HERNON®
Formulating Solutions

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Tuffbond® 317

Product Description

Hernon® Tuffbond® 317 is a two component, room temperature cure system. By changing the ratio of resin and hardener, the cured adhesive can change from a tough and flexible to a hard and rigid system. The resin offers a unique combination of hardness and flexibility with high chemical and solvent resistance.

Tuffbond® 317 is recommended for bonding metal, glass, wood, concrete, and rubber, and can be used for potting and encapsulation of electrical and electronic components.

Typical Applications

- Marine coating
- Underwater coating
- Potting electronic boards
- Encapsulating electrical and electronic components
- Repair bond for joints
- Glass reinforcement resin

Product Benefits

- Excellent resistance to chemicals, alcohols and solvents
- Good Water resistance
- Good Toughness and Flexibility
- Outstanding resistance to abrasion
- Low temperature cure – Non-critical mixing

FDA Status

Cured coating formulated with **Tuffbond® 317** epoxy resins, crosslinking agents and adjuncts may be safely used as food-contact surfaces and conform to listing in section 175.300, Title 21 (21 CFR 175.300) of the Code of Federal Regulations. The cured **Tuffbond® 317** epoxy coating may be applied over a metal or other suitable substrate as a continuous film that serves as a functional barrier between food and the substrate. Please review the regulations.

Typical Properties (Uncured)

Property	Part A	Part B
Base	Epoxy	Amine
Appearance	Clear	Amber
Viscosity at 25ºC, cP	10,000 - 20,000	8,000 – 18,000
Specific Gravity	1.17	0.97
Mix Ratio by Weight	100	40 to 110

Typical Properties (Cured)

Property	Value
Results for mixing ratio Part A: Part B	1:1
Working Life at 22ºC (20g), minutes	≤150
Durometer Hardness, Shore D	60 - 70
Glass Transition Temperature (Tg) ºC	64.7
Thermal Conductivity	0.24 W/m ºK
Coefficient of thermal expansion, ASTM D696 (K^{-1}), before tg	40 x 10^{-6}
Coefficient of thermal expansion, ASTM D696 (K^{-1}), after tg	200 x 10^{-6}
Tensile Strength, psi, ASTM D638	7,012.27
Modulus, psi	244,366.23
Elongation, tensile strain at break, %	6.54
Dielectric Constant at 1kHz	2.4
Dissipation Factor at 1kHz	0.0048
Dielectric Strength, V/mil	500-700

Property	Value
Results for mixing ratio Part A: Part B	2:1
Working Life at 22ºC (20g), minutes	≤120
Durometer Hardness, Shore D	70 - 80
Glass Transition Temperature (Tg) ºC	108.8
Coefficient of thermal expansion, ASTM D696 (K^{-1}), before tg	72 x 10^{-6}
Coefficient of thermal expansion, ASTM D696 (K^{-1}), after tg	165 x 10^{-6}

Property	Value
Results for mixing ratio Part A: Part B	1:2
Working Life at 22ºC (20g), minutes	210-240
Durometer Hardness, Shore A	70 - 80
Glass Transition Temperature (Tg) ºC	37

Typical Cured Performance

Shear Strength
Lap-shear specimens tested according to ASTM D1002.
Cured 24 Hours at 22ºC

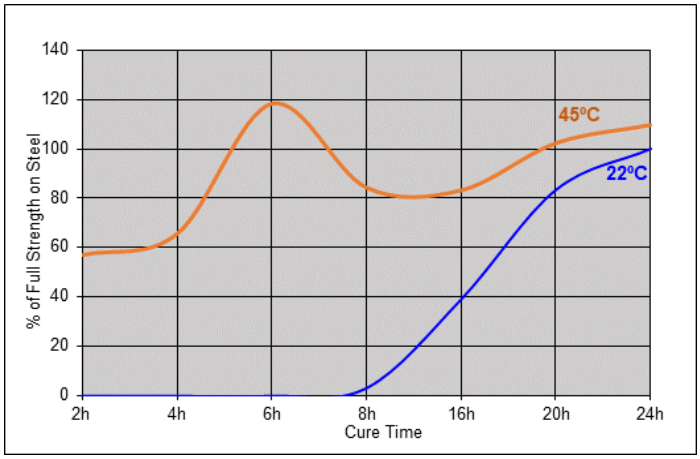
Substrates	Shear Strength (psi)		
	1:1	2:1	1:2
Grit-blasted Steel	2000 – 4000	1500 – 2000	>1500
Grit-blasted Aluminum	>3000	>2500	>1500
FR-4	1500 – 2500	>1500	>750

