Technical Data Sheet

TEROSON® EP 5075 SB

July 2023

PRODUCT DESCRIPTION

TEROSON® EP 5075 SB High Impact Resistant Structural Bonder provides the following product characteristics:

Technology	Epoxy
Chemical type	Epoxy
Appearance (resin)	Pink
Appearance (hardener)	Amber
Appearance (mixed) – uncured	Pink
Appearance (mixed) –cured	Purple
Components	Two components – requires mixing
Viscosity	Low to medium
Mix ratio, (by volume) Resin : Hardener	2 : 1
Cure	Room temperature cure after mixing, accelerated cure at elevated temperature
Application	Bonding
Application Temperature	10 to 35°C (50 to 95°F)
In service temperature	-40 to 90°C (-40 to 194°F)
Specific benefits	• High Impact resistance, high durability against fatigue and stress • Complies with high crash safety standard • High crash performance at extreme temperatures (both low and high) • Adheres to a wide range of materials (without primer) and dissimilar metals • Compatible with spot welding and riveting methods • Contains Glass beads (0.15mm) to provide uniform bond-line control • Color changing technology to indicate the degree of curing

TEROSON® EP 5075 SB High Impact Resistant Structural Bonder is a solvent free, two-component, high strength impact resistant adhesive, based on toughened epoxy resin.

It is designed to meet with the upgraded OEM impact resistance specifications, which requires higher impact peel strength compared to the conventional Impact Resistant Structural Adhesives.

It has a high impact resistance at both high and low temperatures (-40°C to 80°C) which means, the adhesive provides high crash safety at a full temperature spectrum. The cured adhesive film is hard, but not brittle.

It is made for professionals to be mainly used in structural bonding of metals in car repair when crash behavior requirements are high.

Typical application areas are engine mounts, strut tower, radiator support, A & B pillars, aprons, core supports, roof frame, rocker panel, wheel arch, floors, and safety critical parts.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Resin

Specific gravity @ 23°C	1.14
Viscosity, mPa·s (cP):	75,000
Physica Rheometer @25°C	
Plate/plate Ø 40 mm, Shear rate: 20 s^{-1}	

Hardener

Specific gravity @ 23°C	1.09
Viscosity, mPa·s (cP):	45,000
Physica Rheometer @25°C	
Plate/plate Ø 40 mm, Shear rate: 20 s^{-1}	

TYPICAL CURING PERFORMANCE

Working time

Working time @23°C, minutes	60
ASTM D 2471	

Fixture time

Fixture time is defined as the time to develop a shear strength of 0.1 N/mm².

Fixture Time, @23°C, hours	6

Final cure time

Final Cure, @ 23°C, hours	48
Final Cure, Accelerated Cure @ 60°C, hours	2
Final Cure, Accelerated Cure @ 80°C, minutes	45

TYPICAL PERFORMANCE OF CURED MATERIAL

Physical properties

Elongation, at break, ISO 527, %		5
E-Modulus, ISO 527, cured for 7 days @23°C	N/mm^2 (psi)	1,600 (230,000)
Tensile Strength, at break, ISO 527	N/mm^2 (psi)	26 (3,800)

Adhesive properties

Cured for 7 days @ 23°C Lap Shear Strength, DIN 1465: CRS, sanded w/ 80 grit		
Tested @ 23°C	N/mm^2 (psi)	30 (4,400)
Tested @ -40°C	N/mm^2 (psi)	46 (6,700)
Cured for 30 mins @60°C, Cured for 7 days @23°C Lap Shear Strength, DIN 1465: CRS, sanded w/ 80 grit		
Tested @ 23°C	N/mm^2 (psi)	32 (4,600)
Tested @ -40°C	N/mm^2 (psi)	46 (6,700)
Cured for 7 days @ 23°C "T" Peel Strength, ISO 11339: CRS, sanded w/ 80 grit		
Tested @ 23°C	N/mm (lb/in)	8 (46)
Cured for 30 mins @60°C, Cured for 7 days @23°C "T" Peel Strength, ISO 11339: CRS, sanded w/ 80 grit		
Tested @ 23°C	N/mm (lb/in)	9 (51)
Cured for 7 days @ 23°C Impact Peel, ISO 11343; CRS, sanded w/ 80 grit		
Tested @ 23°C	N/mm (lb/in)	27 (150)
Tested @ 80°C	N/mm (lb/in)	20 (114)
Tested @ -40°C	N/mm (lb/in)	19 (108)
Cured for 30 mins @60°C, Cured for 7 days @23°C Impact Peel, ISO 11343; CRS, sanded w/ 80 grit		
Tested @ 23°C	N/mm (lb/in)	26 (148)
Tested @ 80°C	N/mm (lb/in)	31 (180)
Tested @ -40°C	N/mm (lb/in)	31 (180)

GENERAL INFORMATION

This product is not recommended for use in pure oxygen and/or oxygen rich systems and should not be selected as a sealant for chlorine or other strong oxidizing materials.

