



## **Loctite® Maintenance, Repair & Overhaul**

Solutions Guide & Product Selector





## MAKING THE RIGHT CHOICE...

For every industrial maintenance, repair and overhaul challenge, Loctite® products have the right solution.

Designed to prevent common failures, extend equipment life and increase production reliability, the Loctite® product range is a maintenance professionals most valuable tool. Proven with over 50 years industrial experience, typical product applications include;

- ✓ Securely lock any threaded fastener or fitting against vibration and shock load.
- ✓ Seal and protect threaded joints and components.
- ✓ Instantly replace gaskets of any size or shape.
- ✓ Retain bearings, bushes and cylindrical parts into housings or onto shafts - even if worn.
- ✓ Protect metal parts from corrosion, galling and seizing.
- ✓ Permanently and quickly bond a wide variety of materials.
- ✓ Make emergency repairs to burst pipes and tanks.
- ✓ Clean, degrease and covert rust.

## MORE THAN A PRODUCT...

Our highly experience Loctite® Application Engineers are committed to providing the highest level of technical and product support in the industry.

Working closely with our local industrial suppliers, our Application Engineers provide full process support from problem solving to on-site maintenance and product training.



Within this Solutions Guide & Product Selector you will find everything you need to know about Loctite® brand industrial grade products. Whether for an emergency repair or preventative maintenance, you will find it easy to select the Loctite® product you need. However if more information is required, all you have to do is visit our website or call the Loctite® Customer Support Line.














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# LOCTITE®

## THE MASTER OF MOBILITY



Mobility comes in many forms and Loctite Sticks provide improved mobility to make your job faster and easier. Loctite Sticks are convenient enough to carry in your pocket and perfect for use in hard to reach or overhead applications without any drips, leaks or spills.

**NO LEAKS, DRIPS OR SPILLS**  
**FITS IN YOUR POCKET**  
**KEEPS TOOLBOXES AND HANDS CLEAN**  
**FAST AND EASY TO APPLY**  
**GREAT FOR OVERHEAD USE**



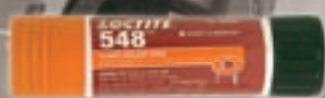
**248** Medium Strength  
Threadlocker



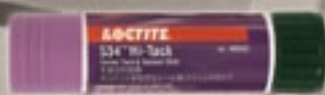
**268** High Strength  
Threadlocker



**668** High Temp/Strength  
Retaining Compound



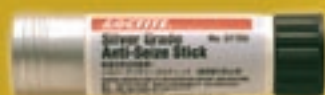
**548** Gasket Eliminator™  
Flange Sealant



**534** Hi-Tack Gasket Tack  
and Sealant



**561** PST™ Pipe Sealant  
with PTFE



**Silver Grade** Anti-Seize Stick





## COMMITTED TO INNOVATION

From its founding in 1953, based on the world's first anaerobic product that cured in the absence of air, Loctite® has achieved success through innovation.

An unrelenting commitment to continuous research and development has resulted in the most technically advanced range of industrial maintenance products available today. Products that increase equipment reliability, reduce costs and improve quality throughout industry.

Here are some of our newest innovations featured throughout this catalogue;

### Loctite® Sticks

The quality and performance you trust in a new and more convenient semi-solid stick formula.

These patented new stick products offer greater flexibility for tougher applications, especially overhead, under or around machinery, and on components that can not be moved. They're compact, making them easy to carry from job to job and easy to store in a tool box, tool belt or pocket. The semi-solid formula means that they won't spill or leak. Now available in an expanded range including two threadlockers, a pipe sealant, an anti-seize, a retaining compound and two gasketing products.

**Loctite® Reliability with a twist!**

*(Refer to previous page for more details)*



### Primerless Threadlockers

Formulated with ground-breaking technology, and designed to achieve rapid fixture strength without the use of primers, Loctite® Primerless Threadlockers cure up to 400% faster than conventional products and are ideal for work sites where flammable primers are restricted. Available in two grades, 2440 Medium Strength and 2760 High Strength, they also feature broad chemical resistance. *(Refer to page 9 for more details).*



### Loctite® Freeze & Release

The solution for releasing seized or corroded parts – SHOCK FREEZE.

Loctite® Freeze & Release instantly chills seized and rusted parts (bolts, nuts, studs) down to -43°C. The exceptional shock-freeze effect causes microscopic cracks in the layer of rust, allowing the lubricating ingredient to wick directly into the rust by capillary action. The assembly can be easily dismantled after allowing 1-2 minutes reaction time. Released parts remain lubricated and protected from corrosion. *(Refer to page 25 for more details).*





# Threadlocking



Invented as a revolutionary method to lock and seal threaded fasteners, Loctite® brand anaerobic threadlockers have found wide acceptance in a range of applications – from delicate electronic components to heavy construction equipment. Loctite® brand threadlockers are available in varying viscosities and strengths for virtually any application, including exposure to extreme environments.

## Features & Benefits

**Prevents Loosening of Fasteners** - Sets to a thermoset plastic that fills microscopic gaps between interfacing threads preventing any movement.

**Seals Against Corrosion** – Seals the joint preventing ingress of moisture and other corrosive gases, chemicals and fluids.

**Provides Correct Lubricity** – Lubrication properties yield controlled torque tension curves - ideal for assembly of equipment to specified torque values.

**Controlled Strengths** – Available in varied controlled strengths to suit all applications – low, medium and high.

**Suitable for all Fastener Sizes** – Eliminates the need to hold stock of expensive mechanical fasteners.

**Easy to Apply** – Simply apply to the thread and assemble. Excess will not cure and can be easily wiped away.

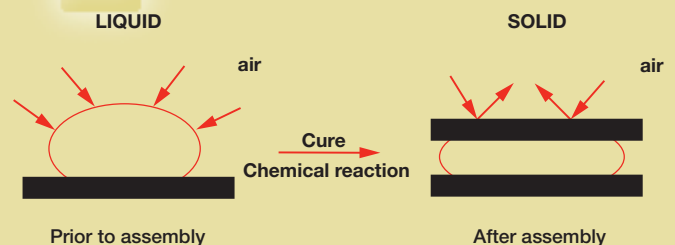


## Did You Know?

### How does an Anaerobic Adhesive work?

Anaerobic adhesives are single-component materials which cure at room temperature when deprived of contact with oxygen. Curing begins when the two metal parts are mated together and any adhesive outside of the joint or thread remains liquid.

The capillary effect of the anaerobic liquid adhesive carries it into even the smallest gaps to fill the joint. The cured adhesive is then 'keyed' to the surface roughness of the parts forming a tough thermoset plastic, which bonds the components and seals against moisture or chemical attack.





# Threadlocking

## Product Selector

1 Are the parts assembled?

2 What strength is required?

3 Maximum Temperature

4 Unique Features

## Solution

	222	243	248	262
Fastener Size	Up to 36mm (M36)	Up to 36mm (M36)	Up to 20mm (M20)	Up to 36mm (M36)
Colour	Purple	Blue	Blue	Red
Strength	Low	Medium	Medium	High
Fixture Time <sup>#</sup>	20 min	20 min	10 min	20 min
Full Strength <sup>#</sup>	24 hrs	24 hrs	24 hrs	24 hrs
Breakloose Torque <sup>#</sup> Nm (lb.in.)	14 (120)	24 (210)	20 (177)	38 (340)
Prevailing Torque <sup>#</sup> Nm (lb.in.)	14 (120)	24 (210)	-	40 (350)
Temperature Range	-54°C to +150°C	-54°C to +150°C	-54°C to +150°C	-54°C to +150°C
Recommended Activator	7471	7471	7649	7649
Disassembly Method	Hand Tool	Hand Tool	Hand Tool	Direct Heat
Size (Part Number)	10ml bottle (22220) 50ml bottle (22250) 250ml bottle (22270)	10ml bottle (21320) 50ml bottle (21321) 250ml bottle (21322)	19gm stick (37773B)	10ml bottle (26220) 50ml bottle (26250) 250ml bottle (26270)

# M10 steel nut & bolt, cured for 24 hours @ 22°C and pre-torqued to 5Nm. \* Breakaway torque. For further information refer to product Technical Data Sheet.

## Product Description

### Loctite® 222



Recommended for low strength threadlocking of adjusting screws, counter sunk head screws and set screws; on collars, pulleys, tool holders, and controllers.

### Loctite® 243



Effective on all types of metal threaded fasteners. Prevents loosening on vibrating parts such as pumps, motor mounting bolts, gear boxes or presses. Contains a cutting additive for high oil tolerance.

### Loctite® 248



Medium strength semi-solid stick applicator ideal for hard to reach applications. Recommended for fastener applications where removal is required.

### Loctite® 262



For use on all metal fasteners (including stainless steel and those with protective coatings such as zinc), where permanent locking and sealing is required.



Not Assembled				Assembled
High			Very High	Medium/High
150°C		232°C	150°C	150°C
Stick Applicator	Rapid Cure	High Thermal Stability	Very High Strength	Wicking Grade
No Mess	Primerless		High Chemical Resistance	Fills Porosity in Welds
<b>268</b>	<b>2760</b>	<b>272</b>	<b>277</b>	<b>290</b>
Up to 20mm (M20)	Up to 36mm (M36)	Up to 36mm (M36)	Up to 36mm (M36)	Up to 12mm (M12)
Red	Red	Red	Red	Green
High	High	High	Very High	Medium/High
20 min	10 min	120 min	60 min	20 min
24 hrs	24 hrs	24 hrs	24 hrs	24 hrs
37 (330)	36 (325)	23 (200)*	38 (340)	30 (270)
-	36 (320)	25 (220)*	40 (350)	40 (350)
-54°C to +150°C	-54°C to +150°C	-54°C to +232°C	-54°C to +150°C	-54°C to +150°C
7471	-	7471	7649	7649
Direct Heat	Direct Heat	Direct Heat	Direct Heat	Direct Heat
19gm stick (37775B)	50ml bottle (32525) 250ml bottle (32527)	50ml bottle (27240)	50ml bottle (27750) 250ml bottle (27770)	10ml bottle (29020) 50ml bottle (29050) 250ml bottle (29070)

**Loctite® 268**

High strength semi-solid stick applicator ideal for hard to reach places. Recommended for heavy duty applications such as transmission bolts and construction equipment.

**Loctite® 2760**

Achieves rapid cure without primers. Ideal for sites such as mines where flammable primers are restricted. Also available in medium strength – Loctite® 2440 50ml (33947) or 250ml (33948)

**Loctite® 272**

High temperature threadlocker with outstanding chemical resistance. Suitable for sealing most refrigerants.

**Loctite® 277**

Very high strength threadlocker with outstanding chemical resistance. Suitable for sealing most refrigerants.

**Loctite® 290**

Recommended for locking pre-assembled fasteners such as instrument screws, electrical connectors and set screws.



# Thread Sealing



Loctite® brand liquid thread sealants seal and secure metal pipes and fittings, filling the space between threaded metal parts and curing to prevent leakage. Designed for low and high pressure applications, liquid thread sealants seal instantly for low pressure testing. When fully cured, they seal to the burst strength of most piping systems.

## Features & Benefits

**Complete Seal** – Fills voids between threads creating a 100% seal, preventing leakage caused by vibrational loosening, temperature cycling, corrosion and extreme pressures.

**Locks & Seals in any Position** – Seals independent of assembly torque allowing correct alignment of fittings.

**Does Not Block Pipe System** – Uncured anaerobic sealant is completely soluble in hydraulic fluid, diesel oils, petrols and most industrial chemicals.

**Instant Low Pressure Seal** – Suitable for immediate operation or low pressure testing of newly sealed threads.

**Lubricates During Assembly** – Eliminates risk of over-stressing fittings or castings, common with alternative thread sealing methods.

**Easy Application & Disassembly** – Simply apply directly to the thread and assemble. Excess sealant can be wiped away without solvents or chemicals. Disassembled with hand tools.

Replaces most tapes and hemp/paste combinations.



## Did You Know?

Industry loses millions of dollars annually due to leakage of fluids through pipe and tubing. Loctite® brand sealants prevent fluid loss, minimising cost of wastage, maintenance and down-time.

The table below details the significant potential cost of a leaking hydraulic fitting over a one year period.

Leakage Rate	Loss per Day (ltr)	Loss per Year (ltr)	Annual Cost (\$/Year)
One drop in 10 sec.	0.56	204.98	\$1,025
One drop in 5 sec.	1.12	409.97	\$2,050
One drop per sec.	5.62	2049.84	\$10,250

*Based on Hydraulic Fluid: \$5.00 / litre*





# Thread Sealing

## Product Selector

**1** Are the pipe threads metal or plastic?

**2** What will flow through pipes?

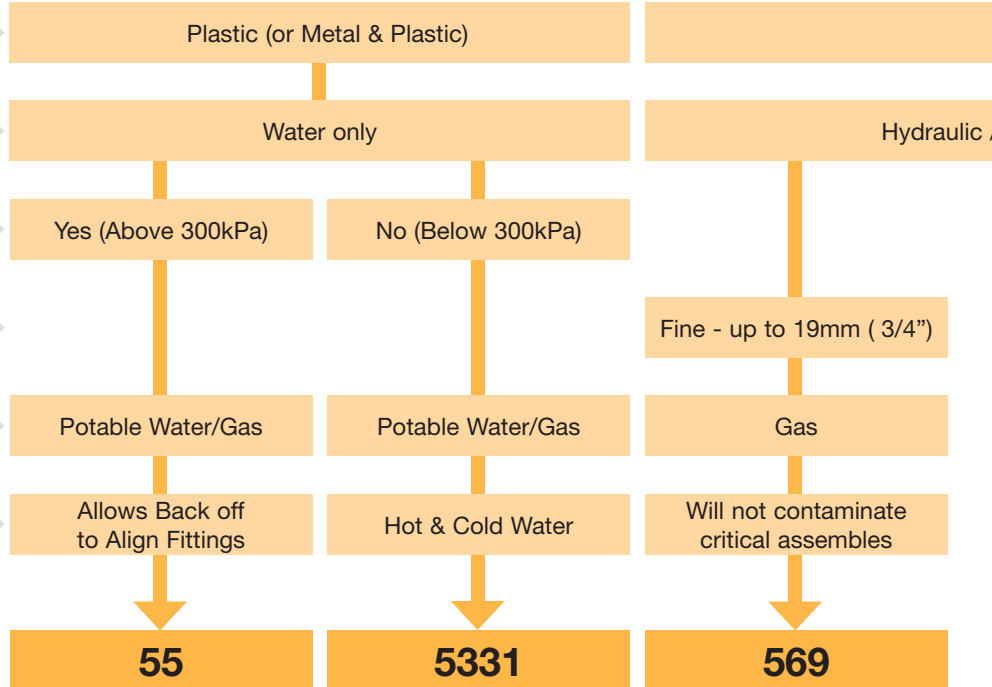
**3** Will operating pressure exceed 300kPa?

**4** Are the threads fine or coarse?

**5** What approvals are required?

**6** Unique Features

## Solution



Description	Cord	White Paste	Brown Liquid
Maximum Thread Size	100mm (4")	76mm (3")	19mm (3/4")
Instant Low Pressure Seal	Yes	Yes (up to 50kPa)	No
Temperature Range	-54°C to +150°C	-54°C to +150°C	-54°C to +150°C
Disassembly Strength	Low	Low	Low/Medium
Recommended Activator	-	-	7471
Size (Part Number)	50m (37371A) 150m (31899)	100ml tube (23872)	50ml bottle (56950) 250ml bottle (56970)

For further information refer to product Technical Data Sheet.

