

Technical Data Sheet HASA 722

December 2009

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Product Description

Hernon[®] **HASA 722** is a single-component, anaerobic, structural adhesive designed for bonding rigid assemblies. **HASA 722** cure is accomplished when mating surfaces including metal, glass and ceramics are joined together.

Accelerated cures are possible with the application of primers or by a short, low temperature heat cycle. Upon cure, **HASA 722** is a highly cross linked thermoset plastic with excellent properties over a wide range of conditions.

Product Benefits

- Single component, ready to use adhesive.
- Room temperature cure.
- 100% active material, no solvents.
- Easy clean-up. Wipe uncured adhesive from outer surfaces.

Typical Applications

- Bonding ferrite to plated metals in electric motors and loud speakers.
- Bonding of glass and ceramics.
- Where fast setting of adhesives with high structural properties is required.

Typical Properties (Uncured)

Property	Value
Chemical Type	Urethane
Appearance	Amber liquid
Specific gravity @ 25°C	1.10
Viscosity @ 25°C, cP	10,000
Flash point	See MSDS

Typical Properties (Cured)

Physical Properties

Property	Value
Coefficient of thermal expansion, ASTM D696 (K ⁻¹)	80 x 10 ⁻⁶
Coefficient of thermal conductivity, ASTM C 177, W/(m·K)	0.1
Specific Heat, kJ/(kg·k)	0.3
Tensile strength, psi, ASTM D412	4,930
Elongation, %, ASTM D412	135
Modulus, psi, ASTM D638	44,000
Maximum Gap Fill, in.	0.020

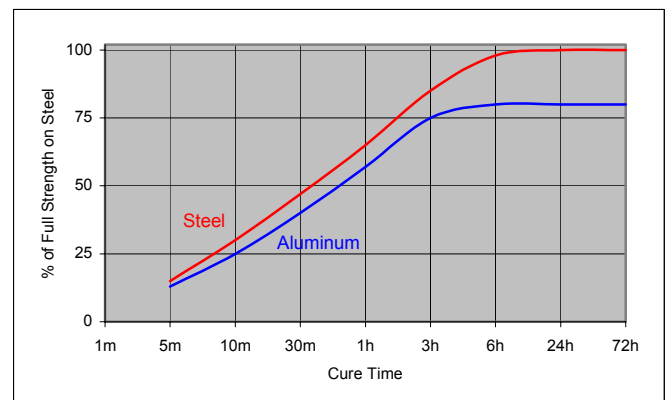
Electrical Properties

Property	Value
Dielectric Strength, kV/mm ASTM D149	30
Dielectric Constant @ ASTM D150	100 Hz 5.6 1 kHz 5.3 1 MHz 4.6
Dissipation Factor @ ASTM D150	0.10 kHz 0.03 1 kHz 0.03 10 kHz 0.04
Volume Resistivity, Ω·cm ASTM D257	2 × 10 ¹³
Surface Resistivity, Ω ASTM D257	2 × 10 ¹⁷

Typical Curing Performance

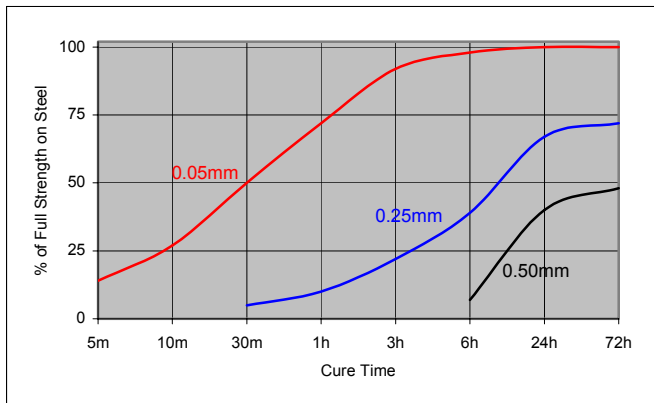
Cure Speed vs. Substrate

The rate of cure will depend on the substrate used. The graph below shows the shear strength developed with time on grit blasted steel lap shears compared to different materials and tested according to ISO 4587. (**EF**[®] Primer 50 applied to one surface)



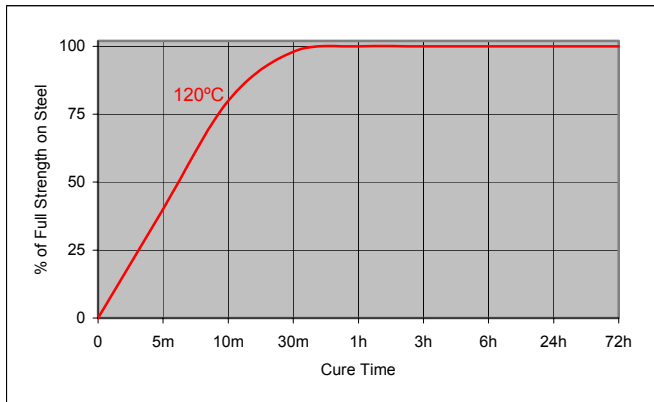
Cure Speed vs. Bond Gap

The rate of cure will depend on the bondline gap. The following graph shows the shear strength developed with time on grit blasted steel lap shears at different controlled gaps and tested according to ISO 4587. (EF[®] Primer 50 applied to one surface)



Cure Speed vs. Time, Temperature

The rate of cure will depend on the ambient temperature. The graph below shows shear strength developed with time at 120°C on grit blasted steel lap shears and tested according to ISO 4587.



