

## Technical Data Sheet Nuts N' Bolts<sup>®</sup> 420

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### Product Description

**Hernon<sup>®</sup> Nuts N' Bolts<sup>®</sup> 420** is a single component anaerobic thread locking material, which is thixotropic and develops low strength for easy disassembly. The product cures when confined in the absence of air between close fitting metal surfaces.

### Typical Applications

- Prevents loosening and leakage of threaded fasteners.
- Adjustment of set screws.
- Situations where easy disassembly is required.

### Performance Testing

Each batch of **Nuts N' Bolts<sup>®</sup> 420** is tested to the lot requirements of MIL-S-46163A (Type II Grade M), and to the detail requirements of ASTM D5363 (AN0311).

### Typical Properties (Uncured)

Property	Value
Chemical Type	Methacrylate Ester
Appearance	Purple fluorescent liquid
Specific Gravity	1.03
Viscosity @ 25°C, cP	800 to 1600
Flash Point	See SDS

### Typical Properties (Cured)

Property	Value
Coefficient of thermal conductivity, ASTM C177, W / m <sup>2</sup> K	0.5
Set Time, Steel, Minutes	<20

### Typical Cured Performance

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

Cure	Substrate	Torque	N <sub>o</sub> m (in-lb)
60 Mins.	Steel	Breakaway	≥ 1.7 (≥15)
		Prevailing	≥0.5 (≥4.4)
24 hours	Steel	Breakaway	3.4-11.3 (30 to 100)
		Prevailing	1.1- 11.3 (10 to 100)
	Plated	Breakaway	1.1- 11.3 (10 to 100)
		Prevailing	0.6 - 11.3 (5 to 100)

24 hours	Zinc	Breakaway	≥2.8 (≥25)
		Prevailing	≥0.5 (≥4.4)

### Qualification of Primer

Torque Strength, ASTM D5363  
3/8 x 16 grade 5 bolts and type 2 nuts  
Cure Time at 22°C with **Hernon<sup>®</sup> Primer 50**  
(Grade N)

Prevailing Torque N <sub>o</sub> m (in-lb)	
Plated Steel	
6 Hours	0.3 to 5.6 (2.5-50)
24 Hours	0.5 to 11.3 (5-100)

### Typical Environmental Resistance

#### Hot Strength

Cured for 24 hours at standard conditions.  
Heated to 121°C for 2 hours,  
3/8 x 16 grade 5 bolts and type 2 nuts  
Tested hot according to ASTM D5363

Substrate	Torque	N <sub>o</sub> m (in-lb)
Steel	Breakaway	≥1.7 (≥15)
	Prevailing	≥0.5 (≥5)

#### Heat Aging

Cured for 24 hours at standard conditions.  
Aged for 1000 hours at temperature and tested at room temperature, according to ASTM D5363  
3/8 x 16 Grade 2 Steel Nuts and Bolts

Substrate	Temperature	Torque	N <sub>o</sub> m (in-lb)
Steel	121°C	Breakaway	≥ 1.7 (≥15)
		Prevailing	≥0.5 (≥5)

#### Chemical/Solvent Resistance

Cured for 1 week at 22 °C,  
Aged for 1000 hours under the conditions indicated and tested at 22 °C,  
Breakaway Torque, ISO 10964:  
M10 Zinc phosphate steel Nuts and Bolts

Chemical/Solvent	Temp (°C)	% of Initial Strength
Motor Oil	125	100

Water:Glycol (50:50)	87	100
Ethanol	22	45
Brake Fluid	22	76
Gasoline	22	50
DEF	22	100

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.

### **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 Safety Data Sheet (SDS).**

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 case, 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® 420** 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® 420** should be stored in a cool, dry location in unopened containers at a temperature between 45°F to 85°F (7°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. 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