## Product Description

### Loctite® 55



Faster, more versatile pipe sealant which out-dates traditional tapes and hemp/pastes combinations. Provides an instant seal and allows back-off to align fittings.

#### Approvals

- Plumbing Safety License AS/NZS 4020:2002 Cert No. 8638 (Potable Water)
- AGA Certificate 6007 to 2400kPa (Gas).

### Loctite® 5331 No More Leaks



Recommended for use on low pressure threaded plastic or plastic/metal fittings carrying hot or cold water.

#### Approvals

- German DVGW No 96.07e125 (Gas & Potable Water)
- German KTW (Potable Water)
- WRC approved to 85°C (Potable Water)

### Loctite® 569

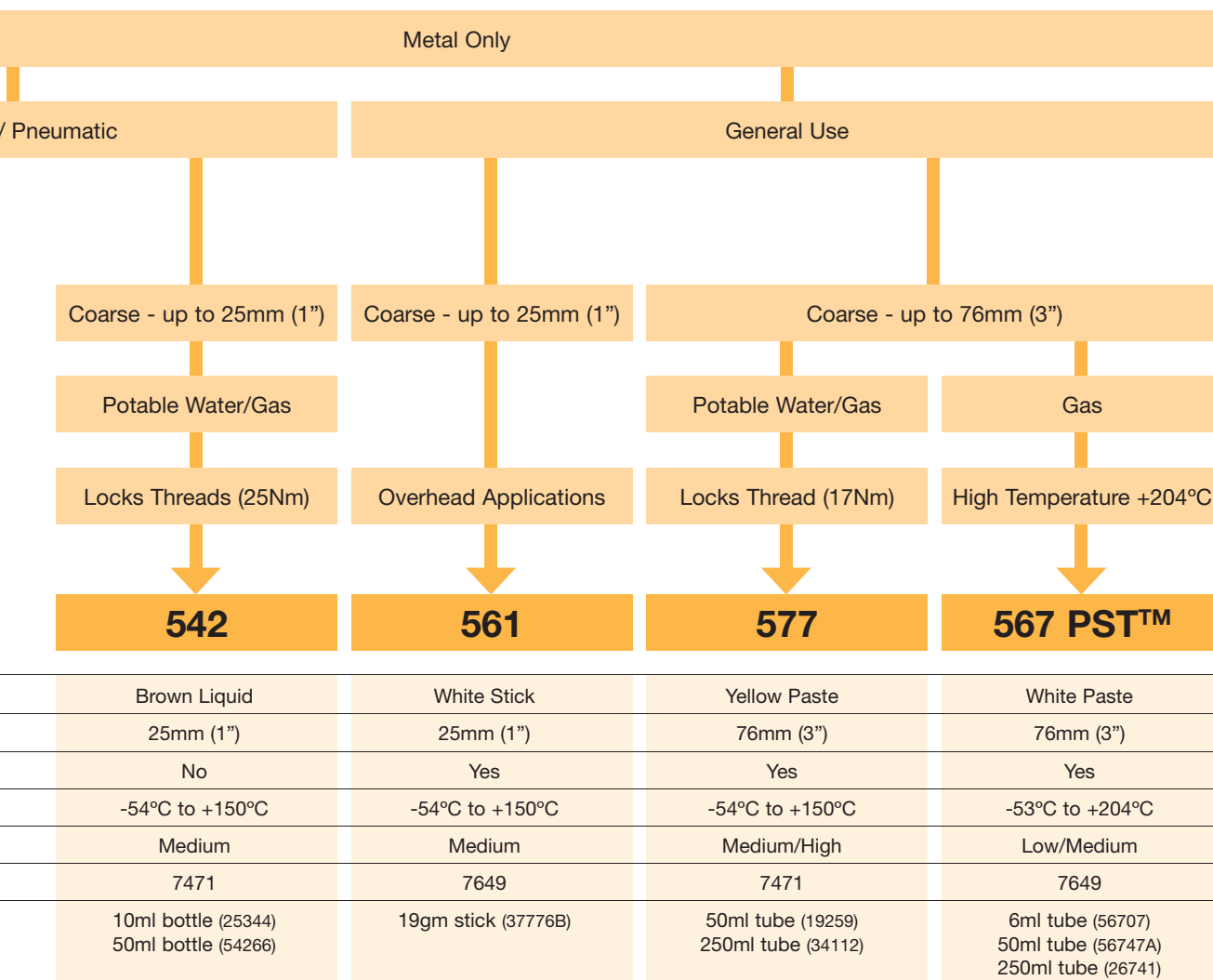


Recommended for fine threaded fittings as used in hydraulic and pneumatic applications.

#### Approvals

- AGA Certificate 3375 to 1050kPa (Gas)



**Loctite® 542**

Recommended for threaded fittings as used in hydraulic and pneumatic installations.

**Approvals**

- German DVGW No 96.02e125 (Gas & Potable Water)
- BS 6956 Type A (Gas)
- WRC approved to 85°C (Potable Water)

**Loctite® 561**

Semi-solid stick formula offers added convenience and portability. Formulated for fast, reliable curing on metal, tapered pipe threads and fittings. Provides high pressure sealing at operating temperatures up to 150°C.

**Loctite® 577**

Recommended for all coarse metal threads. Suitable for applications at low temperatures requiring fast cure.

**Approvals**

- Plumbing Safety License AS/ NZS 4020:2002 Cert No. 20079 (Potable Water)
- AGA Certificate 4787 to 2600kPa (Gas)

**Loctite® 567 PST™**

Recommended for all coarse metal threads where slow cure is required to prolong time frame for adjusting valves and fittings.

**Approvals**

- AGA Certificate 3207 to 1050kPa (Gas)



# Gasketing



Loctite® brand Anaerobic and Silicone gasketing solutions are suitable for small and large gap flange assemblies. Formed-in-place, they can be applied to any shape and offer improved seal reliability compared to traditional pre-cut compression gaskets.

## Features & Benefits

### Anaerobic Gaskets

Loctite® brand anaerobic gaskets remain liquid when exposed to air, but cure when confined between mating flanges. Anaerobic gasketing products are best suited for small gap applications and rigid metal-to-metal assemblies.

#### Features and Benefits;

- ✓ No Shimming Effect - controlled tolerances, no need for re-torquing.
- ✓ Fills all voids reducing the need for a fine surface finish on flanges.
- ✓ Does not shrink when cured.
- ✓ Parts can be easily disassembled even after extended service.
- ✓ Resists high pressure when fully cured.

### Silicone Sealants

Loctite® brand silicone gasketing materials include unique products with excellent fluid and high temperature resistance. They are best suited for large gap applications and stamped metal assemblies where flange flexing occurs.

#### Features and Benefits;

- ✓ High gap fill and flexibility.
- ✓ High temperature and chemical resistance.



## Did You Know?

### What is a Formed-In-Place Gasket?

Formed-in-place gaskets are applied as a fluid sealant to one of the flange surfaces before the parts are assembled. When the parts are assembled the sealant spreads between the flanges, filling gaps, voids, scratches and surface irregularities. After assembly the gasket cures and forms a durable seal.

Formed-in-place gaskets eliminate the inventory expense of stocking countless pre-cut gaskets.

### How do you remove baked-on gasket material?

Loctite® 790 Chisel® Gasket Remover easily removes pre-cut gasket cement and formed-in-place gaskets in 10-15 minutes. Simply spray on, then wipe or scrap off residual gasketing material. (Refer to page 31 for further details).

### How do you position and seal pre-cut gaskets?

Loctite® 534 Hi-Tack Gasket Dressing & Sealant Stick is designed to hold pre-cut gaskets in place while assembling and helps to seal up to +150°C.



# Gasketing

## Product Selector

**1** What size is the gap?

Less than 0.5mm (Anaerobic Sealants)

**2** Is the flange rigid or flexible?

Rigid (Metal to Metal)

**3** What is the flange material?

Steel

Alloy/Aluminium

All Metals

**4** Maximum Temperature

150°C

150°C

150°C

200°C

**5** Unique Features

Use with Shims

Easy Disassembly

Stick Applicator

High Chemical Resistance

## Solution

**515**

**518**

**548**

**510**

Gasket Type	Formed in Place	Formed in Place	Formed in Place	Formed in Place
Flange Type (Elongation)	Rigid	Rigid	Rigid	Rigid
Tack Free Time <sup>#</sup>	-	-	-	-
Low Pressure Seal	30 min	30 min	-	2 hrs
Temperature Range	-54°C to +150°C	-54°C to +150°C	-54°C to +150°C	-54°C to +200°C
Oil Resistance	Excellent	Excellent	Excellent	Excellent
Water/Glycol Resistance	Good	Good	Good	Excellent
Sensor Safe	Yes	Yes	Yes	Yes
Neutral Cure	-	-	-	-
Recommended Activator	7649	7649	7471	7471
Size (Part Number)	6ml tube (51517) 50ml tube (51531A) 300ml cartridge (33530)	6ml tube (51817) 25ml syringe (51827) 50ml tube (25583A) 300ml cartridge (51845)	18gm stick (40393B)	50ml tube (25555A) 250ml tube (25554)

<sup>#</sup> Varies with substrate. For further information refer to product Technical Data Sheet.

## Product Description



### Loctite® 515



Recommended for coating and re-using gaskets to improve sealing.

#### Approvals

- AGA certificate 2590 to 690kPa (Gas)

### Loctite® 518



Recommended for use on rigid iron, steel and aluminium flanges e.g. aluminium gearbox and engine castings, etc.

### Loctite® 548



Semi-solid stick formula, ideal for on-the-spot repairs, or when a conventional gasket is out of stock. Can be applied quickly and neatly on a variety of metal surfaces to form a flexible, solvent resistant seal.

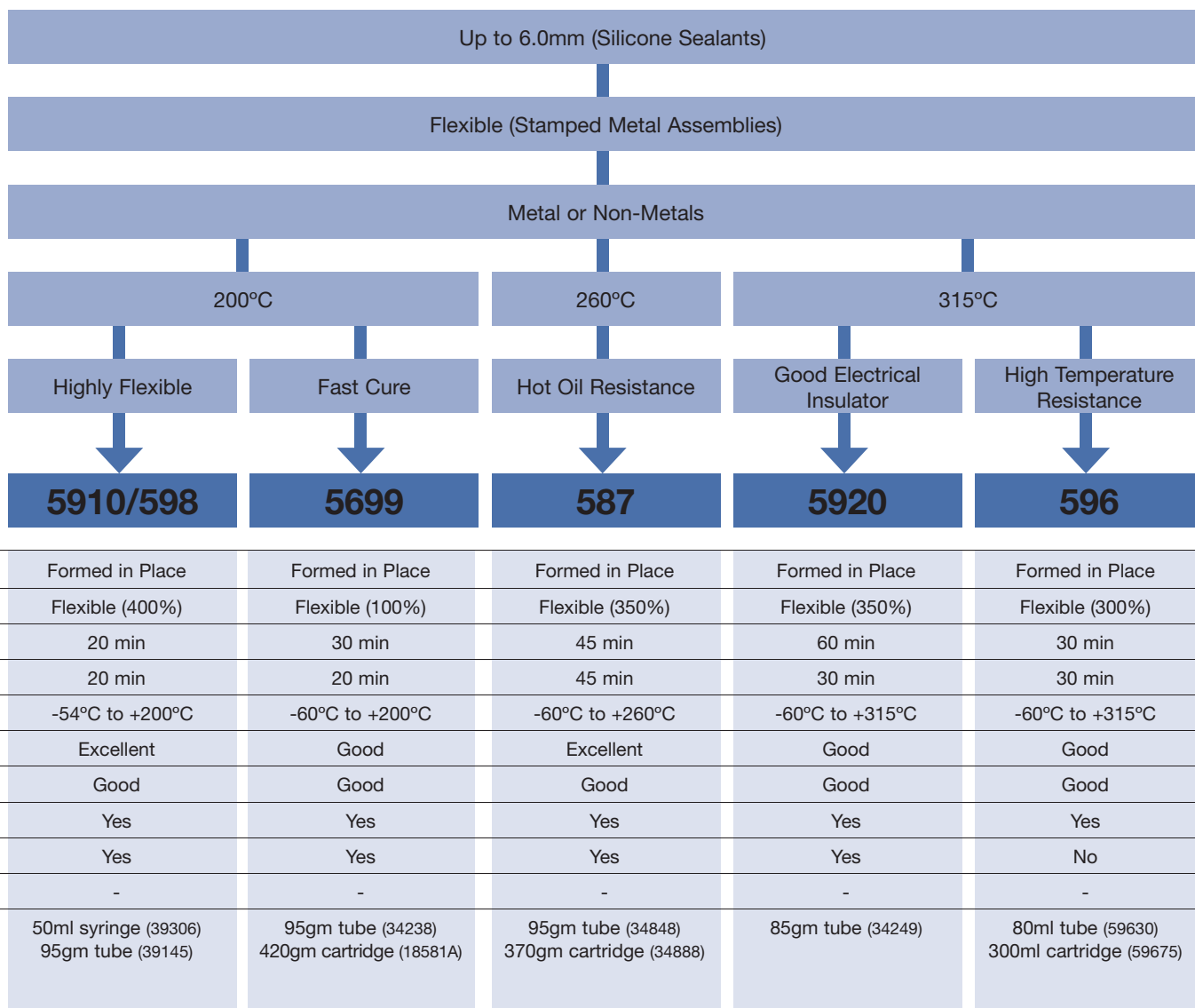
### Loctite® 510



Recommended for use on rigid metal parts e.g. cast iron components and pump housings, etc. operating at high temperatures.

#### Approvals

- AGA certificate 2590 to 690kPa (Gas)



### Loctite® 5910/598 Black Maxx®



Replacement for cork and paper cut gaskets on flanges and stamped sheet metal covers. Recommended for use where high vibration or flexing occurs. Can also be used with plastic parts. Oxygen sensor safe.

### Loctite® 5699 Grey Maxx®



Designed for high torque applications. Remains flexible and withstands high vibration. Outstanding oil and shop fluid resistance. Non-corrosive, low odour.

### Loctite® 587 Blue Maxx®



Recommended for sealing all types of flanges including stamped sheet metal where high flexibility and high oil or water glycol resistance is required. Oxygen sensor safe.

### Loctite® 5920 Copper Maxx®



Single component RTV non-sag silicone paste for low volatility applications. Adheres to metal, glass, natural and synthetic fibres, wood, ceramics, and many plastic substrates. Oxygen sensor safe.

### Loctite® 596 Superflex Red



Recommended for sealing all of flanges including stamped sheet metal where high temperature resistance is required, e.g. assembly and repair of industrial furnaces, ovens, boilers, exhaust stacks and high temperature ducting.



# Retaining



Accepted as a standard method for assembling press and slip parts, Loctite® anaerobic retaining compounds fill the 'inner space' between components and cure to form a strong precision assembly. Formulated in a wide variety of viscosities, gap fills, flexibility and strength characteristics, Loctite® anaerobic retaining compounds are suitable for a broad range of industrial maintenance applications.

## Features & Benefits

**Increased Assembly & Product Reliability** – Prevents damage caused by press or shrink fits such as wallowing, backlash and fretting corrosion.

**Fills all Voids & Ensures 100% Contact** – Fills infinite microscopic imperfections that exists on even the most precisely machined surfaces, thereby providing 100% contact between mating parts, ensuring load and stress is distributed evenly over the joint.

**Creates Stronger Industrial Assemblies** – Increases shear strength of mechanical assemblies and is suitable for a wider range of industrial applications from securing a metal locating pin to large diameter shaft bearings.

