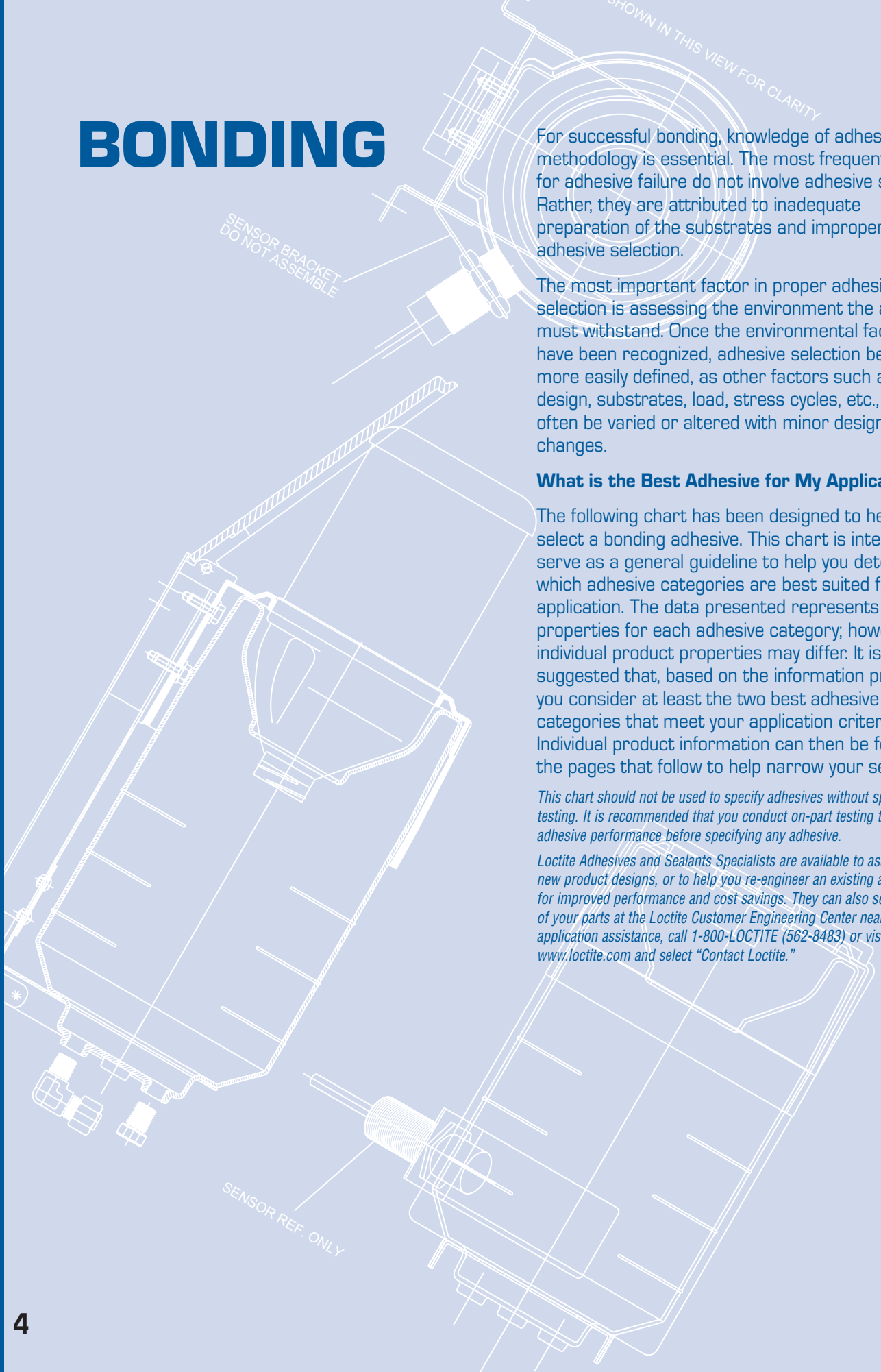
BONDING



For successful bonding, knowledge of adhesive methodology is essential. The most frequent causes for adhesive failure do not involve adhesive strength. Rather, they are attributed to inadequate preparation of the substrates and improper adhesive selection.

The most important factor in proper adhesive selection is assessing the environment the adhesive must withstand. Once the environmental factors have been recognized, adhesive selection becomes more easily defined, as other factors such as joint design, substrates, load, stress cycles, etc., can often be varied or altered with minor design changes.

What is the Best Adhesive for My Application?

The following chart has been designed to help you select a bonding adhesive. This chart is intended to serve as a general guideline to help you determine which adhesive categories are best suited for your application. The data presented represents typical properties for each adhesive category; however, individual product properties may differ. It is suggested that, based on the information provided, you consider at least the two best adhesive categories that meet your application criteria. Individual product information can then be found on the pages that follow to help narrow your search.

This chart should not be used to specify adhesives without specific testing. It is recommended that you conduct on-part testing to ensure adhesive performance before specifying any adhesive.

Loctite Adhesives and Sealants Specialists are available to assist you with new product designs, or to help you re-engineer an existing application for improved performance and cost savings. They can also set up testing of your parts at the Loctite Customer Engineering Center nearest you. For application assistance, call 1-800-LOCTITE (562-8483) or visit www.loctite.com and select "Contact Loctite."

PERFORMANCE CONSIDERATIONS	ADHESIVE CATEGORY							
	Acrylics	**Cyanoacrylates**	**Epoxies**	**Hot Melts**	**Silicones**	**Urethanes**	**2-Part Acrylics**	**2-Step Acrylics**
Benefits	Good impact resistance/ flexibility	Excellent adhesion to rubber or plastics	Wide range of formulations	Fast, large gap fiiling	Excellent temperature resistance	Excellent toughness/ flexibility	Good impact resistance/ flexibility	Good impact resistance/ flexibility
Limitations	Primer required	Low solvent resistance	Mixing required	Low heat resistance	Low strength	Sensitive to moisture	Mixing required	Primer required
Temperature Resistance								
Typical for the category (°F)	-65 to +300	-65 to +180	-65 to +180	-65 to +250	-65 to +400	-65 to +250	-65 to +250	-65 to +300
Highest Rated Product (°F)	400	250	275	330	600	300	250	400
Environmental Resistance								
Polar Solvents *(ex, H20, Ethylene Glycol, IPA, Acetone)*	Good	Poor[1]	Very good	Good	Good	Good	Good	Good
Non-Polar Solvents *(ex, Motor Oil, Toluene, Gasoline, ATF)*	Very good	Good	Excellent	Good	Poor	Good	Very good	Very good
Adhesion to Substrates								
Metals	Excellent	Very good	Excellent	Good	Good	Good	Excellent	Excellent
Plastics[2]	Fair	Excellent	Fair	Very good	Fair	Very good	Excellent	Fair
Glass	Excellent	Poor	Excellent	Good	Very good	Good	Good	Excellent
Rubber	Poor	Very good	Fair	Fair	Good	Good	Poor	Poor
Wood	Good	Good	Very Good	Excellent	Fair	Fair	Good	Good
Overlapping Shear Strength	High	High	High	Low	Low	Medium	High	High
Peel Strength	Medium	Low	Medium	Medium	Medium	Medium	High	Medium
Tensile Strength	High	High	High	Low	Low	Medium	High	High
Elongation/Flexibility	Medium	Low	Low	High	Very High	High	High	Medium
Hardness	Semi-Rigid	Rigid	Rigid	Semi-Soft	Soft	Soft	Semi-rigid	Semi-rigid
PROCESS CONSIDERATIONS								
Number of Components	2	1	2	1	1	2	2	2
Cure Temperature	Room Temp.	Room Temp.	Room Temp.	Room Temp.[3]	Room Temp.	Room Temp.	Room Temp.	Room Temp.
Fixture Time								
Average	10 minutes	60 seconds	35 minutes	70 seconds	25 minutes	25 minutes	20 minutes	5 minutes
Fastest	30 seconds	10 seconds	3-5 minutes	20 seconds	10 minutes	5 minutes	3-5 minutes	30 seconds
Full Cure Time	24 hours	24 hours	12 - 24 hours	1 hour (or when cooled)[4]	24 hours	24 hours	24 hours	24 hours
Gap Fill								
Ideal (in inches)	0.002 - 0.004	0.001 - 0.003	0.004 - 0.006	0.002 - 0.005	0.004 - 0.006	0.004 - 0.006	0.010 - 0.040	0.002 - 0.004
Maximum (in inches)	0.040	0.010	0.125	0.240	0.240	0.125	0.5	0.040
Dispensing/Mixing Equipment Required?	No	No	Yes	Yes	No	Yes	Yes	Yes
Light Cure Versions Available?	Yes	Yes	Yes	No	Yes	No	No	Yes
For more information on each adhesive category, refer to pages...	6-9, 26-28, 84, 86	10-13, 27, 28, 85	14-17, 19	16-17, 48	27, 29, 34, 35, 49, 85	15, 18, 19, 85	7, 9	6, 8

[1] Cyanoacrylates have very good moisture resistance on plastics.
[2] Uncured liquid adhesives may cause stress cracking of certain thermoplastics, e.g. polycarbonate, acrylic, and polysulfone. Special products and process techniques are available. Consult the Loctite Design Guide to Bonding Plastics (LT2197) or contact 1-800-LOCTITE for more information.
[3] Elevated temperatures are required to dispense liquid Hot Melt Adhesives.
[4] Urethane Hot Melts require 24 hours for full cure.

Loctite Acrylic Adhesives were developed for structural bonding applications that require tensile, shear, and peel strength combined with maximum impact, stress, and shock resistance. Available in two major categories:

- Two-Step No Mix Structural Acrylics
- Two-Part Structural Acrylics

BONDING

ACRYLIC ADHESIVES

TWO-STEP NO MIX STRUCTURAL ACRYLICS – when in contact with a liquid activator, these no-mix materials cure rapidly at room temperature to a weather-resistance bond. Ideal for close fitting parts and where extended open time is required.

324 High Impact SpeedBonder™

Ideal for large gap applications. A structural adhesive that offers the strength of an epoxy and the speed of an instant adhesive. Solvent resistant. Cures in minutes. Specially formulated for toughness and impact strength.

325 High Temperature SpeedBonder™

Solvent resistant, activator-cured in minutes. Forms flexible bonds on gaps up to 0.40". Designed for severe environments and temperatures to 350°F.

326 Fast Fixture SpeedBonder™

An all-purpose bonder. A structural adhesive that offers the strength of an epoxy and the speed of an instant adhesive. Solvent resistant. Cures in minutes. Ideal for applications requiring fast fixturing.

330 Depend® No-Mix Adhesive

A no-mix high viscosity adhesive for a wide range of materials including metal, wood, ferrite, ceramic, and plastic.

332 Structural Adhesive Severe Environment

An activator-cured, no-mix adhesive that provides high temperature capability with thermal durability up to 350°F.

384 Output™ Repairable Thermally Conductive

Mounts components to heat sinks but allows removal for repair or replacement. Output Activator is required for curing.

TWO-PART STRUCTURAL ACRYLICS – when statically mixed, these adhesives develop a tough, durable bond to a wide variety of substrates, including metals, plastics, and composites. Loctite® two-part strucutrual acrylics are available in mixer-friendly packaging to minimize waste and process time. Refer to the Dispensing section for available dual cartridge dispensers and mix nozzles.

H3000 Speedbonder® General Purpose

A low visocsity general purpose adhesive ideal for bonding plastics and composites.

H3300 Speedbonder® General Purpose, Fast Fixturing

A non-sag, fast fixturing structural adhesive for bonding plastics and composites.

H3151 Speedbonder® Metal Bonder

Extended open time allows for adjustment of parts. Excellent bond strength on aluminum and steel. Impact and peel resistant.

H4100 Speedbonder® Ultra Fast

Ultra fast fixturing structural adhesive. Forms strong bonds to plastics and composites.

H4200 Speedbonder® Toughened

A general purpose plastic and composite bonder with high peel and impact resistance. Fixtures in 15 minutes.

H4500 Speedbonder® Metal Bonder

High strength structural adhesive for metals. Fixtures in 10 minutes.

H4800 Speedbonder® Toughened

Provides extended open time, making it ideal for the assembly and adjustment of large parts. Excellent peel and impact resistance. Provides high bond strengths on composites.

3410 Speedbonder® Low Odor/Non-Flammable

A fast setting, non-sag gel structural adhesive with minimal odor. Acid free. Fixtures in 10 minutes.

3411 Speedbonder® Low Odor/Non-Flammable

A medium setting, non-sag gel structural adhesive with minimal odor. Acid free. Fixtures in 15 minutes.

ADDITIONAL OFFERINGS

A complete line of Surface Preparation Products are available. For more information refer to the Surface Preparation section on pages 52 and 53.

PROPERTIES CHART

PRODUCT	Item Number	Container	Typical Use	Color	Gap Fill	Viscosity cP @ 20 RPM	Shear Strength (PSI)*	Temperature Range	Cure Speed	Recommended Primer	Specific Gravity
312	03333 00144 31231 31243	10 ml kit[1] 50 ml kit[2] 50 ml bottle 1 liter bottle	Fast cure on close fitting parts	Amber	.003"	1,000	3,000	-65°F to 225°F	Fixture - 30 sec.* Full - 24 hrs.	736	1.08
324	32430 32490	50 ml bottle 1 liter bottle	High impact applications	Amber	.040"	17,000	2,175	-65°F to 275°F	Fixture - 5 min. Full - 24 hrs.	7075	1.11
325	32530 32586	50 ml bottle 1 liter bottle	High temperature applications	Amber	.040"	20,000	2,200	-65°F to 350°F	Fixture - 5 min. Full - 24 hrs.	7075	1.11
326	32629 32685	50 ml bottle 1 liter bottle	Fast fixturing applications	Amber	.020"	18,000	2,700	-65°F to 225°F	Fixture - 1 min. Full - 24 hrs.	7649	1.10
330	20253 20251 20252 33058 33064 33081	3 ml kit[3] 25 ml kit[4] 250 ml kit[5] 250 ml tube 300 ml cartdg. 1 liter bottle	Rough or porous surfaces	Amber	.030"	67,500	3,300	-65°F to 250°F	Fixture - 5 min.* Full - 24 hrs.	7387	1.05
332	33201 33275 33290	25 ml syringe 300 ml cartdg. 1 liter bottle	High temperature applications	Pale yellow	.020"	200,000	3,500	-65°F to 400°F	Fixture - 3 min. Full - 24 hrs.	7387/ 7380	0.97
334	33403 33470	25 ml syringe 300 ml cartdg.	Tough magnet bonder	Pale yellow	.020"	80,000/ 140,000 Thixotropic	2,800	-65°F to 300°F	Fixture - 90 sec. Full - 24 hrs.	7387/ 7380	1.05
383	17098 33348 21086 12991	25 ml syringe 25 ml EFD syr. 25 ml kit[6] 300 ml cartdg.	High strength adhesive for permanent assemblies	Grey	.010	500,000 to 1,100,000 @ 2.5 RPM	1,800	-40°F to 250°F	Fixture - 5 min. Full - 24 hrs.	Output™ Activator 20263	1.5
384	17099 20286 21087 17041	25 ml syringe 25 ml EFD syr. 25 ml kit[7] 300 ml cartdg.	Repairable adhesive for parts subject to disassembly	White	.010	300,000 to 800,000	750	-40°F to 250°F	Fixture - 5 min. Full - 24 hrs.	Output™ Activator 20263	1.6
392	39205 39250 39275 39280	25 ml syringe 50 ml tube 300 ml cartdg. 1 liter bottle	Fast fixturing magnet bonder	Amber	.020"	60,000	2,800	-65°F to 300°F	Fixture - 60 sec. Full - 24 hrs.	7387/ 7380	1.16

* Varies with substrates

Indicates worldwide availability

[1] Contains 10 ml bottle of Speed Bonder 312™ and 40 gm aerosol can of Locquic® Primer NF.
[2] Contains 50 ml bottle of Speed Bonder 312™ and 6 oz. aerosol can of Locquic® Primer NF.
[3] Contains 0.2 fl. oz. tube of Depend® 330 and 0.7 fl. oz. ampule activator.
[4] Contains 25 ml syringe of Depend® 330 and 25 gm aerosol can activator.
[5] Contains 250 ml tube of Depend® 330 and 4.5 fl. oz. aerosol can activator.
[6] Contains 25 ml syringe of Loctite® 383 and 13 ml bottle activator.
[7] Contains 25 ml syringe of Loctite® 384 and 13 ml bottle activator.

PLASTIC AND COMPOSITE BONDERS PROPERTIES CHART

PRODUCT	Item Number	Container	Viscosity cP (part A / part B)	Color (mixed)	Open Time in Minutes	Fixture Time in Minutes	Peel Strength, pli	Impact Strength, kJ/m²	Aluminum Shear Strength, psi	Steel Shear Strength, psi	Fiberglass Shear Strength, psi	Gelcoat Shear Strength, psi	ABS Shear Strength, psi	PVC Shear Strength, psi
1:1 Products														
H3000	83001 83000	50 ml cartridge 400 ml cartridge	65,000/ 24,000	Tan	5	12-15	-45	25	2360	3830	1740	1495	1550	2510
H3300	83020 83019 83024 83022	50 ml cartridge 400 ml cartridge 40 lb. pail, adhesive 40 lb. pail, activator	150,000/ 85,000	Yellow	5	6	35-40	20	1700	3350	1650	1425	1880	990
H3101	83007 83006	50 ml cartridge 400 ml cartridge	95,000/ 65,000	Cream	15-20	25	35	20-25	1610	2510	1810	1565	1420	2080
10:1 Products														
H4000	83025 83031 83028	490 ml cartridge 40 lb pail, adhesive 40 lb. pail, activator	100,000/ 70,000	Pale yellow	8	14	45	20-25	2580	3500	1645	1500	790	1980
H4100	83032	490 ml cartridge	95,000/ 145,000	Pale yellow	2	3-5	13	8	710	3140	1725	1405	2270	2850
H4200	83038	490 ml cartridge	95,000/ 45,000	Pale yellow	5	15	55	>42	2870	4020	1640	1520	740	2440
H4800	83045 83047 83046	490 ml cartridge 40 lb. pail, adhesive 36 lb. pail, activator	50,000/ 55,000	Light yellow	20-25	35	50	>42	1810	3930	1725	1590	530	2090

Peel Strength measured on steel
Impact Strength measured on as-received aluminum

METAL BONDERS PROPERTIES CHART

PRODUCT	Item Number	Container	Viscosity cP (part A / part B)	Color (mixed)	Open Time in Minutes	Fixture Time in Minutes	Peel Strength, pli	Impact Strength, kJ/m²	Aluminum Shear Strength, psi	Steel Shear Strength, psi	Fiberglass Shear Strength, psi	Gelcoat Shear Strength, psi	ABS Shear Strength, psi	PVC Shear Strength, psi
1:1 Products														
H3151	83015 83014	50 ml cartridge 400 ml cartridge	70,000/ 70,000	Pale yellow	35-40	60	40	>42	3600	3770	1835	1440	1570	1590
10:1 Products														
H4500	83041	490 ml cartridge	54,000/ 54,000	Pale yellow	8-10	10	40	40	4020	4130	1760	1455	1560	2200

Peel Strength measured on steel
Impact Strength measured on as-received aluminum

LOW ODOR / NON-FLAMMABLE PROPERTIES CHART

PRODUCT	Item Number	Container	Viscosity cP (part A / part B)	Color (mixed)	Open Time in Minutes	Fixture Time in Minutes	Peel Strength, pli	Impact Strength, kJ/m²	Aluminum Shear Strength, psi	Steel Shear Strength, psi	Fiberglass Shear Strength, psi	Gelcoat Shear Strength, psi	ABS Shear Strength, psi	PVC Shear Strength, psi
3410	32507 32510 32600 32601	50 ml cartridge 400 ml cartridge 5 gallon, adhesive (e) 5 gallon, activator (e)	96,000/ 19,000	Yellow	5	7-8	5	7 (steel)	2270	4380	>1000	>1000	1880	740
3411	32509 32511 32602 32603	50 ml cartridge 400 ml cartridge 5 gallon, adhesive (e) 5 gallon, activator (e)	96,000/ 19,000	Yellow	10	12-13	N/A	7 (steel)	3140	3660	>1000	>1000	2090	500

Peel Strength measured on steel
Impact Strength measured on as-received aluminum

Loctite technology has made the productivity promises of cyanoacrylate adhesives a reality with the industry's widest selection of high-performance, application-specific, instant adhesives. Loctite® Instant Adhesives are available in a variety of viscosities, cure speeds, gap-filling capability and substrate compatibility. The ultra high-performance PRISM® family offers additional products that surpass the most stringent demands, including toughened formulations, low odor and low blooming products, surface insensitive and thermally resistant formulations.

BONDING

CYANOACRYLATE ADHESIVES

380 Black Max® Toughened Instant Adhesive

The original elastomer-modified instant adhesive. Bonds metal, rubber, and plastic. Excellent peel, impact, and shear strength.

401 PRISM® Surface Insensitive Instant Adhesive

A general-purpose surface-insensitive adhesive for difficult-to-bond surfaces.

403 PRISM® Low Odor/Low Bloom Instant Adhesive

An adhesive for less precisely-fitted parts. Eliminates the need for sophisticated ventilation.

404 Quick Set™ Industrial Adhesive

A general-purpose instant adhesive for general maintenance and repair. Excellent for rubber bonding.

