

Technical Data Sheet Quantum[®] 148

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Page 1 of 2

Product Description

Hernon[®] Quantum[®] 148 Cyanoacrylate Adhesive is formulated to improve the adhesion, set time and the gap filling capabilities over conventional cyanoacrylate adhesives. This advanced formulation improves adhesion to difficult to bond plastics, wood, leather, ceramics and elastomers.

Quantum[®] 148 is a single component, solventless, room temperature curing adhesive that polymerizes rapidly when pressed into a thin film between parts. The presence of surface moisture initiates the cure of the adhesive. **Quantum[®] 148** will develop a handling strength within seconds and a full cure within a few hours.

Typical Applications

- Rubber bumpers
- Permanent locking of plastic fasteners
- Speaker components
- Shock mounts
- Gear to shaft
- Wiper blades
- Acrylic windows
- Name plates
- Catheters
- Honing stones
- Security collars
- O-rings
- Insulation pads

Product Benefits

- Single component
- 100% solventless
- Instant setting
- Improved gap filling capability
- Improved adhesion to difficult to bond surfaces

Typical Properties (Uncured)

Property	Value
Chemical Type	Ethyl Cyanoacrylate
Appearance	Clear liquid
Viscosity @ 25°C, cP	650 to 750
Specific gravity	1.10
Flash point	See MSDS

Typical Properties (Cured)

Cured 1 week @ 22°C

Physical Properties

Property	Value
Coefficient of thermal expansion, K ⁻¹ , ASTM D696	100 × 10 ⁻⁶
Temperature range, °C, (°F)	-54 to 121 (-65 to 250)

Electrical Properties

Property	Value
Dielectric Strength, kV/mm ASTM D149	25
Volume Resistivity, Ω·cm ASTM D257	1 × 10 ¹⁶
Surface Resistivity, Ω ASTM D257	4 × 10 ¹⁶

Typical Curing Performance

Cure Speed vs. Substrate

The rate of cure will depend on the substrate used. The table below shows the fixture time achieved on different materials at 22°C / 50% relative humidity. Fixture time is defined as the time to develop a shear strength of 0.1 N/mm².

Substrate	Fixture Time (seconds)
Steel (degreased)	15
Aluminum (etched)	20
Zinc Dichromate	35
Neoprene	15
Nitrile Rubber	20
ABS	5
PVC	10
Polycarbonate	20
Phenolic	10
Epoxyglass, G-10	15
Leather	20
Paper	5
Pine	20
Teak	17

Cure Speed vs. Bond Gap

The rate of cure will depend on the bond line gap. Thin bond lines result in high cure speeds, increasing the bond gap will decrease the rate of cure.

Cure Speed vs. Accelerator

Where cure speed is unacceptably long due to large gaps, applying accelerator to the surface will improve cure speed. However, this can reduce ultimate strength of the bond and therefore testing is recommended to confirm effect.

Cure Speed vs. Humidity

The rate of cure will depend on the ambient relative humidity. Higher relative humidity levels result in more rapid speed of cure.

Typical Cured Performance

Shear Strength

Cured 1 week @ 22°C - tested according to ISO 4587

Substrate	Shear Strength N/mm ² (psi)
Steel (grit blasted)	22.1 (3200)
Aluminum (etched)	15.2 (2200)
Zinc Dichromate	17.2 (2500)
ABS	5.9 (850) ¹
PVC	5.9 (850) ¹
Polycarbonate	4.8 (700) ¹
Phenolic	10.3 (1490)
Neoprene	10.3 (1490) ¹
Nitrile	10.3 (1490) ¹

¹ Substrate Failure

Typical Environmental Resistance

Cured for 1 week @ 22°C

Shear Strength, ISO 4587

Steel lap-shear specimens (grit blasted)

Chemical/Solvent Resistance

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

Chemical/Solvent	Temp (°C)	% of Initial Strength		
		100h	500h	1000h
Motor Oil	40	100	100	95
Gasoline	22	100	100	100
Ethanol	22	100	100	100
Isopropanol	22	100	100	100
Freon TA	22	100	100	100
1,1,1 Trichloroethane	22	100	100	100
Heat / 95% RH	40	80	75	65

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).

Directions For Use

For best performance bond surfaces should be clean and free from grease. This product performs best in thin bond gaps (0.05 mm).

Disassembly and Cleanup

Liquid Cyanoacrylate should not be wiped with rags or tissue. The fabric will cause polymerization and large quantities of adhesive will heat or cure causing smoke and strong irritating vapors. Always flood with excess water to clean up spill conditions.

Storage

Cyanoacrylate adhesives must be stored under refrigeration at a temperature of 40°F ± 5°F for extended shelf life. Before opening, the containers must be warmed to room temperature, otherwise, water may condense into the bottle and cause hardening of the adhesive. To prevent contamination of unused adhesive, do not return product 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.