Technical Data Sheet

Permatex® Permanent Strength Threadlocker RED

AAM Revised 08/04

PRODUCT DESCRIPTION **S.I.N.: 834-300**

PERMATEX® Permanent Strength Threadlocker RED is a **permanent high strength** anaerobic threadlocking material, which cures between engaged threads to form a unitized assembly that resists virtually all leakage, shock and vibration. The product is a single component, anaerobic liquid that cures when confined in the absence of air between close fitting metal surfaces. Ideal for all 3/8 inch to 1 inch diameter nut and bolt assemblies where future disassembly is improbable. Excellent chemical resistance with a temperature resistance range of -175°C to 150°C (-65°F to 300°F). OEM Specified. NSF White Book registered.

PRODUCT BENEFITS

Improved Reliability

- Eliminates vibration issues
- Seals against leakage
- Prevents rusting of threads
- Cures without cracking or shrinking

Easy Application

- No mixing
- No curing outside of joint
- Thixotropic: resists dripping from threads during assembly
- No torque compensation required during assembly

TYPICAL APPLICATIONS

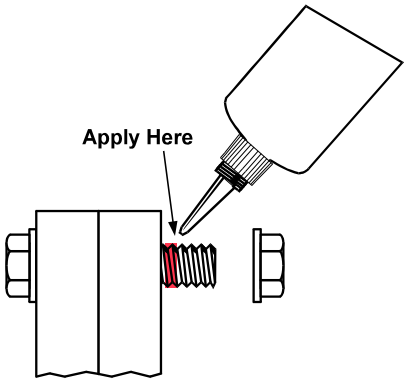
Prevents loosening and leakage of threaded fasteners. Particularly suitable for applications such as:

- Cylinder block bolts
- Ring gear bolts
- Transmission
- Frame bolts
- Shock absorber bolts

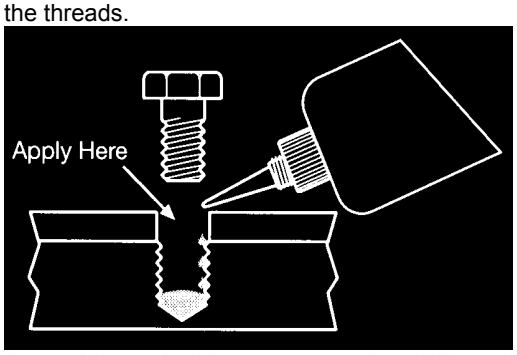
DIRECTIONS FOR USE

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. Determine if the threads to be bonded are **Active** or **Inactive Metals** (Ref: Cure Speed vs. Substrate on the second page). If material is an **Inactive Metal**, spray all threads with Permatex Surface Prep (24163) and allow 30 seconds to dry. Priming is not required if the material is an **Active Metal**. If unknown, it's always best to use the primer.
3. Shake the product thoroughly before use.
4. To prevent the product from clogging in the nozzle, do not allow the tip to touch metal surfaces during application.
5. **For Thru Holes**, apply several drops of product onto the bolt at the nut engagement area.



For Blind Holes, apply several drops down the female threads into the bottom of the hole. As threads are engaged, compressed air forces the product upwards into the threads.



6. Assemble and tighten as usual. When tightening to established torque values, torque compensation is not required.

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. Apply localized heat to nut or bolt to approximately 232°C (450°F). Disassemble while hot.

For Reassembly

1. Remove loose product from nut and bolt.
2. Apply primer to all threads, regardless of metal type.
3. Assemble and tighten as usual.

PROPERTIES OF UNCURED MATERIAL

	Typical Value
Chemical Type	Anaerobic Dimethacrylate Ester
Appearance	Opaque Red Fluorescent Liquid
Specific Gravity	1.10
Viscosity @ 25°C, mPa.s (cP)	1,200 to 2,400
Flash Point (TCC), °C (°F)	>93 (>200)

TYPICAL CURING PERFORMANCE

Cure speed vs. substrate

The rate of cure will depend on the material used. Permatex® Permanent Strength Threadlocker RED will react faster and stronger with **Active Metals.** However, **Inactive Metals** will require the use of a primer (Surface Prep) to obtain maximum strength and cure speed at room temperature.

Active Metals	Inactive Metals
Soft Steel Iron	Bright Platings
Copper	Anodized Surfaces
Brass	Titanium
Manganese	Zinc
Bronze	Pure Aluminum
Nickel	Stainless Steel
Aluminum Alloy	Cadmium

Cure speed vs. temperature

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

Cure speed vs. primer

To shorten cure time or if an inactive surface is present, applying a primer (Surface Prep) to the surface will improve cure speed. A 3/8-16 steel nut and bolt assembly will fixture in 5 minutes using a primer, while fixturing will occur in 20 minutes without a primer. Full cure in 24 hours for both procedures.

PERFORMANCE OF CURED MATERIAL

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

	Typical Value	Range
Breakaway Torque, Nm,	22	14 to 29
(in.lbs)	(189)	(125 to 250)
Prevail Torque, Nm	32	17 to 46
(in.lbs)	(275)	(150 to 300)

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 -175°C to 150°C (-65°F to 300°F). The Breakaway and Prevailing Torque values decrease as temperature increases, however the assembly remains effective against vibration and leakage.

Chemical / Solvent Resistance

The product retains effective properties in contact with automotive fluids, such as motor oil, gasoline, brake fluids, transmission fluids, alcohol and antifreeze solutions.

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
19962	6 ml tube, carded
26240	36 ml bottle

OEM Interchange

Manufacture	OEM Specifications Numbers	
Auto-Latina	MKL10623668	M10616316
BMW	0126374	
Ford	E2FZ-19554-B	WSK-M2G351-A6
G.M.	998 5773	
Isuzu	1-8844-6372-0	
Mazda	LA1249111	
Opel	L0010153	L0020153
Scania	L0020153	
VW/Audi	AMV197300	

STORAGE

Products shall be ideally stored in a cool, dry location in unopened containers at a temperature between 8° to 28°C (46° to 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.