411 PRISM® Clear Toughened Instant Adhesive

An adhesive formulated for excellent impact and peel strength in gap-filling applications.

430 Super Bonder® Instant Adhesive

A general industrial-grade instant adhesive. Excellent choice for bonding close fitting metal parts.

444 Tak Pak® Instant Adhesive

An adhesive designed for printed circuit board assembly and repair. Cures instantly with Tak Pak® Accelerator.

For technical information and/or product availability, call 1-800-LOCTITE or on the web

Visit www.loctite.com

454 PRISM® Surface Insensitive Instant Adhesive Gel

A general-purpose, no-run clear gel. Can be applied to vertical surfaces. Excellent for almost all surfaces. Ideal for porous substrates and rough and acidic surfaces.

495 Super Bonder® Instant Adhesive

A general-purpose adhesive designed to bond rubber, metal, and plastic parts with gaps to .004".

498 Super Bonder® Thermal Cycling Resistant Instant Adhesive

A medium-viscosity, high-temperature product for all metals, and most plastics and rubbers. Resists temperatures to 223°F continuous or up to 250°F intermittent.

4204 PRISM® Thermal Resistant Instant Adhesive

Part of the family of clear, toughened, thermally resistant instant adhesives. Excellent hot strength and heat aging properties up to 250°F.

4210 PRISM® Thermal Resistant Instant Adhesive

Part of the family of black toughened thermally resistant instant adhesives. Low-viscosity and thermally resistant up to 250°F.

4212 PRISM® Thermal Resistant Instant Adhesive Gel

A high-viscosity, black, toughened, instant adhesive. Thermally resistant up to 250°F.

ADDITIONAL OFFERINGS

For Light Cure Cyanoacrylate Adhesives, see the Light Cure section on pages 26-29.

PROPERTIES CHART

PRODUCT	Item Number	Container	Typical Use	Color	Gap Fill	Category	Viscosity cP	Strength (PSI)* Tensile Shear	Temperature Range	Cure Speed**	Specific Gravity	Key Specifications
380	38004 38050 38061	3 gm tube 1 oz. bottle 1 lb. bottle	Close fitting parts	Black	.006"	Toughened Ethyl	200	3,750	-65°F to 225°F	Fixture - 90 sec. Full - 24 hrs.	1.10	–
382	38203 20420 38240 38261	3 gm tube 20 gm kit† 20 gm bottle 1 lb. bottle	Tak Pak® Ultra-performance wire tacking	Clear	.008"	General purpose Ethyl	5,000	3,200	-65°F to 250°F	Fixture - 30 sec. Full - 24 hrs.	1.05	–
401	40104 40140 40161	3 gm tube 20 gm bottle 1 lb. bottle	General purpose	Clear	.005"	Surface insensitive Ethyl	110	3,200	-65°F to 180°F	Fixture - 15 sec. Full - 24 hrs.	1.05	Agriculture Canada approved
403	40304 40340 40361	3 gm tube 20 gm bottle 1 lb. bottle	Gap filling	Clear	.008"	Low odor/ low bloom Alkoxy	1,000	2,600	-65°F to 160°F	Fixture - 50 sec. Full - 24 hrs.	1.10	–
404	46551 46548 46561	1/3 oz. bottle 4 oz. bottle 1 lb. bottle	Rubber O-Ring bonder	Clear	.005"	General purpose Ethyl	80	3,500	-65°F to 180°F	Fixture - 30 sec. Full - 24 hrs.	1.09	Commercial item std. A-A-3097 Type II, Class 2
406	40604 40640 40661	3 gm tube 20 gm bottle 1 lb. bottle	Wicking grade	Clear	.004"	Surface insensitive Ethyl	20	3,200	-65°F to 180°F	Fixture - 15 sec. Full - 24 hrs.	1.05	Commercial item std. A-A-3097 Type II, class 1
408	40840 40861	20 gm bottle 1 lb. bottle	Wicking grade	Clear	.002"	Low odor/ low bloom Alkoxy	5	2,600	-65°F to 160°F	Fixture - 50 sec. Full - 24 hrs.	1.05	–
409	40904 21922 40945 40974 18030	3 gm tube 10 gm syringe 20 gm tube 200 gm tube 300 gm cartridge	General purpose gel adhesive	Clear	.010"	General purpose Ethyl	Gel	3,200	-65°F to 180°F	Fixture - 75 sec. Full - 24 hrs.	1.10	–
410	41004 41045 41061	3 gm tube 20 gm bottle 1 lb. bottle	Gap filling	Black	.008"	Toughened Ethyl	3,500	3,200	-65°F to 225°F	Fixture - 90 sec. Full - 24 hrs.	1.07	–
411	41104 41145 41161	3 gm tube 20 gm bottle 1 lb. bottle	Clear gap filling	Clear	.008"	Toughened Ethyl	5,000	3,200	-65°F to 210°F	Fixture - 30 sec. Full - 24 hrs.	1.07	–
412	41250 41261	1 oz. bottle 1 lb. bottle	Temporary bonding	Clear	.002"	General purpose Ethyl	3	1,500	-65°F to 180°F	Fixture - 15 sec. Full - 24 hrs.	1.05	–
414	41404 41450 41461	3 gm tube 1 oz. bottle 1 lb. bottle	Plastic bonder	Clear	.006"	General purpose Ethyl	110	3,200	-65°F to 180°F	Fixture - 20 sec. Full - 24 hrs.	1.05	Commercial item std. A-A-3097 Type II, Class 2
415	41550 41561	1 oz. bottle 1 lb. bottle	Gap filling metal bonder	Clear	.008"	General purpose Methyl	1,500	3,600	-65°F to 180°F	Fixture - 30 sec. Full - 24 hrs.	1.09	Commercial item std. A-A-3097 Type I, Class 3
416	41650 41661	1 oz. bottle 1 lb. bottle	Gap filling plastic bonder	Clear	.008"	General purpose Ethyl	1,500	3,200	-65°F to 180°F	Fixture - 30 sec. Full - 24 hrs.	1.05	Commercial item std. A-A-3097 Type II, Class 3
417	41750	1 oz. bottle	Temporary bonding	Clear	.002"	General purpose Ethyl	3	400	-65°F to 180°F	Fixture - 30 sec. Full - 24 hrs.	1.05	–
420	42050 42061	1 oz. bottle 1 lb. bottle	Wicking type plastic bonder	Clear	.002"	General purpose Ethyl	2	2,900	-65°F to 180°F	Fixture - 20 sec. Full - 24 hrs.	1.05	Commercial item std. A-A-3097 Type II, Class 1
422	42250 42261	1 oz. bottle 1 lb. bottle	Gap filling plastic bonder	Clear	.008"	General purpose Ethyl	2,500	3,200	-65°F to 180°F	Fixture - 30 sec. Full - 24 hrs.	1.09	Commercial item std. A-A-3097 Type II, Class 3
426	21921 18398 17451 17529	10 gm syringe 20 gm tube 200 gm tube 300 gm cartridge	Porous surfaces	Black	.010"	Toughened Ethyl	Gel	3,000	-65°F to 210°F	Fixture - 20 sec. Full - 24 hrs.	1.10	–
430	43004 43050 43061	3 gm tube 1 oz. bottle 1 lb. bottle	Metal bonder for close fitting parts	Clear	.005"	General purpose Methyl	80	3,600	-65°F to 180°F	Fixture - 30 sec. Full - 24 hrs.	1.09	Commercial item std. A-A-3097 Type I, Class 2

* Grit blasted steel ** Varies with substrates
† Contains Adhesive 382 (20 gm bottle), Accelerator 7452 (0.7 oz. net wt. aerosol can).

A complete line of surface primers, accelerators and cleaners are available to further enhance the performance of Loctite® Instant Adhesives. Refer to Surface Preparation section pages 52 and 53.

Indicates worldwide availability

PROPERTIES CHART

PRODUCT	Item Number	Container	Typical Use	Color	Gap Fill	Category	Viscosity cP	Strength (PSI)* Tensile Shear	Temperature Range	Cure Speed**	Specific Gravity	Key Specifications
444	12292 20419 12294	20 gm bottle 20 gm kit† 1 lb. bottle	Tak Pak® Wire tacking adhesive	Clear	.007"	General purpose Ethyl	700	3,200	-65°F to 180°F	Fixture - 30 sec. Full - 24 hrs.	1.05	Commercial item std. A-A-3097 Type II, Class 3
454	45404 21925 45440 45474 45478	3 gm tube 10 gm syringe 20 gm tube 200 gm tube 300 gm cartridge	Porous surfaces	Clear	.010"	Surface insensitive Ethyl	Gel	3,200	-65°F to 180°F	Fixture - 15 sec. Full - 24 hrs.	1.05	Agriculture Canada approved
455	22309 17421	10 gm syringe 200 gm tube	Porous surfaces	Clear	.010"	Low odor/ low bloom Alkoxy	Gel	2,600	-65°F to 160°F	Fixture - 90 sec. Full - 24 hrs.	1.10	–
460	46004 46040 46061	3 gm tube 20 gm bottle 1 lb. bottle	Close fitting parts	Clear	.004"	Low odor/ low bloom Alkoxy	45	2,600	-65°F to 160°F	Fixture - 50 sec. Full - 24 hrs.	1.10	–
480	48040 48061	20 gm bottle 1 lb. bottle	General filling	Black	.006"	Toughened Ethyl	300	3,800	-65°F to 210°F	Fixture - 90 sec. Full - 24 hrs.	1.10	NSF/ANSI 61 approved
493	49350 49361	1 oz. bottle 1 lb. bottle	Wicking type metal bonder	Clear	.002"	General purpose Methyl	2	3,600	-65°F to 180°F	Fixture - 30 sec. Full - 24 hrs.	1.09	Commercial item std. A-A-3097 Type I, Class 1
495	49595 49504 49550 49561	.07 fl. oz. Gluematic® Pen 3 gm tube 1 oz. bottle 1 lb. bottle	General purpose	Clear	.004"	General purpose Ethyl	45	2,750	-65°F to 180°F	Fixture - 20 sec. Full - 24 hrs.	1.05	Commercial item std. A-A-3097 Type II, Class 1
496	49650 49661	1 oz. bottle 1 lb. bottle	General pupose rubber bonder	Clear	.006"	General purpose Methyl	125	3,600	-65°F to 180°F	Fixture - 30 sec. Full - 24 hrs.	1.09	Commercial item std. A-A-3097 Type I, Class 2
498	49850 49861	1 oz. bottle 1 lb. bottle	Thermal cycling adhesive	Clear	.007"	General purpose Ethyl	500	3,000	-65°F to 250°F	Fixture - 50 sec. Full - 24 hrs.	1.10	–
499	49904 21924 49945 49974	3 gm tube 10 gm syringe 20 gm tube 200 gm tube	Thermal cycling gel adhesive	Clear	.010"	General purpose Ethyl	Gel	3,200	-65°F to 200°F	Fixture - 75 sec. Full - 24 hrs.	1.10	– –
4203	28026 28027	20 gm tube 1 lb. bottle	Close fitting parts	Clear	.005"	Thermally resistant Ethyl	375	2,200	-65°F to 250°F	Fixture - 30 sec. Full - 24 hrs.	1.10	–
4204	26324 26325	20 gm tube 1 lb. bottle	Gap filling	Clear	.008"	Thermally resistant Ethyl	4,000	2,100	-65°F to 250°F	Fixture - 30 sec. Full - 24 hrs.	1.10	–
4205	28028 28029 28030	20 gm tube 200 gm tube 300 gm cartridge	Porous surfaces	Clear	.010"	Thermally resistant Ethyl	Gel	2,300	-65°F to 250°F	Fixture - 30 sec. Full - 24 hrs.	1.10	–
4210	19757 19758 19759	3 gm tube 20 gm bottle 1 lb. bottle	Close fitting parts	Black	.005"	Thermally resistant Ethyl	160	3,600	-65°F to 250°F	Fixture - 120 sec. Full - 24 hrs.	1.10	–
4211	19761 19762 19763	3 gm tube 20 gm bottle 1 lb. bottle	Gap filling	Black	.007"	Thermally resistant Ethyl	2,500	3,600	-65°F to 250°F	Fixture - 210 sec. Full - 24 hrs.	1.07	–
4212	19765 21923 19766 19767 19768	3 gm tube 10 gm syringe 20 gm tube 200 gm tube 300 gm cartridge	Porous surfaces	Black	.008"	Thermally resistant Ethyl	11,000	3,900	-65°F to 250°F	Fixture - 360 sec. Full - 24 hrs.	1.05	Agriculture Canada approved
4471	44704 44740 44761	3 gm tube 20 gm bottle 1 lb. bottle	Gap filling	Clear	.007"	Surface insensitive Ethyl	600	3,200	-65°F to 180°F	Fixture - 10 sec. Full - 24 hrs.	1.10	–

* Grit blasted steel ** Varies with substrates
† Contains Adhesive 444 (20 gm bottle), Accelerator 7452 (1.75 fl. oz. bottle).

A complete line of surface primers, accelerators and cleaners are available to further enhance the performance of Loctite® Instant Adhesives. Refer to Surface Preparation section pages 52 and 53.

Indicates worldwide availability

Loctite offers a complete line of one-part and two-part epoxy and urethane adhesives for structural bonding, potting, and encapsulating.

The Loctite® Hysol® line contains a wide range of application-specific products designed to outperform the competition in all aspects:

- Better Adhesion
- Better Flow
- Less Odor
- Improved Clarity
- Higher Strength
- Greater Durability

From fast setting to high temperature properties, Hysol® Epoxy and Urethane adhesives offer a variety of performance benefits to meet your assembly requirements.

BONDING

EPOXY & URETHANE ADHESIVES

EPOXY ADHESIVES

E-00CL Hysol®

A fast setting epoxy with a 5-minute worklife. Clear, flowable, low odor.

E-00NS Hysol®

A non-sag epoxy with a 5-minute worklife. Translucent, controlled flow, low odor.

E-05CL Hysol®

A toughened epoxy with a 5-minute worklife. Ultra-clear, high peel, low odor.

E-20HP Hysol®

A high-strength epoxy with a 20-minute worklife. Off-white, toughened. High peel, high shear.

E-20NS Hysol®

A metal bonding epoxy with a 20-minute worklife. Light tan, non-sag, high peel, high shear.

E-30CL Hysol®

A glass bonding epoxy with a 30-minute worklife. Ultra-clear, low viscosity, impact resistant.

E-40FL Hysol®

A toughened epoxy with a 40-minute worklife. Grey, flexible, impact resistant.

E-60HP Hysol®

A high-strength epoxy with a 60-minute worklife. Off-white, toughened, high peel, high shear.

E-60NC Hysol®

A potting compound with a 60-minute worklife. Black opaque, low-viscosity. Electrically non-corrosive.

E-90FL Hysol®

A toughened epoxy with a 90-minute worklife. Grey, flexible, impact resistant.

E-120HP Hysol®

An ultra-strength epoxy with a 120-minute worklife. Amber, non-sag, aerospace grade.

E-214HP Hysol®

A one-component, heat cure epoxy. Grey, temperature resistant, high-strength, non-sag.

608 Hysol®

A fast setting, low odor epoxy with a 5-minute worklife. Cures at room temperature to form a clear bondline.

D609 Hysol®

A high performance epoxy with a 5-minute worklife. Ultra clear, low odor, very fast room temperature cure, heat resistant to 180°F.

615 Hysol®

A high-strength, low odor epoxy with a 10-minute worklife. Blue, fast cure, gap-filling, sandable.

0151 Hysol®

A general purpose epoxy with a 50-minute worklife. Allows for extended adjustment time. Clear, thixotropic paste.

9433 Hysol®

A high-strength epoxy with a 30-minute worklife. Cream in color, self-leveling, flowable, toughened, high peel resistance.

9430 Hysol®

A high-strength epoxy with a 40-minute worklife. Off-white, toughened, light paste, high peel, high shear strength.

9460 Hysol®

A high viscosity, non-sag epoxy with a 30-minute worklife. Grey, impact resistant, high peel, high shear.

9459 Hysol®

A one-component, heat cure epoxy. Low viscosity, self-leveling. Light gray, excellent high temperature performance, excellent chemical resistance.

9432NA Hysol®

A single-component, heat cure epoxy. Grey, non-sag paste. Excellent high temperature performance, excellent chemical resistance, surface insensitive.

URETHANE ADHESIVES

U-05FL Hysol®

A two-part, high-performance urethane adhesive for metal bonding with a 5-minute worklife. Off-white, highly flexible, impact resistant, high peel, high shear.

U-10FL Hysol®

A two-part, high-performance urethane adhesive for plastic bonding with a 10-minute worklife. Ultra-clear, highly flexible, impact resistant, high peel.

For a free Hysol® product sample, call us at 1-800-323-5106 or register your request on the web at:

www.loctite.com

EPOXY ADHESIVES PROPERTIES CHART

PRODUCT	Item Number	Container	Features	Color	Viscosity at 25°C	Worklife	Mix Ratio by Volume (Resin:Hardener)	Peel Strength (PIW)	Overlap Shear Strength* (PSI)	Tg (°C)	Hardness (Shore D)
E-00CL	29289 29290 29291 29292 29293	50 ml dual cartridge 200 ml dual cartridge 400 ml dual cartridge 5 gallon pail, resin 5 gallon pail, hardener	Fast setting Flowable Low odor	Clear	Mixed - low Resin: 9,300cP Hardener: 2,700cP	3-5 minutes	1:1	1-5	2,000-4,000	20	80
E-00NS	29294 29295 29296 29297 29298	50 ml dual cartridge 200 ml dual cartridge 400 ml dual cartridge 5 gallon pail, resin 5 gallon pail, hardener	Non-sag Controlled flow Low odor	Translucent	Mixed - high Resin: 375,000 cP Hardener: 2,800cP	3-5 minutes	1:1	1-5	2,000-4,000	20	80
E-05CL	29299 29300 29301 29302 29303	50 ml dual cartridge 200 ml dual cartridge 400 ml dual cartridge 5 gallon pail, resin 5 gallon pail, hardener	Toughened High peel Low odor	Ultra clear	Mixed - low Resin: 1,900cP Hardener: 2,800cP	3-5 minutes	1:1	5-30	2,000-4,000	10	55
608	83086 83075 83082 83083	4 g foil pack 50 ml dual cartridge EPK 2.8 oz. kit 5 lb. kit	Fast cure Clear	Clear	Mixed - medium Resin: 325,000 cP Hardener: 30,000 cP	5 minutes	1:1	N/A	2000	–	80
D609**	83089	50 ml dual cartridge	Fast cure Ultra clear High strength	Ultra clear	Mixed - low Resin: 15,000 cP Hardener: 15,000 cP	5 minutes	1:1	N/A	2800	–	75
615	83094 83095	EPK 3.2 oz. kit 2 gallon kit	Fast cure Gap filling Sandable	Blue	Mixed - paste Resin: 700,000 cP Hardener:140,000 cP	10 minutes	1:1	N/A	2500	–	65
1C	83200 83202 83201	EPK 4 oz. kit 1 quart kit 1 gallon kit	General purpose Gap-filling High temp	White	Mixed - paste Resin: 235,000 cP Hardener:710,000 cP	20 minutes	2.5:1	N/A	1750	98	80
1C-LV	83208 83207	50 ml cartridge 200 ml cartridge	General purpose Gap-filling Impact resistant	Light tan	Mixed - medium Resin: 82,000 cP Hardener: 36,200 cP	20 minutes	2:1	N/A	2100	–	75
907	83098	EPK 2.3 oz. kit	General purpose Minimal surface preparation	Light blue	Mixed - medium Resin: 100,000 cP Hardener: 150,000 cP	20 minutes	1:1	N/A	3100	–	79
6C	83211 83212	EPK 4 oz. kit 17 lb. kit	General purpose Bonds and seals Machineable	Grey	Mixed - paste Resin: 235,000 cP Hardener: 710,000 cP	25 minutes	2.5:1	N/A	1750	98	80
11C	83186	EPK 4 oz. kit	General purpose Bonds and seals Machineable	Black	Mixed - paste Resin: 235,000 cP Hardener: 710,000 cP	25 minutes	2.5:1	N/A	1750	98	80
0151	83069 83176 83179 83178	50 ml cartridge EPK 3.3 oz. kit 2.6 lb. kit 10.7 lb. kit	General purpose Ultra clear Extended work life	Clear	Mixed -light paste Resin: 70,000 cP Hardener: 60,000 cP	50 minutes	2.7:1	N/A	1850	58	85
9460F	83225 83224	50 ml cartridge 200 ml cartridge	Impact resistant High sheer High peel	Grey	Mixed - paste Resin: 225,000 cP Hardener: 175,000 cP	20 minutes	1:1	40†	3800	–	80
E-20HP	29314 29315 29316 29317 29318	50 ml dual cartridge 200 ml dual cartridge 400 ml dual cartridge 5 gallon pail, resin 5 gallon pail, hardener	High strength Rubber toughened High peel High shear	Off-white	Mixed - medium Resin: 65,000 cP Hardener: 7,000 cP	20 minutes	2:1	20-70	3,000-5,000	60	80
9433	83119	50 ml cartridge	Self-levelling High strength High peel	Cream	Mixed - medium Resin: 174,000 cP Hardener: 115,000 cP	30 minutes	2:1	45†	3800	–	75
9490	83146	5 lb. kit	Impact resistant High peel High shear Non-sag	Grey	Mixed - paste Resin: 225,000 cP Hardener: 175,000 cP	30 minutes	1:1	35†	3500	–	>80
9430	83114 83113	2 lb. kit 10 lb. kit	High strength High peel	Off-white	Mixed - light paste Resin: 300,000 cP Hardener: 40 cP	40 minutes	4:1	60†	4700	–	75

