

Shape Charge Sealant 820

Product Description

Heron® Shape Charge Sealant 820 is a fast curing; high strength anaerobic adhesive designed to retain and seal cylindrical assemblies. Curing occurs when adhesive is confined between mating surfaces. The cured adhesive is a thermoset plastic suitable for exposure to most solvents. Augments or replaces press fits, set screws, pins and other mechanical retaining methods. Avoiding heavy press fits due to rapid cure.

Shape Charge Sealant 820 cures quickly at room temperature without the need for surface activators or heat to join cylindrical assemblies. Fixturing strength develops in five minutes or within 15 seconds by exposing the edge fillets to high intensity long wavelength UV light (365 nm). Full strength will be reached in 24 hours.

Typical Properties (Uncured)

Property	Value
Chemical Type	Urethane Methacrylate
Appearance	Red Liquid
Viscosity @ 77°F (25°C), cP	500 to 700
Specific gravity	1.09
Flash point	See SDS

Typical Properties (Cured)

Property	Value
UV cure time (US1000)	3 - 5 seconds
UV cure time (LED9)	5 - 7 seconds
Temperature Range, °F	-65 to 300

Typical Curing Performance

Curing Specifications

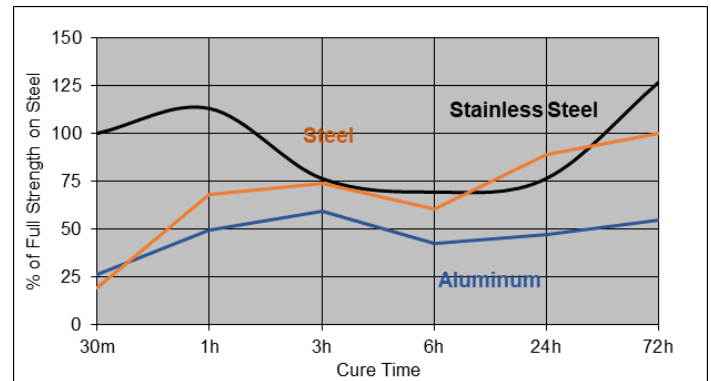
Curing occurs when the resin is confined between metallic surfaces. The metal acts as a catalyst for the curing process. Hot air oven heat or induction heat will fully cure these compounds. To ensure proper cure of UV fillets, UV light intensities above 100 milliwatts/cm² is recommended.

Fixture Time and Surface Cure

UV fixture time is defined as the light exposure time required to develop a shear strength of 0.1 N/mm². When curing with sufficient UV light irradiance, exposed material cures dry to touch in seconds.

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 steel pins and collars compared to different materials and tested according to ISO 10123.



Typical Cured Performance

Compressive Shear Strength,
Tested at RT, on steel pins and collars according to ASTM D4562.

Cure Conditions	Temperature	Strength, psi
24 Hours	22°C	≥ 2500

Cured for 1 week @ 22°C,
Shear Strength, according to ASTM D4562,
Steel Pins and Collars,
Tested at temperature indicated.

Temperature	Shear Strength, psi
150°C	≥ 1400

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).

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.

Hernon® Technical Data Sheet

Shape Charge Sealant 820

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

For best results, clean all surfaces (external and internal) with a **Hernon®** cleaning solvent and allow them to dry. If the material is an inactive metal or the cure speed is too slow, apply **Activator 49 or 50** and allow it to dry.

For Slip Fitted Assemblies, apply an adhesive around the leading edge of the pin and the inside of the collar and use a rotating motion during assembly to ensure good coverage.

For Press Fitted Assemblies, apply adhesive thoroughly to both bond surfaces and assemble at high press on rates.

For Shrink Fitted Assemblies the adhesive should be coated onto the pin, the collar should then be heated to create sufficient clearance for free assembly.

Parts should not be disturbed until sufficient handling strength is achieved.

Disassembly and Cleanup

To aid in disassembly anaerobic compounds can be weakened by heating to at least 500°F (260°C). Once disassembled, cured adhesive can be removed with a solvent.

Storage

Shape Charge Sealant 820 should be stored in a cool, dry location in unopened containers at a temperature between 45°F to 85°F (7°C to 29°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, do 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.