

Features & Benefits

- Full cure seal to the burst rating of pipe
- Easy to use and apply
- Directional freedom
- Does not contain solvents
- Excellent chemical and temperature resistance
- Cures at room temperature
- Will not shred, tear or cause blockages

Description

Permabond® LH050 pipe sealant with PTFE is a general purpose pipe sealant that provides instant air pressure seal up to 1000 psi with limited hand tightening. After cure, the sealing capability is typically up to the burst rating of the pipe itself. The low locking strength allows easy disassembly.

Permabond® LH050 pipe sealant performs well on most metals, particularly steel and brass. It provides an excellent alternative to pipe dopes and pipe tapes for sealing pipe joints.

It cures anaerobically when in contact with metal parts (as in a threaded pipe joint). When applied, LH050 dispenses as a smooth paste, filling the entire space between the threaded parts. It then cures at ambient temperature to form a solid plastic, completely sealing against hydraulic fluids, air, gases and chemicals. In addition, it locks the pipes, plugs or fittings against vibration loosening, tampering and variable temperature effects.

UL Classification:

Permabond LH050 is classified by Underwriters Laboratories Inc.® for use in devices handling gasoline, petroleum oils, and natural gas (pressure not over 300 psig) not exceeding 2 in. pipe size; propane and butane not exceeding 1 in. pipe size. 66G9.

Permabond LH050 is classified by Underwriters Laboratories Inc.® for use in sprinkler system and water spray system piping not exceeding 2 in. pipe size containing air, nitrogen, water, propylene glycol or glycerol antifreeze solutions. 66G9.

Physical Properties of Uncured Adhesive

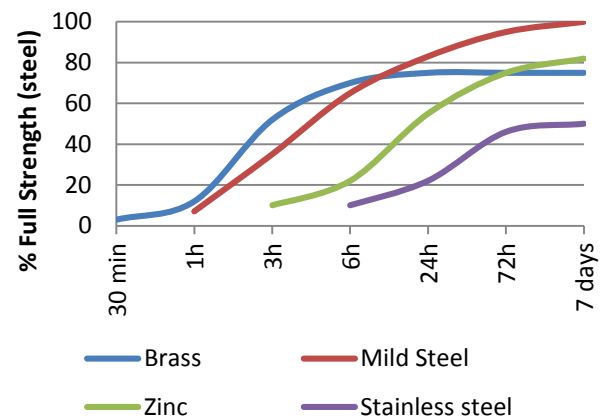
Chemical composition	Methacrylate esters
Appearance	White
Viscosity @ 25°C	250,000 mPa.s (cP)
Specific Gravity	1.1
Particle size	<10µm
UV fluorescence	No

Typical Curing Properties

Maximum gap fill	0.5 mm <i>0.02 in</i>
Time taken to reach handling strength (M10 steel) @23°C	2 hours*
Full strength (M10 steel) @23°C	24 hours

*Copper and its alloys will make the adhesive cure more quickly, while oxidized or passivated surfaces (like stainless steel) will reduce cure speed. To reduce curing time, use Permabond activator A905 or ASC10. Alternatively, increasing the curing temperature will reduce curing time.

Strength Development



*Cure times are typical at 23°C. Copper and its alloys will follow the faster cure while oxidised or passivated surfaces like stainless steel will tend towards the slower curve. Lower temperatures or large gaps will tend to extend the cure time. To reduce the cure time the use of Permabond A905, ASC10, or heat can be considered.