* Tested on aluminum lap shears ** Formerly Dexter® Hysol® 609 †ASTM D3167 N/A = Not available at time of printing EPK = Epoxi-Patch® Kit

EPOXY ADHESIVES PROPERTIES CHART

PRODUCT	Item Number	Container	Features	Color	Viscosity at 25°C	Worklife	Mix Ratio by Volume (Resin:Hardener)	Peel Strength* (PIW)	Overlap Shear Strength* (PSI)	Tg (°C)	Hardness (Shore D)
9460	83129 83128 83131 83130 83133 83134	50 ml cartridge 200 ml cartridge 5 lb. kit 20 lb. kit 50 lb. pail, hardener 50 lb. pail, resin	High peel Impact resistant High viscosity Non-sag	Grey	Mixed - paste Resin: 225,000 cP Hardener: 175,000 cP	40 minutes	1:1	35†	3200	–	80
E-40FL	29304 29305 29306 29307 29308	50 ml dual cartridge 200 ml dual cartridge 400 ml dual cartridge 5 gallon pail, resin 5 gallon pail, hardener	Toughened Flexible Impact resistant	Grey	Mixed - medium Resin: 75,000 cP Hardener: 65,500 cP	40 minutes	1:1	5-40	1,000-3,000	30	75
9462	83142 83135	50 ml cartridge 200 ml cartridge	Impact Resistant Toughened Non-sag	Beige	Mixed - medium Resin: 82,500 cP Hardener: 52,500 cP	50 minutes	1:1	20†	3500	–	77
E-60HP	29319 29320 29321 29322 29323	50 ml dual cartridge 200 ml dual cartridge 400 ml dual cartridge 5 gallon pail, resin 5 gallon pail, hardener	High strength Rubber toughened High peel High shear	Off-White	Mixed - medium Resin: 67,500 cP Hardener: 7,000 cP	60 minutes	2:1	20-70	3,000-5,000	70	80
E-90FL	29309 29310 29311 29312 29313	50 ml dual cartridge 200 ml dual cartridge 400 ml dual cartridge 5 gallon pail, resin 5 gallon pail, hardener	Toughened Flexible Impact resistant	Grey	Mixed - medium Resin: 71,500 cP Hardener: 19,000 cP	90 minutes	1:1	5-40	1,000-3,000	-5	60
9460PB	83233 83232	5 lb. kit 20 lb. kit	Bonds printing blanket stock High strength	Grey	Mixed - paste Resin: 225,000 cP Hardener: 100,000 cP	100 minutes	1:1	N/A	2000	–	–
E-120HP	29353 29354 29355 29356 29357	50 ml dual cartridge 200 ml dual cartridge 400 ml dual cartridge 5 gallon pail, resin 5 gallon pail, hardener	Ultra strength Non-sag Aerospace grade	Amber	Mixed- high Resin: 41,500 cP Hardener: 2,800 cP	120 minutes	2:1	20-50	3,000-6,000	90	85
9739	83149 83150	42 lb. pail, hardener 168 lb. pail, resin	High temperature resistance High chemical resistance	Black	Mixed- high Resin: 1,400,000 cP Hardener: 2,250,000 cP	90 minutes	3.3:1	N/A	2500	–	–
E-20NS	29334 29335 29336 29337 29338	50 ml dual cartridge 200 ml dual cartridge 400 ml dual cartridge 5 gallon pail, resin 5 gallon pail, hardener	Metal bonder Non-sag High peel High shear	Light tan	Mixed- high Resin: Non-sag paste Hardener: 30,000 cP	20 minutes	2:1	5-30	2,000-4,000	87	90
E-30CL	29329 29330 29331 29332 29333	50 ml dual cartridge 200 ml dual cartridge 400 ml dual cartridge 5 gallon pail, resin 5 gallon pail, hardener	Glass bonder Low viscosity Impact resistant	Ultra clear	Mixed- low Resin: 10,500 cP Hardener: 2,200 cP	30 minutes	2:1	5-30	2,000-4,000	70	85
E-60NC	29324 29325 29326 29327 29328	50 ml dual cartridge 200 ml dual cartridge 400 ml dual cartridge 5 gallon pail, resin 5 gallon pail, hardener	Potting†† Electrically non-corrosive Low viscosity	Black opaque	Mixed- low Resin: 6,200 cP Hardener: 13,000 cP	60 minutes	1:1	1-5	1,000-3,000	55	85
9412	83108 83107	2 lb. kit 10 lb. kit	Potting†† High peel Self-leveling	Pink	Mixed- Low Resin: 15,000 cP Hardener: 40 cP	60 minutes	3.5:1	35†	4000	–	75
9459	83126	1 gallon	High temperature resistance Self-leveling High chemical resistance	White	Low 39,000 cP	60 minutes	1 part	N/A	3000	–	–
E-214HP	29339 29340 29341	30 ml cartridge 300 ml cartridge 5 gallon pail	High strength Temperature resistant Non-sag	Grey	150,000 cP	Heat cure	1 part	30-70	3,000-6,000	120	85
9432 NA	83217 83216	2 lb. kit 55 lb. pail	Non-sag Surface insensitive High temp	Grey	Paste 225,000cP	N/A	1 part	8	3800	–	90

* Tested on aluminum lap shears † ASTM D3167 †† For additional potting and encapsulating products refer to page 42 N/A = Not available at time of printing

URETHANE ADHESIVES PROPERTIES CHART

PRODUCT	Item Number	Container	Features	Color	Viscosity @ 25°C	Worklife	Mix Ratio by Volume (Resin:Hardener)	Peel Strength* (PIW)	Overlap Shear Strength* (PSI)	Tg (°C)	Hardness (Shore D)
U-04FL	29342	50 ml dual cartridge	Fast setting Flexible Abrasion resistant	Tan	N/A	4 Minutes	1:1	N/A	800-1300	N/A	68
U-05FL	29348 29349 29350 29351 29352	50 ml dual cartridge 200 ml dual cartridge 400 ml dual cartridge 5 gallon pail, resin† 5 gallon pail, hardener†	Metal bonder Highly flexible High peel High shear	Off white	Mixed - low Resin: 640cP Hardener: 35,000cP	5 Minutes	1:2	5-30	1000-3000	48	45
U-10FL	29343 29344 29345 29346 29347	50 ml dual cartridge 200 ml dual cartridge 400 ml dual cartridge 5 gallon pail, resin† 5 gallon pail, hardener†	Plastic bonder Highly flexible High peel	Ultra clear	Mixed - low Resin: 10,000cP Hardener: 1,150cP	10 Minutes	1:1	5-30	500-2000	-20	45

* Varies with substrates
** Test run on 1/8" specimens
† Made to order item

SUBSTRATE SELECTOR GUIDE

Hysol® Structural Adhesives Bond to a Variety of Substrates

Simply determine which substrates you're bonding and find the adhesive recommendations in the table below. Refer to the previous charts for typical performance properties of the recommended adhesive. These recommendations should be used as a starting point only. Loctite recommends evaluating the selected product in your application to determine suitability.

	Metals	Thermo-Plastics	Thermoset Plastics	Rubber	Glass	Ceramic	Masonry	Wood	Leather	Paper/ Hardboard
Metals	E-20NS E-214HP U-05FL	U-05FL E-40FL E-20HP 9430	E-20NS E-20HP E-120HP 608	U-05FL E-40FL U-10FL 9460	E-30CL E-20NS U-05FL 0151	E-20HP E-30CL E-20NS 9430	E-20HP E-120HP E-20NS 9432NA	E-00NS E-20HP E-40FL 608	U-05FL E-40FL U-10FL 9460	E-05CL E-40FL E-00CL D609
Thermo-Plastics	U-05FL E-40FL E-20HP 615	U-05FL U-10FL E-40FL 615	U-05FL U-10FL E-40FL 615	U-05FL E-40FL U-10FL 9460	U-05FL U-10FL E-40FL 9460	U-05FL U-10FL E-40FL 9460	E-40FL E-05CL E-20HP 615	E-05CL E-40FL E-20HP 11C	U-05FL U-10FL E-40FL 9460	E-05CL E-40FL E-20HP 9433
Thermoset Plastics	E-20HP E-20NS E-120HP 615	U-05FL U-10FL E-40FL 615	E-20HP E-120HP E-214HP 615	U-05FL E-20HP E-40FL 9460	E-30CL U-05FL E-00CL 0151	E-30CL E-20HP E-40FL 9433	E-20HP E-120HP E-00CL 9432NA	E-20HP E-40FL E-00NS 11C	E-05CL U-10FL E-40FL 615	E-40FL E-00CL U-05FL D609
Rubber	U-05FL E-40FL U-10FL 9460	U-05FL U-10FL E-40FL 9460	U-05FL E-40FL E-20HP 9433	E-40FL E-90FL U-05FL 9460	U-05FL E-40FL U-10FL 9460	U-05FL E-40FL U-10FL 9460	E-40FL E-90FL E-05CL 9460	E-40FL E-05CL E-20HP 9433	U-05FL U-10FL E-40FL 9460	E-40FL E-05CL U-10FL 9460
Glass	E-20NS E-30CL U-05FL 0151	U-05FL U-10FL E-40FL 9460	E-00CL E-30CL U-05FL D609	E-05CL U-05FL U-10FL 615	E-30CL E-00CL U-10FL D609	E-30CL E-20NS U-05FL 0151	E-30CL E-00NS E-20HP 0151	E-30CL E-40FL E-00CL D609	E-40FL E-05CL U-10FL 615	E-05CL E-40FL E-30CL 9460
Ceramic	E-20NS E-30CL E-20HP 9430	U-05FL U-10FL E-40FL 9460	E-40FL E-20HP E-30CL 9433	U-05FL U-10FL E-40FL 9460	E-30CL E-00CL U-05FL D609	E-20HP E-30CL E-120HP 9433	E-00NS E-20HP E-20NS 608	E-20HP E-40FL E-00NS 608	E-40FL E-05CL U-10FL 9460	E-40FL E-05CL E-00CL D609
Masonry	E-20NS E-20HP E-120HP 9433	E-40FL E-20HP E-05CL 9433	E-20HP E-120HP E-00CL D609	E-40FL E-90FL E-05CL 615	E-30CL E-00NS E-20HP 0151	E-00NS E-20HP E-20NS 9433	E-20HP E-00NS E-120HP 608	E-20HP E-00NS E-40FL 9433	E-05CL E-40FL U-05FL 9460	E-05CL E-00CL E-20HP D609
Wood	E-20HP E-40FL E-00NS 9433	E-40FL E-05CL E-20HP 11C	E-20HP E-40FL E-00NS 11C	E-40FL E-05CL E-20HP 9433	E-30CL E-40FL E-00CL 0151	E-20HP E-40FL E-00NS 608	E-20HP E-00NS E-40FL 608	E-00CL E-20HP E-40FL 11C	E-05CL E-40FL E-90FL 615	E-00CL E-20HP E-40FL D609
Leather	E-40FL U-05FL U-10FL 9460	U-05FL U-10FL E-40FL 9460	E-05CL U-10FL E-40FL 9460	U-05FL U-10FL E-40FL 9460	E-40FL E-05CL U-10FL 9460	E-40FL E-05CL U-10FL 9460	E-05CL E-40FL U-05FL 615	E-05CL E-40FL E-90FL 9460	U-05FL U-10FL E-40FL 9460	E-05CL E-40FL U-05FL 9460
Paper/ Hardboard	E-40FL E-05CL E-00CL D609	E-40FL E-05CL E-20HP 9433	E-40FL E-05CL U-05FL 9460	E-40FL E-05CL U-10FL 9460	E-05CL E-40FL E-30CL 0151	E-40FL E-05CL E-00CL D609	E-05CL E-00CL E-20HP D609	E-00CL E-20HP E-40FL 9460	E-05CL E-40FL U-05FL 615	E-05CL E-40FL E-00CL D609

Thermoplastics: ABS, PC, Acrylic, Nylon, SAN, PVC Thermoset Plastics: Epoxy, Phenolic, Polyester, DAP Rubber: Butyl, Neoprene, Nitrile, SBR, Natural, EPDM

GASKETING

Gaskets are used to prevent fluid or gas leaks by forming impervious barriers. For successful gasketing, the seal must remain intact and leak-free over a prolonged period of time. Therefore, the gasket must resist the fluid and/or gaseous medium being sealed or excluded, and withstand the operating temperatures and pressures to which it is subjected.

There are three types of flange gaskets.

1. Conventional pre-cut compression gaskets made from paper, rubber, cork, metal, or other materials.
2. Formed-in-Place (FIP) gaskets, are applied as a liquid sealant to one of the flange surfaces before the parts are assembled. After assembly, the FIP gasket spreads and cures between the flanges, filling gaps, scratches, and surface irregularities, to provide a durable seal.
3. Cured-in-Place (CIP) gaskets, which are applied as a liquid by tracing machines in precise beads to one of the flanges and cured by ultraviolet (UV) light, form an elastomeric material with adhesion to the flange surface. Sealing is achieved through compression of the cured gasket during flange assembly.

What is the Best Gasket for My Application?

Many factors influence gasket choice to achieve the required sealing performance on a wide range of flanges. The following chart will work best when selecting the right gasket type. This chart is intended to serve as a general guideline to help you determine which gasket type is best suited for your application. The data presented herein reflects typical properties for each gasket type; however, there may be exceptions to the data presented. Individual product information can then be found on the following pages to help narrow your search.

This chart should not be used to specify gasket materials without specific testing. It is recommended that you conduct on-part testing to ensure adhesive performance before specifying any Loctite® product.

Loctite Adhesives and Sealants Specialists are available to assist you with new flange designs, or to help you re-engineer an existing application for improved performance and cost savings. They can also set up testing of your parts at the Loctite Customer Engineering Center nearest you. For application assistance, call 1-800-LOCTITE (562-8483) or visit www.loctite.com and select "Contact Loctite."

GENERAL COMPARISON	GASKET TYPE		
	Form-in-Place Anaerobic	Form-in-Place Silicone	Cure-in-Place Silicone
Benefits	Improve Structural Strength Long Open Time High Pressure Seals	High Gap Filling Resistant to Dynamic Fatigue Online Pressure Testing	High Gap Filling Reusable/Servicable Gasket Immediate Full Properties
Limitations	Gap Fill	Short Open Time	Requires Process Equipment
PERFORMANCE CONSIDERATIONS			
Temperature Resistance **Continuous Operation** **Maximum**	 -40° to 300°F 400°F	 -60° to 400°F 500°F	 -60 to 400°F 500°F
Fluid Resistance **Oil** **Water/Glycol** **Fuel** **Transmission Fluid**	 Yes Yes Limited Yes	 Yes Yes No Yes	 Yes Yes No Yes
Gap Fill **Ideal** **Maximum**	 0.001" - 0.005" 0.050"	 0.001" - 0.125" 0.240"	 0.020" - 0.125" 0.240"
Instant Seal	Low Pressure	Low Pressure	High Pressure
Flange Type	Rigid	Rigid or Flexible	Rigid or Flexible
Suitable for Use With **Metals** **Plastics**[1]	 Yes No	 Yes Yes	 Yes Yes
PROCESS CONSIDERATIONS			
Number of Components	1	1	1
Cure Method	Anaerobic	RTV	UV/RTV
Cure Temperature	Room Temperature	Room Temperature	Room Temperature
Cure Speed **Initial Cure** **Full Cure**	 15-30 minutes 24 - 72 Hours	 15 -30 minutes 24 hours - 7 Days	 15-30 seconds 30 seconds
Processing Options **Manual** **Automated**	 Yes Yes	 Yes Yes	 No Yes
For more information on each Adhesive Category, refer to the following pages...	32-33	34-35	27-29

[1] Uncured liquid adhesives may cause stress cracking of certain thermoplastics, e.g. polycarbonate, acrylic, and polysulfone. Special products and process techniques are available. Consult the Loctite Design Guide to Bonding Plastics (LT-2197) or contact 1-800-LOCTITE for more information.

Pioneered by Loctite, anaerobic gasketing technology has revolutionized the sealing of flanges in the automotive industry, in the assembly of heavy equipment and in the manufacture of various types of fluid power equipment.

Loctite® Anaerobic Gasketing materials 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.

GASKETING

ANAEROBIC

504 Gasket Eliminator® Gap Filling Flange Sealant

A single-component, instant, low-pressure seal that fills gaps to .030".

509 Gasket Eliminator® Flexible Flange Sealant

Product withstands minor flange movements caused by vibrations. It will not run when applied to vertical surfaces. Fluorescent blue properties allow easy visual inspection during assembly.

510 Gasket Eliminator® High Temperature Flange Sealant

Product has a temperature range to 400°F with excellent solvent and chemical resistance. Makes or dresses gaskets in rigid assemblies. Eliminates gasket compression set.

515 Gasket Eliminator® Flange Sealant

Makes flexible gaskets for rigid machined flanges with less than .050" gap. Flexes with flanges that move in service.

518 Gasket Eliminator® Flange Sealant

Forms a flexible, solvent-resistant seal that will not tear or decay. Seals to 300°F and fills gaps to 0.050". Can be used on flexible metal assemblies including aluminum surfaces. Easy disassembly and cleaning.

5205 Flange Sealant

Fast curing and flexible, good sealing properties against oil and water/glycol particularly at high temperatures. High viscosity.

5206 Flange Sealant

Slow curing allows for micro-movement during assembly operations. Good sealing properties against oil and water/glycol. High viscosity.

PROPERTIES CHART

PRODUCT	Item Number	Container	Typical Use	Color	Gap Fill	Cured State	Viscosity cP	Temperature Range	Cure Speed	Recommended Primer	Specific Gravity	Key Specifications
504	50441 50480	250 ml tube 300 ml cartdg.	Gap filling	Orange	Unprimed - .030" Primed - .050"	Rigid	500,000/ 1,200,000 Thixotropic	-65°F to 300°F	Unprimed - 4 to 24 hrs. Primed - 30 min. to 4 hrs.	NF	1.08	–
509	21525 50965	300 ml cartdg. 850 ml cartdg.	Very flexible	Blue	Unprimed - .010" Primed - .020"	Flexible	65,000/ 200,000 Thixotropic	-65°F to 300°F	Unprimed - 6 to 48 hrs. Primed - 1 to 6 hrs.	N	1.12	–
510	51031 51041 51074	50 ml tube 250 ml tube 300 ml cartdg.	High temp. applications Excellent solvent resistance	Red	Unprimed - .010" Primed - .020"	Rigid	188,000/ 500,000 Thixotropic	-65°F to 400°F	Unprimed - 4 to 24 hrs. Primed - 30 min. to 4 hrs.	N	1.16	UL classified
515	51517 51531 51580	6 ml tube 50 ml tube 300 ml cartdg.	For flexible applications	Purple	Unprimed - .010" Primed - .050"	Flexible	275,000/ 950,000 Thixotropic	-65°F to 300°F	Unprimed - 1 to 12 hrs. Primed - 15 min. to 2 hrs.	N	1.10	UL classified
518	22423 22424 51817 51831 51845	Kit Kit 6 ml tube 50 ml tube 300 ml cartdg.	For all metals including aluminum flanges	Red	Unprimed - .010" Primed - .050"	Flexible	800,000/ 3,750,000 Thixotropic	-65°F to 300°F	Unprimed - 4 to 24 hrs. Primed - 30 min. to 4 hrs.	N	1.13	NSF/ANSI 61 certified Agriculture Canada approved
573	26392	250 ml tube	Slow curing for extended assembly operations	Green	Unprimed - .010" Primed - .020"	Semi-rigid	19,000/ 60,000 Thixotropic	-65°F to 300°F	Unprimed - 6 to 48 hrs. Primed - 1 to 6 hrs.	N	1.25	–
574	24018 26338	50 ml tube 250 ml tube	Fast curing, large gaps	Orange	Unprimed - .010" Primed - .020"	Semi-rigid	30,000/ 100,000 Thixotropic	-65°F to 300°F	Unprimed - 1 to 12 hrs. Primed - 15 min. to 2 hrs.	N	1.11	–
5182	18010	850 ml cartridge	Robotic application on flanges, seals, covers	Red	Unprimed - .010" Primed - .020"	Flexible	140,000/ 580,000 Thixotropic	-65°F to 300°F	Unprimed - 4 to 24 hrs. Primed - 30 min. to 24 hrs.	N	1.10	–
5205	28554	50 ml bottle	Fast curing, flexible	Red	Unprimed - .010" Primed - .020"	Flexible	110,000/ 345,000 Thixotropic	-65°F to 300°F	Unprimed - 1 to 24 hrs. Primed - 5 min. to 24 hrs.	N or T	1.19	–

Indicates worldwide availability

Loctite® Silicone Gasketing materials include unique products with excellent fluid resistance, formulations for high operating temperatures, and UV-curing formulations for cure-in-place production requirements. Silicone gasketing products are best suited for large gap applications and stamped metal assemblies where flange flexing occurs.

GASKETING

SILICONE

FORM-IN-PLACE

5699 RTV Silicone Flange Sealant

For rigid flange assemblies. Excellent fluid resistance. Easy to dispense, non-corrosive. Low odor, low volatility. Grey in color.