**Seals Against Corrosion** – Seals the assembly preventing ingress of moisture and other corrosive gases, chemicals and fluids.

**Replaces or Augments Mechanical Assemblies** - Reduces need for close tolerances, additional securing components and elaborate assembly methods, therefore reducing maintenance cost.

**Controlled Strengths** – Available in high & moderate strengths formulations to suit all applications. Parts can be disassembled using regular processes.

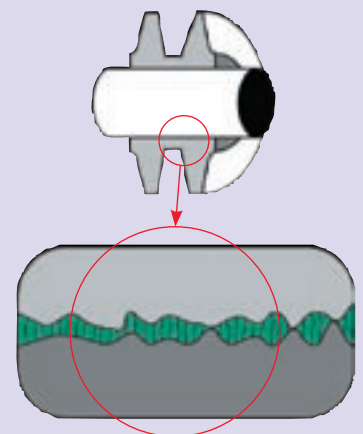


## Did You Know?

**Interference fits typically have only 20-40% effective contact area!**

Typically the contact area is limited to the peaks left behind by machining processes. Micro-movement during dynamic loading can shear these away, allowing the joint to fail. Tightening the machining tolerances to avoid this is a very expensive solution.

A Loctite® anaerobic retaining compound assures 100% contact, as well as eliminating "fretting corrosion" within the joint.



*Loctite® brand Retaining Compounds fill the microscopic peaks and valleys, ensuring maximum adhesion between mating surfaces*



# Retaining

## Product Selector

**1** Is the assembly badly worn?

No (Gaps)

**2** Do you require lubricity for interference fit?

No

**3** What strength do you require?

Low

Medium

**4** Maximum Temperature

150°C

150°C

200°C

**5** Unique Features

Easy Disassembly

General Purpose

High Temperature

## Solution

**641**

**609**

**668**

Colour	Yellow	Green	Green
Strength	Low	Medium	Medium
Fixture Time <sup>#</sup>	30 min	25 min	30 min
Full Strength <sup>#</sup>	24 hrs	24 hrs	24 hrs
Maximum Gap Fill Diameter	0.20mm	0.20mm	0.20mm
Compressive Shear Strength <sup>#</sup> N/mm <sup>2</sup> (psi)	6.5 (940)	15.8 (2,300)	7.0 (1,015)
Temperature Range	-54°C to +150°C	-54°C to +150°C	-54°C to +200°C
Recommended Activator	7649	7471	7649
Disassembly Method	Pulley or Press	Press	Press
Size (Part Number)	10ml bottle (21314) 50ml bottle (21315) 250ml bottle (21316)	10ml bottle (30013) 50ml bottle (30015) 250ml bottle (30014)	19gm stick (40391B)

<sup>#</sup> Steel pin & collar, cured for 24 hours @ 22°C. \* Steel pin & collar cured for 2 hours @ 121°C. For further information refer to product Technical Data Sheet.

## Product Description



### Loctite® 641



A controlled strength retaining compound, ideal for cylindrical parts that require disassembly; e.g. retention of bearings onto shafts and into housings.

### Loctite® 609



Recommended as a general purpose, low viscosity retaining compound. Use to bond rotors to shafts, secure bushings and sleeves, and augment press fits.

### Loctite® 668



High temperature retaining compound in a semi-solid formula. Featuring a no mess stick applicator, it is ideal for hard to reach and high temperature applications.

to 0.25mm)		Yes (Gaps to 0.5mm)	
		Yes	No
High		Medium	High
150°C	232°C	150°C	150°C
Quick Cure	Very High Temperature	High Lubricity	Repairs Worn Parts
<b>680</b>	<b>620</b>	<b>232</b>	<b>660</b>
Green	Green	Brown	Silver
High	High	Medium	High
20 min	120 min	4–6 hrs	10 min
24 hrs	24 hrs	72 hrs	24 hrs
0.20mm	0.25mm	0.10mm	0.5mm
19.3 (2,800)	17.2 (2,495)	9.3 (1,350)*	17.2 (2,490)
-54°C to +150°C	-54°C to +232°C	-54°C to +150°C	-54°C to +150°C
7471	7649	7471/ 7649	7471
Press	Press	Press	Press
50ml bottle (68050) 250ml bottle (68070)	50ml bottle (62050) 250ml bottle (62070)	250ml bottle (27863)	6ml tube (66010A) 50ml tube (66040A)

**Loctite® 680**

Gives best resistance to dynamic, axial and radial loads. Recommended for retaining shafts, gears, pulleys, and similar cylindrical parts.

**Approvals**

- Plumbing Safety License  
4020:2002 Cert No. 8687  
(Potable Water)

**Loctite® 620**

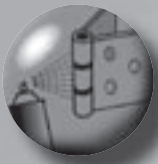
Recommended for high temperature retaining of parts with a clearance or interference fit, e.g. retaining bushes, bearings, seals, fans and liners.

**Loctite® 232**

Has lubricating properties to facilitate smooth assembly of heavy interference or high torque fits. Prevents galling and metal pick-up during assembly.

**Loctite® 660**

Used for repairing worn coaxial parts without re-machining. Enables reuse of worn bearing seats, keys, splines, tapers, or for retaining shims.



# Anti-Seize Lubricants



Loctite® brand Anti-Seize compounds are a range of premium quality products, developed to protect metal parts from corrosion, galling and seizing. They ease assembly and disassembly of slip fit and threaded joints, and reduce friction and wear. Formulated for severe environments, these products protect against high temperatures up to 1315°C, in conjunction with heavy loads and chemical corrosion.

## Features & Benefits

**High Temperature Resistance** – Formulated with high quality grease and solid lubricating agents for optimal temperature resistance up to 1315°C.

**Reduces Friction & Wear** – Reduces metal-to-metal contact resulting in less friction and wear.

**Seals Against Corrosion** – Displaces and seals against contact with moisture and other corrosive liquids.

**Metal Free Available** – For use in environments that prohibit use of copper or where dissimilar metals are used.

**Convenient Packaging & Easy Use** – Available in tubs, tubes, aerosols and the patented stick applicator. Tubs include a brush attached to the lid for no-mess application.



## Did You Know?

### Effective Anti-Seize lubricants increase assembly strength!

An anti-seize lubricant used on a bolt helps to develop greater clamp load for the same torque compared to an unlubricated bolt. However care should be taken to avoid over-stressing a bolt caused by excessive lubrication. Loctite® anti-seize products provide a controlled torque coefficient which ensures consistent clamp load when tightening.

### Anti-Seize lubricants act as an 'Internal Galvaniser'!

The use of an anti-seize product is an excellent method of preventing galvanic corrosion, especially in hot, acidic, or caustic environments. Anti-seizes resist galvanic attack by sacrificing the metals in the anti-seize in preference to the metal parts under protection.



# Anti-Seize Lubricants

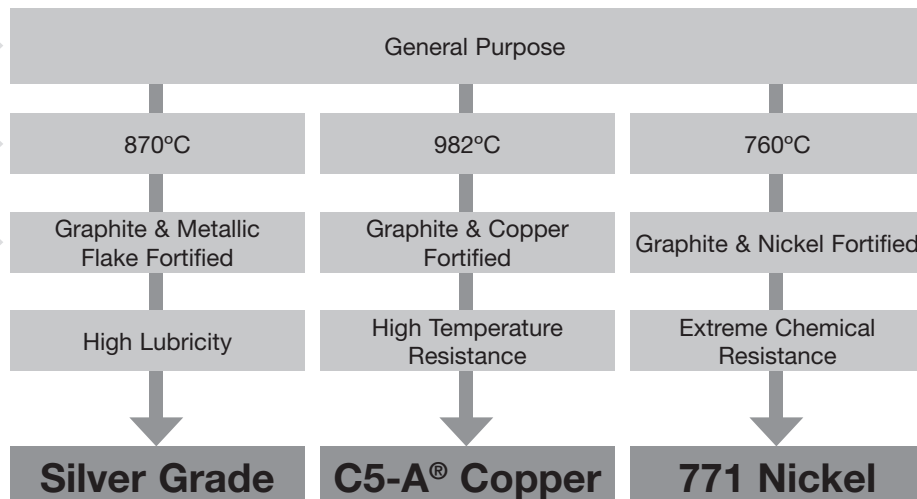
## Product Selector

**1** What type of Anti-Seize do you require?

**2** Maximum Temperature

**3** Unique Features

## Solution



Colour	Silver	Copper	Silver
Solid Lubricating Agent	Aluminium/Graphite	Copper/Graphite	Nickel/Graphite
Torque Coefficient ( <i>K value</i> )	0.18	0.16	0.13
Temperature Range	-29°C to +870°C	-29°C to +982°C	-29°C to +760°C
Metal Free	No	No	No
Size (Part Number)	20gm stick (37783B) 200gm aerosol (76756) 236ml brushtop (76732) 250gm tube (76741) 500gm brushtop (76769) 5kg bucket (76731) 10kg bucket (76785) 194kg drum (76779)	340gm aerosol (51003) 453gm brushtop (51007)	28gm tube (28182A) 500gm brushtop (39163)

# K value on steel nuts and bolts. For further information refer to product Technical Data Sheet.

## Product Description

### Loctite® Silver Grade Anti-Seize



Heavy Duty, temperature resistant, petroleum based lubricant compound fortified with graphite and metal flake. Inert, will not evaporate or harden in extreme cold or heat. For use in assemblies up to 870°C.

#### Recommended for:

- General purpose machine and bolt assembly.
- Close tolerance assembly
- Fine threads and snug slip fits.

### Loctite® C5-A Copper Anti-Seize



Exclusive formula suspends copper and graphite in a high quality grease. Protects metal parts from rust, corrosion, galling and seizing at temperatures to 982°C.

#### Recommended for:

- Nuts, bolts and studs.
- Fittings and shafts, machine surfaces.
- Fittings on steam turbines, pumps and valves.
- Flanges, extruders and dies.

### Loctite® 771 Nickel Anti-Seize

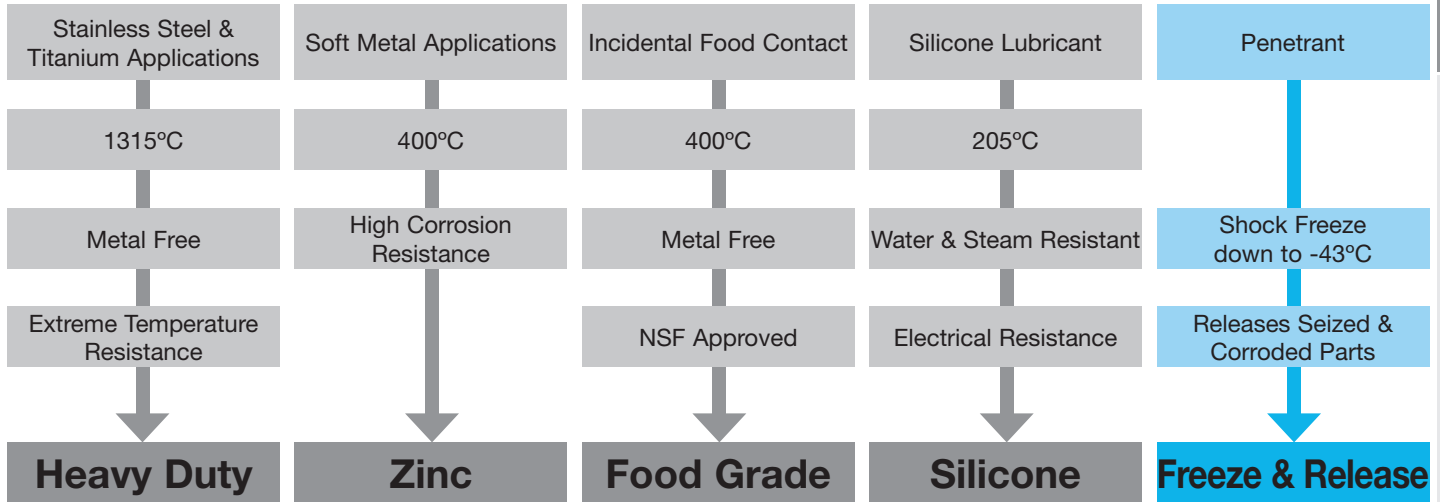


Copper Free formulation with extreme chemical resistance, recommended for stainless steel and other metal fittings. Prevents corrosion, seizing and galling in harsh chemical environments at temperatures to 760°C.

#### Recommended for:

- Chemical plants and oil refineries.
- Water and sewage plants.
- Environments where a 'clean' inert lubricant is needed.





Black	Grey	White	Translucent Paste	Clear Liquid
Calcium/Graphite	Zinc	Calcium	Silicone	-
0.16	0.15	0.13	-	-
-29°C to +1315°C	-29°C to +400°C	-29°C to +400°C	-29°C to +205°C	-
Yes	No	Yes	Yes	Yes
510gm brushtop (51606)	454gm tin (39901)	226gm brushtop (51168)	150gm tube (51360)	310gm aerosol (FAR)

### Loctite® Heavy Duty Anti-Seize

**Metal Free**



Metal free formulation provides outstanding lubrication to all metals including stainless steel, aluminum and soft metals up to 1315°C.

#### Recommended for:

- OEM specified turbine studs and bolts.
- Ethylene and acetylene piping.
- Petrochemical plants.
- Environments prohibiting the use of copper.

### Loctite® Zinc Anti-Seize



Smooth mixture of zinc dust and petrolatum grease that acts like an 'internal galvaniser' for superior protection of aluminum and ferrous surfaces from seizure and corrosion up to 400°C.

#### Recommended for:

- Protecting aluminum, aluminum alloy, and ferrous metal from seizing and corrosion.

### Loctite® Food Grade Anti-Seize

**Metal Free**



Metal free formulation provides high levels of purity and excellent lubricating properties for use on equipments with incidental food contact at temperatures up to 400°C.

#### Recommended for:

- Lubricating and protecting parts in food processing plants, breweries, packaging plants and hospitals.

### Loctite® Silicone Lubricant



Non-curing silicone paste that seals, lubricates, protects, waterproofs, and electrically insulates metal, rubber, and plastic parts. Will not tarnish paint, rubber or plastic surfaces.

#### Recommended for:

- Plug or ball valve, valve stem packing and protecting electrical contacts.
- Stopping leaks.

### Loctite® Freeze & Release

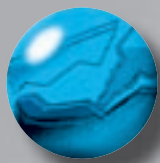
**NEW**



Shock-freezes seized and rusted parts down to -43°C, causing microscopic cracks in the rust and allowing the lubricant to penetrate. The assembly can be easily dismantled after allowing 1-2 minutes and parts remain lubricated and protected from corrosion.

#### Recommended for:

- Seized and or rusted components.



# Bonding

## Features & Benefits

- ✓ Convenient repairs in seconds
- ✓ High shear and peel strength
- ✓ No mixing
- ✓ Bonds to a wide variety of materials
- ✓ Extensive range available, suitable for infinite industrial maintenance and OEM applications.