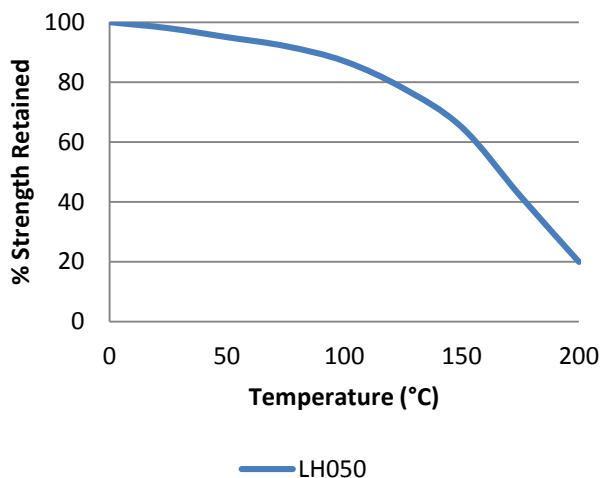
Typical Performance of Cured Adhesive

Torque strength (M10 steel ISO10964)	Break 4 N·m <i>35 in.lb</i> Prevail 3 N·m <i>25 in.lb</i>
Compressive shear strength (steel collar & pin ISO10123)	7 MPa <i>1000 psi</i>
Coefficient of thermal expansion	90 x 10 ⁻⁶ mm/mm/°K
Coefficient of thermal conductivity	0.19 W/(m.K)

The information given and the recommendations made herein are based on our research and are believed to be accurate but no guarantee of their accuracy is made. In every case we urge and recommend that purchasers before using any product in full-scale production make their own tests to determine to their own satisfaction whether the product is of acceptable quality and is suitable for their particular purpose under their own operating conditions. THE PRODUCTS DISCLOSED HEREIN ARE SOLD WITHOUT ANY WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED.

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Hot Strength



"Hot strength" Breakaway strength on M10 Zinc plated bolts according to ISO 10964. Cured at 23°C for 24 hours then conditioned for 30 minutes at testing temperature.

LH050 can withstand higher temperatures for brief periods (such as for paint baking and wave soldering processes) providing the joint is not unduly stressed. The minimum temperature the cured adhesive can be exposed to is -55°C (-65°F) depending on the materials being bonded.

Chemical Resistance

1000 Hour immersion	Temperature, °C (°F)	Pressure, psi	Results
50% Antifreeze / 50% water solution	126 (260)	60	No leak
Brake fluid	150 (300)	60	No leak
Differential lube	150 (300)	60	No leak
5W/30 Engine oil	150 (300)	60	No leak
Transmission fluid	150 (300)	60	No leak
Diesel fuel #2	25 (77)	60	No leak
ASTM fuel C	25 (77)	60	No leak
Water, steam	198 (390)	60	No leak
Air	150 (300)	60	No leak

This product is not recommended for use in contact with oxygen, oxygen rich systems and other strong oxidizing materials. This product may adversely affect some thermoplastics and users must check compatibility of the product with such substrates before using.

Surface Preparation

Though the anaerobic adhesives will tolerate a slight degree of surface contamination, best results are obtained on clean, dry and grease free surfaces. The use of a suitable solvent-based cleaner (such as acetone or isopropanol) is recommended. To reduce the curing time, especially on inactive surfaces (such as zinc, aluminum and stainless steel), the use of Permabond® A905 or ASC10 can be considered.

Directions for Use

- 1) Prevent the tip from touching metal surfaces during application.
- 2) Apply Permabond® LH050 onto the leading 3-4 threads half way around the male pipe for pipes up to 1½ inches in diameter. For larger pipes, apply completely around the pipe.
- 3) Screw fittings together. Permabond pipe sealants will seal even when the direction the pipe must face does not allow the complete seating of the threads.
- 4) Visually inspect for a bead of pipe sealant around the entire pipe. If the sealant isn't visible around the circumference, repeat the steps above using more sealant.

Permabond®LH050 is designed for use on threaded metallic pipe joints; not recommended for use on plastic components.

Storage & Handling

Storage Temperature	5 to 25°C (41 to 77°F)
Users are reminded that all materials, whether innocuous or not, should be handled in accordance with the principles of good industrial hygiene. Full information can be obtained from the Safety Data Sheet.	

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