5900™ Heavy Body RTV Silicone Flange Sealant

Superior flexibility and adhesion. Provides instant seal. Excellent fluid resistance. Non-corrosive. Low odor. Low volatility. Black in color.

5910™ RTV Silicone Flange Sealant

Superior flexibility and adhesion. Excellent fluid resistance. Medium body is easy to dispense. Non-corrosive. Low odor. Low volatility. Black in color.

5999 Heavy Body RTV Silicone Flange Sealant

For rigid flange assemblies. Provides instant seal. Excellent fluid resistance. Non-corrosive. Low odor. Low volatility. Grey in color.

CURE-IN-PLACE

5950/5951 FASTGASKET® Flange Sealant

Designed for automated assembly. Rapid 30 second UV cure permits in-line processing. Secondary moisture cure insures full cure even in shadowed areas. Black/clear in color.

5960/5962 FASTGASKET® Flange Sealant

Designed for automated assembly. Rapid 30 second UV cure permits in-line processing. Fluid resistant. Clear/white in color.

5963 PROCURE™ Heat Cure Compression Gaskets

Superior compression set resistance. One-component, exceptional fluid resistance, and heat resistance to 150°C. Great for powertrain applications. Grey in color.

5964 PROCURE™ Heat Cure Compression Gaskets

Soft, with greater elongation. Cured with either convection heat or microwave. One-component, good compression set for powetrain applications. Brown in color.

For more information call the Loctite Technical Center at (248) 364-4700, or e-mail automotive@loctite.com

Or visit us on the web at:
www.loctite.com/auto

5966 PROCURE™ Heat Cure Compression Gaskets

Designed to be fuel resistant. Two-component, convection heat, great for sealing fuel related assemblies. Red in color.

5975 DURAFOAM™ Heat Cure Self-Foaming Gaskets

A 2-part silicone with excellent thermal resistance and compression set properties.

FORM-IN-PLACE SILICONES PROPERTIES CHART

PRODUCT	Item Number	Container	Typical Use	Color	Gap Fill	Extrusion Rate (gm/min.)	Temperature Range	Cure Method	Cure Speed*	Specific Gravity	Durometer**	% Elongation	Tensile Strength (PSI)Δ
5699	18718 18581 18582 18583	70 ml tube 300 ml cartridge 50 lb. pail 550 lb. drum	Oil/water resistant	Grey	.240"	250	-65°F to 400°F	Moisture	Tack free - 30 min. Full cure - 24 hrs.	1.45	55	160	435
5900™	20166 20167 20168	300 ml cartridge 50 lb. pail 550 lb. drum	High adhesion, instant seal	Black	.240"	35	-65°F to 400°F	Moisture	Tack free - 20 min. Full cure - 24 hrs.	1.34	35	550	200
5910™	21746 21747 21748	300 ml cartridge 50 lb. pail 550 lb. drum	High adhesion	Black	.240"	600	-65°F to 400°F	Moisture	Tack free - 20 min. Full cure - 24 hrs.	1.34	30	550	200
5920	30542 82046 21472	70 ml tube 300 ml cartridge 40 lb. pail	High temperature	Copper	.240"	>300	-65°F to 700°F	Moisture	Tack free - 60 min. Full cure - 24 hrs.	1.05	31	355	275
5999	21744 28298 20170	300 ml cartridge 50 lb. pail 550 lb. drum	Oil/water resistant, instant seal	Grey	.240"	105	-65°F to 400°F	Moisture	Tack free - 10 min. Full cure - 24 hrs.	1.45	60	175	500

* Varies with substrates, ** Shore A, Δ Grit blasted steel Indicates worldwide availability

CURE-IN-PLACE FASTGASKET® PROPERTIES CHART

PRODUCT	Item Number	Container	Color	Extrusion Rate (gm/min.)	Cure Method	Cure Speed*	Hardness	% Elongation	Tensile Strength (PSI)Δ	Key Specifications
5950	29287 18495	300 ml cartridge 40 lb. pail	Black	350	UV/ moisture	30 seconds @ 120 mW/cm^2	30	200	150	UL JMLUZ
5951	18198	40 lb. pail	Clear	350	UV/ moisture	30 seconds @ 120 mW/cm^2	30	200	150	–
5960	31132 24707	300 ml cartridge 40 lb. pail	Clear	350	UV	30 seconds @ 120 mW/cm^2	50	200	600	–
5962	31120 31121	300 ml cartridge 40 lb. pail	White	450	UV	30 seconds @ 120 mW/cm^2	28	350	600	–

* Varies with substrates Indicates worldwide availability

CURE-IN-PLACE PROPERTIES CHART

PRODUCT	Item Number	Container	Color	Extrusion Rate (gm/min.)	Cure Method	Cure Speed*	Hardness	% Elongation	Tensile Strength (PSI)Δ
5963 PROCURE™	34337	50 lb. pail	Grey	250	Heat	10 minutes @150°C	50	350	650
5964 PROCURE™	34347 34348	50 lb. pail 300 ml cartridge	Brown	120	Heat/ microwave	10 minutes@150°C/ VFM 2-4 minutes	28	550	650
5966 PROCURE™**	32731 part A 32732 part B	5 gal. pail 5 gal. pail	Red	100	Heat	10 minutes @150°C	35	300	590
5975 DURAFOAM™**	34664 part A 34665 part B	44 lb. pail 44 lb. pail	Grey	N/A†	Heat	10 minutes @150°C	57	150	33

* Varies with substrates, ** Need both A & B (Two part component), † Viscosities for both part A and B is 60 to 120,000 cP.

Loctite Corporation, the pioneer of anaerobic adhesives, has applied this technology to create retaining compounds that increase the shear strength of cylindrical, non-threaded assemblies. Finding wide acceptance as a standard method for assembling press and slip-fitted parts, Loctite® Retaining Compounds fill the "inner space" between components and cure to form a strong precision assembly. Formulated in a selection of viscosities, gap filling ability, flexibility and strength characteristics, Loctite® Retaining Compounds can be applied with automated process equipment or dispensed manually.

RETAINING

603 Retaining Compound Oil Tolerant

A retaining compound tolerant of oil and other contamination. Seals and secures cylindrical assemblies up to 0.005" radial clearance. Fixtures in 10 minutes. Prevents fretting and corrosion of metal assemblies.

609 Retaining Compound General Purpose

A low viscosity retaining compound that bonds rigid metal assemblies. Ideal for gap distances up to 0.005" diameter. Fixtures in 10 minutes and provides a shear strength of 3,000 psi after 24 hours. Easily joins dissimilar metals. Withstands temperatures to 300°F.

620 Retaining Compound High Temperature

A high temperature (450°F), high viscosity liquid retaining compound. Provides a shear strength of over 3,500 psi on steel. Locks and secures metal cylindrical assemblies up to .015" diameter clearance. Prevents metal fretting and corrosion. Seals against leakage.

635 Retaining Compound High Strength/Slow Cure

A high viscosity, high strength retaining compound with slow cure speed to permit readjustment of parts during assembly.

638 Retaining Compound Maximum Strength

A maximum strength retaining compound for use where high dynamic forces or cyclic loading is expected. Locks cylindrical assemblies up to .010" diameter clearance. Fixtures in 5 minutes.

640 Retaining Compound Medium Strength/ High Temperature

A medium viscosity retaining compound that resists temperatures to 400°F.

641 Retaining Compound Controlled Strength

A controlled strength retaining compound that is ideal for cylindrical parts that require disassembly. Recommended for maximum diameter clearance of 0.008". Fixtures in 10-30 minutes.

648 Retaining Compound High Strength/Rapid Cure

A retaining compound recommended for continuous working temperatures up to 300°F. Fills gaps up to 0.006" diameter clearance. Fixtures in 5 minutes.

660 Quick Metal® Retaining Compound Press Fit Repair

A creamy, non-running adhesive/sealant. Repairs worn machine parts. Restores correct fit to mating assemblies. Fills gaps up to 0.020" diameter clearance.

675 Retaining Compound Medium Strength

A low viscosity retaining compound augments press fit assemblies. Slow cure speed permits readjustment of parts during assembly.

680 Retaining Compound High Strength/High Viscosity

A retaining compound for joining fitted cylindrical parts. Fixtures in 10 minutes and provides a shear strength of 4,000 psi on steel after 24 hours. Fills diametral gap distances up to 0.015".

PROPERTIES CHART

PRODUCT	Item Number	Container	Typical Use	Color	Gap Fill (Diametral)	Viscosity cP	Shear Strength Steel/Steel (PSI)*	Temperature Range	Cure Speed, Steel @25°C	Recommended Primer	Specific Gravity	Key Specifications
603	21440 21441 21442	10 ml bottle 50 ml bottle 250 ml bottle	For close fitting parts with light contamination	Green	.005"	125	3,770	-65°F to 300°F	Fixture - 30 min. Full - 24 hrs.	T	1.10	–
609	60905 60921 60931 60941	.5 ml capsule 10 ml bottle 50 ml bottle 250 ml bottle	1st generation to augment press fits	Green	.005"	125	3,000	-65°F to 300°F	Fixture - 10 min. Full - 24 hrs.	T	1.10	Mil-Spec (R-46082B) Type I
620	62005 62015 62040 22241	.5 ml capsule 10 ml bottle 50 ml bottle 250 ml bottle	For high temperature applications	Green	.015"	8,500/ 22,000 Thixotropic	3,800	-65°F to 450°F	Fixture - 1 hr. Full - 24 hrs.	N	1.16	–
635	63531 63541	50 ml bottle 250 ml bottle	1st generation high strength for slip fits	Green	.010"	2,000	4,000	-65°F to 300°F	Fixture - 1 hr. Full - 24 hrs.	T	1.05	Mil-Spec (R-46082B) Type III
638	21447 21448 21449	10 ml bottle 50 ml bottle 250 ml bottle	High strength for loose fitted parts	Green	.010"	2,500	4,500	-65°F to 300°F	Fixture - 5 min. Full - 24 hrs.	T	1.09	–
640	64031 64041	50 ml bottle 250 ml bottle	For high temperature applications	Green	.007"	600	3,000	-65°F to 400°F	Fixture - 1 hr. Full - 24 hrs.	T	1.12	Mil-Spec (R-46082B) Type II
641	28802 21458 28801	10 ml bottle 50 ml bottle 250 ml bottle	Medium strength for removable bearings	Yellow	.008"	525/1,950 Thixotropic	1,700	-65°F to 300°F	Fixture - 30 min. Full - 24 hrs.	N	1.07	–
648	21443 21444 21445	10 ml bottle 50 ml bottle 250 ml bottle	Fast fixturing for close fitting parts	Green	.006"	500	3,900	-65°F to 300°F	Fixture - 5 min. Full - 24 hrs.	N	1.13	–
660	66010 66040 30287	6 ml tube 50 ml tube 250 ml tube	For repair of worn machinery parts	Silver	.020"	250,000/ 1,500,000	3,335	-65°F to 300°F	Fixture - 10 min. Full - 24 hrs.	N	1.13	Agriculture Canada approved
661	66141	250 ml bottle	Fast anaerobic curing UV curing for edge fillets	Amber	.006"	500	3,500	-65°F to 300°F	Fixture - 5 min. Full - 24 hrs.	T	1.11	–
675	67541	250 ml bottle	1st generation for close fitting parts	Green	.005"	125	3,000	-65°F to 300°F	Fixture - 20 min. Full - 24 hrs.	T	1.09	Mil-Spec (R-46082B) Type I
680	68005 68015 68035 68060	.5 ml capsule 10 ml bottle 50 ml bottle 250 ml bottle	High strength for slip fitted parts	Green	.015"	1,250	4,000	-65°F to 300°F	Fixture - 10 min. Full - 24 hrs.	T	1.11	NSF/ANSI 61 approved

* Varies with substrates

Indicates worldwide availability

With Loctite® Porosity Sealing technology, castings, powder metal parts, plastics, electrical components, and other porous substrates are sealed with a low-viscosity Loctite® sealant that fills internal voids. Porosity Sealing creates leak-free assemblies that are capable of handling high-pressure fluids, and are resistant to liquid or gas leakage. Loctite® Porosity Sealing also improves both the quality and durability of surface finishes.

POROSITY SEALING

RESIN TECHNOLOGY

Resinol® AT

A low viscosity, water washable sealant that cures anaerobically at room temperature. This patented technology produces perfectly clean, reliable parts. Completely seals parts in one processing cycle, virtually eliminating scrap.

Resinol® 88C

Resinol 88C is a single component, low viscosity sealant designed for metal castings. Also excellent for microscopic voids in a variety of other materials. Excellent heat resistance. Offers rapid polymerization. Responds more completely in plain water rinse than conventional resins, for parts that are more cosmetically appealing.

Resinol® 90C

Resinol® 90C is a heat-curing sealant with excellent washability in water, and high first-time sealing yield. Minimal system maintenance makes Resinol® 90C a good choice for small volume or intermittent users.

Resinol® RTC

Resinol® RTC is the latest self-curing anaerobic sealant formulated with a unique proprietary surfactant monomer washable in plain water. Worldwide availability, high temperature resistance, and extremely good chemical resistance make Resinol® RTC a good choice for many users.

Flexseal™ 5110

Flexseal™ 5110 is a single-component anaerobic sealant for electrical and electronic components. Seals out moisture, solvents, and corrosives. Ideally suited for pressure tight connectors, wire harnesses, and small coils.

PROPERTIES CHART

PRODUCT	Item Number	Container	Typical Use	Cure Type	Temperature Resistance	Pore Size Sealing Capability	Solvent Resistance
Resinol® AT	32107	4 gal. cubitainer	High volume, best in class sealing, superior washability	Room temperature	Superior	Small	Excellent
Resinol® RTC	18018	4 gal. cubitainer	High volume, OEM continuous processing	Room temperature	Excellent	Large & small	Excellent
Resinol® 88C	32180	5 gal. cubitainer	Easy to rinse / especially intermittant production	Heat cured	Excellent	Small	Good
Resinol® 90C	18017	4 gal. cubitainer	Intermittant production, superior sealing performance	Heat cured	Excellent	Small	Excellent
PMS 50E	12124	4 gal. cubitainer	High chemical and environment resistance	Room temperature	Superior	Large	Superior
990 Sealant	17497	1 liter bottle	Wicking grade, surface applications	Room temperature	Good	Large	Good
Flexseal™ 5100	28261	4 gal. cubitainer	Flexible electrical components (harnesses)	Room temperature	Excellent	Small	Excellent
Flexseal™ 5110	22470	1 liter bottle	Rigid electrical components (connectors, coils)	Room temperature	Superior	Large	Superior

Indicates worldwide availability

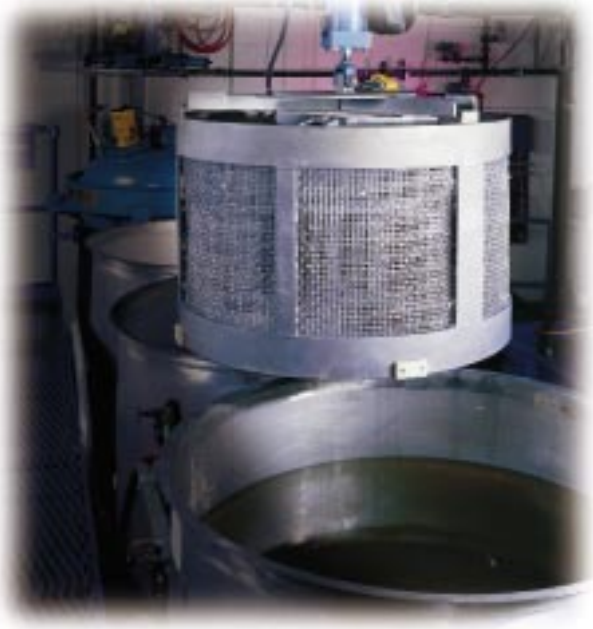
EQUIPMENT CONFIGURATIONS

Basket Working Diameter	Basket Working Depth	Basket Working Volume	Floor Space Required*	Floor to Hoist Height*
22"	15"	5,700 in^3	150 ft^2	9 feet min.
22"	22"	8,360 in^3	160 ft^2	10 feet min.
36"	15"	15,267 in^3	320 ft^2	12 feet min.
36"	23"	23,409 in^3	340 ft^2	14 feet min.
36"	34"	34,605 in^3	380 ft^2	15 feet min.
55"	18"	42,764 in^3	560 ft^2	16 feet min.
55"	28"	66,522 in^3	600 ft^2	17 feet min.
55"	41"	97,407 in^3	650 ft^2	18 feet min.

* All systems are custom configured.
Wet vacuum ambient, wet vacuum pressure, dry vacuum ambient, or dry vacuum pressure process capability available in all sizes.
Systems typically produce 4, 3, or 2 baskets per hour, depending on process.
Systems may be configured for either anaerobic or heat cure sealants.
Specifications subject to change without notice.

Loctite® Porosity Sealants are approved to numerous industry specifications and can be applied in-house or through one of our worldwide network of authorized converters. For more info, please call 1-800 323-5106 ext. 4338, or e-mail porositysealing@loctite.com

Or visit us on the web at:
www.loctite.com/auto



POTTING & ENCAPSULATING

Potting and Encapsulating Compounds are used to provide mechanical reinforcement to housed assemblies, to fill large voids, and to protect components from the effects of exposure to chemicals, moisture, mechanical shock, and vibration. Sealing components with potting and encapsulating compounds prevents corrosion and ensures long-term integrity of the device. Variables to consider when selecting a potting or encapsulating material include:

- Viscosity of uncured compound
- Dispensing requirements
- Device operating temperature
- Desired chemical resistance
- Desired thermal conductivity
- Desired flame retardance
- Hardness of cured product
- Overall cost

There are a variety of potting and encapsulating compounds to choose from – epoxy, hot melt, silicone, and urethane. The thermal properties of epoxy, and silicone systems make them ideally suited for applications exposed to temperatures above 125°C. If a soft, flexible material is needed, particularly at low temperatures, then a urethane, a silicone, or a hot melt material may be used.

What is the Best Product for My Application?

The following chart will work best when selecting a potting or encapsulating compound. This chart is intended to serve as a general guideline to help you determine which categories are best suited for your application. The data presented represents typical properties for each product category; however, individual product properties may differ. It is suggested that, based on the information provided, you consider at least the two best product categories that meet your application criteria. Individual product information can then be found on the pages that follow to help you narrow your search.

This chart should not be used to specify products without specific testing. It is recommended that you conduct on-part testing to ensure product performance before specifying any adhesive.

Loctite Adhesives and Sealants Specialists are available to assist you with new product designs, or to help you re-engineer an existing application for improved performance and cost savings. They can also set up testing of your parts at the Loctite Customer Engineering Center nearest you. For application assistance, call 1-800-LOCTITE (562-8483) or visit www.loctite.com and select "Contact Loctite."

PERFORMANCE CONSIDERATIONS	POTTING & ENCAPSULATING COMPOUNDS			
	Hot Melts	Urethanes	Epoxies	Silicones
Benefits	Fast, large gap filling	Excellent toughness/ flexibility	Wide range of formulations	Excellent temperature resistance
Limitations	Low heat resistance	Liquid adhesive sensitive to moisture	Mixing required	Low strength
Temperature Resistance	-65°C to +125°C	-65°C to +125°C	-65°C to +180°C	-65°C to +200°C
Environmental Resistance **Polar Solvents**[1] **Non-Polar Solvents**[2]	 Good (Polyolefins, Polyamides) Good (Polyamides)	 Good Good	 Very Good Excellent	 Good Poor
Hardness	Semi-Soft	Soft	Rigid	Soft
Flexibility	High	High	Low	Very High
Tg	Low	Low	High	Very Low
PROCESS CONSIDERATIONS				
Number of Components	1	2	2	1
Cure Temperature	Room Temperature (applied at elevated temperature)	Room Temperature	Room Temperature	UV/Room Temperature
Gel Time **Average** **Fastest**	 60 seconds 10 - 20 seconds	 1-3 hours 15 minutes	 1-3 hours 15 minutes	 30 seconds 5 seconds
Full Cure Time	1 hour (or when cooled)	24 hours	24 hours	24 hours
Depth of Cure	unlimited	unlimited	unlimited	Shallow (<0.375")
Dispensing/Curing Equipment Required?	Yes	Yes	Yes	Yes
Light Cure Versions Available?	No	No	Yes	Yes
For more information on each Category, refer to the following pages...	22-25, 48	15, 18, 19 44-45, 48	14, 15, 16, 17, 19, 44, 46-48	27, 34, 35, 49

[1] Examples of Polar Solvents: Water, Ethylene Glycol, IPA, Acetone
[2] Examples of Non-Polar Solvents: Motor Oil, Gasoline, Toluene, n-Heptane, ATF

There are a variety of Potting and Encapsulating Compounds to choose from – Epoxy, Hot Melt, Polyurethane, and Silicone.

Loctite® Potting and Encapsulating Compounds are designed to protect electrical components from the effects of exposure to chemicals, moisture, thermal shock, mechanical shock, and vibration. Sealing components with Loctite® Potting and Encapsulating Compounds prevents corrosion and ensures long-term integrity of electrical devices.

POTTING & ENCAPSULATING

EPOXIES, POLYURETHANES, HOT MELTS & SILICONES

EPOXY & POLYURETHANE COMPOUNDS

Loctite® Hysol® Potting and Encapsulating Compounds are two-part epoxy and polyurethane systems, formulated to offer a wide range of performance characteristics matched to specific application requirements. Any resin can be combined with any hardener within the same color region to create a mixed system.

