HERNON®
High Performance Adhesives and Sealants
ISO 9001 Registered

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Technical Data Sheet
Quantum® 45801

Product Description

Hernon® Quantum® 45801 is a single-component cyanoacrylate adhesive formulated for impact, thermal shock and peel resistance.

Product Benefits

- Single-component: no mixing
- Good shock and impact resistance
- Cures at room temperature
- Easy to apply

Typical Applications

- For bonding parts that require a higher humidity resistance than regular cyanoacrylates
- For parts subjected to shock and vibration
- For parts subjected to thermal cycling
- For most rubber, plastic or metal substrates

Typical Properties (Uncured)

Property	Value
Chemical Type	Ethyl Cyanoacrylate
Appearance	Clear
Viscosity, cP	2000 to 3500
Specific gravity	1.07
Flash point	See MSDS

Typical Properties (Cured)

Cured 24 Hours @ 22ºC

Physical Properties

Property	Value
Coefficient of thermal expansion, K^{-1}, ASTM D696	90×10^{-6}
Temperature range, ºC (ºF)	-55 to 120 (-65 to 248)
Gap Fill, mm (in.)	0.203 (0.008)

Electrical Properties

Property	Value
Dielectric Strength, kV/mm ASTM D149	25
Dielectric Constant @ 0.1 kHz ASTM D150 1 kHz 1000 kHz	4.0 3.8 3.3
Dissipation Factor @ 0.05 kHz ASTM D150 1 kHz 1000 kHz	< 0.04 < 0.04 < 0.03
Volume Resistivity, Ω·cm ASTM D257	8×10^{15}
Surface Resistivity, Ω ASTM D257	180×10^{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, degreased	210
Aluminum	90
Zinc Dichromate	240
Neoprene	20
Nitrile Rubber	10
ABS	15
PVC	35
Polycarbonate	60
Phenolic	180
Melamine (G9)	90

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

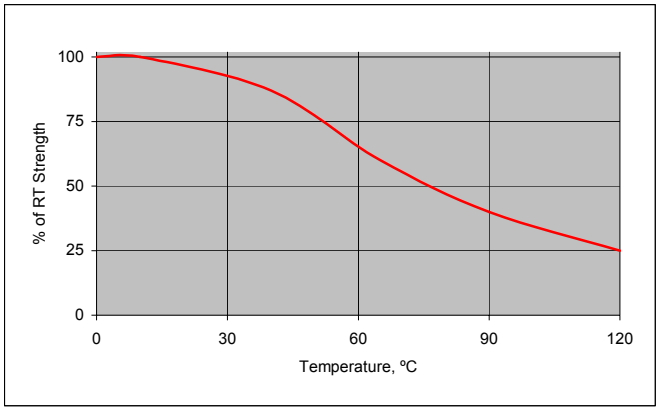
Substrate	Shear Strength N/mm² (psi)
Steel, gritblasted	25.0 (3625)
Steel, gritblasted, exposed to 121ºC for 24 h, tested at 121ºC	≥6.9 (≥1000)
Steel, gritblasted, exposed to 121ºC for 24 h, tested at 22ºC	≥20.7 (≥3000)
Aluminum, etched	17.2 (2500)
Zinc Dichromate	11.0 (1600)
G-10 Epoxy	10.0 (1450)
G-11 Epoxy	8.3 (1200)

Typical Environmental Resistance

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

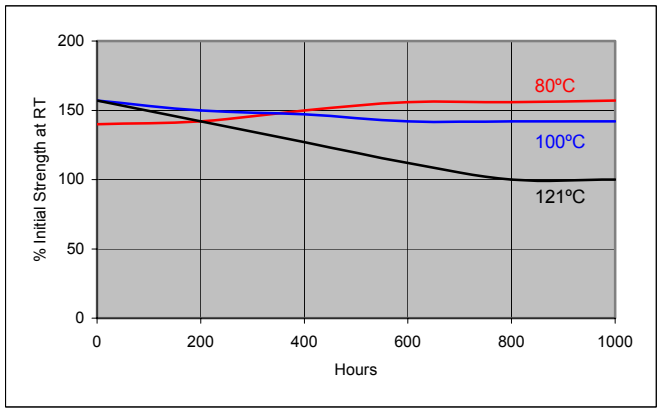
Hot Strength

Tested at temperature



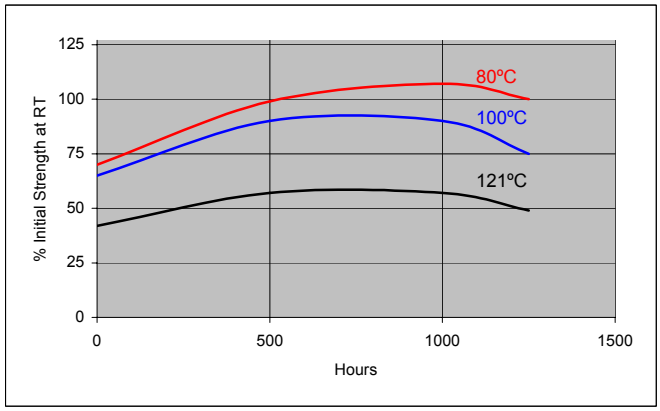
Heat Aging

Aged at temperature indicated and tested at 22°C



Heat Aging/Hot Strength

Aged at temperature indicated and tested at temperature



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.