## Product Selector

**1** What are you bonding?

**2** Do you require instant adhesion?

**3** Is the surface porous?

**4** Unique Features

Porous

Instant Fixture

Easy Application

**Control Gel**

## Solution

Colour	Clear
Gap Fill	0.10mm
Viscosity	Gel
Shear Strength# N/mm <sup>2</sup> (PSI)	20 (2,930)
Temperature Range	-54°C to +82°C
Fixture Time	5–20 sec
Full Strength	24 hrs
Recommended Activator/Primer	-
Size (Part Number)	3gm dispenser (40778)

# Grit blasted steel cured for 24 hours at 22°C. \* Applied @ 22°C / 50% relative humidity.

## Product Description

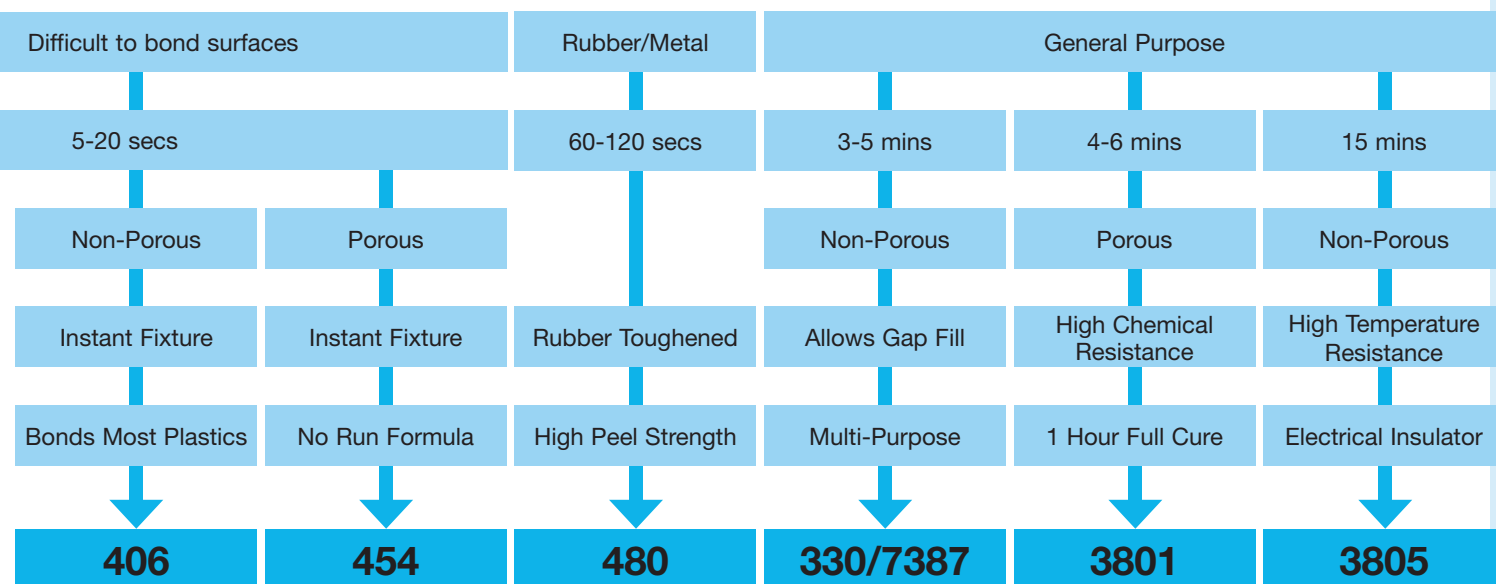
Henkel Corporation, the manufacturer of Loctite® products, is the world leader of structural and instant adhesive bonding solutions. Our advanced adhesives range includes Cyanoacrylates, Epoxies, Hot Melts, Light Cure, Silicones, Urethanes and Acrylics for maintenance and OEM applications.

The Loctite® adhesive products shown here is a targeted selection of maintenance bonding solutions. Call the Loctite® Customer Support Line for more information on our full product range.

**Loctite® Control Gel**



The ultimate adhesion tool, this multi-purpose instant adhesive features a self-piercing precision applicator. The spill-proof robust design offers improved control and accuracy. Also available in lower viscosity – Loctite Control Liquid (40779).



Clear	Clear	Black	Amber	Amber	Grey
0.10mm	0.10mm	0.10mm	0.50mm	0.20mm	0.20mm
20 CP	Gel	200 CP	Gel	Gel	Heavy Paste
22 (3,200)	22 (3,200)	26 (3,800)	23 (3,300)	16 (2,300)	6.9 (3,000)
-54°C to +82°C	-54°C to +82°C	-54°C to +100°C	-54°C to +120°C	-54°C to +82°C	-54°C to +150°C
5-20 sec	5-20 sec	60-120 sec	3-5 min	4-6 min	10-15 min
24 hrs	24 hrs	24 hrs	24 hrs	1 hr	16 hrs
770	-	770	7387	-	-
25ml bottle (40633-25) 100ml bottle (33533) 500ml bottle (33534)	3gm tube (45404) 20gm tube (45416A) 200gm tube (45474)	25ml bottle (16819-25) 500gm bottle (16887)	50ml kit (20251) 300ml cartridge (33064)	25ml dual syringe (20981)	56gm kit (24180)

For further information refer to product Technical Data Sheet.

### Loctite® 406



General purpose adhesive for difficult to bond surfaces. Bonds Santoprene® rubbers, polyolefin plastics and elastomers when used in conjunction with Loctite® 770 Polyolefin Primer. Also available in higher viscosity grade, Loctite® 401 25ml (40124-25) 100ml (33531) and 500ml (33532).

### Loctite® 454



General purpose gel for bonding metals, composite materials, wood, cork, foam, leather, card, paper, plaster and unglazed ceramics. Recommended for use on vertical or overhead surfaces. Fills gaps to 0.5mm with the use of Primer 7452.

### Loctite® 480



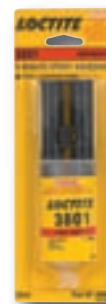
Black rubber toughened grade for bonding metal to metal and metal to rubber; especially suitable with applications where high peel strength is required and/or shock loads are present.

### Loctite® 330 Multi-Bond Kit



This multi-purpose adhesive suits most bonding needs including metal bonding, ID plates and signage. Two part, no mix, fast curing and toughened with good moisture, impact resistance and peel strength. (50ml kit includes 7387 Activator 25gm).

### Loctite® 3801



Conventional dual syringe, two-part epoxy. Ideal for emergency repairs or where fast cure time is required. Sets in 5 minutes. Resistant to a wide range of chemicals and solvents, and acts as an excellent electrical insulator.

### Loctite® 3805



Fast setting, two component adhesive and filler system, ideal for repairs, filling, bonding to iron steel brass, bronze, aluminum and copper. Can be drilled, tapped, threaded or filed and is an excellent electrical insulator. Typically used under speedy sleeves.



# Primers & Activators

## Features & Benefits

- ✓ Activates inactive surfaces and speeds cure time
- ✓ Speeds cure through larger gaps and deep threads

Active Surfaces (Primer optional)	Brass, copper, bronze, iron, soft steel
Inactive Surface (Primer required)	Aluminium, stainless steel, magnesium, zinc, black oxide, cadmium, titanium, nickel, others

## Product Selector

**1** Do you need an activator or primer?

**2** What type of product are you using?

**3** Which product are you using?

Anaerobic  
Thread Sealing,

232, 248, 262, 277,  
290, 515, 518, 561,  
567, 620, 641,  
668

## Solution

**7649**

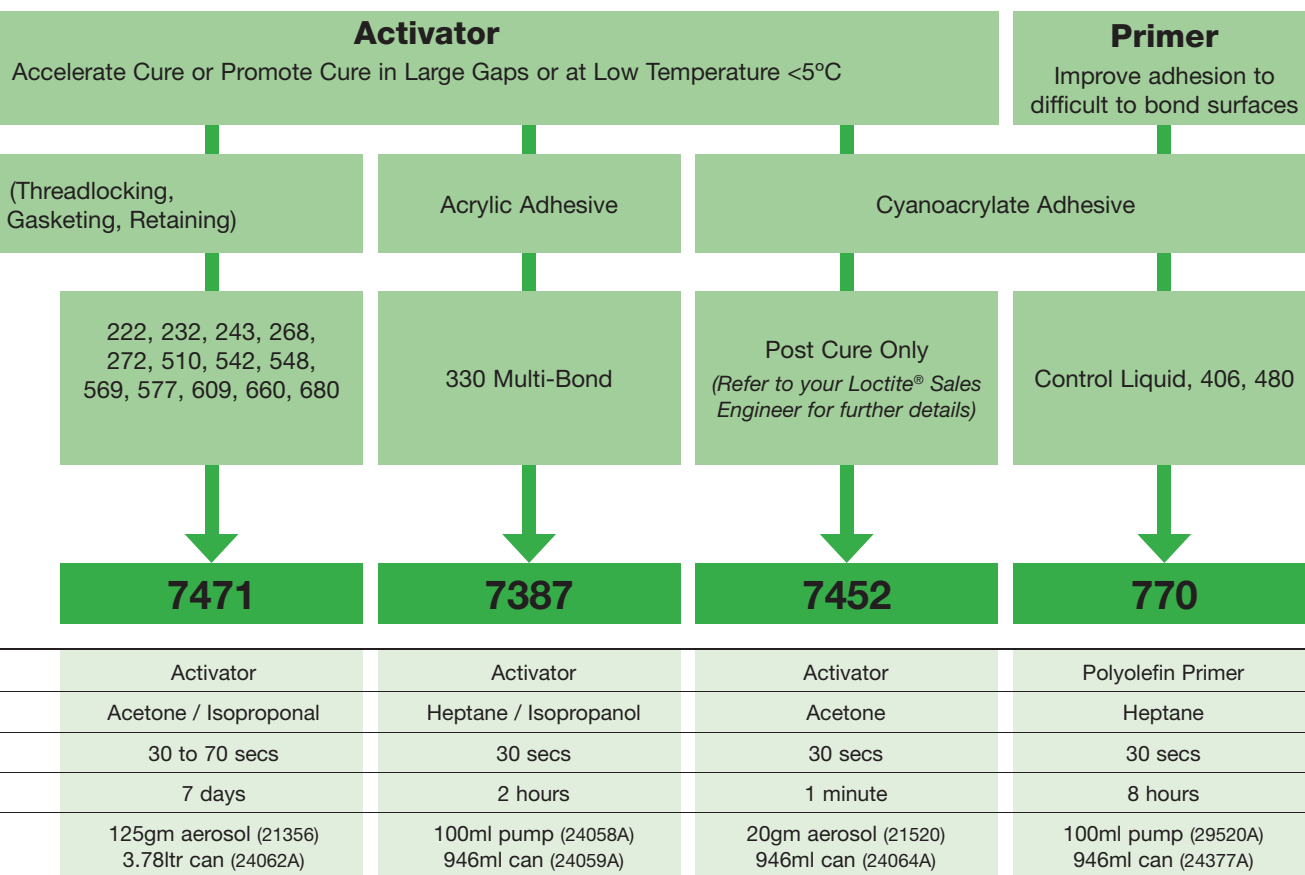
Description	Activator
Base Solvent	Acetone
Drying Time at 20°C	30 to 70 secs
On-Part Life	30 days
Size (Part Number)	100ml pump (22410A) 3.78ltr can (24063A)

## Product Description

**Loctite® 7649**



Use to increase the cure speed of Loctite® brand anaerobic products, especially at low temperatures, in applications with passive metals or inert surfaces, or where large gaps are involved.



### Loctite® 7471



Use to increase the cure speed of Loctite® brand anaerobic products, especially at low temperatures, in applications with passive metals or inert surfaces, or where large gaps are involved.

### Loctite® 7387



Required to initiate the cure of Loctite® brand toughened acrylic adhesives.

### Loctite® 7452



Applied after adhesive to speed cure of Loctite® brand cyanoacrylate adhesives. Typical applications include securing wires to coils or PCB's and tamper-proofing adjustments and mounting edge guides or stiffeners.

### Loctite® 770



Helps to provide strong reliable bonds with Loctite® brand cyanoacrylates on "impossible" substrates like polypropylene, polyethylene, PTFE and thermoplastic rubber.



# Rust Treatment & Cleaning

## Features & Benefits

- ✓ Effective rust converter formula for surface preparation of all metals
- ✓ Fast acting and non-corrosive gasket remover eliminates need for scraping and sanding
- ✓ Fast and effective industrial grade cleaners
- ✓ Premium-grade hand cleaner with skin conditioners to soothe and protect hands

## Product Selector

1 What is your task?

Rust Treatment

2 What are you cleaning?

3 Unique Features

Converts Rust

Protects Surface

## Solution

754

Appearance	Milky Liquid
Temperature Range	Up to 121°C
Dry Time	30 min
KB Values <sup>#</sup>	-
Size (Part Number)	946ml bottle (75430) 3.78ltr bottle (75448) 18.9ltr bottle (75465)

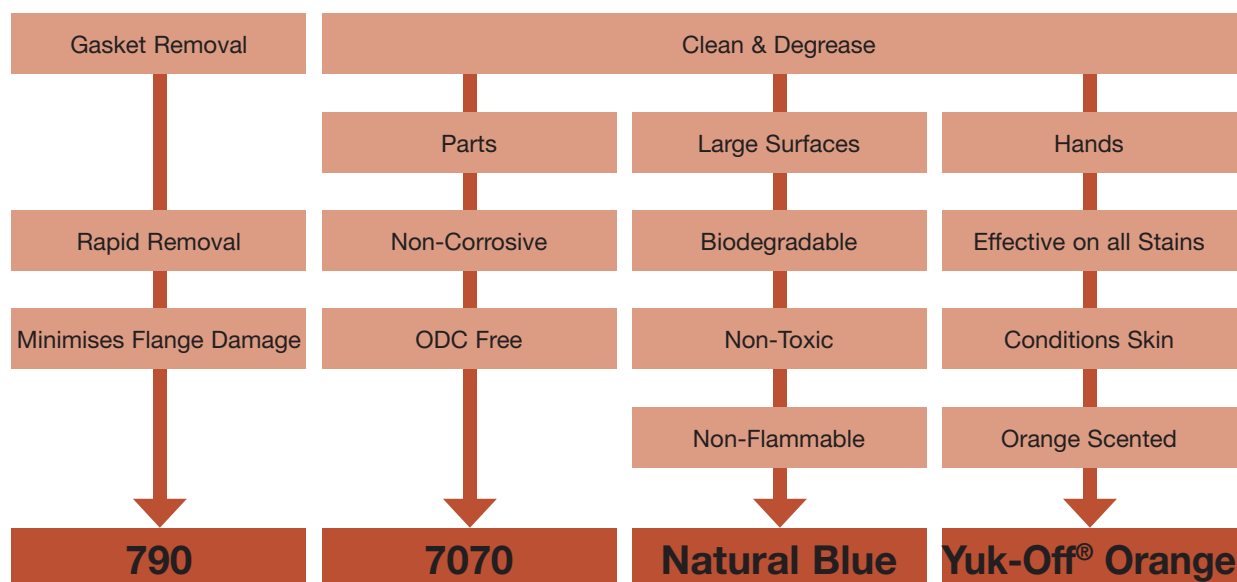
<sup>#</sup> Kauri-Butanol Values tested to ASTM D 1133. (Determines relative solvent power of hydrocarbons)

## Product Description

**Loctite® 754**  
*Extend® Rust Treatment*



Converts existing rust into a stable base. Cured product acts as a primer ready for painting. Protects surfaces from corrosion. Use on metal pipes, valves, fittings, storage tanks, fences, guard rails, conveyors, construction and agricultural equipment.



White Liquid	Clear Liquid	Blue Liquid	White Lotion
-	-	-	-
-	5 – 20 min	-	-
>200	31	-	-
510gm aerosol (79040)	473ml aerosol (20162)	709ml bottle (82249) 3.78ltr bottle (82251) 18.9ltr bucket (82253)	400ml bottle (31908) 4ltr pump (31909) 15ltr bucket (31910)

ocarbon solvents). Dry time is dependant on temperature. For further information refer to product Technical Data Sheet.

