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Technical Data Sheet

Permatex® Medium Strength Threadlocker BLUE Gel

AAM Revised 01/08

PRODUCT DESCRIPTION

PERMATEX® Medium Strength Threadlocker BLUE Gel is a **medium strength** anaerobic threadlocking gel conveniently packaged in a new Gel Twist™ or Gel Squeeze™ applicator. The product, like its liquid counterpart, is a single component, anaerobic gel that cures when confined in the absence of air between close fitting metal surfaces, ideal for all 6mm to 25mm (1/4 inch to 1 inch) diameter threaded assemblies. Excellent chemical resistance and temperature resistance range of -65°F to +300°F (-54°C to +149°C). The assembly is easily removable with hand tools for servicing requirements. NSF Nonfood Components Program Listed (P1) (135871).

PRODUCT BENEFITS

Improved Reliability

- Eliminates vibration issues
- Seals against leakage
- Prevents rusting of threads
- Designed for use on vertical or hard-to-reach applications
- Cures without cracking or shrinking
- Adjusts or disassembles with hand tools

Easy Application

- No mess Gel Twist™ or Gel Squeeze™ applicator
- Gel-type product does not drip when applied
- Single component
- No curing outside of joint
- Thixotropic: resists dripping from threads during assembly
- No torque compensation required during assembly

TYPICAL APPLICATIONS

Prevents loosening and leakage of threaded fasteners. Particularly suitable for applications such as:

- Belt tensioner bolts
- Pulley bolts
- Cup and core plugs
- Fan hub bolts
- Visor mount bolts
- Starter mounting bolts
- Alternator Mounting Bolts
- Intake Manifold Bolts
- Valve Cover Bolts
- Vacuum Adjustment Screws
- Oil Pan Bolts
- Axle Cover Screws
- Drive Shaft Bolts
- Disc Brake Caliper Bolts
- Gearshift Knobs

DIRECTIONS FOR USE

For assembly

1. Clean all threads (bolt and hole) with a cleaning solvent such as Permatex® Brake and Parts Cleaner and allow to dry.
2. Remove the translucent protective cap by pulling off at an angle.
3. For Gel Twist™ turn the dial on the bottom of the container until 1/8” to 1/4" (3mm to 6mm) of material protrudes from the top of the application tip. Note: First time use may require 4 to 5 full turns of the dial before material appears in the tip.
   For Gel Squeeze™, remove cap and squeeze 1/8 to 1/4" (3mm to 6mm) of material beyond tip.
4. Apply threadlocker to the engagement area of the male fitting (usually the leading 5 to 6 threads).
5. Assemble parts and tighten to recommended torque.
6. If unused gel contacts metal threads, do not retract threadlocker back into the tube. Wipe off with a clean towel.
7. Replace protective cap.

For Cleanup

1. Residual liquid films and/or fillets outside the joint are readily soluble in Permatex® Brake and Parts Cleaner.
2. Cured product can be removed with a combination of soaking in Permatex® Gasket Remover and mechanical abrasion such as a wire brush.

For Disassembly

1. Remove with standard hand tools.
2. In the rare instance where hand tools do not work, because of excessive engagement length, apply localized heat to nut or bolt to approximately 450°F (232°C). Disassemble while hot.

For Reassembly

1. Remove loose product from nut and bolt following cleanup procedure above.
2. Apply Surface Prep™ activator to all threads, regardless of metal type and allow to dry.
3. Apply threadlocker gel as above.
4. Assemble and tighten as usual.

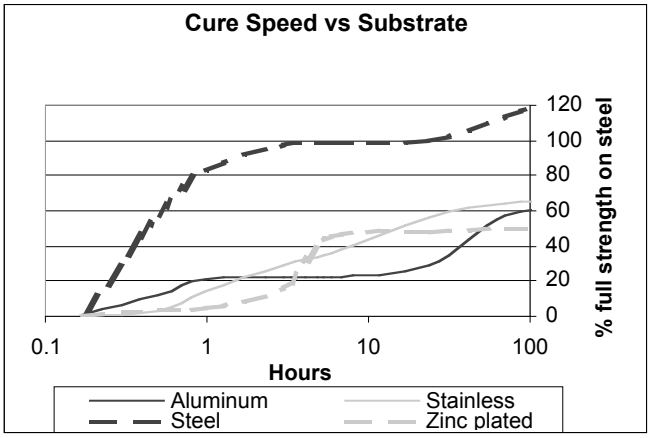
PROPERTIES OF UNCURED MATERIAL

	Typical Value
Chemical Type	Anaerobic Dimethacrylate Ester
Appearance	Opaque Blue Fluorescent Gel
Specific Gravity	1.15
Viscosity @ 25°C, cP	
Brookfield RVF, spindle #3, @ 20 RPM	Gel
Flash Point (TCC), °F (°C)	>200 (>93)

TYPICAL CURING PERFORMANCE

Cure speed vs. substrate

The graph below shows the breakaway strength developed with time on 3/8" – 16 Grade 5 bolts and Grade 2 nuts for different materials.



Cure speed vs. temperature

The rate of cure will depend on the ambient temperature. **Full cure** is attainable in 24 hours at room temperature, 72°F (22°C), or 1 hour at 200°F (93°C).

PERFORMANCE OF CURED MATERIAL

(After 24 hrs. at 72°F on 3/8-16 steel Grade 8 Nuts and Grade 5 bolts)

	Typical Value	Range
Breakaway Torque, in.lbs	115	70 to 150
(Nm)	(13)	(8 to 17)
Prevail Torque, in.lbs	53	25 to 60
(Nm)	(6)	(3 to 7)

Where Breakaway Torque is the force required to initiate the fastener movement and Prevail Torque is the force required to disassemble the fastener once Breakaway Torque has occurred.

TYPICAL ENVIRONMENTAL RESISTANCE

Temperature Resistance

Product temperature range from -65°F to +300°F (-54°C to +149°C). The breakaway and prevailing torque values decrease as temperature increases, however the assembly remains effective against vibration and leakage.

Chemical / Solvent Resistance

Aged under conditions and tested at 72°F (22°C)
3/8 – 16 steel nuts & bolts
% Initial Strength retained after time

	Temp	1000hr
Hot air	150°C	47
Motor oil (SL)	125°C	21

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).

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.

ORDERING INFORMATION

Part Number	Container Size
24010	10 gm Gel Twist™ Applicator, carded
24005	5 gm Gel Squeeze™ Applicator, carded

STORAGE

Products shall be ideally stored in a cool, dry location in unopened containers at a temperature between 8° and 28°C (46° and 82°F) unless otherwise labeled. Optimal storage is at the lower half of this temperature range. To prevent contamination of unused product, do not return any material to its original container.

NOTE

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