Epoxy Resin	Key Features	Epoxy Hardener	Key Features
3140	General Purpose	**3160**	Glossy Surface Finish
3141	High Temperature	**3162**	Fast Cure
3142	Thermally Conductive	**3163**	Excellent Adhesion
3144	Flame Retardant	**3164**	General Purpose
		3165	Low Shrinkage

Polyurethane Resin	Key Features	Polyurethane Hardener	Key Features
3172	Low Tg Flame Retardant	**3181**	Low Temperature Flame Retardant
3173	General Purpose	**3182**	Fast Cure
		3183	General Purpose
		3184	Flame Retardant
3174	Doming Grade	**3185**	Crystal Clear, Fast Cure

System Characteristics	Polyurethane Systems				
	3172/3181	3173/3182	3173/3183	3173/3184	3174/3185
Typical Uncured Properties					
Viscosity, cP					
Resin	200	75	75	75	350
Hardener	12,500	30,000	800	14,000	1,500
Mixed	2,500	5,500	450	2,250	1,120
Working Time					
73°F (23°C)	45-60 min. at 140 g	<7 min. at 300 g	20-40 min. at 105 g	45 min. at 300 g	6 min. at 100 g
Gel Time					
73°F (23°C)	90-120 min. at 140g	14 min. at 300 g	40-70 min. at 105 g	150 min. at 300 g	11 min. at 100 g
Cure Cycle					
Normal 73°F (23°C)	12-30 hrs.	90 min.	24 hrs.	24 hrs.	24 hrs.
Alternate185°F (85°C)	1.5-3 hrs.	30 min.	1-3 hrs.	1-3 hrs.	2 hrs.
Mix Ratio					
By Weight, Resin to Hardener	21.7:100	13:87	30:70	15:85	50:50
By Volume, Resin to Hardener	1:4	1: 5.2	1:3	1:4.8	1:1
Color					
Resin	clear dk. brown	dk. brown	clear brown	clear brown	clear white
Hardener	black	black	opaque black	opaque white	clear white
Mixed	black	black	opaque black	opaque white	clear-water white
Specific Gravity					
Resin	1.28	1.23	1.23	1.23	1.07
Hardener	1.48	1.60	0.96	1.45	1.06
Mixed	1.46	1.55	1.06	1.40	1.06
Typical Cured Properties					
Hardness, Shore A	65	75	70	80	65
Hardness, Shore OO	–	–	–	–	–
Tg, °C	-65	-10	-16	-15	–
CTE above Tg, m/mm°C	159x10e-6	128x10e-6	190x10e-6	151x10e-6	–
Typical Electrical Properties					
Dielectric Constant					
0.1 kHz	5.44	4.68	5.92	4.51	–
1.0 kHz	5.31	4.02	4.36	4.29	–
10.0 kHz	5.15	3.76	3.65	3.94	–
100.0 kHz	4.95	3.63	3.31	3.56	–
Dissipation Factor					
0.1 kHz	0.03	0.13	0.22	0.02	–
1.0 kHz	0.02	0.07	0.17	0.04	–
10.0 kHz	0.02	0.04	0.10	0.06	–
100.0 kHz	0.03	0.02	0.05	0.07	–
Insulation Resistance, ohms	1.3x10e+10	2.5x10e+13	1.1x10e+11	1.1x10e+12	–
Volume Resistivity, ohms/cm	7.03x10e+11	1.5x10e+15	6.83x10e+12	6.61x10e+13	–
Dielectric Strength, Volts/mil	325	370	375	370	–
Flammability Rating	94V-Øat1/4"	–	–	94V-Øat3/8"	–
UL File No. E106917				94V-2at1/4"	

Refer to pages 45-48 for Hysol® package sizes and ordering information.

System Characteristics	Epoxy System 3140					Epoxy System 3141				
	3140/3160	3140/3162	3140/3163	3140/3164	3140/3165	3141/3160	3141/3162	3141/3163	3141/3164	3141/3165
Typical Uncured Properties										
Viscosity, cP										
Resin	11,000	11,000	11,000	11,000	11,000	80,000	80,000	80,000	80,000	80,000
Hardener	180	120	450	105	55	180	120	450	105	55
Mixed	1,700	2,000	1,500	1,500	2,000	7,000	5,000	4,000	6,000	13,000
Working Time										
77°F(25°C)	80-100 min. at 200 g	5-10 min. at 100 g	80-100 min. at 200 g	10-15 min. at 400 g	60-90 min. at 400 g	90-120 min. at 400 g	5 min. at 200 g	30-45 min. at 200 g	10 min. at 400 g	35-40 min. at 200 g
Gel Time										
77°F(25°C)	2.5-3 hrs. at 200 g	10-15 min. at 100 g	2.5-3 hrs. at 200 g	25-35 min. at 400 g	2-3 hrs. at 400 g	2.5-3.5 hrs. at 400 g	10-15 min. at 200 g	60-80 min. at 200 g	20-25 min. at 200 g	65-75 min. at 200 g
Cure Cycle										
Normal 77°F(25°C)	24 hrs.	16 hrs.	24 hrs.	16 hrs.	24 hrs./77°F +4 hrs./200°F	24 hrs.	24 hrs.	24 hrs.	24 hrs.	24 hrs./77°F +4 hrs./200°F
Alternate 150°F(66°C)	2 hrs.	1 hrs.	2 hrs.	2 hrs.	NA	4 hrs.	2 hrs.	2 hrs.	2 hrs.	NA
Mix Ratio										
By Weight	100:20	100:18.1	100:29	100:29.5	100:9	4:1	100:19.8	100:30	100:31.5	100:9
By Volume	3.1:1	3.6:1	2:1	2:1	6.5:1	2.5 :1	3:1	2:1	2:1	6.5:1
Color										
Resin	black	black	black	black	black	black	black	black	black	black
Hardener	clear	clear	clear	clear	clear	clear	clear	amber	amber	clear
Mixed	black	black	black	black	black	black	black	black	black	black
Specific Gravity										
Resin	1.64	1.64	1.64	1.64	1.64	1.61	1.61	1.61	1.61	1.61
Hardener	1.00	0.99	0.96	0.97	0.96	1.00	0.99	0.96	0.97	0.96
Mixed	1.48	1.48	1.41	1.42	1.55	1.44	1.46	1.40	1.40	1.40
Typical Cured Properties										
Hardness, Shore D	80	80	80	70	85	85	90	80	85	85
Tg, °C	27	35	20	27	67	43	75	38	31	104
CTE above Tg, mm/mm°C	130x10e-6	125x10e-6	133x10e-6	150x10e-6	119x10e-6	160x10e-6	135x10e-6	138x10e-6	111x10e-6	115x10e-5
CTE below Tg, mm/mm°C	44x10e-6	37.5x10e-6	44.9x10e-6	82.6x10e-6	36.0x10e-6	60.7x10e-6	39.7x10e-6	52.6x10e-6	49.2x10e-6	35x10e-6
Typical Electrical Properties										
Dielectric Constant										
0.1 kHz	4.43	4.25	4.61	4.2	4.87	4.30	3.91	3.58	4.11	4.28
1.0 kHz	4.37	4.20	4.37	4	4.83	4.22	3.88	3.52	3.97	4.18
10.0 kHz	4.31	4.16	4.20	3.8	4.75	4.14	3.84	3.46	3.87	4.06
100.0 kHz	4.24	4.10	4.05	3.7	4.64	4.03	3.79	3.39	3.77	3.92
Dissipation Factor										
0.1 kHz	0.008	0.010	0.040	0.08	0.003	0.01	0.01	0.01	0.02	0.01
1.0 kHz	0.008	0.011	0.027	0.04	0.007	0.01	0.01	0.01	0.02	0.02
10.0 kHz	0.010	0.012	0.026	0.03	0.011	0.02	0.01	0.01	0.02	0.02
100.0 kHz	0.014	0.013	0.023	0.03	0.014	0.02	0.01	0.02	0.02	0.02
Insulation Resistance, ohms	1.14x10e+13	2.67x10e+13	1.61x10e+12	7.5x10e+11	5.19x10e+13	5.72x10e+13	4.09x10e+13	1.23x10e+14	4.57x10e+13	2.15x10e+13
Volume Resistivity, ohms/cm	6.03x10e+14	2.53x10e+15	1.02x10e+14	1.5x10e14	2.69x10e+15	4.03x10e+15	2.61x10e+15	7.41x10e+15	2.98x10e+15	1.37x10e+15
Dielectric Strength, Volts/mil	365	385	365	410	350	375	355	385	395	365
Flammability Rating UL File No. E106917	–	–	–	UL 94HB at 1/16"	–	–	–	–	–	–
Insulation System UL File No. E106917	–	–	–	UL 1446	–	–	–	–	–	–

Refer to pages 45-48 for Hysol® package sizes and ordering information.

System Characteristics	Epoxy System 3142					Epoxy System 3144				
	3142/3160	3142/3162	3142/3163	3142/3164	3142/3165	3144/3160	3144/3162	3144/3163	3144/3164	3144/3165
Typical Uncured Properties										
Viscosity, cP										
Resin	95,000	95,000	95,000	95,000	95,000	18,000	18,000	18,000	18,000	18,000
Hardener	180	120	450	105	55	180	120	450	105	55
Mixed	7,500	6,000	7,000	8,000	18,000	6,000	4,000	2,500	3,000	7,000
Working Time										
77°F(25°C)	90-120 min. at 400 g	10-15 min. at 200 g	2 hrs. at 400 g	25 min. at 400 g	80 min. at 400 g	80-100 min. at 200 g	15-20 min. at 200 g	3 hrs. at 200 g	30-40 min. at 200 g	3 hrs. at 400 g
Gel Time										
77°F(25°C)	3.5-4 hrs. at 400 g	25-35 min. at 200 g	>3 hrs. at 400 g	50 min. at 400 g	2.5 hrs. at 400 g	2.5-3 hrs. at 200 g	30-40 min. at 200 g	>5 hrs. at 200 g	60-90 min. at 200 g	6 hrs. at 400 g
Cure Cycle										
Normal 77°F(25°C)	24 hrs.	24 hrs.	48 hrs.	24 hrs.	24 hrs./77°F +4 hrs./200°F	24 hrs.	16 hrs.	24 hrs.	24 hrs.	24 hrs./77°F +2 hrs./200°F
Alternate 150°F(66°C)	4 hrs.	2 hrs.	4 hrs.	2 hrs.	4 hrs./+200°F	2 hrs.	2 hrs.	4 hrs.	2 hrs.	4 hrs./+200°F
Mix Ratio										
By Weight	100:10.7	100:9	100:10.9	100:14.3	100:4.1	100:17.5	100:13	100:16	100:21	100:6.1
By Volume	3.8:1	4.5:1	3.6:1	2.8:1	9.7:1	3.4:1	4.5:1	3.5:1	2.8:1	9.3:1
Color										
Resin	black	black	black	black	black	black	black	black	black	black
Hardener	clear	clear	amber	amber	clear	clear	clear	clear	clear	clear
Mixed	black	black	black	black	black	black	black	black	black	black
Specific Gravity										
Resin	2.40	2.40	2.40	2.40	2.40	1.68	1.68	1.68	1.68	1.68
Hardener	1.00	0.99	0.96	0.97	0.96	1.00	0.99	0.96	0.97	0.96
Mixed	1.54	1.54	1.53	1.50	1.62	1.54	1.52	1.53	1.50	1.62
Typical Cured Properties										
Hardness, Shore D	90	90	90	85	90	75	80	75	55	85
Tg, °C	26	42	30	29	84	12	25	20	15	28
CTE above Tg, mm/mm°C	104x10e-6	97.2x10e-6	96.1x10e-6	106x10e-6	87.7x10e-6	138x10e-6	138x10e-6	140x10e-6	147x10e-6	109x10e-6
CTE below Tg, mm/mm°C	29.2x10e-6	28.2x10e-6	33.5x10e-6	51.9x10e-6	26.9x10e-6	48.2x10e-6	39x10e-6	67.1x10e-6	93.4x10e-6	42.1x10e-6
Thermal Conductivity										
Watts/Meter°C	0.422	0.415	0.406	0.399	0.491	–	–	–	–	–
Typical Electrical Properties										
Dielectric Constant										
0.1 kHz	5.77	4.87	5.28	5.51	5.65	4.74	4.24	4.29	5.31	4.26
1.0 kHz	5.69	4.83	5.20	5.35	5.57	4.53	4.12	4.03	4.87	4.17
10.0 kHz	5.62	4.78	5.12	5.21	5.46	4.39	4.03	3.84	4.52	4.10
100.0 kHz	5.52	4.72	5.02	5.06	5.34	4.28	3.96	3.70	4.23	4.05
Dissipation Factor										
0.1 kHz	0.00	0.01	0.01	0.02	0.01	0.03	0.02	0.04	0.06	0.01
1.0 kHz	0.01	0.01	0.01	0.02	0.01	0.03	0.02	0.04	0.06	0.01
10.0 kHz	0.01	0.01	0.01	0.02	0.01	0.02	0.01	0.03	0.05	0.01
100.0 kHz	0.01	0.01	0.01	0.02	0.01	0.02	0.01	0.02	0.04	0.01
Insulation Resistance ohms	4.61x10e+13	5.31x10e+13	3.65x10e+13	2.75x10e+12	4.09x10e+13	5.52x10e+12	1.79x10e+13	1.60x10e+12	4.23x10e+10	3.14x10e+13
Volume Resistivity ohms/cm	3.00x10e+15	3.47x10e+15	2.55x10e+15	1.65x10e+14	2.61x10e+15	3.15x10e+14	7.97x10e+14	1.05x10e+14	2.85x10e+12	1.84x10e+15
Dielectric Strength Volts/mil	360	345	355	345	335	375	375	360	365	340
Flammability Rating	–	–	–	–	–	UL 94V-O at 1/8"	UL 94V-O at 1/8"-		–	–
UL File No. E106917										

Refer to pages 45-48 for Hysol® package sizes and ordering information.

HYSOL® PACKAGE SIZES AND ORDERING INFORMATION

Product No.	1quart	1gallon	5gallon[1]	55gallon[1]
Hysol® Epoxy Resins				
3140	–	39944	39945	39946
3141	–	39947	39948	39949
3142	–	39950	39951	39952
3144	–	39953	39954	39955
3143	–	39821	39822	39823
Hysol® Epoxy Hardeners				
3160	39956	39957	39958	39959
3162	39960	39961	39962	39963
3163	39964	39965	39966	39967
3164	39968	39969	39970	39971
3165	39395**	39973	39974	39975

[1] 5 gal. & 55 gal. are made-to-order items
** 1 pint fill

Product No.	1quart	1gallon	5gallon[1]	55gallon[1]
Hysol® Polyurethane Resins				
3172	39980	39981	39982	39983
3173	39984	39985	39986	39987
3174*	33954	33955	–	–
Hysol® Polyurethane Hardeners				
3181	–	39992	39993	39994
3182	–	39995	39996	39997
3183	–	39998	39999	39399
3184	–	39398	39397	39396
3185*	33954	33955	–	–

*3174/3185 – kit

HOT MELT ADHESIVES

In addition to structural bonding, Loctite® Hysol® Hot Melt Adhesives are also well suited for fast, deep potting applications requiring large gap fills in a high-speed manufacturing environment.

1942 Hysol® EVA

EVA based medium setting, general purpose hot melt adhesive. Excellent adhesion to wood and many plastics.

7901 Hysol® Polyamide

Low viscosity polyamide used extensively for potting and encapsulating.

HOT MELT ADHESIVES PROPERTIES CHART

PRODUCT	Item Number	Container	Color	Viscosity (cP) at Dispense Temperature	Tensile Strength (psi)	Open Time	Temperature Resistance	% Elongation	Hardness (Shore A)	Key Specifications
1942	83266 83267 83268 83269 83270 83271 83272 83273 83274 83275 83276 83277	5 lb. sample bag pellets 40 lb. carton pellets Maxistick sample 7 oz. bag Maxistick 35 lb. carton PT stick sample 8 oz. bag PT stick 35 lb. carton Mini stick 35 lb. carton Superstick sample 10" 5 oz. bag Superstick 10" 25 lb. carton Superstick 4" 25 lb. carton Polyshot sample 12 oz. bag Polyshot 35 lb. carton	Tan	5,000	250	30 seconds	142°F	500	–	FDA CFR175.105
3650	31308 31315 31302 31297	Sample sticks 11 lb. box sticks 22 lb. pellets 44 lb. pellets	Light beige	2,900	305	60-80 seconds	176°F	43	87	–
3651	31303	26.4 lb. squares	Beige	10,000	334	80-100 seconds	266°F	790	55	–
3652	31310 31317 31304	Sample sticks 11 lb. box sticks 26.4 lb. squares	Light beige	16,000	174	60-80 seconds	266°F	440	60	–
7809FR	83388 83390 83391	5 lb. bag sample pellets Superstick sample 10" 13 oz. bag Polyshot 13 oz. bag	Amber	7,000	363	35 seconds	240°F	373	85	UL 94V-O
7811	83337 83339	5 lb. bag sample pellets Polyshot sample 13 oz. bag	–	6,400	400	35 seconds	266°F	1,200	–	None
7901	83341 83342 83343 83344	5 lb. bag sample pellets 40 lb. carton pellets Polyshot sample 13 oz. bag Polyshot 25 lb. pail	–	750	260	35 seconds	300°F	80	84	None

SILICONE POTTING COMPOUNDS

Loctite® Silicones are single-component, tough protective potting and encapsulating compounds that seal components against moisture, solvents, and environmental conditions. Loctite® Nuva-Sil® products cure in as little as 30 seconds to depths of .150" when exposed to UV light, while Loctite® RTV silicones cure in 24 hours at room temperature when exposed to atmospheric moisture.

5088 Nuva-Sil® Silicone Potting Compound

A medium-viscosity, thixotropic, non-corrosive UV curing silicone for high-speed, shallow potting of sensitive substrates.

5091 Nuva-Sil® High Adhesion Potting Silicone

A low-viscosity, self-leveling, UV curing silicone for high-speed shallow potting, coating, and sealing of electronic connectors. Provides high adhesion for difficult-to-bond substrates.

5092 Nuva-Sil® Non-Corrosive Potting Silicone

A low-viscosity, self-leveling, non-corrosive UV curing silicone for high-speed shallow potting, coating, and sealing of electronic connectors. Excellent adhesion to engineering plastics, gold, brass, and tin-plated leads.

5140 RTV Potting Silicone

A non-corrosive, self-leveling RTV silicone for shallow potting, sealing, and coating of electronic devices, especially for military, automotive, and industrial electronics. Meets Mil-A-46146B.

SILICONE ADHESIVES PROPERTIES CHART

PRODUCT	Item Number	Container	Cure Schedule (Cure/Alt. Cure)	Viscosity (cP) (mixed)	Work Life at Room Temperature	Gel Time	Hardness	Tg (°C)	CTE ppm/°C
5088	17614 17382	300 ml cartridge 40 lb. pail	UV/moisture 60 sec. @ 40mW/cm^2	65,000	N/A	Seconds	30 shore A	N/A	N/A
5091	17412 18074	300 ml cartridge 40 lb. pail	UV/moisture 60 sec. @ 40mW/cm^2	5,500	N/A	Seconds	34 shore A	N/A	N/A
5092	28354 28355	300 ml cartridge 40 lb. pail	UV/moisture 60 sec. @ 70mW/cm^2	5,800	N/A	Seconds	42 shore A	N/A	N/A
5140	18120 18117 17660	85 gm tube 300 ml cartridge 40 lb. pail	Moisture 24 hrs. @ 25°C	35,000	N/A	<3 hrs. (skin over)	30 shore A	N/A	N/A

Indicates worldwide availability

For technical information and/or product availability, call 1-800-LOCTITE or on the web

Visit www.loctite.com

Loctite Corporation, the pioneer of anaerobic adhesives, has applied this technology to create retaining compounds that increase the shear strength of cylindrical, non-threaded assemblies. Finding wide acceptance as a standard method for assembling press and slip-fitted parts, Loctite® Retaining Compounds fill the "inner space" between components and cure to form a strong precision assembly. Formulated in a selection of viscosities, gap filling ability, flexibility, and strength characteristics, Loctite® Retaining Compounds can be applied with automated process equipment or dispensed manually.

RETAINING

603 Retaining Compound Oil Tolerant

A retaining compound tolerant of oil and other contamination. Seals and secures cylindrical assemblies up to 0.005" radial clearance. Fixtures in 10 minutes. Prevents fretting and corrosion of metal assemblies.

609 Retaining Compound General-Purpose

A low-viscosity retaining compound that bonds rigid metal assemblies. Ideal for gap distances up to 0.005" diameter. Fixtures in 10 minutes and provides a shear strength of 3,000 psi after 24 hours. Easily joins dissimilar metals. Withstands temperatures to 300°F.

620 Retaining Compound High Temperature

A high-temperature (450°F), high-viscosity liquid retaining compound. Provides a shear strength of over 3,800 psi on steel. Locks and secures metal cylindrical assemblies up to .015" diameter clearance. Prevents metal fretting and corrosion. Seals against leakage.

635 Retaining Compound High Strength/Slow Cure

A high-viscosity, high-strength retaining compound with slow cure speed to permit readjustment of parts during assembly.

638 Retaining Compound Maximum Strength

A maximum-strength retaining compound for use where high dynamic forces or cyclic loading is expected. Locks cylindrical assemblies up to .010" diameter clearance. Fixtures in 5 minutes.