### Loctite® 790 Chisel® Gasket Remover



Removes gaskets from any type of assembly in 10 to 15 minutes. Prepares metal parts for new gaskets, eliminating scraping and sanding. Suitable for wood and is non-corrosive to aluminium. Not for use with plastics, linoleum or synthetic fibres.

### Loctite® 7070 ODC Free Cleaner & Degreaser



General purpose parts cleaner and degreaser which contains no ozone depleting chemicals. Prepares surface for bonding and is non-corrosive and plastic compatible. Removes grease, oil and dirt from electrical parts, tools, bearings, controls, and precision equipment.

### Loctite® Natural Blue® Cleaner & Degreaser



A biodegradable, all-purpose, industrial strength, concentrated cleaner and degreaser, Natural Blue® contains no hazardous solvents. Formulated for wipe down, pressure spraying and immersion cleaning processes, Natural Blue® can be economically diluted with water at room temperature or heated, to meet a wide range of industrial cleaning applications. ODC free, non flammable, non-toxic and pine scented. (709ml is diluted 1:1 ready for use).

### Loctite® Yuk-Off® Orange Hand Cleaner



Contains premium-grade cleansing agents that quickly dissolve dirt, grease, resin, ink, paint, glue, tile cements and other stubborn stains. Citrus-based, smooth formula is PH balanced and fortified with skin conditioners lanolin, aloe vera, Vitamin E, jojoba and wheat germ extract to soothe and protect raw, rough hands. Wall bracket dispenser available for 4ltr bottle (p/n: 90128).



# Kit & Emergency Repairs

## Features & Benefits

### Tool Kits

- ✓ Contains essential tools for industrial maintenance and repair

### Emergency Repair Products

- ✓ Easy to use – does not require specialised equipment
- ✓ Enable rapid repair of damaged equipment

## Product Selector

### 1 Industrial Maintenance Kits

20 x Products

### 2 Emergency Repair Kits

### 3 Features & Benefits

Comprehensive

Free Tool Box

## Solution

## Top Line Kit

### Contents

Threadlockers - 243, 262, 271, 290 50ml  
Retaining Compounds - 609, 641, 660, 680 50ml  
Thread Sealants - 515, 567, 569 50ml  
Bonding Adhesives - 406 25ml, 454 20gm, 3805 56gm  
Anti-Seize Lubricants - Silver Grade, 771 Nickel 500gm  
Primers - 7471 125gm, 7649 100ml  
Others - 790 Chisel® Gasket Remover 510gm, Form-A-Thread 13.1ml

### Size (Part Number)

Kit (00192)

## Product Description

### Loctite® Top Line Kit



Contain all the essential tools for industrial maintenance reliability including Threadlocking, Retaining Compounds, Thread Sealing, Bonding Adhesives, Anti-Seize Lubricants and Primers.

8 x Products	Replace or Repair O-Ring Seals	Repair Stripped Threads	Stop Pipe Leaks	Repair Metal Surfaces
Handy Size Container	Water & Oil Resistant	Rated to 28kg of Torque	30 Minute Cure	10 Minute Cure
	Permanent Replacement	Resistant to +150°C	Cures Wet or Underwater	Metal-Like Finish
<b>Multi Kit</b>	<b>O-Ring Kit</b>	<b>Form-A-Tread</b>	<b>Pipe Repair</b>	<b>Metal Magic</b>
243 Threadlocker (10ml) 454 Instant Adhesive (3gm) 518 Master Gasket (6ml) 542 Thread Sealant (10ml) 567 Thread Sealant (6ml) 609 Retaining Compound (6ml) 660 Retaining Compound (10ml) 771 Nickel Anti-Seize (28gm)	406 Instant Adhesive O-Ring Splicing Fixture Cutting Blade 1.6mm, 2.4mm, 3.0mm, 5.7mm, 8.4mm Cord (Metric Kit) or 3/32", 1/8", 3/16", 1/4" Cord (Imperial Kit)	Repair Compound A (Syringe) Repair Compound B (Syringe) Release Agent Mixing Spatula	Urethane-Impregnated Fiberglass Tape Metal Magic Steel Stick Protective Gloves	Putty stick (pre-measured resin & hardener. Simply cut of as desired amount, knead and apply)
Kit (LOC-2)	Metric (16224A) Imperial (10361A)	13.1ml kit (STR1)	1.8m kit (96321) 3.6m kit (96322)	57gm stick (MMR-1) 113gm stick (98853)

### Loctite® Multi Kit



Handy sized kit designed to fit into a tool chest. Includes a Threadlocker, Instant Adhesive, Thread Sealants, Retaining Compounds and Anti-Seize Lubricant.

### Loctite® O-Ring Kit



Contains all of the materials necessary to produce stationary o-rings on the spot. Saves time by allowing o-ring replacement without disassembling machinery. Eliminates the need for inventory of different sized o-rings.

### Loctite® Form-A-Thread



Permanently repair stripped threads and fasteners in five minutes without machining. Suitable for all size threads in a wide variety of metal and wood. Handling strength cure in 5 minutes and full cure in 2 hours. Resistant to most shop fluids.

### Loctite® Pipe Repair Kit



Recommended for reliable, temporary repairs of metal, plastic and composite pipes. Easy to use - no tools are required and can be applied to odd shapes as required. Cures in 30 minutes and can be sanded or painted.

### Loctite® Metal Magic



Easy to use, steel-filled compound designed for emergency maintenance repairs on damp, dry or underwater surfaces. Cures to a metal-like finish in less than 10 minutes under typical temperatures of -30°C to +121°C

# LOCTITE®

## THE MASTER OF KNOWLEDGE

Information is one of the cornerstones of maintenance and repair. Knowledge that determines selection of the correct product, confidence that drives professional application and satisfaction that comes from a successful repair are the products of carefully designed and presented training programs.

One of the reasons that Loctite has become the world's leading brand of adhesives and sealants is the constant flow of knowledge provided to users. For over 50 years, thousands of Loctite users have been provided with the training that delivers professional results in equipment maintenance and repair. Training programs are available for:

**THREADLOCKING  
RETAINING  
THREAD SEALING  
BONDING  
GASKETING  
LUBRICATION**

Call today to schedule a training session at your plant. Learn the methods, practice the techniques and experience the results. You can continue to be the Master of Knowledge.





# Technical References

## Ten Points About Liquid Threadlockers

By Rick Skibba  
Henkel Corporation, Rocky Hill, CT

**B**olts, studs, set screws and other threaded fasteners are the “ties that bond” industrial equipment together. Considering that fastener loosening is a leading cause of catastrophic failure in machinery, maintaining proper clamping forces is an important element in fastening effectiveness.

Liquid anaerobic threadlockers are an excellent method of keeping fasteners firmly in place. Listed here are ten points that plant personnel should know about using liquid anaerobic threadlockers:

**It's not just a bolt.** The real function of nuts and bolts is to provide clamping force to hold two components together. If that clamping force decreases, the fastener begins to slip, and failure become inevitable.

**Thread space is the enemy.** There can be as little as 15% metal-to-metal contact between the thread of a nut and bolt. The empty space leaves room for movement that leads to self-loosening and loss of clamping force.

**Side movement causes failure.** Fasteners work loose for complex reasons, but a key cause is sideways movement. Bolted surfaces can slide sideways as a result of thermal expansion, bending of the assembly, impact or vibration. As this happens, the bolt takes on a rocking motion that causes the threads to wear against each other. In time, the bolt becomes almost frictionless, and the threads can unwind.

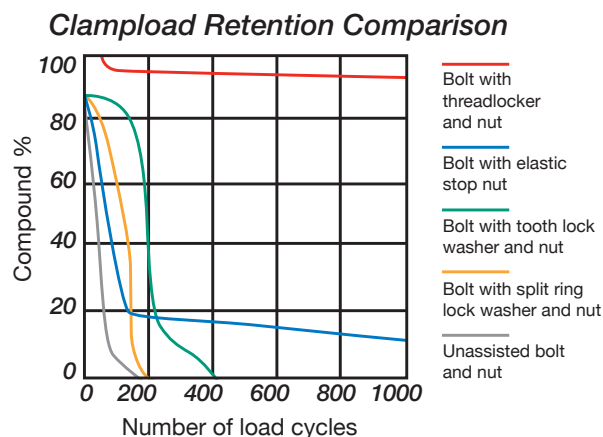
**Threadlockers stop all kinds of movement.** Liquid anaerobic threadlockers attack the root cause of loosening by filling spaces between the threads. The result is a secure, one-piece assembly that will not loosen under stress.

**Sealing stops corrosion.** By sealing between thread spaces, threadlockers keep out air and moisture that can cause corrosion – another common cause of

fastener failure. Because of their chemical resistance, threadlockers seal effectively in contact with most fluids, gases, and solvents used in industry. (Refer to *Fluid Compatibility Chart* - pg 42 & 43).

**Threadlockers hold better.** In test on transverse shock and vibration machines, liquid threadlockers drastically outperformed mechanical devices (see graph). Bolts secured with threadlocker retained nearly all their clamping force after more than 1,000 cycles.

Mechanical devices began to fail almost immediately.



*In test on transverse shock and vibration machines, liquid threadlockers drastically outperformed mechanical locking devices*

**Better performance cost less.** Mechanical locking methods are effective to some degree, but are difficult to justify based on cost. A special nut or washer can cost more than four times as much as an application of liquid threadlocker. Mechanical devices also require extensive and costly inventories to keep the range of sizes on hand. Three or four grades of threadlocker – easy to carry and colour-coded, serve the same purpose.

**It will come out.** All threadlocked fasteners can be disassembled. Different grades of threadlockers can be used depending on the job. Fasteners secured with low and medium strength grades can be removed with common hand tools. Those secured with high strength grades can be removed by applying heat for a specified time. (Refer to *High Strength Disassembly guide* - pg 38)

**Threadlockers ease assembly and disassembly.** When wet, threadlockers lubricate fasteners, allowing proper, consistent assembly tightening and torque. When cured in place, threadlockers stop corrosion, thus preventing seizure and allowing for ease in disassembly.

**There is no “downside”.** Liquid threadlockers are not just for certain specialized uses. They perform effectively on fasteners and threaded assemblies of any type and size, in any kind of equipment.



# Technical References

## Loctite® at Work

### Loctite® Threadlocker Saves +\$73,000 per Year

#### Situation:

A large wood and lumber manufacturer was experiencing mechanical failure and unscheduled downtime due to fastener loosening on their limit switch arms. Limit switches translate motion into switch actuation. The maintenance department found the screws were loosening in the arms, which allowed the wand to fall out or become misaligned. A maintenance person was assigned to tighten all the screws. This task took about 5 to 10 minutes to complete and occurred at least twice per shift. Each time the task is completed, the equipment must be “tagged out,” tightened and brought back on line. In one year, it was found that over 91 hours had been spent on labor and downtime.

#### Solution:

Based on the advice of a Loctite® Application Engineer, the maintenance personnel of this manufacturer chose Loctite® 222 Threadlocker to remedy their limit switch situation. Loctite® 222 is applied before the fasteners are assembled and is recommended for small fasteners less than 6mm (1/4"). Once cured, Loctite® 222 has a torque removal resistance of up to 14Nm and can be easily disassembled with standard hand tools. It resists vibration loosening and does not breakdown when in contact with various shop chemicals.

#### Results:

Loctite® 222 Threadlocker unitised the screws within the assembly and prevented them from vibrating loose. Since implementing this technique, the manufacturer has saved over \$73,000 of labor and downtime in just one year.



### Maintaining Mine Production with Loctite® Retaining Compound

#### Situation:

Mine production depends on how quickly material can be reclaimed and transported to the milling operation. Any downtime may result in significant lost production, therefore effective equipment maintenance is vital.

A bucket loader at a large open mine site suffered from regular failure caused by the extreme shock and impact on the hinge arms and pin bearings. A shrink fit was used to insert the hinge pin bearings into the hinge arm, but surface imperfections on the bushing created space which allowed for movement and corrosion.

Every time the hinge pin bearings pounded out the housing, maintenance on the equipment was required. Mine engineers needed to find a better way to secure the hinge pin bearings into the hinge arm that would increase in-service time for the bucket loader and so consulted their Loctite® Application Engineer.

#### Solution:

The worn hinges were machined to round and sized 0.1mm smaller than the sleeve overall diameter. All surfaces were cleaned with Loctite® 7070 ODC Free Cleaner. After cooling the replacement sleeve, Loctite® 680 was applied to the housing and the sleeve. The sleeve was slid into place and allowed to cure for 24 hours.

Loctite® 680 Retaining Compound is a medium-viscosity, fast curing retaining compound. It fixtures in 10 minutes at room temperature and provides a shear strength of 19.3N/mm<sup>2</sup> on steel.

#### Results:

Augmenting the shrink fit with Loctite® 680 completely filled any voids in the fit of the two parts. This added a significant amount of strength to the final assembly and sealed against corrosion, enabling the bucket loader to stay in service longer.



## Loctite® at Work

### Pro-Active Maintenance Stops Leaks Before They Happen

#### Problem:

A large university employs 40 steamfitters to maintain its central heating and cooling system in over 300 buildings. In one situation, the maintenance team was replacing 76mm (3") diameter chilled water piping using a different style of piping. The threads had to be re-cut to make the fit and Teflon® tape was used to seal the joined piping. Later, callbacks were necessary due to leakage. The callbacks were costing more than the original repair because maintenance personnel had to tear everything apart and start the repair over again. At \$55 an hour, the cost was adding up rapidly.

#### Solution:

Joe Baldwin, Craftworker Supervisor, had recently attended Loctite Maintenance Training where he learnt about 567 PST Pipe Sealant with Teflon.

Loctite® 567 PST, used in conjunction with Loctite® Primer N, seals stainless steel, galvanized and other inert metal fittings. It's excellent for high pressure applications up to 69MPa on fittings ranging from 12mm (1/2") to 76mm (3") diameter and withstands continuous temperatures from -53°C to +204°C.

#### Results:

After applying 567 PST to the pipe threads, no leaks occurred, and no callbacks were necessary.

Now Joe and his team use 567 PST proactively. "PST Pipe Sealant may cost a little more (as compared to traditional methods of pipe sealing such as Teflon tape and hemp) but it more than pays for itself because we use it only once and never get a callback," said Joe. "Now whenever we absolutely, positively don't want any leaks, we use and trust 567 PST."



### Saving Time & Money with Loctite® Anaerobic Gaskets

#### Problem:

With over 100 gear boxes on this steel company's roll line, maintenance is a costly expense. Replacement of shear pins is frequent, making disassembly a regular maintenance chore. The high vibration and heavy shock loads experienced by the gear boxes loosen the bolts which mount the housing. Cut gaskets were used to seal the end bells, but leaks were a real problem.

#### Solution:

Better able to withstand vibration, liquid gaskets provide a more precise and reliable seal than cut gaskets. Loctite® 515 Gasket Eliminator is now applied to both front and rear bell housings of the gear boxes, replacing cut gaskets. Loctite® 515 Gasket Eliminator® is a general purpose anaerobic sealant primarily used for making flexible gaskets.

#### Results:

Using Loctite® 515 Gasket Eliminator instead of cut gaskets provided many cost-cutting improvements for our customer:

1. No need to carry stock of pre-cut gaskets. Loctite® Formed-in-Place Gaskets can be made to any size or shape.
2. Downtime was significantly reduced due to fast repair time. Loctite® 515 is easy to apply and cures to a low pressure seal within 30 minutes
3. Costly oil leakage and clean-up eliminated, saving critical downtime and money.



