HERNON®
High Performance Adhesives and Sealants
ISO 9001 Registered

121 Tech Drive
Sanford, FL 32771
(407) 322-4000
Fax: (407) 321-9700
www.hernonmfg.com

Technical Data Sheet
Instantbond 127

Product Description

Hernon® Instantbond 127 is a gel consistency single component, solventless, room temperature adhesive that sets in seconds when confined between two surfaces. The gel consistency allows for gap filling capability and prevents migration to unwanted areas.

Typical Applications

- Rapid bonding of a wide range of metal, plastic, or elastomeric material.
- On narrow flanges to maintain adhesive width control
- On porous substrates such as leather or foamed plastic or rubber.

Product Benefits

Instantbond 127 develops handling strength within seconds and a fully cured resilient bond within 24 hours. It can bond a wide variety of surfaces to include metals, thermoplastics, ceramics, leather, cork, and paper.

Performance Requirements

Instantbond 127 meets the requirements of CID A-A-3097 Type II Class 5.

Typical Properties (Uncured)

Property	Value
Chemical Type	Ethyl Cyanoacrylate
Appearance	Colorless gel
Viscosity @ 77ºF (25ºC), cP	15,000 to 40,000
Specific gravity	1.13
Flash point	See MSDS

Typical Properties (Cured)

Cured 24 Hours @ 22ºC

Physical Properties

Property	Value
Coefficient of thermal expansion, K^{-1}, ASTM D696	80×10^{-6}
Coefficient of thermal conductivity, W/(m·K), ASTM C177	0.1
Temperature range, ºC, (ºF)	-55 to 82 (-65 to 180)
Gap Fill, mm (in.)	0.254 (0.010)

Electrical Properties

Property		Value
Dielectric Strength, kV/mm ASTM D149		25
Dielectric Constant ASTM D150	@ 0.10 kHz 1 kHz 10 kHz	2.3 2.3 2.3
Dissipation Factor ASTM D150	@ 0.10 kHz 1 kHz 10 kHz	< 0.02 < 0.02 < 0.02
Volume Resistivity, Ω·cm ASTM D257		10×10^{15}

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 22ºC / 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	50 to 100
Aluminum	5 to 30
Neoprene	15 to 25
Nitrile Rubber	15 to 25
ABS	20 to 60
PVC	50 to 100
Polycarbonate	40 to 80
Phenolic	20 to 50

Cure Speed vs. Bond Gap

The rate of cure will depend on the bondline 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.

Typical Cured Performance

Shear Strength

Cured 24 Hours @ 22ºC - tested according to ISO 4587

Substrate	Shear Strength, N/mm² (psi)
Steel (grit blasted)	17.9 to 26.2 (2600 to 3800)
Aluminum (etched)	11.0 to 19.3 (1,600 to 2,800)
ABS	> 6.0 (> 870)
PVC	> 6.0 (> 870)
Polycarbonate	> 5.2 (> 750)
Phenolic	5.2 to 15.2 (750 to 2200)
Neoprene	> 10 (> 1450)
Nitrile	> 10 (> 1450)

Tensile Strength

Tested according to ISO 6922

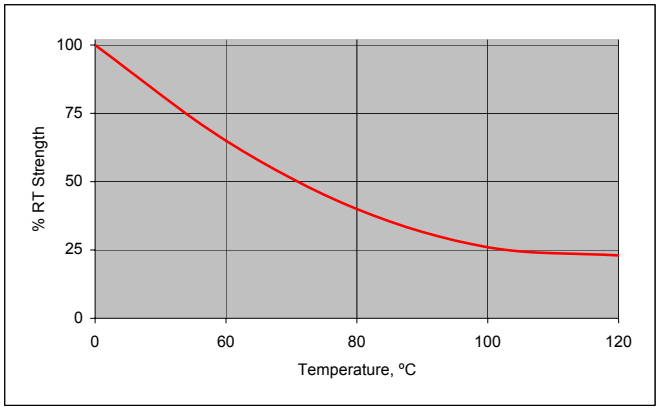
Substrate	Cure Time at 22ºC	N/mm² (psi)
Steel	24 hours	12.1 to 25.2 (1750 to 3650)
Buna-N	30 seconds	> 6.0 (> 870)

Typical Environmental Resistance

Cured for 1 week @ 22ºC
Shear Strength, ISO 4587
Steel lap-shear specimens (grit blasted)

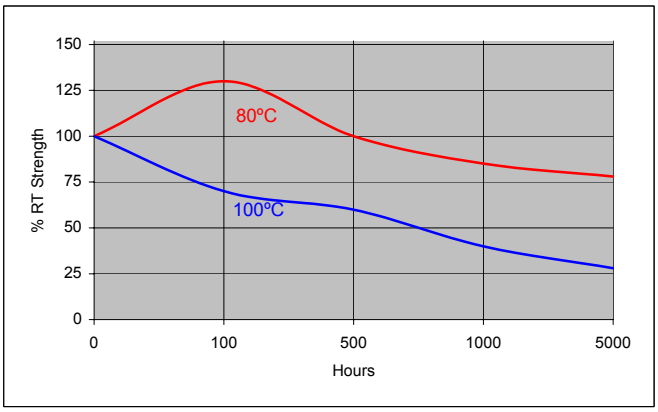
Hot Strength

Tested at temperature



Heat Aging

Aged at temperature indicated and tested at 22°C



Chemical/Solvent Resistance

Aged under condition indicated - Tested at 72ºF (22ºC).

Chemical/Solvent	Temp (ºC)	% of Initial Strength 100h	500h	1000h
Motor Oil	40	100	100	95
Gasoline	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 40ºF ± 5ºF 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.