

### Features & Benefits

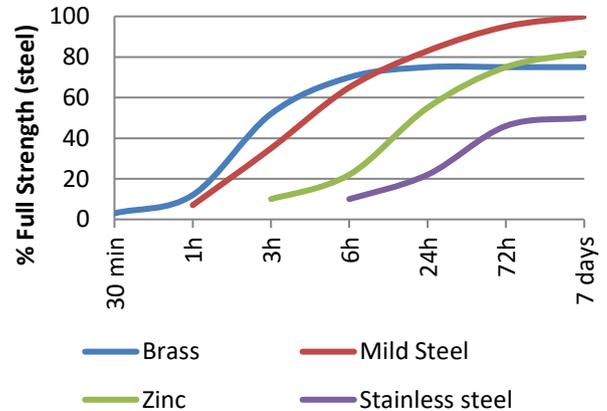
- Easy to use and apply
- Directional freedom
- Does not contain solvents
- Excellent chemical and temperature resistance
- Cures at room temperature
- Will not shred, tear or cause blockages

### Description

Permabond® LH051 Pipe Sealant with PTFE is specifically designed for those applications that require a good “bottoming-out” of pipe, fitting or plug. The added lubricity helps in seating the part even with an interference fit/ As such, it is used in heavy duty machinery e.g. compressors, hydraulics and construction equipment. When used on soft brass parts, the lubricity may be too high at times, thereby causing deformation of the part upon assembly. LH051 is also made flowable so that it can easily be applied with dispensing equipment. The particle size of the filler is very low, so that it can be used on most hydraulic systems without clogging hydraulic screens or valves.

Permabond LH051 Pipe Sealant with PTFE provides an excellent replacement for pipe dopes and pipe tapes.

### 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.

### Physical Properties of Uncured Adhesive

Chemical composition	Methacrylate esters
Appearance	White
Viscosity @ 25°C	2rpm: 450,000 mPa.s (cP) 20rpm: 70,000 mPa.s (cP)
Specific Gravity	1.1
Particle Size	<10µm

### Typical Performance of Cured Adhesive

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

### Typical Curing Properties

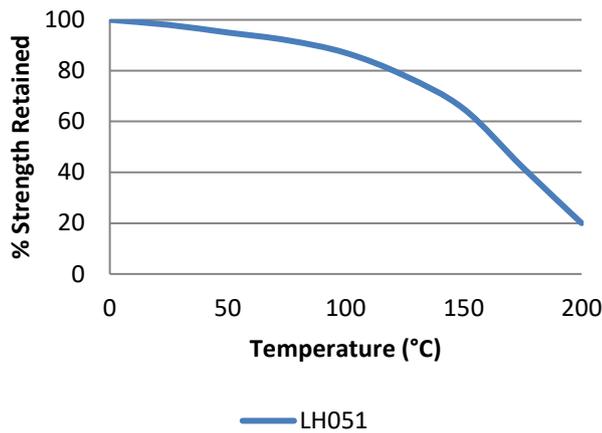
Maximum gap fill	0.5 mm <b>0.02 in</b>
Time taken to reach handling strength (M10 steel) @23°C	2 hours*
Full strength (M10 steel) @23°C	24 hours

\*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.

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.

No representative of ours has any authority to waive or change the foregoing provisions but, subject to such provisions, our engineers are available to assist purchasers in adapting our products to their needs and to the circumstances prevailing in their business. Nothing contained herein shall be construed to imply the non-existence of any relevant patents or to constitute a permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of this patent. We also expect purchasers to use our products in accordance with the guiding principles of the Chemical Manufacturers Association's Responsible Care® program.

## 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.*

LH051 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.*

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.

No representative of ours has any authority to waive or change the foregoing provisions but, subject to such provisions, our engineers are available to assist purchasers in adapting our products to their needs and to the circumstances prevailing in their business. Nothing contained herein shall be construed to imply the non-existence of any relevant patents or to constitute a permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of this patent. We also expect purchasers to use our products in accordance with the guiding principles of the Chemical Manufacturers Association's Responsible Care® program.

Permabond LH051

Global TDS Revision 2

18 October 2016

Page 2/2

FOR PROFESSIONAL OR INDUSTRIAL USE ONLY. KEEP OUT OF REACH OF CHILDREN.

## 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, aluminium 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® LH051 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®LH051 is designed for use on threaded metallic pipe joints; not recommended for use on plastic components.*

## Video Link

Pipesealant directions for use:  
<https://youtu.be/mLvX0LoaNaE>



## 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.	

**This Technical Datasheet (TDS) offers guideline information and does not constitute a specification.**

[www.permabond.com](http://www.permabond.com)

• UK: 0800 975 9800

• General Enquiries: +44 (0)1962 711661

• US: 732-868-1372

• Asia: + 86 21 5773 4913

[info.europe@permabond.com](mailto:info.europe@permabond.com)

[info.americas@permabond.com](mailto:info.americas@permabond.com)

[info.asia@permabond.com](mailto:info.asia@permabond.com)