Loctite® Formed-in-Place Gaskets eliminate the expense of carrying countless inventory of pre-cut gaskets



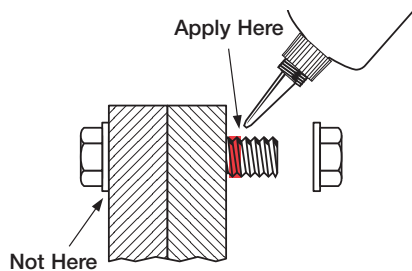


# Technical References

## Application Procedures

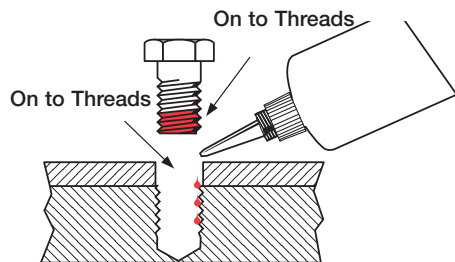
### THREADLOCKING

#### THROUGH HOLE (BOLTS AND NUTS)



1. Clean all threads (bolt and nut) with Loctite® ODC-Free Cleaner & Degreaser.
2. If necessary, spray all threads with Loctite® Primer (Refer to Technical Data). Allow to dry.
3. Select the proper strength Loctite® Threadlocker product.
4. Insert bolt into through hole assembly.
5. Apply several drops of Threadlocker onto bolt at targeted tightened nut engagement area. Avoid touching bottle tip to metal.
6. Assemble and tighten nut as usual.

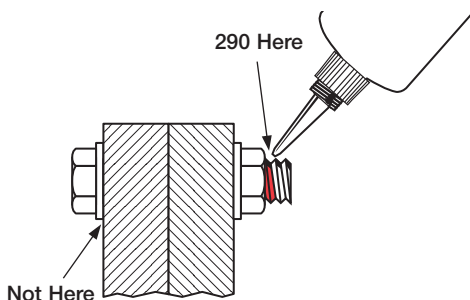
#### BLIND HOLES (CAP SCREWS, ETC.)



1. Clean all threads (bolt and hole) with Loctite® ODC-Free Cleaner & Degreaser.
2. If necessary, spray (bolt and hole) with Primer (Refer to Technical Data). Allow to dry.
3. Select the proper strength Threadlocking product.
4. Squirt several drops down the sides of the female threads.
5. Apply several drops to bolt. Avoid touching bottle tip to metal.
6. Tighten as usual.

**Note:** Using Loctite® Threadlockers will virtually eliminate stripped threads in aluminium or magnesium housings caused by galvanic corrosion.

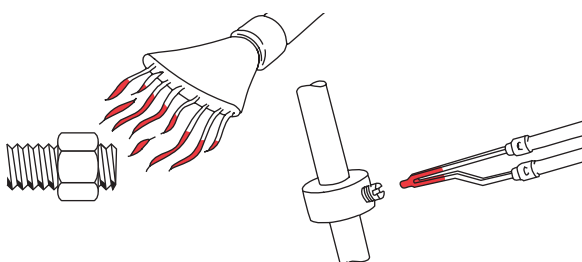
#### PRE-ASSEMBLED FASTENERS



1. Clean bolts and nuts with Loctite® ODC-Free Cleaner & Degreaser.
2. Assemble components.
3. Tighten nuts.
4. Apply drops of Loctite® 290 Threadlocker at the nut and bolt juncture.
5. Avoid touching bottle tip to metal.

**Note:** For preventive maintenance on existing equipment: RETIGHTEN nuts and apply Loctite® 290 Threadlocker at the nut and bolt juncture.

#### HIGH STRENGTH DISASSEMBLY



Localised Heating Methods

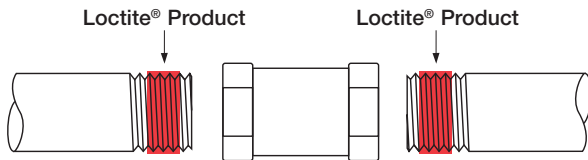
1. Apply localized heat to nut or stud (230°C for 5 minutes).
2. Disassemble while HOT.

**Note:** Use standard hand tools for disassembly of low and medium strength Threadlockers.

## Application Procedures

### THREAD SEALING

#### STANDARD FITTINGS — PIPE, HYDRAULICS, POTABLE WATER OR AIR



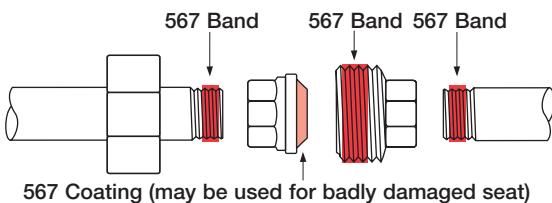
1. Clean parts of contamination with ODC-Free Cleaner & Degreaser. If necessary, spray Loctite® Primer (Refer to Technical Data) onto threaded parts (male and female). Allow to dry.  
**Note:** Primer is not required for brass parts.
2. Apply a band of Loctite Product to male threads starting one to two threads from end of pipe.
3. Assemble parts snugly. Do not overtighten.
4. If initial pressure exceeds 6.9 MPa\*, wait 30 minutes before pressurizing.

**Note:**

- If sealing chemicals or strong acids/bases, refer to Fluid Compatibility Chart (pg 42-43).
- Do not use on oxygen or strong oxidisers (chlorine).
- Refer to Loctite® Thread Sealing selector Chart (pg 12-13) for correct product selection

\*Depending on conditions

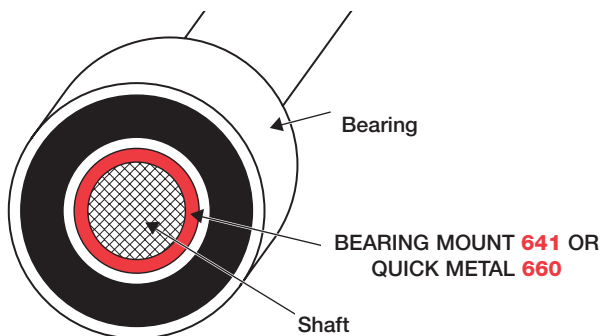
### METAL PIPE UNIONS



1. Disassemble and if necessary, spray all components with Loctite® **7649** Primer. Allow to dry.
2. Apply a thin coating of **567** PST® Pipe Sealant to union face.
3. Apply a band of **567** PST® Pipe Sealant to male threads.
4. Assemble parts snugly.

### SHAFT MOUNTED COMPONENTS

#### SLIP FIT — LIGHT DUTY



#### ORIGINAL

1. Clean all parts with Loctite® ODC-Free Cleaner & Degreaser.
2. Spray all parts (I.D. and O.D.) with Loctite® Primer (Refer Technical Data).
3. Apply Loctite® **641** dabs around shaft at engagement area.
4. Assemble parts as normal.
5. Wipe off excess.
6. Allow 20 minutes cure time prior to service.

#### WORN SHAFT

Follow directions above except:

1. Determine radial gap.
2. If radial gap exceeds 0.1mm, Loctite® Primer must be used.
3. Take steps to maintain concentricity with large gaps.
4. Larger gaps require longer cure times (30-60 minutes).
5. Loctite® QUICK METAL® **660** is NOT recommended for radial gaps exceeding 0.5mm.

**Note:** Loctite® QUICK METAL® **660** is very fast fixturing (30 seconds or less) with Loctite® **7471** Primer (T).

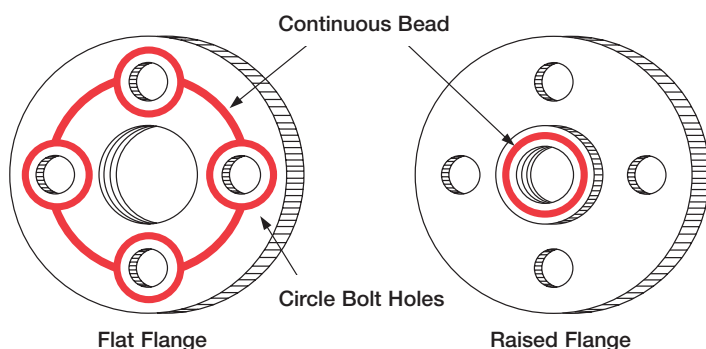


# Technical References

## Application Procedures

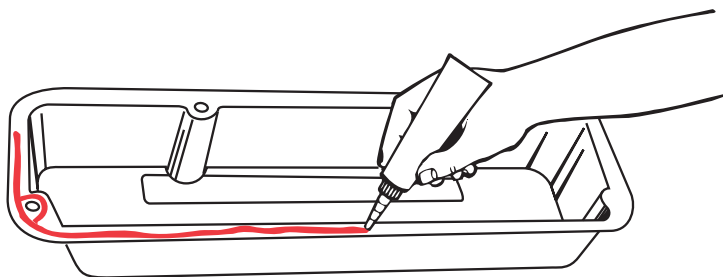
### FORMED-IN-PLACE GASKETING

#### SEALING CAST RIGID FLANGES



1. Remove old gasketing material and other heavy contaminants with Loctite® CHISEL® Gasket Remover. Use mechanical removal technique if required.  
**Note:** Avoid grinding.
2. Clean both flanges with Loctite® ODC-Free Cleaner & Degreaser.
3. Spray Loctite® Primer (Refer Technical Data) on only one surface. Allow to dry.
4. Apply a continuous bead of SELECTED LOCTITE® GASKETING PRODUCT to the other surface.  
**Note:** Circle all bolt holes with sealant, if appropriate.
5. Mate Parts. Assemble and tighten as required. **Note:** Immediate assembly not required; however avoid delays over 45 minutes (assemble immediately if primer is used).
6. Allow to cure:
  - a. No pressure – immediate service
  - b. Low pressure (up to 3.45MPa) – 30 to 45 minutes
  - c. High pressure (3.45 to 17.2MPa) – 4 hours
  - d. Extreme high pressure (17.2 to 34.45MPa) – 24 hours

#### STAMPED OR SHEET METAL FLANGES



1. Remove old gasketing material and other heavy contaminants with Loctite® CHISEL® Gasket Remover.
2. Clean both flanges with Loctite® ODC-Free Cleaner & Degreaser.
3. Apply a continuous bead of the selected Loctite® MAXX® SILICONE to sealing surface. Circle all bolt holes.  
**Note:**
  - Use proper bead diameter to seal flange width and depth.
  - Minimize excessive material “squeeze in”.
4. Assemble within 10 minutes by pressing together. Tighten as required.
5. Clean up any excess.
6. Cure times will vary with temperature, humidity, and gap.

Refer to Loctite® Do It Right Users Guide for further application procedures such as;

#### Threadlocking

- Blind Holes (Studs, etc)
- Adjustment Screws
- Stripped Thread Repair

#### Thread Sealing

- Compression Fittings
- Flared / Swaged Fittings
- Hose Ends – Air & Hydraulic

#### Puncture Sealing

- Tanks, Vessels, etc

#### Porosity Sealing

- Porosity in Welds and Castings

#### Gasket Dressing

- Sealing Flanges with Gasket

#### Strengthen Keyed Assemblies

- Keyed Assemblies – Standard & Heavy Duty
- Repair Badly Wallowed Keys

#### Shaft Mounted Components

- Repair Badly Worn Shaft
- Slip Fit – Heavy Duty
- Press Fit

#### Housed Components

- Slip Fit – Light & Heavy Duty
- Retaining (Large Gaps)

And More....

## Agency Approvals

### Australian Gas Association (AGA)

Loctite® 55 - Approval number 6007 to 2400 kPa  
Loctite® 510 - Approval number 2590 to 690 kPa  
Loctite® 515 - Approval number 2590 to 690 kPa  
Loctite® 567 - Approval number 3207 to 1050 kPa  
Loctite® 569 - Approval number 3375 to 1050 kPa  
Loctite® 577 - Approval number 4787 to 2600 kPa

### Plumbing Safety License (AS/NZS 4020:2002)

Loctite® 55 - Certificate 8638  
Loctite® 577 - Certificate 20079  
Loctite® 680 - Certificate 8687

### Australian Quarantine & Inspection Service (AQIS)

Loctite® Yuk-Off® Orange Hand Cleaner

### NSF International

Loctite® 55 Pipe Sealing Cord  
Loctite® 243 Threadlocker, Medium Strength/Oil Resistant  
Loctite® 248 Threadlocker, Medium Strength/Removable  
Loctite® 262 Threadlocker, Medium to High Strength  
Loctite® 290 Threadlocker, Wicking Grade  
Loctite® 480 Instant Adhesive, Black/Toughened  
Loctite® 518 Gasket Eliminator™ Flange Sealant  
Loctite® 561 PST™ Pipe Sealant  
Loctite® 587 Blue, High Performance RTV Silicone Gasket Maker  
Loctite® 680 Retaining Compound, Slip Fit/High Strength  
Loctite® 5900 Flange Sealant, Heavy Body RTV Silicone  
Loctite® 7649 Primer N  
Loctite® Food Grade Anti-Seize  
Loctite® No More Leaks, Plastic Pipe Sealant  
Loctite® ODC-Free Cleaner & Degreaser

### American Bureau of Shipping (ABS)

Loctite® 262 Threadlocker, Medium to High Strength  
Loctite® 454 Instant Adhesive, Surface Insensitive Gel  
Loctite® 567 PST™ Thread Sealant, High Temperature  
Loctite® 587 Blue, High Performance RTV Silicone Gasket Maker  
Loctite® 620 Retaining Compound, Slip Fit/High Temperature  
Loctite® 680 Retaining Comp., Slip Fit/High Strength  
Loctite® Extend® Rust Treatment  
Loctite® Nickel Anti-Seize  
Loctite® Silver Grade Anti-Seize

### Canadian Food Inspection Agency (CFIA)

Loctite® 243 Threadlocker, Medium Strength/Oil Resistant  
Loctite® 248 Threadlocker, Medium Strength/Removable  
Loctite® 262 Threadlocker, Medium to High Strength  
Loctite® 268 Threadlocker, High Strength  
Loctite® 272 Threadlocker, High Strength/High Temperature  
Loctite® 290 Threadlocker, Wicking Grade  
Loctite® 330 Depend Adhesive, No Mix  
Loctite® 454 Prism Instant Adhesive, Surface Insensitive Gel  
Loctite® 518 Gasket Eliminator Flange Sealant  
Loctite® 561 PST™ Pipe Sealant  
Loctite® 567 PST™ Thread Sealant, High Temperature  
Loctite® 569 Thread Sealant, Hydraulic Sealant  
Loctite® 587 Blue, High Performance RTV Silicone Gasket Maker

Loctite® 609 Retaining Compound, Press Fit/General Purpose  
Loctite® 620 Retaining Compound, Slip Fit/High Temperature  
Loctite® 638 Retaining Compound, Slip Fit/Maximum Strength  
Loctite® 641 Retaining Compound, Controlled Strength  
Loctite® 660 Quick Metal Retaining Compound, Press Fit Repair  
Loctite® 770 Primer  
Loctite® 2760 Threadlocker, Primerless/High Strength  
Loctite® 5900 Flange Sealant, Heavy Body RTV Silicone  
Loctite® 7649 Primer N  
Loctite® C5-A® Copper Based Anti-Seize  
Loctite® Extend® Rust Treatment  
Loctite® Form-A-Thread® Stripped Thread Repair Kit  
Loctite® No More Leaks, Plastic Pipe Sealant  
Loctite® O-Ring Making Kit  
Loctite® Pipe Repair Kit