For safe handling information on this product, consult the Safety Data Sheet (SDS).

Direction for use

Pretreatment:

1. Bonding surfaces must be free of oil, grease, dust, or any other contaminant. Pretreat bonding surfaces with TEROSON® VR 10 and a lint-free cloth.
2. Remove old adhesive from existing body parts to make sure they are back to bare metal and free of any contamination.
3. Both bonding surfaces must be cleaned again to remove grinding dust. Pretreat bonding surfaces with TEROSON® VR 10 . Allow the prepared surfaces to dry for approx. 5 minutes.

Curing

1. Cure speed may vary based on adhesive and substrate temperature.
2. During the curing phase, adhesive color will start to change from pink to dark purple. The change in the color is an indication of curing process.
3. Please avoid movement or stress until the product is fully cured.

Application:

1. Unscrew the coupling ring and remove the cap from TEROSON® EP 5075 SB High Impact Resistant Structural Bonder cartridge. Before attaching the static mixer to the cartridge, squeeze out a small amount of material until both adhesive components run equally. This is necessary to achieve a good mix of the two components.
2. Attach the static mixer and fix it with the coupling ring. Insert the cartridge into the application dispenser. Only use dispensers that are equipped with a piston rod.
3. When mixed, TEROSON® EP 5075 SB High Impact Resistant Structural Bonder is pink color. Discard first 5 cm of adhesive.
4. Apply and spread TEROSON® EP 5075 SB High Impact Resistant Structural Bonder with a spreader or brush. All bare metal areas should be covered with adhesive for corrosion protection. TEROSON® EP 5075 SB High Impact Resistant Structural Bonder can be used on steel and aluminum panels and as part of the preparation.
5. It may be necessary tochange the static mixer if no material has been passed throughit in over 30 minutes.
6. Join and fix components within the 60 minutes processing time. The processing time depends on the temperature. If spot welding is required, it must be carried out during this initial period. Do not subject bonded parts to stress before final cure. In order to avoid the bonded parts being displaced, it is recommended that they should always be fixed during the process of curing.
7. To ensure high crash safety performance, the assembly bonded shall be designed so that the bonded surface or seams are only subjected to tensile or shear forces, but not to peel forces. It is recommended that bonding should be done with single overlaps.
8. After use, leave the static mixing nozzle in place to seal the cartridge.

Cleaning:

1. It is important to clean up excess adhesive from the work area and application equipment before it hardens.
2. Remove excess adhesive immediately with spatula or cloth and TEROSON® VR 10. Cured adhesive can only be removed mechanically.

Painting:

1. TEROSON® EP 5065 Impact Resistant Structural Bonder can be painted when initial bond strength has been reached.

Storage

Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.
Optimal Storage: 15°C to 35°C (59°F to 77°F).
Under certain conditions, the product is frost sensitive. It may crystalize but it is reversible >40°C (104°F).
Material removed from containers may be contaminated during use. Do not return product to the original container. Henkel cannot assume responsibility for product which has beencontaminated or stored under conditions other than thosepreviously indicated. If additional information is required, please contact your local Henkel representative.

Product Specification

The technical data contained herein are intended as reference only and are not considered specifications for the product. Product specifications are located on the Certificate of Analysis or please contact Henkel representative.

Approval and Certificate

Please contact Henkel representative for related approval or certificate of this product.

Data Ranges

The data contained herein may be reported as a typical value. Values are based on actual test data and are verified on a periodic basis.

Temperature/Humidity Ranges: 23°C / 50% RH = 23±2°C / 50±5% RH

Conversions

(°C x 1.8) + 32 = °F
kV/mm x 25.4 = V/mil
mm / 25.4 = inches
µm / 25.4 = mil
N x 0.225 = lb
N/mm x 5.71 = lb/in
N/mm² x 145 = psi
MPa x 145 = psi
N·m x 8.851 = lb·in
N·m x 0.738 = lb·ft
N·mm x 0.142 = oz·in
mPa·s = cP

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Reference 1