

TEROSON® EP 5065

Known as Impact Resistant Structural Bonder
November 2024

Product description

TEROSON® EP 5065 Impact Resistant Structural Bonder provides the following product characteristics:

Technology	Epoxy
Chemical type	Epoxy
Appearance (resin)	Black
Appearance (hardener)	Grey / greyish
Appearance (mixed)	Black
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. Accelerated Cure @ 60°C for 1h, @ 80°C for 30min
Application	Bonding critical safety parts
Application temperature	10 to 35°C (50 to 95°F)
In service temperature	-40 to 90°C (-40 to 194°F)
Short exposure (up to 1 hr)	140°C (284°F)
Specific benefits	• High impact resistance, high fatigue and stress durability • Excellent corrosion protection • High crash performance on extreme temperatures (both low and high) • Adheres to a wide range of materials (without primer) • Can be used in combination with spot welding and riveting

TEROSON® EP 5065 Impact Resistant Structural Bonder is an OEM approved, solvent free, two-component, high strength impact resistant adhesive, based on toughened epoxy resin. It is made for professionals to be mainly used in structural bonding of metals in car repair when crash behavior requirements are high.

TEROSON® EP 5065 Impact Resistant Structural Bonder supports high crash impact absorption performance of a vehicle exposed to a collision, at high and low temperatures (-40 °C to 80 °C / -40 °F to 176 °F). This means the adhesive provides high crash safety for the driver and passengers in the aftermath of an accident, at various environment temperature conditions.

The adhesive provides the following characteristics:

- High Impact resistance, high fatigue and stress durability for increased crashworthiness of the vehicle
- Excellent corrosion protection
- High crash safety standard to meet OEM production line requirement
- High crash performance on extreme temperatures (both low and high)
- Compatible with main types of metal used in automotive industry. Adheres to a wide range of materials (without primer)
- Can be used in combination with spot welding and riveting methods to meet OEM repair guidelines

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

TYPICAL PROPERTIES OF UNCURED MATERIAL

Resin

Specific Gravity @ 23°C	1.1
Viscosity, mPa·s (cP):	30,000
Physica Rheometer @25°C	
Plate/plate Ø 20 mm, Shear rate: 10 s ⁻¹	

Hardener

Specific Gravity @ 23°C	1.0
Viscosity, mPa·s (cP):	2,000
Physica Rheometer @25°C	
Plate/plate Ø 20 mm, Shear rate: 10 s ⁻¹	

TYPICAL CURING PERFORMANCE

Working Time

Working Time @ 23°C, minutes ISO 4587-DIN EN 1465	60
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Fixture Time

Fixture Time, @ 23°C, hours	10
Achieve 0.1 N/mm ²	

Final Cure

Final Cure, @ 23°C, hours	48
Final Cure, Accelerated Cure @ 60°C, hours	1
Final Cure, Accelerated Cure @ 80°C, minutes	30

TYPICAL PERFORMANCE OF CURED MATERIAL

Physical Properties

Elongation, at break, ISO 527, %		3
E-Modulus,	N/mm ²	1,600
ISO 527, cured for 7 days @ 23°C	(psi)	(232,000)
Tensile Strength, at break, ISO 527	N/mm ²	36
	(psi)	(5,200)

Adhesive Properties

Cured for 7 days @23°C

Lap Shear Strength, DIN 1465:	N/mm ²	23
CRS, sanded w/ 120 grit	(psi)	(3,300)
"T" Peel Strength, ISO 11339:	N/mm	7
CRS, sanded w/ 120 grit	(lb/in)	(40)

Impact Peel, ISO 11343, CRS:

Tested @ 23 °C	N/mm	17
	(lb/in)	(97)
Tested @ 80 °C	N/mm	13
	(lb/in)	(74)
Tested @ -40 °C	N/mm	12
	(lb/in)	(69)

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).

Directions for Use:

During the storage and shipment, a crystallization of the resin may occur. By heating the adhesive @ 60°C (140°F) for about 60 minutes, this physical change is reversible. Afterwards, all properties will remain on the same level. It is recommended that the adhesive should be used at a minimum temperature of 15°C (59°F).

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 evaporate for approx. 5 minutes.

Application:

1. Unscrew coupling ring and remove cap from TEROSON® EP 5065 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 static mixer and tighten it. Insert the cartridge into the application dispenser. TEROSON® EP 5065 Impact Resistant Structural Bonder is processed with manual and pneumatic application tools (LOCTITE® HD14 Handheld Pneumatic Dual Cartridge Dispenser or LOCTITE® HD14 Handheld Manual Dual Cartridge Dispenser). Only use dispensers that are equipped with a piston rod.
3. When mixed, TEROSON® EP 5065 Impact Resistant Structural Bonder is very dark grey in color (almost black). Discard first 5cm (~2 inches) of adhesive.
4. Apply and spread TEROSON® EP 5065 Impact Resistant Structural Bonder with a spreader or brush. All bare metal areas should be covered with adhesive for corrosion protection. TEROSON® EP 5065 Impact Resistant Structural Bonder can be used on steel and aluminum car frame parts.
5. It may be necessary to change the static mixer if no material has been passed through it 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, follow the manufacturer guidelines.

Curing:

1. Cure speeds may vary based on adhesive and substrate temperatures.
2. TEROSON® EP 5065 Impact Resistant Structural Bonder cures at room temperature (23°C, 50% RH)
3. During the curing phase, avoid movement or stress until the product is fully cured.

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 95°F). Under certain conditions the product is frost sensitive. It may crystalize but it is reversible 60°C (140°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 been contaminated or stored under conditions other than those previously 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

Disclaimer

The information provided in this Technical data sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. The product can have a variety of different applications as well as differing application and working conditions in your environment that are beyond our control. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product. Any liability in respect of the information in the Technical data sheet or any other written or oral recommendation(s) regarding the concerned product is excluded, except if otherwise explicitly agreed and except in relation to death or personal injury caused by our negligence and any liability under any applicable mandatory product liability law.

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