### Canadian Food Inspection Agency (CFIA)

Loctite® Silver Grade Anti-Seize  
Loctite® Superflex Red High Temp RTV, Silicone Adhesive Sealant  
Loctite® Thread Sealant with PTFE

### Military Specifications (Mil Spec)

Loctite® 262 Threadlocker, Medium to High Strength  
Loctite® 277 Threadlocker, High Strength/Large Threads  
Loctite® 290 Threadlocker, Wicking Grade  
Loctite® 609 Retaining Compound, Press Fit/General Purpose  
Loctite® 635 Retaining Compound, Slip Fit/High Strength/Slow Cure  
Loctite® 640 Retaining Compound, Press Fit/Medium Strength/High Temp.  
Loctite® 7452 Tak Pak Accelerator  
Loctite® 7471 Primer T  
Loctite® 7649 Primer N  
Loctite® C5-A® Copper Based Anti-Seize  
Loctite® Moly-50 Anti-Seize  
Loctite® Silver Grade Anti-Seize

### Military Specifications (Commercial Item Standard)

Loctite® 406 Instant Adhesive, Surface Insensitive

### UL Classified/Listed for U.S.

Loctite® 55 Pipe Sealing Cord  
Loctite® 271 Threadlocker, High Strength  
Loctite® 510 Gasket Eliminator™ Flange Sealant  
Loctite® 515 Gasket Eliminator™ Flange Sealant  
Loctite® 561 PST™ Pipe Sealant  
Loctite® 567 PST™ Thread Sealant, High Temperature  
Loctite® 587 Blue, High Performance RTV Silicone Gasket Maker

### ULC Classified for Canada

Loctite® 561 PST™ Pipe Sealant  
Loctite® 567 PST™ Thread Sealant, High Temperature

### CSA International

Loctite® 55 Pipe Sealing Cord  
Loctite® 561 PST™ Pipe Sealant  
Loctite® 567 PST™ Thread Sealant, High Temperature



# Technical References

## Fluid Compatability Chart

### LIQUIDS, SOLUTIONS & SUSPENSIONS

(for metal threaded fittings sealed with Loctite® Sealants)

<b>LEGEND:</b> ● All Loctite® Anaerobic Sealants are Compatible Including # 242, 243, 542, 567, 569, 577 † Use Loctite® # 271, 277 ✗ Not Recommended □ < 10% (same as ●) ● > 10% (same as †) ☆ < 5% (same as ●) ● > 5% (same as †) ◆ Use Loctite® # 242, 243, 290			
Abrasive Coolant .....	●	Arsenic Acid .....	●
Acetaldehyde .....	●	Asbestos Slurry .....	●
Acetate Solvents .....	●	Ash Slurry .....	●
Acetimide .....	●	Asphalt Emulsions .....	●
Acetic Acid .....	●	Asphalt Molten .....	●
Acetic Acid - glacial .....	●	Bagasse Fibers .....	●
Acetic Anhydride .....	●	Barium Acetate .....	●
Acetone .....	●	Barium Carbonate .....	●
Acetyl Chloride .....	●	Barium Chloride .....	●
Acetylene (Liquid Phase) .....	●	Barium Hydroxide .....	□
Acid Clay .....	●	Barium Sulfate .....	●
Acrylic Acid .....	□	Battery Acid .....	□
Acrylonitrile .....	●	Battery Diffuser Juice .....	●
Activated Alumina .....	●	Bauxite (See Alumina) .....	●
Activated Carbon .....	●	Bentonite .....	●
Activated Silica .....	●	Benzaldehyde .....	●
Alcohol-Allyl .....	●	Benzene .....	●
Alcohol-Amyl .....	●	Benzene Hexachloride .....	●
Alcohol-Benzyl .....	●	Benzene in Hydrochloric Acid .....	●
Alcohol-Butyl .....	●	Benzoic Acid .....	●
Alcohol-Ethyl .....	●	Benzotriazole .....	●
Alcohol-Furfuryl .....	●	Beryllium Sulfate .....	●
Alcohol-Hexyl .....	●	Bicarbonate Liquor .....	●
Alcohol-Isopropyl .....	●	Bilge Lines .....	●
Alcohol-Methyl .....	●	Bleach Liquor .....	●
Alcohol-Propyl .....	●	Bleached Pulps .....	●
Alum-Ammonium .....	●	Borax & Liquors .....	●
Alum-Chrome .....	●	Boric Acid .....	●
Alum-Potassium .....	●	Brake Fluids .....	●
Alum-Sodium .....	●	Brine Chlorinated .....	●
Alumina .....	●	Brine (cold) .....	●
Aluminium Acetate .....	●	Bromine Solution .....	†
Aluminium Bicarbonate .....	●	Butadiene .....	●
Aluminium Bifluoride .....	●	Butyl Acetate .....	●
Aluminium Chloride .....	●	Butyl Alcohol .....	●
Aluminium Sulfate .....	●	Butyl Amine .....	●
Ammonia Anhydrous .....	✗	Butyl Cellulosolve \$ .....	●
Ammonia Solutions .....	✗	Butyl Chloride .....	●
Ammonium Bisulfite .....	●	Butyl Ether (Dry) .....	●
Ammonium Borate .....	●	Butyl Lactate .....	●
Ammonium Bromide .....	●	Butyl Resin .....	●
Ammonium Carbonate .....	●	Butyraldehyde .....	●
Ammonium Chloride .....	●	Butyric Acid .....	□
Ammonium Chromate .....	●	Cadmium Chloride .....	●
Ammonium Fluoride .....	●	Cadmium Plating Bath .....	●
Ammonium Fluorosilicate .....	●	Cadmium Sulfate .....	●
Ammonium Formate .....	●	Calcium Acetate .....	●
Ammonium Hydroxide .....	✗	Calcium Bisulfate .....	●
Ammonium Hyposulfite .....	●	Calcium Carbonate .....	●
Ammonium Iodide .....	●	Calcium Chlorate .....	●
Ammonium Molybdate .....	●	Calcium Chloride .....	●
Ammonium Nitrate .....	●	Calcium Chloride Brine .....	●
Ammonium Oxalate .....	●	Calcium Citrate .....	●
Ammonium Persulfate .....	●	Calcium Ferrocyanide .....	●
Ammonium Phosphate .....	●	Calcium Formate .....	●
Ammonium Picrate .....	●	Calcium Hydroxide .....	●
Ammonium Sulfate .....	●	Calcium Lactate .....	●
Ammonium Sulfate Scrubber .....	●	Calcium Nitrate .....	●
Ammonium Sulfide .....	●	Camphor .....	●
Ammonium Thiocyanate .....	●	Carbaryl .....	●
Amyl Acetate .....	●	Carbolic Acid (phenol) .....	□
Amyl Amine .....	●	Carbon Bisulfide .....	●
Amyl Chloride .....	●	Carbon Black .....	●
Aniline .....	●	Carbon Tetrachloride .....	●
Aniline Dyes .....	●	Carbolic Acid .....	□
Anodizing Bath .....	●	Carbowax \$ .....	●
Antichlor Solution .....	●	Carboxymethyl Cellulose .....	●
Antimony Acid Salts .....	●	Carnauba Wax .....	●
Antimony Oxide .....	●	Casein .....	●
Antioxidant Gasoline .....	●	Casein Water Paint .....	●
Aqua Regia .....	✗	Celite .....	●
Argon .....	●	Cellulosolve \$ .....	●
Armeen \$ .....	●	Cellulose Pulp .....	●
Arochlor \$ .....	●	Cellulose Xanthate .....	●
Aromatic Gasoline .....	●	Cement Dry/Air Blown .....	●
Aromatic Solvents .....	●	Cement Grout .....	●
		Cement Slurry .....	●
		Ceramic Enamel .....	●
		Ceric Oxide .....	●
		Chalk .....	●
		Chemical Pulp .....	●
		Chestnut Tanning .....	●
		China Clay .....	●
		Chloral Alcoholate .....	●
		Chloramine .....	●
		Chlorinated Hydrocarbons .....	●
		Chlorinated Paperstock .....	●
		Chlorinated Solvents .....	●
		Chlorinated Sulphuric Acids .....	✗
		Chlorinated Wax .....	●
		Chlorine Dioxide .....	✗
		Chlorine Liquid .....	✗
		Chlorine (Dry) .....	✗
		Chloroacetic Acid .....	□
		Chlorobenzene (Dry) .....	●
		Chloroform (Dry) .....	●
		Chloroformate Methyl .....	●
		Chlorosulfonic Acid .....	✗
		Chrome Acid Cleaning .....	□
		Chrome Liquor .....	□
		Chrome Plating Bath .....	□
		Chromic Acid 10% .....	●
		Chromic Acid 50% (cold) .....	✗
		Chromic Acid 50% (hot) .....	✗
		Chromium Acetate .....	●
		Chromium Chloride .....	●
		Chromium Sulfate .....	●
		Classifier .....	●
		Clay .....	●
		Coal Slurry .....	●
		Coal Tar .....	●
		Cobalt Chloride .....	●
		Copper Ammonium Formate .....	●
		Copper Chloride .....	●
		Copper Cyanide .....	●
		Copper Liquor .....	●
		Copper Naphthenate .....	●
		Copper Plating (Acid Process) .....	●
		Copper Plating (Alk. Process) .....	●
		Copper Sulfate .....	●
		Core Oil .....	●
		Corundum .....	●
		Creosote .....	●
		Creosote-Cresylic Acid .....	●
		Cyanide Solution .....	●
		Cyanuric Chloride .....	●
		Cyclohexane .....	●
		Cylinder Oils .....	●
		De-Ionized Water .....	●
		De-Ionized Water Low Conductivity .....	●
		Detergents .....	●
		Developer, photographic .....	●
		Dextrin .....	●
		Diacetone Alcohol .....	●
		Diammonium Phosphate .....	●
		Diamylamine .....	●
		Diatomaceous Earth Slurry .....	●
		Diazo Acetate .....	●
		Diethyl Phthalate .....	●
		Dichlorophenol .....	✗
		Dichloro Ethyl Ether .....	●
		Dicyandamide .....	●
		Dielectric Fluid .....	●
		Diester Lubricants .....	●
		Diethyl Ether Dry .....	●
		Diethyl Sulfate .....	●
		Diethylamine .....	●
		Diethylene Glycol .....	●
		Diglycolic Acid .....	●
		Dimethyl Formamide .....	●
		Dimethyl Sulfoxide .....	●
		Dioxane Dry .....	●
		Dioxidene .....	●
		Dipentene-Pinene .....	●
		Diphenyl .....	●
		Distilled Water (Industrial) .....	●
		Dowtherm \$ .....	●
		Drying Oil .....	●
		Dust-Flue (Dry) .....	●
		Dye Liquors .....	●
		Emery-Slurry .....	●
		Emulsified Oils .....	●
		Enamel Frit Slip .....	●
		Esters General .....	●
		Ethyl Acetate .....	●
		Ethyl Alcohol .....	●
		Ethyl Amine .....	●
		Ethyl Bromide .....	●
		Ethyl Cellosolve \$ .....	●
		Ethyl Cellosolve Slurry \$ .....	●
		Ethyl Formate .....	●
		Ethyl Silicate .....	●
		Ethylene Diamine .....	●
		Ethylene Dibromide .....	●
		Ethylene Dichloride .....	●
		Ethylene Glycol .....	●
		Ethylenediamine Tetramine .....	●
		Fatty Acids .....	●
		Fatty Acids Amine .....	●
		Fatty Alcohol .....	●
		Ferric-Floc .....	●
		Ferric Chloride .....	●
		Ferric Nitrate .....	●
		Ferric Sulfate .....	●
		Ferrocene-Oil Sol .....	●
		Ferrous Chloride .....	●
		Ferrous Oxalate .....	●
		Ferrous Sulfate 10% .....	●
		Ferrous Sulfate (Sat) .....	●
		Fertilizer Sol .....	●
		Flotation Concentrates .....	●
		Fluoride Salts .....	●
		Fluorine, Gaseous or Liquid .....	●
		Fluorolube .....	●
		Fluosilic Acid .....	●
		Flux Soldering .....	●
		Fly Ash Dry .....	●
		Foam Latex Mix .....	●
		Foamite .....	●
		Formaldehyde (cold) .....	●
		Formaldehyde (hot) .....	†
		Formic Acid (Dil cold) .....	●
		Formic Acid (Dil hot) .....	†
		Formic Acid (cold) .....	†
		Formic Acid (hot) .....	†
		Freon \$ .....	†
		Fuel Oil .....	●
		Fuming Nitric Red .....	✗
		Fuming Sulfuric .....	✗
		Fuming Oleum .....	✗
		Furfural .....	●
		Gallic Acid .....	☆
		Gallium Sulfate .....	●
		Gasoline-Acid Wash .....	●
		Gasoline-Alk. Wash .....	●
		Gasoline Aviation .....	●
		Gasoline Copper Chloride .....	●
		Gasoline Ethyl .....	●
		Gasoline Motor .....	●
		Gasoline Sour .....	●
		Gasoline White .....	●
		Gluconic Acid .....	●
		Glue-Animal Gelatin .....	●
		Glue-Plywood .....	●
		Glutamic Acid .....	●
		Glycerine Lye-Brine .....	✗
		Glycerol .....	●
		Glycine .....	●
		Glycine Hydrochloride .....	●
		Glycol Amine .....	●
		Glycolic Acid .....	●
		Glyoxal .....	●
		Gold Chloride .....	●
		Gold Cyanide .....	●
		Granodine .....	●
		Grape Pomace Graphite .....	●
		Grease Lubricating .....	●
		Green Soap .....	●
		Grinding Lubricant .....	●
		Grit Steel .....	●
		Gritty Water .....	●
		Groundwood Stock .....	●
		GRS Latex .....	●
		Gum Paste .....	●
		Gum Turpentine .....	●
		Gypsum .....	●
		Halane Sol .....	●
		Halogen Tin Plating .....	●
		Halowax \$ .....	●
		Harvel-Trans Oil .....	●
		Heptane .....	●
		Hexachlorobenzene .....	●
		Hexadiene .....	●
		Hexamethylene Tetramine .....	●
		Hexane .....	●
		Hydrazine .....	●
		Hydrazine Hydrate .....	●
		Hydrobromic Acid .....	□
		Hydrochloric Acid .....	●
		Hydrocyanic Acid .....	□
		Hydrofluoric Acid .....	✗
		Hydrogen Peroxide (dil) .....	●
		Hydrogen Peroxide (con) .....	†
		Hydroponic Sol .....	●
		Hydroquinone .....	●
		Hydroxyacetic Acid .....	●
		Hypo .....	●
		Hypochlorous Acid .....	●
		Ink .....	●
		Ink in Solvent-Printing .....	●
		Iodine in Alcohol .....	●
		Iodine-Potassium Iodide .....	●
		Iodine Solutions .....	●
		Ion Exchange Service .....	●
		Ion Exclusion Glycol .....	●
		Irish Moss Slurry .....	●
		Iron Ore Taconite .....	●
		Iron Oxide .....	●
		Isobutyl Alcohol .....	●
		Isobutyraldehyde .....	●
		Isocetane .....	●
		Isopropyl Alcohol .....	●
		Isocyanate Resin .....	●
		Isopropyl Acetate .....	●
		Isopropyl Ether .....	●
		Itaconic Acid .....	●
		Jet Fuels .....	●
		Jeweler's Rouge .....	●
		Jig Table Slurry .....	●
		Kaolin-China Clay \$ .....	●
		Kelp Slurry .....	†
		Kerosene .....	●
		Kerosene Chlorinated .....	●
		Ketone .....	●
		Lacquer Thinner .....	●
		Lactic Acid .....	●
		Lapping Compound .....	●
		Latex-Natural .....	●
		Latex-Synthetic .....	●
		Latex Synthetic Raw .....	●
		Laundry Wash Water .....	●
		Laundry Bleach .....	●
		Laundry Blue .....	●
		Laundry Soda .....	●
		Lead Arsenate .....	●
		Lead Oxide .....	●
		Lead Sulfate .....	●
		Lignin Extract .....	●
		Lime Slaked .....	●
		Lime Sulfur Mix .....	●
		Liquid Ion Exchange .....	●
		Lithium Chloride .....	●
		LOX (Liquid O <sub>2</sub> ) .....	✗
		Ludox .....	●
		Lye .....	✗
		Machine Coating Color .....	●
		Magnesite Slurry .....	●
		Magnesite .....	●
		Magnesium Bisulfite .....	●
		Magnesium Carbonate .....	●
		Magnesium Chloride .....	●
		Magnesium Hydroxide .....	●
		Magnesium Sulfate .....	●
		Maleic Acid .....	●
		Maleic Anhydride .....	●
		Manganese Chloride .....	●
		Manganese Sulfate .....	●
		Melamine Resin .....	●
		Menthyl .....	●
		Mercaptans .....	●
		Mercuric Chloride .....	●
		Mercuric Nitrate .....	●
		Mercury .....	●
		Mercury Dry .....	●
		Methane .....	●
		Methyl Alcohol .....	●
		Methyl Acetate .....	●
		Methyl Bromide .....	●
		Methyl Cellosolve \$ .....	●
		Methyl Chloride .....	●
		Methyl Ethyl Ketone .....	●
		Methyl Isobutyl Ketone .....	●
		Methyl Lactate .....	●
		Methyl Orange .....	●
		Methylamine .....	●
		Methylene Chloride .....	●
		Mineral Spirits .....	●
		Mixed Acid, Nitric/Sulfuric .....	✗
		Monochloroacetic Acid .....	●
		Morpholine .....	●
		Mud .....	●
		Nalco Sol. .....	●
		Naphtha .....	●
		Naphthalene .....	●
		Naval Stores Solvent .....	●
		Nematocide .....	●
		Neoprene Emulsion .....	●
		Neoprene Latex .....	●
		Nickel Acetate .....	●
		Nickel Ammonium Sulfate .....	●
		Nickel Chloride .....	●
		Nickel Sulfate .....	●
		Nickel Cyanide .....	●
		Nickel Fluoborate .....	●
		Nickel Ore Fines .....	●
		Nickel Plating Bright .....	●
		Nickel Sulfate .....	●
		Nicotinic Acid .....	□
		Nitrate Sol. .....	●
		Nitration Acid(s) .....	✗
		Nitric Acid .....	✗
		Nitric Acid 10% .....	□
		Nitric Acid 20% .....	†
		Nitric Acid Anhydrous .....	✗
		Nitrosyl Chloride .....	✗
		Nitro Aryl Sulfonic Acid .....	●
		Nitrobenzene-Dry .....	●
		Nitrocellulose .....	●
		Nitrofurane .....	●
		Nitroguanidine .....	●
		Nitroparaffins-Dry .....	●
		Nitrosyl Chloride .....	●
		Norite Carbon .....	●
		Nuchar .....	●
		Oakite \$ Compound .....	●
		Oil, Creosote .....	●
		Oil, Emulsified .....	●
		Oil, Fuel .....	●
		Oil, Lubricating .....	●
		Oil, Soluble .....	●
		Oleic Acid (hot) .....	●
		Oleic Acid (cold) .....	●
		Ore Fines-Flotation .....	●
		Ore Pulp .....	●
		Organic Dyes .....	●
		Oxalic Acid (cold) .....	●
		Ozone (wet) .....	✗