640 Retaining Compound Medium Strength/ High Temperature

A medium-viscosity retaining compound that resists temperatures to 400°F.

641 Retaining Compound Controlled Strength

A controlled-strength retaining compound that is ideal for cylindrical parts that require disassembly. Recommended for maximum diameter clearance of 0.008". Fixtures in 10-30 minutes.

648 Retaining Compound High Strength/Rapid Cure

A retaining compound recommended for continuous working temperatures up to 300°F. Fills gaps up to 0.006" diameter clearance. Fixtures in 5 minutes.

675 Retaining Compound Medium Strength

A low-viscosity retaining compound that augments press fit assemblies. Slow cure speed permits readjustment of parts during assembly.

680 Retaining Compound High Strength/High Viscosity

A retaining compound for joining fitted cylindrical parts. Fixtures in 10 minutes and provides a shear strength of 4,000 psi on steel after 24 hours. Fills diametral gap distances up to 0.015".

660 Quick Metal® Retaining Compound Press Fit Repair

A creamy, non-running adhesive/sealant. Repairs worn machine parts. Restores correct fit to mating assemblies. Fills gaps up to 0.020" diameter clearance.

PROPERTIES CHART

PRODUCT	Item Number	Container	Typical Use	Color	Max. Gap Fill (Diametral)	Viscosity cP	Shear Strength Steel/Steel (PSI)*	Temperature Range	Cure Speed, Steel @25°C	Recommended Primer	Specific Gravity	Key Specifications
603	21440 21441 21442	10 ml bottle 50 ml bottle 250 ml bottle	For close fitting parts with light contamination	Green	.005"	125	3,770	-65°F to 300°F	Fixture - 30 min. Full - 24 hrs.	T	1.10	–
609	60905 60921 60931 60941 60943	.5 ml capsule 10 ml bottle 50 ml bottle 250 ml bottle 1 liter bottle	1st generation to augment press fits	Green	.005"	125	3,000	-65°F to 300°F	Fixture - 10 min. Full - 24 hrs.	T	1.10	Mil-Spec (R-46082B) Type I
620	62005 62015 62040 62070 62085	.5 ml capsule 10 ml bottle 50 ml bottle 250 ml bottle 1 liter bottle	For high temperature applications	Green	.015"	8,500/ 22,000 Thixotropic	3,800	-65°F to 450°F	Fixture - 30 min. Full - 24 hrs.	N	1.16	–
635	63531 63541	50 ml bottle 250 ml bottle	1st generation high strength for slip fits	Green	.010"	2,000	4,000	-65°F to 300°F	Fixture - 1 hr. Full - 24 hrs.	T	1.05	Mil-Spec (R-46082B) Type III
638	21447 21448 21449	10 ml bottle 50 ml bottle 250 ml bottle	High strength for loose fitted parts	Green	.010"	2,500	4,500	-65°F to 300°F	Fixture - 5 min. Full - 24 hrs.	T	1.09	–
640	64031 64041	50 ml bottle 250 ml bottle	For high temperature applications	Green	.007"	600	3,000	-65°F to 400°F	Fixture - 1 hr. Full - 24 hrs.	T	1.12	Mil-Spec (R-46082B) Type II
641	28802 21458	10 ml bottle 50 ml bottle	Medium strength for removable bearings	Yellow	.008"	525/1,950 Thixotropic	1,700	-65°F to 300°F	Fixture - 30 min. Full - 24 hrs.	N	1.07	–
648	21443 21444 21445	10 ml bottle 50 ml bottle 250 ml bottle	Fast fixturing for close fitting parts	Green	.006"	500	3,900	-65°F to 300°F	Fixture - 5 min. Full - 24 hrs.	N	1.13	–
660	66010 66040 30287	6 ml tube 50 ml tube 250 ml tube	For repair of worn machinery parts	Silver	.020"	250,000/ 1,500,000	3,300	-65°F to 300°F	Fixture - 10 min. Full - 24 hrs.	N	1.13	Agriculture Canada approved
661	66141	250 ml bottle	Fast anaerobic curing UV curing for edge fillets	Amber	.006"	500	3,500	-65°F to 300°F	Fixture - 5 min. Full - 24 hrs.	T	1.11	–
675	67541	250 ml bottle	1st generation for close fitting parts	Green	.005"	125	3,000	-65°F to 300°F	Fixture - 20 min. Full - 24 hrs.	T	1.09	Mil-Spec (R-46082B) Type I
680	68005 68015 68035 68060 68090	.5 ml capsule 10 ml bottle 50 ml bottle 250 ml bottle 3 liter bottle	High strength for slip fitted parts	Green	.015"	1,250	4,000	-65°F to 300°F	Fixture - 10 min. Full - 24 hrs.	T	1.11	NSF/ANSI 61 approved

* Varies with substrates

Indicates worldwide availability

Loctite offers a complete line of surface preparation products to ensure the maximum performance of Loctite® Adhesives and Sealants.

Loctite® Accelerators are used to increase the cure speed and gap-filling capabilities of Cyanoacrylate Adhesives. Activators are specially-engineered curing agents for Structural Adhesives. Loctite® Primers are used to ensure cure on inactive surfaces and speed the cure of machinery adhesives.

All Loctite® Surface Preparation Products are available in ozone-safe (non-CFC), solvent-based, and solventless formulations.

SURFACE PREPARATION

ACCELERATORS

7452 Tak Pak® Accelerator

This accelerator, with aggressive cleaning properties, promotes the cure speed of all Loctite® Cyanoacrylate Adhesives.

7113 Accelerator

This accelerator features long on-part life. Use with Loctite® Cyanoacrylate Adhesives.

ACTIVATORS

Output™ Activator

Designed for electronics applications using Loctite® Output™ Thermally Conductive Adhesives – 315, 383 and 384.

7075 Activator

An acetone-based activator that promotes the proper cure of Loctite® Products 324 and 325.

7380 Activator

This solvent-free activator allows immediate mating of parts. Use with most Loctite® Acrylic Adhesives.

7387 Activator

This activator promotes the cure of most Loctite® Acrylic Adhesives. This is a flammable product.

For technical information and/or product availability, call 1-800-LOCTITE or on the web

Visit www.loctite.com

PRIMERS

7471 Primer T

A solvent-based primer that speeds the cure of all Loctite® Anaerobic Adhesives and ensures proper cure on inactive metals.

7649 Primer N

A solvent-based primer that features very long on-part life. Use to speed the cure of all Loctite® Anaerobic Products and ensure proper cure on inactive metals. Ideal for cure conditions below room temperature.

770 PRISM® Primer

An adhesion promoter formulated for use with polyolefins and other low-energy surfaces. Use with Loctite® Cyanoacrylate Adhesives. Features fast dry time and long on-part life.

ACCELERATORS/PRIMERS PROPERTIES CHART

PRODUCT	Item Number	Container	Color	Viscosity cP	Base	On-Part Life	Dry Time	Application
712	20352 18636 18390	1.75 fl. oz. bottle 0.7 fl. oz. metered mist 1 gal. can	Clear/amber	1	Isopropanol	1 min.	<30 sec.	All cyanoacrylates
770	18396 18397	1.75 fl. oz. bottle 16 fl. oz. can	Colorless	1.25	Heptane	8 hrs.	30 sec.	All cyanoacrylates
793	18650 20246	1.75 fl. oz. bottle 16 fl. oz. bottle	Clear/ light amber	3	Propylene based glycol ether/water	<2 hrs.	<10 min.	All cyanoacrylates
7090	19368 12695	1 fl. oz. bottle 1 liter bottle	Light amber	3	No solvent	1 hr.	<10 min.	Anaerobics
7109	22440 23034	1.75 fl. oz. bottle 1 qt. bottle	Clear/amber	3	Perfluorocarbon	1 min.	<5 sec.	All cyanoacrylates
7113	19605 19606	1.75 fl. oz. bottle 1 gal. can	Clear	0.4	Heptane	24 hrs.	1 min.	All cyanoacrylates
7452	18490 18580 18637 18575 18576	1.75 fl. oz. brush-cap bottle 1.75 fl. oz. spray-cap bottle 0.7 fl. oz. metered mist 1 qt. can 1 gal. can	Clear/amber	0.4	Acetone	1 min.	<30 sec.	All cyanoacrylates
7453	20282	1.75 fl. oz. bottle	Clear/amber	0.4	Acetone (electronic grade)	1 min.	<30 sec.	All cyanoacrylates
7471	19267 22477 19268	1.75 fl. oz. bottle 4.5 oz. aerosol can 1 gallon can	Amber	2	Acetone/ Isopropanol	7 days	30-70 sec.	Anaerobics
7649	19269 21347 21348 19266	1.75 fl. oz. bottle 25 gm aerosol can 4.5 oz. aerosol can 1 gallon can	Clear/green	2	Acetone	30 days	30-70 sec.	Anaerobics

ACTIVATORS PROPERTIES CHART

PRODUCT	Item Number	Container	Color	Viscosity cP	Base	On-Part Life	Dry Time	Application
Output™ Activator	20263	13 ml bottle	Light Brown	1.5	Heptane/Isopropanol	2 hrs.	None	Electronics
7075	21349 22671	1 qt. can 4.5 oz. aerosol can	Amber	2	Acetone	2 hrs.	3 minutes	324, 325
7380	19822 19824 19907	1 liter can 1.75 fl. oz. bottle 1 gallon can	Light Brown	43	Monomer	2 hrs.	None	Structurals
7387	18861 18862 21088	1.75 fl. oz. bottle 1 qt. can 4.5 oz. aerosol can	Light Brown	1.5	Heptane/Isopropanol	2 hrs.	None	Structurals
25062	25062	1 liter bottle	Thin green/ fluorescent	1.03	Methacrylate	1 hr.	None	Anaerobics on dichromate surfaces

Indicates worldwide availability

Invented by Loctite Corporation as a revolutionary method to lock and seal threaded fasteners, Loctite® Liquid Threadlockers have found wide acceptance in a range of applications–from delicate electronic components to heavy construction equipment.

Loctite® Pre-Applied Threadlockers are dry-to-the-touch films applied to threaded fasteners by fastener suppliers and process centers located throughout North America. Ideally suited for OEMs, they improve speed of assembly and ensure quality by eliminating on-line adhesive dispensing.

Loctite® Threadlockers are available in varying viscosities and strengths for virtually any application, including exposure to extreme environments.

THREADLOCKING

LIQUID THREADLOCKERS

222MS Threadlocker
Low Strength/Small Screw

Ideal for fastener diameters of 1/4" (6 mm) and smaller. Controlled lubricity for accurate clamp loads. Parts can be separated using hand tools.

242® Threadlocker
Medium Strength

A general-purpose, removable threadlocker for fasteners between 1/4" and 3/4" (6 to 20 mm) diameters. Controlled lubricity for accurate clamp loads. Parts can be separated using hand tools.

243 Threadlocker
Oil Resistant/ Medium Strength

A general-purpose, medium-strength threadlocker with improved oil tolerance. For fasteners between 1/4" and 3/4" (6 to 20 mm) diameters.

246 Threadlocker
High Temp./Medium Strength

This threadlocker resists oil and mild surface contamination at continuous temperatures to 450°F. Suitable for fasteners between 1/4" and 3/4" (6 to 20 mm) diameters.

262 Threadlocker
Medium to High Strength

A permanent, locking threadlocker for fasteners up to 3/4" (20 mm) diameter. High lubrication for easy assembly. Excellent for preventing rust and corrosion in extreme chemical/environmental conditions.

266 Threadlocker
High Temp./High Strength

Fast-fixturing threadlocker resists oil and mild surface contamination at temperatures to 450°F. Locks fasteners up to 3/4" (20 mm) in diameter.

271™ Threadlocker High Strength

A high-strength, low-viscosity threadlocker for fasteners up to 1" (25 mm) diameter.

272 Threadlocker High Temp./High Strength

Withstands temperatures to 450°F. Provides a fast cure on most surfaces including "as received" fasteners. Recommended for bolts up to 1 1/2" (36 mm) in diameter. Heat and hand tools are required for disassembly.

277 Threadlocker High Strength

Locks fasteners up to 1 1/2" (36 mm). Protects threads from rust and corrosion. Removable with heat and hand tools.

290 Threadlocker Wicking Grade

A medium-strength threadlocker for pre-assembled bolts up to 1/2" (12 mm). Penetrates threads by capillary action. Secures set screws and other assemblies after settings are completed. Seals welds and porous metal parts. Protects threads from rust and corrosion. Localized heating and hand tools are needed for disassembly.

294 Threadlocker High Temp./Wicking Grade

Ideally suited for pre-assembled fasteners. Performs well on oily fasteners.

425 Assure™ Threadlocker Surface Curing

Low-strength, fast-curing threadlocker for plastic fasteners. Can be applied before or after assembly.

2432 Threadlocker Low Halogen, Low Sulfur

This medium-strength threadlocker was especially developed for use on sensitive metals like, Titanium, used in the Nuclear Industry. Parts can be separated using hand tools.

2440 Threadlocker Primerless/Medium Strength

This threadlocker is particularly fast-curing, thereby reducing or eliminating the need for primers. Performs well on all substrates. It develops useable strength (100 in-lbs) within one hour. Parts can be separated using hand tools.

2760 Threadlocker Primerless/High Strength

This threadlocker is particularly fast-curing, thereby reducing or eliminating the need for primers. Particularly suitable for heavy duty applications where resistance to heavy shock, vibration, and stress levels are required.

For technical information and/or product availability, call: 1-800-LOCTITE (562-8483) or visit us on the web at:

www.loctite.com

LIQUID THREADLOCKERS PROPERTIES CHART

PRODUCT	Item Number	Container	Typical Use	Color	Viscosity cP	Torque in. lbs. (M10 Steel Nuts & Bolts) Break/Prevail	Temperature Range	Cure Speed, Steel @25°C	Oil Tolerant	Recommended Primer	Specific Gravity	Key Specifications
222	21463 21464	10 ml bottle 50 ml bottle	Small screws under 1/4"	Purple	1,200/ 5,000 Thixotropic	53/30	-65°F to 300°F	Fixture - 20 min. Full - 24 hrs.	–	N or T	1.05	–
222MS	22205 22221 22231 22241	.5 ml capsule 10 ml bottle 50 ml bottle 250 ml bottle	Easy removal small screws	Purple	1,200/ 6,000 Thixotropic	62/27	-65°F to 300°F	Fixture - 20 min. Full - 24 hrs.	–	N or T	1.05	Mil-Spec (S-46163A) Type II, Grade M
242®	24205 24221 24231 24241 24243	.5 ml capsule 10 ml bottle 50 ml bottle 250 ml bottle 1 liter bottle	Removable grade up to 1/4" to 3/4" bolts	Blue	1,200/ 6,000 Thixotropic	115/53	-65°F to 300°F	Fixture - 10 min. Full - 24 hrs.	–	N or T	1.07	Mil-Spec (S-46163A) Type II, Grade N NSF/ANSI 61 approved
243	23977 24077 24078 24079 21433	.5 ml capsule 10 ml bottle 50 ml bottle 250 ml bottle 1 liter bottle	1/4" to 3/4" bolts with light oil contamination	Blue	2,250/ 12,000 Thixotropic	180/62	-65°F to 300°F	Fixture - 10 min. Full - 24 hrs.	Yes	N or T	1.08	NSF/ANSI 61 approved Agriculture Canada approved
246	29513 29514 29515	10 ml bottle 50 ml bottle 250 ml bottle	High temperature medium strength	Blue	2,600	170/48	-65°F to 450°F	Fixture - 7 min. Full - 24 hrs.	Yes	N or T	1.15	–
262	26205 26221 26231 26241 26243	.5 ml capsule 10 ml tube 50 ml bottle 250 ml bottle 1 liter bottle	High strength locking up to 3/4" bolts	Red	1,800/ 5,000 Thixotropic	190/275	-65°F to 300°F	Fixture - 20 min. Full - 24 hrs.	–	N or T	1.05	Mil-Spec (S-46163A) Type II, Grade O Agriculture Canada approved
266	26772 26773 26774	10 ml bottle 50 ml bottle 250 ml bottle	High strength high temperature	Red-orange	3,750- 9,000	270/35	-65°F to 450°F	Fixture - 40 min. Full - 3 hrs.	Yes	T	1.19	–
271™	27105 27121 27131 27141 27143	.5 ml capsule 10 ml bottle 50 ml bottle 250 ml bottle 1 liter bottle	High strength for fasteners up to 1" diam.	Red	500	230/320	-65°F to 300°F	Fixture - 10 min. Full - 24 hrs.	–	N or T	1.12	Mil-Spec (S-46163A) Type I, Grade K UL classified
272	27240 27270 27285	50 ml bottle 250 ml bottle 1 liter bottle	High temperature applications	Red	9,500	200/220	-65°F to 450°F	Fixture - 30 min. Full - 24 hrs.	–	N or T	1.11	–
277	21434 27731 27741 27743	10 ml bottle 50 ml bottle 250 ml bottle 1 liter bottle	High strength for large bolts	Red	7,000	275/275	-65°F to 300°F	Fixture - 30 min. Full - 24 hrs.	–	N or T	1.12	Mil-Spec (S-46163A) Type I, Grade L
290	29005 29021 29031 29041 29043	.5 ml capsule 10 ml bottle 50 ml bottle 250 ml bottle 1 liter bottle	Wicking grade for preassembled parts	Green	12	85/250	-65°F to 300°F	Fixture - 20 min. Full - 24 hrs.	–	N or T	1.08	Mil-Spec (S-46163A) Type III, Grade R NSF/ANSI 61 certified
294	27934 27935 27936 27937	.5 ml capsule 10 ml bottle 50 ml bottle 250 ml bottle	High temperature wicking grade	Green	34.5	289/237	-65°F to 400°F	Fixture - 10 min. Full - 24 hrs.	Yes	N or T	1.13	–
425	42540 42561	20 gm bottle 1 lb. bottle	For small plastic fasteners	Blue	60	5/4	-65°F to 180°F	Fixture - 2 min. Full - 14 hrs.	–	–	1.10	–
2432	25523	50 ml bottle	Low halogen low sulfur med. strength	Blue	300	150/53	-65°F to 300°F	Fixture - 30 min. Full - 24 hrs.	–	–	1.08	–
2440	33946 33947 33948	10 ml bottle 50 ml bottle 250 ml bottle	Primerless medium strength	Blue	6,800	200/230	-65°F to 300°F	Fixture - 4 min. Full - 24 hrs.	Yes	N or T	1.10	–
2760	32525 32526 32527 32528	10 ml bottle 50 ml bottle 250 ml bottle 1 liter bottle	Primerless high strength	Red	10,000	200/400	-65°F to 300°F	Fixture - 4 min. Full - 24 hrs.	Yes	N or T	1.15	–

Indicates worldwide availability

PRE-APPLIED THREADLOCKERS

200 DRI-LOC®

A high locking strength compound that reliably secures and seals threaded fasteners.

201 DRI-LOC®

A high-temperature, high-strength adhesive engineered to withstand application temperatures up to 400˚F (204˚C).

202 DRI-LOC®

A medium-strength threadlocker, general-purpose for many application requirements.

203 DRI-LOC®

Offers mild-strength and good lubricity for easy assembly and disassembly of parts.

204 DRI-LOC®

A high-strength adhesive sealant that performs consistently on plated surfaces.

205 DRI-LOC®

The lubricity of this threadlocker provides torque/tension performance that emulates uncoated fasteners. Good strength helps assure specified clamp loads.

DRI-LOC® STS

A medium-strength threadlocker and straight thread sealant, formulated with excellent lubricity to minimize friction for a more controllable torque/ tension relationship.

Pre-Applied Anti-Seize

Capable of withstanding temperatures to 1200°F (648°C), this pre-applied product offers instant sealing of most fluids and thread protection in corrosive environments. Reusable up to five times, Anti-Seize will perform on all part finishes and eliminate high temperature galling.

PRE-APPLIED THREADLOCKERS PROPERTIES CHART

PRODUCT	Item Number	Container	Typical Use	Color	Torque in. lbs. (3/8"-16 Phosphate Steel) Break/Prevail	Temperature Range	Cure Speed, Steel @25˚C	Lubricity	Key Specification
200	12402 12516	40 lb. pail Kit	General purpose	Yellow	220/105	-65°F to 300°F	Fixture - 10 min. Full - 72 hrs.	Med.	–
201	12506	40 lb. pail	High temperature High strength	Yellow	245/130	-65°F to 400°F	Fixture - 10 min. Full - 72 hrs.	Low	–
202	12403 12514	40 lb. pail Kit	Adjustable	Green	200/105	-65°F to 300°F	Fixture - 10 min. Full - 72 hrs.	Med.	–
203	12405 12515	40 lb. pail Kit	Medium strength	Silver	160/75	-65°F to 300°F	Fixture - 10 min. Full - 72 hrs.	Med.	–
204	18723 18722	40 lb. pail Kit	Plated substrates	Red	270/260	-65°F to 300°F	Fixture - 10 min. Full - 72 hrs.	Low	NSF/ ANSI 61 certified
205	19840 19839	40 lb. pail Kit	High strength on most substrates	Peach	149/57	-65°F to 300°F	Fixture - 10 min. Full - 72 hrs.	High	–
2015	N/A	N/A	Medium strength, high temperature	Peach	105/35	-65°F to 400°F	Fixture - 5 min. Full - 72 hrs.	High	–
2050	N/A	N/A	High strength	Red	300/27	65°F to 300°F	Fixture - 10 min. Full - 72 hrs.	High	–
STS	18872 18871	40 lb. pail Kit	Medium strength, thread sealing	Light blue	210/95	-65°F to 300°F	Fixture - 10 min. Full - 24 hrs.	High	–
Anti-Seize	17015	40 lb. pail	Thread protection, anti-galling	Grey	–	-65°F to 1,200°F	Instant, reusable	Very high	–

Indicates worldwide availability

Loctite® Pre-Applied Threadlockers are applied to fasteners and fittings by authorized converters throughout North America. For the name of your nearest converter, call: 1-800-LOCTITE, hit menu item (1) 3-times, then ext. 2630.

