

Technical Data Sheet Nuts N' Bolts[®] 423

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Product Description

Hernon[®] Nuts N' Bolts[®] 423 is a single component anaerobic thread locking material, which is thixotropic and develops medium strength. The product cures when confined in the absence of air between close fitting metal surfaces and is particularly suitable for less active substrates such as stainless steel and plated surfaces.

Typical Applications

- Prevents loosening and leakage of threaded fasteners.
- Pump and motor mounting bolts.
- Engine rocker nuts
- Equipment housing screws.
- Situations where disassembly with hand tools is required.

Performance Testing

Each batch of **Nuts N' Bolts[®] 423** is tested to the lot requirements of ASTM D5363 (AN0321), and to the detail requirements of MIL-S-46163A (Type II Grade N).

Typical Properties (Uncured)

| Property | Value |
|-----------------------------|-------------------------|
| Chemical Type | Dimethacrylate Ester |
| Appearance | Blue Fluorescent Liquid |
| Viscosity @ 77°F (25°C), cP | 800-1600 |
| Specific gravity | 1.04 |
| Flash point | See MSDS |
| Temperature Range, °F | -65 to 300 |
| Fixture Time, Steel, mins | 15 - 30 |

Typical Cured Performance

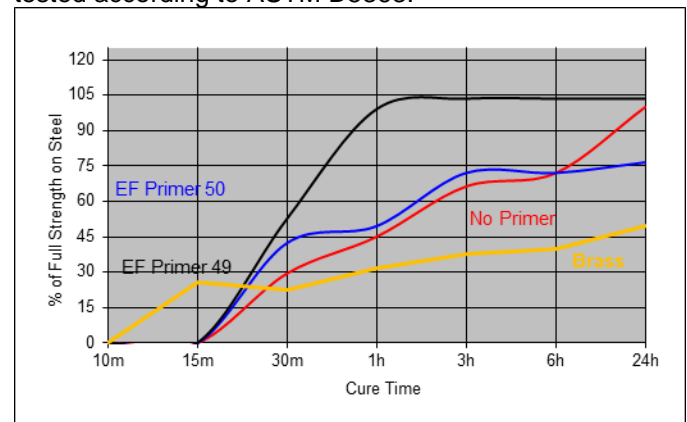
Cured and tested at 22°C on 3/8 x 16 grade 2 nuts and grade 5 bolts according to ASTM D5363.

| Cure | Substrate | Torque | N•m (in-lb) |
|----------|-----------|------------|-------------------------|
| 60 Mins. | Steel | Breakaway | ≥ 4 (≥35) |
| | | Prevailing | ≥1.1 (≥10) |
| 24 Hrs. | Steel | Breakaway | 7.9 to 22.6 (70 to 200) |
| | | Prevailing | 2.3 to 22.6 (20 to 200) |
| | Plated | Breakaway | 1.1 to 22.6 (10 to 200) |
| | | Prevailing | 0.6 to 22.6 (5 to 200) |

Typical Curing Performance

Cure Speed vs. Primer/ Substrate

When cure speed is unacceptably long (because of substrate, temperature or gap), performance may be improved by treating the surface with **Hernon[®] EF[®] Primer 49 or 50**. The graph below shows breakaway strength developed with time using **EF[®] Primer 49 and 50** on 3/8 X 16 steel nuts and bolts and other substrates tested according to ASTM D5363.



Typical Environmental Resistance

Hot Strength

Cured for 24 hours @ 22°C

Heated to 150°C for 2 hrs

Tested hot according to ASTM D5363

| Cure | Substrate | Torque | N•m (in-lb) |
|---------|-----------|------------|-------------|
| 24 Hrs. | Steel | Breakaway | ≥3.9 (≥35) |
| | | Prevailing | ≥1.1 (≥10) |

Chemical/Solvent Resistance

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

| Chemical/Solvent | Temp (°C) | % of Initial Strength | | |
|-----------------------|-----------|-----------------------|-------|--------|
| | | 100 h | 500 h | 1000 h |
| Water Glycol 50/50 | 87 | 80 | 75 | 70 |
| Brake fluid | 22 | 100 | 100 | 100 |
| Ethanol | 22 | 100 | 100 | 95 |
| Leaded Gasoline | 22 | 100 | 100 | 100 |
| Unleaded Gasoline | 22 | 100 | 100 | 95 |
| Motor Oil | 125 | 100 | 100 | 100 |
| Acetone | 22 | 100 | 100 | 85 |
| 1,1,1 Trichloroethane | 22 | 100 | 100 | 90 |

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).

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.

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

Shake the product thoroughly before use. For best performance surfaces should be clean and free of grease. **Nuts N' Bolts® 423** should be applied to the bolt in sufficient quantity to fill all engaged threads.

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 **Heron® Gasket Remover 30**.

Storage

Nuts N' Bolts® 423 should be stored in a cool, dry location in unopened containers at a temperature between 46°F to 85°F (8°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

Heron® offers a complete line of semi and fully automated dispensing equipment. Contact **Heron® 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. HERON 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. Heron's Quality Management System for the design and manufacture of high performance adhesives and sealants is registered to the ISO9001 Quality Standard.