Typical Cured Performance

Cured for 24 hours @ 22°C
 Grit blasted steel specimens
 EF[®] Primer 50 applied to one surface

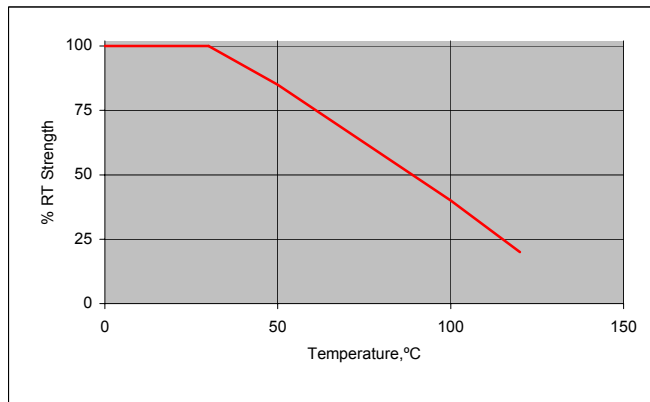
Method	Property	
ISO 4587	Shear Strength	18.6 N/mm ² (2700 psi)
ISO 6922	Tensile Strength	24.1 N/mm ² (3500 psi)

Typical Environmental Resistance

Cured for 1 week @ 22 °C, EF[®] Primer 50 on 1 side
 Shear Strength, ISO 4587
 Steel (grit blasted)

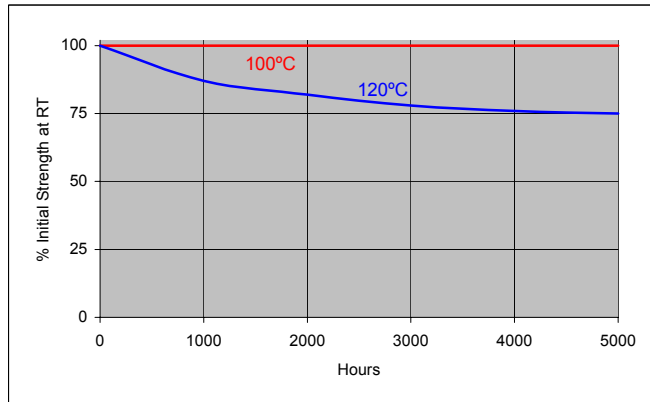
Hot Strength

Tested at temperature



Heat Aging

Aged at temperature indicated - Tested at 72°F (22°C).



Chemical/Solvent Resistance

Aged under condition indicated - Tested at 72°F (22°C).

Chemical/Solvent	Temp (°C)	% of Initial Strength			
		100h	500h	1000h	5000h
Water Glycol 50/50	87	100	40	40	40
Auto. Trans. Fluid	87	100	100	-	-
Phosphate Ester	87	100	100	-	-
Gasoline	22	100	60	60	60
Motor Oil	87	100	100	100	100
Humidity, 100%RH	40	85	85	85	85

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).

Where aqueous washing systems are used to clean the surfaces before bonding, it is important to check for compatibility of the washing solution with the adhesive. In some cases these aqueous washes can affect the cure and performance of the adhesive.

This product is not normally recommended for use on plastics (particularly thermoplastic materials where stress cracking of the plastic could result). It is recommended to confirm compatibility of the product with such substrates.

Directions for Use

1. For best performance, bond surfaces should be clean and free of grease.
2. To ensure a fast and reliable cure, **EF[®] Primer 50** should be applied to one of the bond surfaces and the adhesive to the other surface. Parts should be assembled within 15 minutes.
3. The recommended bondline gap is 0.1 mm. Where bond gaps are large, (up to a maximum of 0.5mm), or faster cure speed is required, activator should be applied to both surfaces. Parts should be assembled immediately, (within 1 minute).
4. Excess adhesive can be wiped away with organic solvent.
5. Bond should be held clamped until adhesive has fixture.
6. Joint should be allowed to develop full strength before subjecting to any service loads, (typically 24 to 72 hours after assembly depending on bond gap and materials).

Storage

HASA 722 should be stored in a cool, dry location in unopened containers at a temperature between 46°F to 82°F (8°C to 28°C) 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.

These suggestions and data are based on information we believe to be reliable and accurate, but no guarantee of their accuracy is made. HERNON MANUFACTURING, INC. shall not be liable for any damage, loss or injury, direct or consequential arising out of the use or the inability to use the product. In every case, we urge and recommend that purchasers, before using any product in full scale production, make their own tests to determine whether the product is of satisfactory quality and suitability for their operations, and the user assumes all risk and liability whatsoever, in connection therewith. Hernon's Quality Management System for the design and manufacture of high performance adhesives and sealants is registered to the ISO 9001 Quality Standard.