Loctite® Pre-Applied Threadlockers are approved to numerous automotive specifications. Contact Loctite at 1-800-LOCTITE, hit menu item (1) 3-times, then ext. 2630 for more information.

Or visit our web site at:
www.loctite.com
Or e-mail us at:
threadlocker@loctite.com

Loctite® Liquid Thread Sealants seal and secure metal pipes and fittings, filling the space between threaded metal parts, and hardening 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.

Loctite® Pre-Applied Thread Sealants are dry-to-the-touch films applied to threaded fittings by fitting suppliers and process centers located throughout North America. Pre-applied thread sealants are ideal for OEMs because they can improve speed of assembly and ensure quality by eliminating on-line dispensing of sealants.

THREAD SEALING

LIQUID THREAD SEALANTS

542 Thread Sealant
Fine Threads

A liquid sealant recommended for sealing the fine threads of hydraulic and pneumatic connectors.

545 Thread Sealant
Hydraulic/Pneumatic Sealant

A liquid sealant for locking and sealing high-pressure, fluid power systems with tapered fittings. Contains no fillers and will not foul valves or fluid filtering systems.

554 Thread Sealant
Refrigerant Sealant

Excellent solvent resistance on threaded fittings and pipes up to 3" in diameter. Recommended for refrigeration systems and service with aggressive chemicals.

565 PST® Thread Sealant
Controlled Strength

A general-purpose instant sealant for tapered and straight/tapered fittings. Controlled strength for ease of disassembly.

For the name and number of your nearest distributor, call: 1-800-LOCTITE (562-8483)

or use the "Distributor Locator" on our web site at **www.loctite.com/distributor**

567 PST® Thread Sealant High Temperature

Withstands temperatures to 400°F with excellent solvent resistance. Locks and seals tapered pipe threads and fittings, including high pressure applications. Disassembles with hand tools.

572 Thread Sealant Low Strength

Low-strength sealant with moderate fixture speed for use on coarse threads.

577 Thread Sealant Coarse Threads

Medium-strength, general-purpose sealant for use on coarse, threaded components.

579 Thread Sealant Instant Seal Pipe Sealant

A general-purpose pipe sealant that cures into a resistant plastic. Excellent solvent resistance and withstands temperatures to 300°F (149°C). Sealing is effective on threaded joints up to 2" in diameter. Lower locking strength secures elbows in any position but permits easy disassembly.

580 PST® Thread Sealant Low Halogen/Low Sulfur

For threaded fittings in fossil fuel, solar, and hydro plant piping systems.

592 PST® Thread Sealant Slow Cure

Locks and seals threaded fittings. Parts may be repositioned up to 24 hours after application.

5772 Thread Sealant Low Halogen, Low Sulfur

A medium-strength thread sealant with fast curing properties. Especially developed for use on sensitive metals, like Titanium, used in the Nuclear Industry. Parts can be separated using hand tools.

For technical information and/or product availability, call 1-800-LOCTITE or on the web

Visit www.loctite.com

LIQUID THREAD SEALANTS PROPERTIES CHART

PRODUCT	Item Number	Container	Typical Use	Color	Viscosity cP	Temperature Range	Seal to Operating Pressure Pressure Resistance	Recommended Primer	Specific Gravity	Key Specifications
542	21453	50 ml bottle	Fine Threads	Brown	525/1,850 Thixotropic	-65°F to 300°F	Seals operating pressures to 10,000 psi	N	1.06	–
545	54505 32429 54531 54541	.5 ml capsule 10 ml bottle 50 ml bottle 250 ml bottle	Pneumatic hydraulic sealant No fillers	Purple	14,000	-65°F to 300°F	Seals operating pressures to 10,000 psi	N	1.20	Agriculture Canada approved
549	54941	250 ml tube	Instant seal plastic gasket	Orange	10,000/ 35,000	-65°F to 300°F	Seals operating pressures to 10,000 psi	N	1.25	–
554	25882 55441	10 ml bottle 250 ml bottle	Refrigerant sealant High strength	Red	2,500	-65°F to 300°F	Seals operating pressures to 10,000 psi	N	1.02	–
564	28753 28754 28755	6 ml tube 50 ml tube 250 ml tube	General purpose	White	90,500	-65°F to 300°F	Seals operating pressures to 10,000 psi	N	1.17	CSA 3319-81, 3319-01
565	56507 56531 56541 56571 56543 56566	6 ml tube 50 ml tube 250 ml tube 300 ml cartdg. 1 liter bottle 10 liter bottle	Controlled strength	White	300,000	-65°F to 300°F	Seals operating pressures to 10,000 psi	N	1.10	CSA 3319-81, 3319-01 UL MH8007 (N) NSF/ANSI 61 ULC-Canada approved, Agriculture Canada approved
567	56707 56747 56765 26377 33241 56790	6 ml tube 50 ml tube 250 ml tube 300 ml cartdg. 16 oz. brush can 1 liter bottle	For stainless steel fittings	White	540,000	-65°F to 400°F	Seals operating pressures to 10,000 psi	N	1.14	UL MH8007 (N)
568	56841	250 ml tube	Plastic gasket	Orange	6,500	-65°F to 300°F	Seals operating pressures to 10,000 psi	N	1.12	–
569	56931 56941 56943	50 ml bottle 250 ml bottle 1 liter bottle	Original hydraulic sealant	Brown	400	-65°F to 300°F	Seals operating pressures to 10,000 psi	N	1.05	–
571	57141	250 ml bottle	Excellent solvent resistance	Brown	20,000	-65°F to 400°F	Seals operating pressures to 10,000 psi	N	1.10	–
572	21454	50 ml tube	Slow cure Low strength	White	17,000/ 50,000	-65°F to 300°F	Seals operating pressures to 10,000 psi	N	1.25	–
577	21456 21457	50 ml tube 250 ml tube	Medium strength Coarse threads	Yellow	24,000/ 80,000 Thixotropic	-65°F to 180°F	Seals operating pressures to 10,000 psi	N	1.09	UL MH8007 (N)
579	57941	250 ml tube	Low strength Instant Seal	Silver/ Brown	20,000	-65°F to 300°F	Seals operating pressures to 10,000 psi	N	1.10	–
580	58031	50 ml tube	Low halogen low sulfur thread sealant Teflon® free	White	600,000	-65°F to 400°F	Seals operating pressures to 10,000 psi	N	1.08	–
592	59214 59231 59241 59243	6 ml tube 50 ml tube 250 ml tube 1 liter bottle	Medium strength	White	350,000	-65°F to 400°F	Seals operating pressures to 10,000 psi	N	1.21	UL MH8007 (N)
5772	25524	50 ml bottle	Low halogen low sulfur medium strength fast cure	Yellow	7,500	-65°F to 300°F	Seals operating pressures to 10,000 psi	–	1.09	–

Indicates worldwide availability

PRE-APPLIED THREAD SEALANTS

503/503HV Vibra Seal®

White, low and high viscosity, water-based pre-applied sealants.

513 Dri-Seal®

A white, low viscosity compound with good cold-flow sealing properties. Prevents galling. Easy installation of aluminum parts and other soft metals, plastics, etc. NSF-61 certified for use in potable water applications.

516/517HV Vibra Seal®

Orange, low and high viscosity, water-based pre-applied sealants.

Brass Loc® 2020

Designed for sealing and locking brass fittings against a range of fluids and gases such as motor oils, glycol solutions, and air pressure.

PRE-APPLIED THREAD SEALANTS PROPERTIES CHART

PRODUCT	Item Number	Container	Typical Use	Color	Temperature Range	Lubricity	Reusable	Seal to Operating Presure	Key Specifications
503	25662 28264 25663	1 liter bottle 10 liter bottle 152 liter drum	General purpose Low viscosity	White	-65°F to 300°F	High	Yes	Seals instantly	NSF/ ANSI 61
503HV	28262 25664 25665	1 liter bottle 10 liter bottle 152 liter drum	General purpose High viscosity	White	-65°F to 400°F	High	Yes	Seals instantly	NSF/ ANSI 61
513 (Dri-Seal®)	51343 51391 51397	1 liter bottle 18 liter bottle 180 liter drum	Potable water (NSF/ANSI 61) High temperature	White	-65°F to 350°F	Med.	Yes	Seals instantly	–
516	25666 25667 25668	1 liter bottle 10 liter bottle 152 liter drum	General purpose High viscosity	Orange	-65°F to 300°F	High	Yes	Seals instantly	–
517HV	25669 25670	10 liter bottle 152 liter drum	General purpose Low viscosity	Orange	-65°F to 300°F	High	Yes	Seals instantly	–
2020	30176 30177	Kit 40 lb. pail	Brass fittings Provides some threadlocking strength	Purple	-65°F to 300°F	High	Yes	Seals instantly	–

Indicates worldwide availability

Loctite® Pre-Applied Thread Sealants are applied to threaded metal pipes and fittings by authorized converters throughout North America. For the name of your nearest converter, call: 1-800-LOCTITE, hit menu item (1) 3-times, then ext. 2630.

Loctite® Pre-Applied Thread Sealants are approved to numerous industry specifications. Contact Loctite at 1-800-LOCTITE, hit menu item (1) 3-times, then ext. 2630 for more information.

Or visit our web site at:
www.loctite.com
Or e-mail us at:
threadlocker@loctite.com

Whether a liquid, foam, aerosol, or gel, you'll find the right product for your bonding need in the extensive family of Loctite® adhesives. These instant, acrylic, and rubber-based adhesives, provide an endless combination of cure speed, impact resistance, strength, temperature range, and solvent resistance to meet tough on-the-job requirements.

ADHESIVES

330 Depend® Adhesive

Depend® 330 sets in just minutes to a tough acrylic adhesive with high peel and impact strength. Bonds almost all combinations of materials, including glass. No-mix kit includes activator and adhesive.

380 Black Max® Instant Adhesive

For parts that encounter shock, vibration, or thermal cycling, 380 is the instant adhesive choice. This black, toughened cyanoacrylate adhesive uses elastomers to withstand impact and challenging environmental conditions. Seals as well as bonds.

404 Quick Set™ Instant Adhesive

This general-purpose Quick Set™ instant adhesive liquid is the one everyone needs in their toolbox for general maintenance and repair. It sets instantly. No clamping, no mixing, no waiting. Keep it handy to bond just about anything in an instant.

454 Prism® Instant Adhesive

The ideal adhesive for porous substrates, 454 is a clear gel adhesive. As a surface insensitive cyanoacrylate, it is ideal for difficult-to-bond substrates, including rough, porous, and acidic surfaces. Need to bond something on a vertical surface? This gel formulation won't run off before you put substrates together.

Black Contact Adhesive

A professional contact adhesive that blends with black-colored moldings and weatherstripping materials. Withstands temperature extremes and is resistant to gasoline, kerosene, and other solvents. Fast drying, waterproof.

Contact Adhesive

Fast-drying, neoprene-based adhesive bonds rubber, insulation, weatherstripping, and other porous materials. Sets to a tack-free surface in 3-4 minutes. Allows repositioning of parts after initial contact. Withstands freezing temperatures.

All-Purpose Spray Adhesive

Bonds lightweight, porous, and non-porous surfaces. Allows repositionable and permanent bonds. Fast drying; won't shrink or bleed. Resists water and humidity. Contains no ozone-depleting compounds.

Max Strength Spray Adhesive

Max Strength Spray Adhesive is a high-strength product designed for bonding foam, carpet, fabrics, plastics, rubber, etc. Max Strength Spray Adhesive is resistant to extreme weather conditions, is water-resistant, and sprays on clear.

PROPERTIES CHART

PRODUCT	Item Number	Container	Temperature Resistance	Adhesive Appearance	Common Surfaces Adhesive Will Bond	Bond Time*	Key Specifications
330 Depend® No-Mix Adhesive	20251 20252	Kit - 25 ml syr. applicator 25 gm aerosol activator Kit - 250 ml tube 4.5 oz. aerosol activator	-60° to 250°F (-51° to 121°C)	Amber liquid	Glass, wood, metal, concrete, ceramic, rubber	Set-up - 1-2 minutes Full Strength - 24 hours	–
380 Black Max® Instant Adhesive	38004 38050	3 gm net wt. tube 1 oz. net wt. bottle	-65° to 225°F (-54° to 107°C)	Black liquid	Metal, plastic, rubber	Set-up - 90-150 seconds Full Strength - 24 hours	–
404 Quick Set™ Instant Adhesive	46551 46548	1/3 oz. net wt. bottle 4 oz. net wt. bottle	-65° to 180°F (-54° to 106°C)	Clear liquid	Metal, plastic, rubber	Set-up - 20-40 seconds Full Strength - 24 hours	AA-3097
454 Prism® Instant Adhesive Gel	45404 45440	3 gm net wt. tube 20 gm net wt. tube	-65° to 180°F (-54° to 106°C)	Clear gel	Metal, plastic, rubber, cork, cardboard, leather	Set-up - 15-90 seconds Full Strength - 24 hours	–
Contact Adhesive	30537	5 fl. oz. tube, box	180°F	Thick yellow liquid	Weatherstripping, vinyl, rubber, wood, metal	Let dry 3-4 min. before assembly. Sets on contact.	–
Black Contact Adhesive	30540	5 fl. oz. tube, box	180°F	Thick black liquid	Weatherstripping, vinyl, rubber, wood, metal	Let dry 3-4 min. before assembly. Sets on contact.	–
All-Purpose Spray Adhesive	30544	10.5 oz. net wt. aerosol	100° to 120°F (38° to 49°C)	Clear-drying semi-translucent foam	Lightweight porous and non-porous materials	Let dry 15-20 min. before assembly. Sets on contact.	–
Max Strength Spray Adhesive	30568	16.75 oz. net wt. aerosol	100° to 120°F (38° to 49°C)	Clear-drying semi-translucent foam	Foam, carpet, fabrics, plastics rubber	Let dry 15-20 min. before assembly. Sets on contact.	–

* Times are based on bonding steel to steel parts.

For technical information and/or product availability, call: 1-800-LOCTITE (562-8483) or visit us on the web at:

www.loctite.com

Loctite® anti-seize compounds are a group of premium quality products, developed to protect metal parts from rust, corrosion, galling, and seizing. They ease assembly and disassembly of slip-fit, press-fit, and threaded joints and reduce friction and wear on critical operating equipment. Formulated for severe industrial environments, these products protect against high temperatures, heavy loads, chemicals, pounding, and vibration.

ANTI-SEIZE

C5-A® Copper Based 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 1800°F (982°C). Tested to MIL-PRF-907-E.

Silver Grade Anti-Seize

Heavy-duty, temperature-resistant, petroleum-based lubricant compound fortified with graphite and metallic flake. Inert, will not evaporate or harden in extreme cold or heat. For use in assemblies up to 1600°F (871°C).

Nickel Anti-Seize

Copper-free. Recommended for stainless steel and other metal fittings. For preventing corrosion, seizing, and galling in harsh, chemical environments, and temperatures to 2400°F (1315°C).

Heavy Duty Anti-Seize

Metal-free. Excellent lubricity. Provides outstanding lubrication to all metals including stainless steel, aluminum, and soft metals up to 2400°F (1315°C).

Moly Paste

Very low friction. Lubricates press fits, protects during break-in and under high static loads up to 750°F (400°C). Allows maximum clamping from available torque.

Marine Grade Anti-Seize

Formulated to protect assemblies exposed directly or indirectly to fresh and salt water, Marine Grade Anti-Seize works especially well in high humidity conditions. It has excellent lubricity, superior water wash-out and water spray resistance, and prevents galvanic corrosion. Protects in temperatures from -29°C to 1315°C (120°F to 2400°F). Approved by the American Bureau of Shipping.

Graphite-50 Anti-Seize

Electrically conductive, non-metallic. Temperature resistant up to 900°F (482°C). Highly electrically conductive in metal-to-metal joints.

Moly-50 Anti-Seize

General-purpose, thread lubricant. Temperature resistant to 750°F (400°C). Provides excellent lubricity. Meets the performance requirements of MIL-PRF-83483.

Zinc Anti-Seize

Protects aluminum and ferrous surfaces from seizure and corrosion up to 750°F (400°C). Tested to AA 59313.

Food Grade Anti-Seize

Prevents seizure, galling, and friction in stainless steel and other metal parts up to 750°F (400°C).

N-1000 High Purity Anti-Seize

Certified pure. Copper-based. Suitable for critical, long-term, stainless steel applications and high-nickel, alloy bolting. Recommended for protecting Class 2 and 3 power plant hardware. Temperature resistant to 1800°F (982°C).

N-5000 High Purity Anti-Seize

Nickel-based. Lubricates and protects Class 1, 2 and 3 power plant hardware. Recommended for highly corrosive environments to 2400°F (1315°C).

High Performance N-5000 High Purity Anti-Seize

Nickel-based. Maximum lubricating and anti-seize properties for Class 1, 2 and 3 power plant hardware. Temperature resistant to 2400°F (1315°C).

N-7000 High Purity Anti-Seize

Metal-free formulation provides high levels of purity and excellent lubricating properties. For Class 1, 2 and 3 power plant hardware. Temperature resistant to 2400°F (1315°C).

White Hi-Temp Anti-Seize

A general purpose non-metallic formulation that protects against high temperature seizing and galling of mated metal parts, up to 2000°F (1093°C). White in color, it has excellent lubricity and can be used on various metals such as copper, brass, cast iron, steel, and all alloys including stainless steel.

Torque guide

Proper clamp load is an essential part of any bolted assembly for trouble-free operations. Torquing either nut or bolt creates the clamp load. An anti-seize lubricant used on a bolt helps to develop greater clamp load for the same torque compared to an unlubricated bolt. An additional benefit is greater uniformity in clamp load among a series of bolts. The relationship between torque and clamp load is expressed in the following equation:

Where:

T = KFD
T = Torque (in-lb, ft-lb, N-m)
F = Clamp Load (lb, N)
D = Nominal diameter of bolt (in, ft, m)
K = Torque coefficient or nut factor, determined experimentally

K Factors: K factors are obtained on Grade 8, ½" steel bolts and grade 5 nuts by a test procedure which measures torque tension properties. Lubricant was applied to the bolt threads and both faces of the washer.

See the Properties Chart for the torque coefficient or K value for the anti-seize compounds.

Loctite believes that this data fairly represents performance to be expected. However, Loctite makes no warranty of specific performance on any individual fastener. In critical applications, it is necessary to determine K values independently.

Note: There are two "coefficients" used to express the relationship between torque and tension: torque coefficient (also called "nut factor") is the most commonly used. A different concept is the "friction coefficient," which has value 2/3 (or 67%) of the torque coefficient.

