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Technical Data Sheet High Performance Thread Sealant

INDUSTRIAL

PRODUCT DESCRIPTION

Permatex® High Performance Thread Sealant is formulated for fast, responsive curing on metal pipe threads and fittings. This sealant is a smooth, white paste-like compound with PTFE that controls lubricity to assist assembly and torque tightening. Permatex® High Performance Thread Sealant replaces tape or pipe dopes. It cures rapidly to withstand 10,000 PSI within 24 hours. Prevents galling and protects mated threaded surfaces from rust and corrosion. The product cures when confined in the absence of air between close fitting metal surfaces. This product may not be compatible with some thermoplastic materials. NSF White Book registered.



Nonfood Compounds
Program Listed (P1)
(134204)

PRODUCT BENEFITS

- Quick fixture time
- Prevents galling and corrosion
- Controlled strength
- Temperature and solvent resistance
- Immediate low pressure sealing
- Contains PTFE

TYPICAL APPLICATIONS

Recommended for sealing metal tapered pipe threads and fittings up to 5cm (2 inches) National Pipe Thread (NPT) for industrial applications in the chemical processing, petroleum refining, pulp/paper, waste treatment, textile, utilities/power generation, marine, automotive, industrial equipment, gas compression and distribution industries. It is also recommended for industrial plant fluid power systems.

- Stainless steel fittings
- Head bolts into through holes
- Oil PSI sending units/sensors
- Fuel fittings
- Oil and coolant lines
- Hydraulic line fittings
- Brake fittings
- Transmission fluid fittings
- PTO fittings
- Air conditioning fittings

DIRECTIONS FOR USE

1. For best performance, surfaces should be clean and free of grease.
2. Product should be applied to the thread engagement area in sufficient quantity to fill all engaged threads.

3. Use accepted trade practices to assemble and wrench-tighten fittings until proper alignment is obtained.
4. This product performs best in thin bond gaps (0.05mm).
5. Very large thread sizes may create large gaps that will affect cure speed and strength.
6. For maximum pressure and solvent resistance, allow at least 24 hours for the product to fully cure before filling and pressurizing system.
7. This product is designed to give controlled friction (torque/tension ratio) during assembly.

PHYSICAL PROPERTIES OF UNCURED MATERIAL

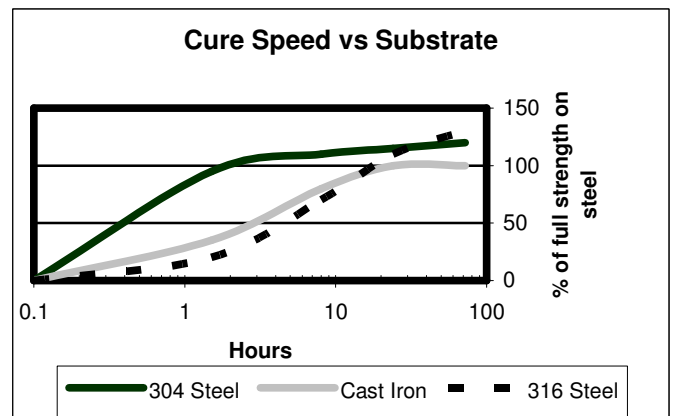
	Typical Value
Chemical Type	Methacrylate ester
Appearance	White opaque paste
Odor	Acrid
Specific Gravity	1.10
Viscosity (cP)	300,000
Flash Point (T.C.C.) °F	>200
Chemical resistance	Gasoline, oil, water, glycol, hydraulic fluid, freon

TYPICAL CURING PERFORMANCE

Cure speed vs. substrate

The rate of cure will depend on the material used. Permatex® High Performance Thread Sealant will react faster and stronger with **Active Metals**. However, **Inactive Metals** will require the use of an activator (Surface Prep) to obtain maximum strength and cure speed at room temperature.

The graph below shows the breakaway strength developed with time on 1/2" NPT fittings compared to different material.

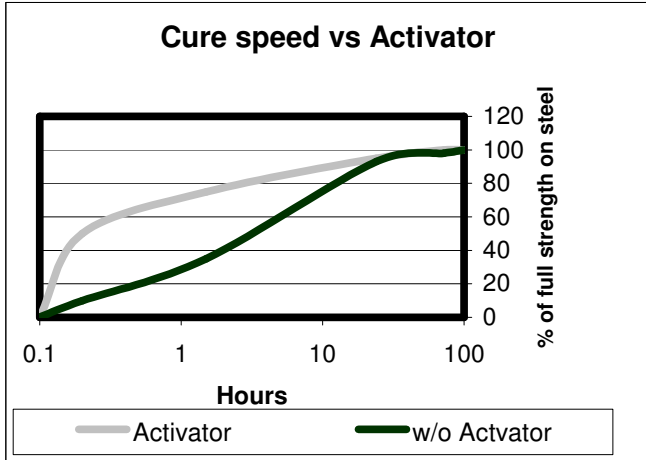


Cure speed vs. temperature

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. activator

Where cure speed is unacceptably long, or large gaps are present, applying an activator (Surface Prep) to the surface will improve cure speed. The graph below shows the shear strength developed with time on 1/2" NPT fittings using Permatex® Surface Prep Activator.



CURED INFORMATION

(3/8 NPT, Cured 24 hours @ 75°F)

Pressure Resistance (psi) 10,000
 Temperature Range (°F) -65 to +300
 Breakaway torque, ISO 10964 (in.-lb.) 40
 Maximum recommended pipe size* 2" NPT

* May be used on threads larger than 2" but all threads must be activated with Surface Prep Activator and the time for full cure extended to 48 hours (pipe burst pressure after 96 hours). Heat may be required for removal.

Chemical / Solvent Resistance

Aged under conditions and tested at 22°C(72°F)

% Initial Strength retained after time		
	Temp	720hr
Heat Aged	150°C	180%
Motor oil	125°C	140%
Gasoline	23°C	75%
Distilled Water	23°C	130%
Antifreeze	87°C	270%

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.

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For safe handling information on this product, consult the Material Safety Data Sheet, (MSDS).

ORDERING INFORMATION

Part Number	Container Size
56521	50 ml. tube, carded
56525	250 ml. tube

STORAGE

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