HERNON® ISO 9001:2000
High Performance Adhesives and Sealants

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

Technical Data Sheet
Quantum® 144

Product Description

Hernon® Quantum® 144 is a black, single component, cyanoacrylate gel instant adhesive toughened with elastomers for impact, peel and moisture resistance. **Quantum® 144** resists thermal shock and can be used in temperatures up to 223ºF.

Typical Applications

- Effective on most plastic, rubber or metal substrates.
- Cures more slowly than standard cyanoacrylates.
- Can be used where thermal cycling resistance is required.
- For parts subjected to shock and vibration.
- Can be used in damp or humid environments.

Typical Properties (Uncured)

Property	Value
Chemical Type	Ethyl Cyanoacrylate
Appearance	Black Liquid
Viscosity @ 77ºF (25ºC), cP	20,000 to 25,000 (gel)
Specific gravity	1.10
Flash point	See MSDS

Typical Properties (Cured)

Cured 24 Hours @ 22ºC

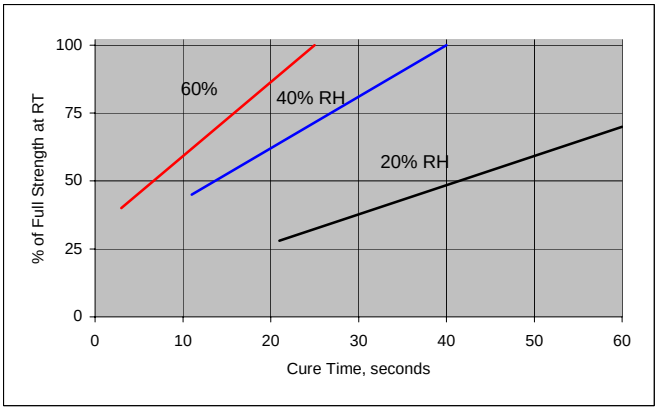
Physical Properties

Property	Value
Coefficient of thermal expansion, K^{-1}, ASTM D696	80×10^{-6}
Coefficient of thermal conductivity, W/(m·K), ASTM C177	0.1
Gap Fill, mm (in.)	0.25 (0.010)

Typical Curing Performance

Cure Speed vs. Substrate & Bond Gap
The rate of cure will depend on the substrate used and 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. Humidity
The rate of cure will depend on the ambient relative humidity. The following graph shows the tensile strength developed with time on Buna N rubber at different levels of humidity.



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	≥ 16.6 (≥ 2400)
Steel, gritblasted, exposed to 121ºC for 24 h, tested at 22ºC	≥ 4.8 (≥ 700)
Steel, gritblasted, exposed to 121ºC for 24 h, tested at 121ºC	≥ 20.7 (≥ 3000)

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.