# Fluid Compatability Chart

## GASES

Perchloric Acid .....	□	Potassium Permanganate .....	●	Sodium Benzene Sulfonate .....	●	Sulfathiazole .....	●	Udylite Bath-Nickel .....	●	Acetylene .....	●
Perchloromethyl Mercaptan .....	●	Potassium Persulfate .....	●	Sodium Bichromate .....	●	Sulfite Liquor .....	●	Undecylenic Acid .....	●	Acid & Alkali Vapors .....	●
Permanganic Acid .....	✕	Potassium Phosphate .....	●	Sodium Bisulfite .....	●	Sulfite Stock .....	●	Unichrome Sol. Alk. ....	●	Air .....	●
Persulfuric Acid .....	✕	Potassium Silicate .....	●	Sodium Bromide .....	●	Sulfonated Oils .....	●	Uranium Salts .....	●	Amine .....	●
Petroleum Ether .....	●	Potassium Sulfate .....	●	Sodium Carbonate .....	●	Sulfones .....	●	Uranyl Nitrate .....	●	Ammonia .....	●
Petroleum Jelly .....	●	Potassium Xanthate .....	●	Sodium Chlorate .....	●	Sulfonic Acids .....	●	Uranyl Sulfate .....	●		
Phenol Formaldehyde Resins .....	●	Press Board Waste .....	●	Sodium Chlorite .....	●	Sulfonyl Chloride .....	●	Urea Ammonia Liquor .....	●		
Phenol Sulfonic Acid .....	●	Propionic Acid .....	●	Sodium Cyanide .....	●	Sulfur Slurry .....	●			Butane .....	●
Phenolic Glue .....	●	Propyl Alcohol .....	●	Sodium Ferricyanide .....	●	Sulfur Solution .....	●			Butadiene Gas/Liquid .....	●
Phloroglucinol .....	●	Propyl Bromide .....	●	Sodium Formate .....	●	in Carbon Disulfide .....	●			Butylene Gas/Liquid .....	●
Phosphate Ester .....	●	Propylene Glycol .....	●	Sodium Glutamate .....	●	Sulphuric Acid 0-7% .....	↑			By-Product Gas (Dry) .....	●
Phosphatic Sand .....	●	Pumice .....	●	Sodium Hydrogen Sulfate .....	●	Sulphuric Acid 7-40% .....	↑				
Phosphoric Acid 85% (hot) .....	✕	Pyranol .....	●	Sodium Hydrosulfite .....	●	Sulphuric Acid 40-75% .....	↑			Carbon Dioxide .....	●
Phosphoric Acid 85% (cold) .....	↑	Pyridine .....	●	Sodium Hydrosulfide .....	●	Sulphuric Acid 75-95% .....	✕			Carbon Disulfide .....	●
Phosphoric Acid 50% (hot) .....	↑	Pyrogalllic Acid .....	●	Sodium Hydrochloride .....	●	Sulphuric Acid 95-100% .....	✕			Carbon Monoxide .....	●
Phosphoric Acid 50% (cold) .....	↑	Pyrogen Free Water .....	●	Sodium Hydroxide .....	✕	Sulphurous Acid .....	↑			Chloride (Dry) .....	●
Phosphoric Acid 10% (cold) .....	●	Pyrole .....	●	Sodium Hydro. 20% (cold) .....	●	Sulfuryl Chloride .....	●			Chlorine (Dry) .....	✕
Phosphoric Acid 10% (hot) .....	↑	Pyromellitic Acid .....	●	Sodium Hydro. 20% (hot) .....	↑	Surfactants .....	●			Chlorine (Wet) .....	✕
Phosphorous Molten .....	●			Sodium Hydro. 50% (cold) .....	↑	Synthetic Latex .....	●			Coke-Oven Gas (Cold) .....	●
Phosphotungstic Acid .....	●	Quebracho Tannin .....	●	Sodium Hydro. 50% (hot) .....	✕					Coke-Oven Gas (Hot) .....	↑
Photographic Sol. ....	●			Sodium Hydro. 70% (cold) .....	↑	Taconite-Fines .....	●			Cyanogen Chloride .....	●
Phthalic Acid .....	●	Rag Stock Bleached .....	●	Sodium Hydro. 70% (hot) .....	✕	Talc-Slurry .....	●			Cyanogen Gas .....	●
Phytate .....	●	Rare Earth Salts .....	●	Sodium Hypochlorite .....	●	Tankage-Slurry .....	●				
Phytate Salts .....	●	Rayon Acid Water .....	●	Sodium Lignosulfonate .....	●	Tannic Acid (cold) .....	↑			Ethane .....	●
Pickling Acid, Sulfuric .....	●	Rayon Spin Bath .....	●	Sodium Metasilicate .....	●	Tamin .....	●			Ether-see Diethyl Ether .....	●
Picric Acid Solutions .....	●	Rayon Spin Bath spent .....	●	Sodium Molten .....	●	Tar & Tar Oil .....	●			Ethylene .....	●
Pine Oil Finish .....	●	Resorcinol .....	●	Sodium Nitrate .....	●	Tartaric Acid .....	●			Ethylene Oxide .....	●
Plating Sol. as follows:		River Water .....	●	Sodium Nitrite-Nitrate .....	●	Television Chemicals .....	●				
Brass Cyanide .....	●	Road Oil .....	●	Sodium Perborate .....	●	Tergitol \$ .....	●			Water-Acid - Below pH7 .....	●
Bronze-Cyanide .....	●	Roccal .....	●	Sodium Peroxide .....	✕	Terpineol .....	●			Water pH7 to 8 .....	●
Chromium & Cadmium .....	●	Rosin-Wood .....	●	Sodium Persulfate .....	●	Tetraethyl Lead .....	●			Water Alkaline - Over pH8 .....	●
Cyanide .....	●	Rosin in Alcohol .....	●	Sodium Phosphate-Mono .....	●	Tetrahydrofuran .....	●			Water Mine Water .....	↑
Cobalt Acid .....	●	Rosin Size .....	●	Sodium Phosphate-Tri .....	●	Tetranitromethane .....	●			Water Potable .....	◇
Copper Acid .....	●	Rubber Latex .....	●	Sodium Potassium Chloride .....	●	Textile Dyeing .....	●			Water River .....	●
Copper Alk. ....	●			Sodium Salicylate .....	●	Textile Finishing Oil .....	●			Water Sandy .....	●
Gold Cyanide .....	●	Safrole .....	●	Sodium Sesquicarbonate .....	●	Textile Printing Oil .....	●			Water "White" - low pH .....	●
Iron-Acid .....	●	Salt Alkaline .....	●	Sodium Silicate .....	●	Thiocyanic Acid .....	●			Water "White" - high pH .....	●
Lead-Fluoro .....	●	Salt Electrolytic .....	●	Sodium Silicofluoride .....	●	Thioglycolic Acid .....	●			Wax .....	●
Nickel Bright .....	●	Salt Refrg. ....	●	Sodium Stannate .....	●	Thionyl Chloride .....	●			Wax Chlorinated .....	●
Platinum .....	●	Sand-Air Blown Slurry .....	●	Sodium Sulfate .....	●	Thiophosphoryl Chloride .....	●			Wax Emulsions .....	●
Silver-Cyanide .....	●	Sand-Air Phosphatic .....	●	Sodium Sulfide .....	●	Thiourea .....	●			Weed Killer Dibromide .....	●
Tin-Acid .....	●	Sea Coal .....	●	Sodium Sulfite .....	●	Thorium Nitrate .....	●			Weisberg Sulfate Plating .....	●
Tin Alk. Barrel .....	●	Sea Water .....	●	Sodium Sulfhydrate .....	●	Thymol .....	●			Wood ground pulp .....	●
Zinc Acid .....	●	Selenium Chloride .....	●	Sodium Thiocyanate .....	●	Tin Tetrachloride .....	●			Wort Lines.....	●
Zinc Alk. Cyanide .....	●	Sequestrene .....	●	Sodium Thiosulfate .....	●	Tinning Sol. DuPont .....	●				
Polyacrylonitrile Slurry .....	●	Sewage .....	●	Sodium Tungstate .....	●	Titania Paper Coating .....	●			X-Ray Developing Bath .....	●
Polypentek .....	●	Shellac .....	●	Sodium Xanthate .....	●	Titanium Acid Slurry .....	●			Xylene .....	●
Poly sulfide Liquor .....	●	Shower Water .....	●	Solox-Denat. Ethanol .....	●	Titanium Oxy Sulfate .....	●				
Polyvinyl Acetate Slurry .....	●	Silica Gel .....	●	Soluble Oil .....	●	Titanium Sulfate .....	●			Zelan .....	●
Polyvinyl Chloride .....	●	Silica Ground .....	●	Solvent Naphthas .....	●	Titanium Tetrachloride .....	●			Zeolite Water .....	●
Porcelain Frit .....	●	Silicone Tetrachloride .....	●	Sorbic Acid .....	●	Toluol .....	●			Nitrogen Gas (Cold) .....	●
Potash .....	□	Silicone Fluids .....	●	Sour Gasoline .....	●	Toluene .....	●			Nitrous Oxide .....	●
Potassium Acetate .....	●	Silver Cyanide .....	●	Soybean Sludge-Acid .....	●	p-Toluene Sulfonic Acid .....	↑			Zinc Acetate .....	●
Potassium Alum. Sulfate .....	●	Silver Iodide-Aqu. ....	●	Spensol Solution .....	●	Transil Oil .....	●			Zinc Bromide .....	●
Potassium Bromide .....	●	Silver Nitrate .....	●	Stannic Chloride .....	●	Trichloroacetic Acid .....	●			Zinc Chloride .....	●
Potassium Carbonate .....	●	Size Emulsion .....	●	Starch .....	●	Trichlorethane 1,1,1 .....	●			Zinc Cyanide-Alk. ....	●
Potassium Chlorate .....	●	Skelly Solve E. L .....	●	Starch Base .....	●	Trichlorethylene .....	●			Zinc Fines Slurry .....	●
Potassium Chloride Sol. ....	●	Slate to 400 Mesh .....	●	Stearic Acid .....	●	Trichlorethylene-Dry .....	●			Zinc Flux Paste .....	●
Potassium Chromate .....	●	Soap Lye .....	✕	Steep Water .....	●	Tricresyl Phosphate .....	●			Zinc Galvanizing .....	●
Potassium Cyanide Sol. ....	●	Soap Solutions (Stearates) .....	●	Sterilization Steam .....	●	Triethanolamine .....	●			Zinc Hydrosulfite .....	●
Potassium Dichromate .....	●	Soap Stone Air Blown .....	●	Stillage Distillers .....	●	Triethylene Glycol .....	●			Zinc Oxide in Water .....	●
Potassium Ferricyanide .....	●	Soda Pulp .....	●	Stoddard Solvent .....	●	Trioxane .....	●			Zinc Oxide in Oil .....	●
Potassium Hydroxide .....	✕	Sodium Acetate .....	●	Styrene .....	●	Tungstic Acid .....	●			Zinc Sulfate .....	●
Potassium Iodide .....	●	Sodium Acid Fluoride .....	●	Styrene Butadiene Latex .....	●	Turpentine .....	●			Zinccolate .....	●
Potassium Nitrate .....	●	Sodium Aluminate .....	●	Sulfamic Acid .....	●	UCON \$ Lube .....	●			Zirconyl Nitrate .....	●
Potassium Perchlorate .....	●	Sodium Arsenate .....	●	Sulfan-Sulfuric Anhydride .....	●					Zirconyl Sulfate.....	●

- NOTE: 1. The above information does not constitute a recommendation of sealant use. It is intended only as a guide for consideration by the purchaser with the expectation of favorable confirming test results. It is impossible to test sealant reaction with the multitude of chemicals in existence, therefore, compatibility has been estimated based on a wide variety of customer experience.
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