Block Shear Strength
Block-shear specimens tested according to ASTM D4501.
Cured 24 Hours at 22ºC

Substrates	Shear Strength (psi)		
	1:1	2:1	1:2
Polycarbonate/Polycarbonate	>1500	>1500	>150
Glass/Glass	>1500	>750	>450

Cured Speed vs Temperature

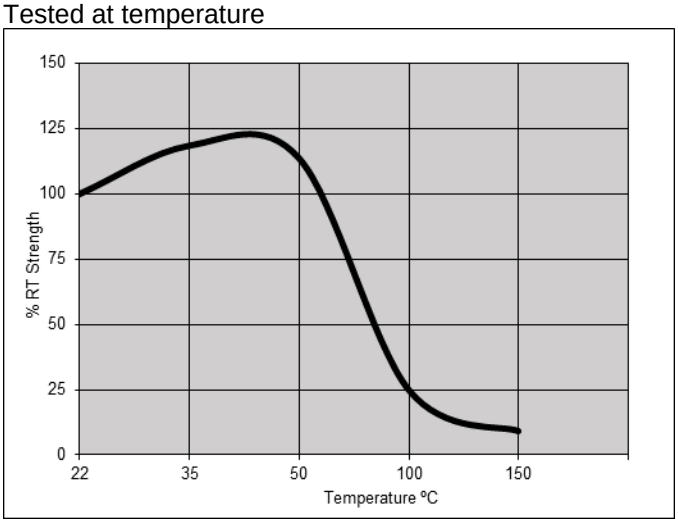
Shear Strength on steel lap-shear specimens tested at 22ºC, according to ASTM D1002.



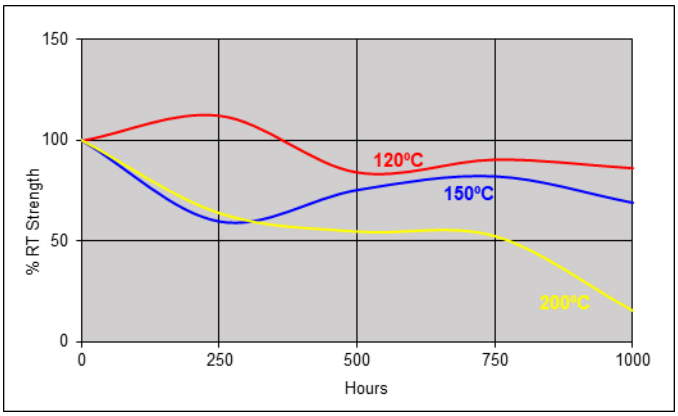
Typical Environmental Resistance

Shear Strength on steel lap-shear specimens tested according to ASTM D1002. Cured for 72 hours at 22ºC.

Hot Strength
Tested at temperature



Heat Aging
Aged at temperature indicated and tested at 22ºC.



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).

Storage

Tuffbond® 317 should be stored in a cool, dry location in unopened containers at a temperature between 45ºF to 85ºF (7ºC to 29ºC) unless otherwise labeled. Optimal storage is at the lower half of this temperature range. To prevent contamination of unused material, do not return any material to its original container.

Dispensing Equipment

Hernon® offers a complete line of semi and fully automated dispensing equipment. Contact **Hernon® Sales** for additional information.