonding area                                                | 25 x 10 mm                           |
| Layer thickness                                             | 0.15 mm                              |
| Substrate                                                   | 2.0 mm HDG                           |
| T-Peel (DIN ISO 11339)                                      | 5 N/mm                               |
| Corrosion resistance                                        |                                      |
| salt spray test<br>(35°C, salt solution 5%,<br>1,000 hours) | no loss of adhesion,<br>no corrosion |
| corrosion test VDA 621-415<br>(10 rounds)                   | no loss of adhesion,<br>no corrosion |

In service temperature range -40 to 90 °C

## 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.

### Application:

TEROSON EP 4554 is applied from pails or drums using high pressure pumps with a compression ratio minimum of 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). The material can be applied by extrusion or by using Swirl or Jet-Stream systems. 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 4554 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 60 °C |

### Curing:

TEROSON EP 4554 is cured while passing the EC oven, e.g. 20 minutes at 170 °C. The minimum curing cycle is 10 min at 160 °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.

### Classification:

Please refer to the corresponding **Material Safety Data Sheets** for details on:

**Hazards identification**  
**Transport information**  
**Regulatory information**

**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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