

Technical Data Sheet Tuffbond[®] 394

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Product Description

Hernon[®] Tuffbond[®] 394 is a single component, high temperature resistant, heat activated epoxy. It cures to a high performance thermoset system with excellent adhesion properties to a wide variety of substrates. **Tuffbond[®] 394** will change from amber-yellow to a reddish brown upon cure.

Bonding the voice coil to the cone has been a challenge for engineers, specifically when the adhesive temperature resistance requirement is above 200°F (93°C). Two component epoxy was commonly used for this application, but limitations such as mixing ratio, cure speed, potential solidification in equipment and the need for equipment flushing solvents have made **Tuffbond[®] 394** more practical.

Product Benefits

- High temperature resistance.
- Single component (no mixing, no pot life).
- Solventless.
- Cures on demand (heat cure).
- Will not slip during cure.
- Changes color upon cure (yellow to brown).
- Excellent adhesion to various substrates.
- Gives high shear.
- Low water absorption.
- Very rigid.
- Low density.
- No porosity upon cure.

Typical Properties (Uncured)

Property	Value
Resin	Epoxy
Appearance	Amber-yellow liquid
Viscosity @ 25°C, cP	44,000 to 56,000
Specific gravity	1.19
Flash point	See MSDS

Curing Characteristics

Tuffbond[®] 394 can be cured by infrared or convection oven. Cure time will depend on the bondline temperature.

Temperature, °C (°F)	Cure Time, minutes
150 (300)	≤1.5
120 (250)	≤ 3
100 (212)	≤ 9

Typical Properties (Cured)

Property	Value
Heat Resistance, °C (°F)	204 (400)

Typical Cured Performance

Shear Strength, ISO 4587
Cured at temperature listed

Substrate	Shear Strength, N/mm ² (psi)
Steel, 150C	≥ 20.7 (≥ 3000)
Steel, 90C	≥ 13.8 (≥ 2000)

Typical Environmental Resistance

Chemical/Solvent Resistance

Shear Strength, gritblasted steel, ISO 4587
Cured 2 minutes at 150°C
1 week immersion in chemical/solvent

Chemical/Solvent	% Initial Strength Retained
Water	100
Motor Oil	99
Hydraulic Fluid	99
Aviation Fluid	99
Methanol	99

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 Material Safety Data Sheet (MSDS).

Storage

Tuffbond® 394 must be stored under refrigeration at a temperature of approximately 40° F for extended shelf life. Keep container tightly closed when not in use. 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.

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