PROPERTIES CHART

PRODUCT	Item Number	Container	Temperature Resistance	Color	K Value
C5-A® Copper Based Anti-Seize	51299 51277 51001 51002 51144 51147 51005 51003 51004 51006 51007 51008 51009 51010 51011 51146	2 gm pouch 7 gm pouch 1 oz. tube 4 oz. tube 4 oz. brush-top can 8 oz. brush-top can 10 oz. brush-top can 12 oz. aerosol 13 oz. cartridge 1 lb. can 1 lb. brush-top can 2.5 lb. can 8 lb. can 25 lb. can 42 lb. pail 425 lb. drum	1800° F (982°C)	Copper	0.16
Silver Grade Anti-Seize	80209 76732 76759 76764 80206 76775	4 oz. brush-top can 8 oz. brush-top can 12 oz. aerosol 1 lb. brush-top can 1 gal. can 5 gal. pail	1600°F (871°C)	Silver	0.18
Nickel Anti-Seize	77124 51286 51102 77164 51152 77175	8 oz. brush-top can 12 oz. aerosol 1 lb. can 1 lb. brush-top can 8 lb. can 5 gal. pail	2400°F (1315°C)	Silver	0.13
Moly-50 Anti-Seize	51094	1 lb. can	750°F (400°C)	Black	0.13
Zinc Anti-Seize	39901	1 lb. can	750°F (400°C)	Grey	0.15
Graphite-50 Anti-Seize	51084	1 lb. can	900°F (482°C)	Black	0.13
Heavy Duty Anti-Seize	51609 51605 51606 51607 51608	1 oz. tube 9 oz. brush-top can 1 lb. brush-top can 2 lb. can 45 lb. pail	2400°F (1315°C)	Black	0.16
Marine Grade Anti-Seize	34395 34026	8 oz. brush-top can 16 oz. brush-top can	2400°F (1315°C)	Black	0.18
Moly Paste	51050 51048 51049 51145	12 oz. aerosol 8 oz. brush-top can 1 lb. can 15 lb. can	750°F (400°C)	Black	0.11
Food Grade Anti-Seize	51168 51170 51171	8 oz. brush-top can 2 lb. can 40 lb. pail	750°F (400°C)	White	0.13
White Hi-Temp Anti-Seize	34517 34518	8 oz. brush-top can 16 oz. brush-top can	2000°F (1093°C)	White	0.16
N-1000 Anti-Seize	51115 51116 51117	8 oz. brush-top can 1 lb. can 2 lb. can	1800°F (982°C)	Copper	0.17
N-5000 Anti-Seize	51346 51243 51269 51246 51245	1 oz. tube 8 oz. brush-top can 1 lb. brush-top can 2 lb. can 8 lb. can	2400°F (1315°C)	Silver	0.15
High Performance N-5000 Anti-Seize	51572	1 lb. brush-top can	2400°F (1315°C)	Silver	0.15
N-7000 Anti-Seize	51272 51270 51273	8 oz. brush-top can 1 lb. brush-top can 2 lb. can	2400°F (1315°C)	Silver	0.16

APPLICATION SELECTION GUIDE

PRODUCT	Maximum Anti-Seize Properties	General Purpose Anti-Seize	Extreme High Temperature Resistance (to 2000–2400°F)	High Temperature Resistance (to 1600°F–1800°F)	Extreme Chemical Resistance	For Maximum Lubricity	Electrically Conductive	For Aluminum/Soft Metals	For Stainless Steel	Copper-free Formulation	For Low Speeds, High Loads	High Purity	Metal Free	Water Applications
C5-A® Copper Based Anti-Seize	◒	●		●			◒	◒	◒					
Silver Grade Anti-Seize	◒	◒		●			◒	◒	◒					
Nickel Anti-Seize	◒		●		●		◒		◒	●				
Moly-50 Anti-Seize	○					◒			●	●	◒		●	
Zinc Anti-Seize	○						○	●	◒					
Graphite-50 Anti-Seize	○	○			◒		●	◒		●			●	
Heavy Duty Anti-Seize	●		●		◒		◒	◒	●	●			●	
Marine Grade Anti-Seize	●		●						●	●			●	●
Moly Paste	○					●			●	●	●		●	
Food Grade Anti-Seize	○							◒	●	●			●	
White High Temp Anti-Seize	◒	●	●					◒	◒	●			●	
N-1000 Anti-Seize	◒						◒		◒			●		
N-5000 Anti-Seize	◒		●		●		◒		◒	●		●		
High Performance N-5000 Anti-Seize	●		●		●	●	◒		◒	●		●		
N-7000 Anti-Seize	●		●		◒		◒		◒	●		●	●	

● Preferred Choice ◒ Good Choice ○ Acceptable Choice

Big Foot™ epoxy flooring products provide tough, long-lasting anti-skid surfaces for added safety. Easily applied to potentially hazardous surfaces, Big Foot coatings stand up to heavy traffic and harsh environments.

ANTI-SLIP COATINGS

Big Foot™ Low Profile Pedestrian Grade

A two-component, water-borne epoxy for recreation and bare foot traffic areas.

Big Foot™ Heavy Duty Pedestrian Grade

For areas with heavy pedestrian or light rolling traffic. Ideal for ramps, walkways, locker rooms, stairs, and assembly areas.

Big Foot™ Acrylic Pedestrian Grade

A single-component, elastomeric, anti-slip floor and deck coating for optimum adhesion to asphalt and flexible applications.

Big Foot™ Vehicular Grade

Withstands even the heaviest rolling equipment traffic. Resists liquids as harsh as jet fuels and hydraulic fluids. Superior adhesion forms a solid bond to metal, concrete, and wood.

Big Foot™ Zero V.O.C.

This 100% reactive, solvent-free epoxy has the most aggressive profile in the Big Foot line. Use in odor-sensitive areas such as wineries, food processing plants, hospitals, or for confined spaces.

Big Foot™ Glow Coat

A unique, glow-in-the-dark formula gives off a luminescent glow in total darkness for up to four hours after only a few seconds of exposure to artificial light. For indoor use only.

Big Foot™ Metal Primer

Two-component, epoxy-polyamide primer increases adhesion between Big Foot anti-slip coatings and metal surfaces.

Big Foot™ Acrylic Primer

A single-component, clear, zero V.O.C., water-based primer designed for use with Big Foot™ Acrylic Pedestrian Grade coating.

Big Foot™ Primer/Sealer

Specially formulated to increase adhesion and coverage of all Big Foot anti-slip coatings. For use on concrete, wood, tile, and other porous substrates. Water-based.

PROPERTIES CHART

PRODUCT	Item Number	Container	Coverage	Color	Mixed viscosity, cP	Maximum temperature, °F	Working time, minutes	Functional cure, hours*	Mix ratio by weight, r:h
Big Foot™ Low Profile Pedestrian Grade	95631 95641	1 gal. kit 1 gal. kit	90 ft²	Black Grey	–	140	60	24/72	N/A
Big Foot™ Heavy Duty Pedestrian Grade	96211 96261 96215 96265	1 gal. can 1 gal. can 5 gal. pail 5 gal. pail	50 ft² per gallon	Black Grey Black Grey	12,500	140	N/A	12/72	N/A
Big Foot™ Acrylic Pedestrian Grade	95591	1 gal. pail	70 ft²	Grey	–	140	N/A	4/24	N/A
Big Foot™ Vehicular Grade	96221 96251 33957 96225 96255	1 gal. kit 1 gal. kit 5 gal. kit 5 gal. kit 5 gal. kit	40 ft² per gallon	Black Grey Tile red Black Grey	11,000	140	120	12/72	18:1
Big Foot™ Zero V.O.C.	96231 39915 96235 96245	1 gal. kit 1 gal. kit 5 gal. kit 5 gal. kit	35 ft² per gallon	Black Grey Black Grey	10,000	140	60	24/72	8.5:1
Big Foot™ Glow Coat	96271	1 gal. can	70 ft²	Luminescent	10,000	140	N/A	4/24	N/A
Big Foot™ Metal Primer	96132	1 gal. kit	250 ft²	Clear	3,000	140	240	1-2	5.25:1
Big Foot™ Acrylic Primer	95581	1 gal. pail	250 ft²	Clear	–	140	N/A	1-2	N/A
Big Foot™ Primer Sealer	94142	1 gal. kit	320 ft²	Clear	500	140	120	3-6	6.5:1

*Cure time is for light pedestrian/heavy pedestrian traffic. Values are temperture and thickness specific.

APPLICATION SELECTION GUIDE

PRODUCT	Asphalt	Wood	Concrete	Metal	Flexible coating	Weather resistant	Water-based	Chemical resistant	Anti-slip pedestrian	Anti-slip vehicular	Anti-slip Zero V.O.C.	Anti-slip glow in the dark
Big Foot™ Low Profile Pedestrian Grade		●	●	●			●	◓	●			
Big Foot™ Heavy Duty Pedestrian Grade		●	●	●				●	●	◓		
Big Foot™ Acrylic Pedestrian Grade	●	●	●	●	●	●			●			
Big Foot™ Vehicular Grade		●	●	●				●	◓	●		
Big Foot™ Zero V.O.C.		●	●	●				●	◓	◓	●	
Big Foot™ Glow Coat	●	●	●	●			●	◓	◓	◓		●

● Preferred choice ◓ Good choice

BIG FOOT™ ACCESSORIES SELECTION GUIDE

PRODUCT	Item Number	Quantity	
Phenolic Rollers	96121	4/case	For use with Big Foot™ Heavy Duty, Low Profile and Acrylic Pedestrian Grade, Vehicular and Zero V.O.C. Grades
Bristle Rollers	96153	2/case	For use with Big Foot™ Glow Coat, Acrylic Pedestrian Grade Primer, Metal Primer and Primer Sealer
Mixer Blades	96131	1/case	For use with all Big Foot™ coatings

Fixmaster® belt repair products are tough urethanes designed to repair conveyor belts and other damaged rubber equipment quickly and easily. Durable, flexible repairs can be performed using formulas for temporary or lasting wear.

Fixmaster® urethanes are two-component, repair materials that can be troweled, cast, or brush-applied to rebuild or protect critical operating equipment. Tough, rubber-like properties provide protection from impact, abrasion, and corrosion. Fixmaster® urethanes are non-shrinking and unaffected by oil, grease, and water. Use of the recommended accessory products ensures maximum adhesion and product reliability.

BELT REPAIR/ URETHANES

Fixmaster® Rapid Rubber Repair Urethane

Our premium-quality, belt repair product is designed to repair conveyor belts and other damaged rubber equipment quickly and easily. Repairs will have the same durability and flexibility as the belt. The 400 ml cartridge requires the use of a Rapid Rubber Repair Gun. Also available in a kit with etching agent, cleaner, and accelerator.

Fixmaster® Instant Belt Repair

A single-component, heat-curing material for fast, temporary belt repairs. Requires no priming. Equipment can be operated in 30 minutes.

Fixmaster® Flex Conveyor Belt Repair Kit

Makes long-lasting belt repairs. Recommended for applications where speed of application is not critical. Cures in 8-12 hours.

Fixmaster® Flex Brushable

This two-part urethane brushes on to form abrasion and impact-resistant linings.

Fixmaster® Flex 80 Liquid

A castable, two-part urethane for making molds, fixtures, expansion joints, and non-scratching holding fixtures.

Fixmaster® Flex 80 Putty

A trowelable, two-part urethane for rebuilding and repairing rubber parts and linings, providing impact, abrasion, and corrosion-resistant protection.

ACCESSORIES CHART

PRODUCT	Item Number	Container	Coverage	Color
Flex Rubber Primer Promotes adhesion to rubber and flexible parts	98468	2.4 fl. oz. can	Approx. 1 can of each product for 2 lbs. of urethane	Clear
Flex Metal Primer Promotes adhesion to metal parts	98471	3.3 fl. oz. can		Clear
Etching Agent Enhances bonds to rubber	99626	3 fl. oz. bottle		Clear
Flex Accelerator Speeds the cure of Flex urethanes	97273	3.5 fl. oz. can		Clear
Flex Cleaner Cleans and primes surfaces	39636	4 fl. oz. can	N/A	Clear

PROPERTIES CHART

PRODUCT	Item Number	Container	Coverage, in.² @ 1/4" Thickness	Color	Maximum Operating Temperature, °F	Adhesive Tensile Strength, psi	% Elongation	Hardness (Shore A)	Working Time, Minutes	Functional Cure, Hours	Mix Ratio by Volume, r : h	Mix Ratio by Weight, r : h
Rapid Rubber Repair Urethane	96673 96671 96672	400 ml kit 400 ml cartridge 150 ml coaxial cartridge	88 33	Black	180	1,300	360	82	1	2	1:1	N/A
Instant Belt Repair	97033	1 lb.	115	Yellow	150	175	650	65	N/A	30 min.	N/A	N/A
Flex Conveyor Belt Repair Kit	98693	1 lb. kit	94	Black	180	1,500	350	87	10	8	100:40	72:28
Flex Brushable	97401	1 lb. kit	2160 @ 20 mls.	Black	180	2,200	140	96	10	6	8.4:1	9:1
Flex 80 Liquid	97413 97412	1 lb. kit 6 lb. kit	27 in.³ 162 in.³	Black	180	1,800	350	87	20	8	100:13.3	77:23
Flex 80 Putty	97423 97422	1 lb. kit 6 lb. kit	94 564	Black	180	1,500	350	87	10	8	100:40	72:28
Rapid Rubber Repair Gun	39635	Required for use with 400 ml Rapid Rubber Repair Urethane										
Rapid Rubber Repair Static Mixers	39633	Packaged 6/bag - for mixing and dispensing Rapid Rubber Repair Urethane in 400 ml cartridge										

Properties based on mixing one lb. unit at 77°F, 7 days cure.

APPLICATION SELECTION GUIDE

PRODUCT	Casting Molds, Fixtures, Parts	Conveyor Belt Repair: Long Term	Conveyor Belt Repair: Temporary	Coating Impellers, Feeder Bowls	Chutes, Hoppers, Deflection Plates	Rebuilding Rubber Parts	Lining Pumps	Forming Expansion Joints
Rapid Rubber Repair Urethane		●					◒	◒
Instant Belt Repair			●					
Flex Conveyor Belt Repair		◒						
Flex Brushable				●	◒	●	●	
Flex 80 Liquid	●			◒				●
Flex 80 Putty	◒				●	●	●	

● Preferred Choice ◒ Good Choice

Loctite offers a complete line of highly effective general-purpose or application-specific cleaners and degreasers. Included are both aqueous and solvent-based products, all of which are free of Class I ozone-depleting compounds.

CLEANERS

Natural Blue® Cleaner & Degreaser

Biodegradable, all-purpose, industrial-strength, concentrated cleaner and degreaser. Can be economically diluted with water. Natural Blue is formulated for wipe down, pressure spraying, and immersion cleaning processes – at room temperature or heated. Pine-scented, non-flammable and non-toxic. Contains no ODCs.

Fragrance-Free Natural Blue® Cleaner & Degreaser

Same product as Natural Blue but without the fragrance. It can be used in all departments of a food processing plant. Contains no ODCs.

ODC-Free Cleaner & Degreaser (Naphtha)

A non-aqueous, hydrocarbon-based solvent designed for cleaning and degreasing surfaces to be bonded with adhesives, as well as for general-purpose industrial cleaning. Safe on aluminum, rubber, and most plastics, and will not cause flash rusting on water-sensitive parts. Dries residue free. Contains no ozone-depleting compounds. (Formerly referenced as 7070.)

Aqua Power™ Cleaner & Degreaser

Penetrates, dissolves, and removes dirt and oil. Fast drying and residue-free. Environmentally friendly product is biodegradable, has low toxicity, no ODCs and is non-corrosive/non-caustic.

Non-Chlorinated Parts Cleaner

Penetrates, dissolves, and removes dirt and oil from metal parts. Leaves no residue. Does not contain 1,1,1-trichloroethane; helps manage EPA halide limits.

Pro Strength Degreaser

Quickly dissolves and removes grease, oil, and dirt from: iron, steel, aluminum, magnesium, copper, rubber, plastic, and concrete. Rinses off with water.

Pro Strength Parts Cleaner

Aggressively penetrates, dissolves, and removes oil and grease from parts. Dries quickly with no residue. Contains no ODCs.

Pro Strength Varnish Remover

Super jet spray quickly cuts and removes grease, gum, and varnish from chokes, baffle plates, and carburetor linkage. Improves performance and fuel efficiency.

Electrical Contact & Parts Cleaner

Fast-evaporating cleaner removes grease, oil, and other contaminants from electrical parts and mechanical equipment. Contains no CFCs or HCFCs and is safe on most plastics. Non-conductive, non-corrosive.

Non-Flammable Electrical Contact Cleaner

Removes grease, oil, and other contaminants from electrical parts to prevent contact failure. Dries residue-free in seconds. Non-conductive, non-corrosive, non-flammable. Contains no CFCs or Class I ODCs. Contains HCFC-141 b. May attack some sensitive plastics.

Chisel® Gasket Remover (Methylene Chloride)

Removes gaskets from any type of assembly in 10 to 15 minutes. Prepares metal parts for new gaskets, eliminating scraping and sanding. Works on wood; non-corrosive on aluminum. Not for use on plastics, linoleum, or synthetic fibers.

Chisel® MC-Free Gasket Remover

Free of Methylene Chloride, Chisel® MC-FREE Gasket Remover has a foaming action that lifts off gaskets from any type of assembly in minutes. Performs better than Methylene Chloride formulations on silicone gaskets and removes most spray paints from steel panels in less than 30 seconds. Convenient spray liquid penetrates and cleans intricate shapes and will not run off, even on vertical surfaces. Suitable for wood and plaster. Not for use on plastics, linoleum, or synthetic fibers.

Multi-Purpose Glass Cleaner

Fast-acting, professional-strength cleaner removes tough grease and dirt from glass, chrome, aluminum, stainless steel, and enamel finishes. Orange-scented formula will not run or streak. Contains no ODCs.

Plastic Cleaner

Cleans and polishes acrylic plastic surfaces, fiberglass, formica, enameled surfaces, ceramics, stainless steel, and glass – all without scratching. Removes dirt, grease, and stains. Forms a water-repellant, anti-static shield which resists fogging. Contains no ODCs.

Paint Stripper

Quickly strips and removes paint. Eliminates sanding and scraping. Works in 10-15 minutes at temperatures from -40°F to 100°F. Contains no ODCs.

CLEANER PRODUCTS APPLICATION CHART

PRODUCT	Function	Application
Natural Blue® Cleaner & Degreaser	Removes grease, grime, oil, soot, cutting fluids, mildew, stains, light carbon, animal fat, polishing compounds and ink.	Cleans engine parts, ovens, exhaust hoods, drilling rigs. Can be diluted for general wipe down cleaning. Formulated for pressure spraying and immersion cleaning processes, at room temperature or heated.
Fragrance-Free Natural Blue® Cleaner & Degreaser	Removes grease, grime, oil, soot, cutting fluids, mildew, stains, light carbon, animal fat, polishing compounds and ink, without added fragrance.	Exhaust hoods, machinery, tanks, motors, concrete floors, asphalt, walls, floors, carpets, valves, equipment, vehicles, compressors, exterior siding, engines, bearings.
Aqua Power™ Cleaner & Degreaser	Biodegradable cleaner for removing oil, grease, asphalt.	All-purpose metal parts cleaner.
ODC-Free Cleaner & Degreaser	Removes grease, oil, lubrication fluids, metal cuttings and fines from parts, equipment and machinery.	Use as a spray or in immersion cleaning processes, at room temperature or heated. Recommended as a final pre-assembly cleaning treatment for all surfaces bonded with adhesives.
Non-Chlorinated Parts Cleaner	Cleaner for removing oil, grease, and asphalt with no chlorinated solvent run-off.	All-purpose metal parts cleaner. Ideal for aluminum surfaces.
Pro Strength Degreaser	Self-emulsifying degreaser that quickly cuts and removes grease, oil, and dirt, as well as inhibiting rust and corrosion.	Cleaning and degreasing industrial and farm equipment, lawn mowers, garage floors, tools.
Pro Strength Parts Cleaner	Removes oil, grease, brake fluids, oxidized oils (gum), and asphalt. Penetrates through dirt and corrosion and flushes them away.	All-purpose metal parts cleaner.
Pro Strength Varnish Remover	Dissolves and cleans residue deposited during normal operation of gasoline engine powered equipment.	Carburetors, chokes, linkages, heat risers, PCV valves, metal parts, industrial equipment.
Electrical Contact & Parts Cleaner	Removes grease, dirt, oil, flux, and surface contaminants from sensitive electrical/electronic devices. Also used for equipment requiring non-conductive, low residue degreasing agents.	Switches, relays, motor controls, pc boards, connectors, tape heads, sensors, control panels, electrically driven equipment, general parts degreasing.
Multi-Purpose Glass Cleaner	Deodorizes and cleans window film.	Glass, chrome, aluminum, stainless steel and enamel finishes, plastics.
Non-Flammable Electrical Contact Cleaner	Removes grease, dirt, oil, flux, and surface contaminants from sensitive electrical/electronic devices. Also used for equipment requiring non-conductive, low residue degreasing agents. Contains HCFC-141b.	Switches, relays, motor controls, pc boards, connectors, tape heads, sensors, control panels, electrically driven equipment.
Paint Stripper	Removes paint, varnish, and glues from metal, wood, and plaster.	Cleaning paint spills, removing various types of paint, contact cements, glues, floor lines, decals and labels.
Plastic Cleaner	Cleans and polishes acrylic plastic surfaces.	Plastic windows, canopies, instrument covers, goggles, lenses, helmets, boat and aircraft windshields, fiberglass.
Chisel® Gasket Remover	Removes pre-cut conventional gasket cements as well as formed-in-place chemical gaskets.	Removing silicones, baked-on gaskets, gaskets from aluminum and small, difficult-to-reach components, weatherstrip adhesive, dried oil, grease, paint, varnish.
Chisel® MC-Free Gasket Remover	Removes pre-cut conventional gasket cements as well as formed-in-place chemical gaskets.	Removing silicones, baked-on gaskets, gaskets from aluminum and small, difficult-to-reach components, weatherstrip adhesive, dried oil, grease, paint, varnish.

PROPERTIES CHART

PRODUCT	Item Number	Container	Drying Time	Residue/ Rinsibility	Odor
Natural Blue® Cleaner & Degreaser	82244 82249 82251 82253 82254 82255	4 fl. oz. bottle 24 fl. oz. spray bottle 1 gal. bottle 5 gal. pail 15 gal. pail 55 gal. drum	Equivalent to the evaporation rate of water. Wiping or blowers will accelerate dry time.	Rinses residue free with water	Pine scent
Fragrance-Free Natural Blue® Cleaner & Degreaser	23811 20279	1 gal. bottle 55 gal. drum	Equivalent to the evaporation rate of water. Wiping or blowers will accelerate dry time.	Rinses residue free with water	Fragrance free
Aqua Power™ Cleaner & Degreaser	30565	17 oz. net wt. aerosol	5-15 minutes	No rinse and no residue	Mild solvent
ODC-Free Cleaner & Degreaser	22355 20162 20260	15 oz. net wt. aerosol 16 fl. oz. pump spray 1 gal. can	5-20 minutes (without wipe) 1-2 minutes (with wipe)	No rinse and no residue	Mild citrus
Non-Chlorinated Parts Cleaner	30545	14.75 oz. net wt. aerosol	5-15 minutes	No rinse and no residue	Mild solvent
Pro Strength Degreaser	30521	15 oz. net wt. aerosol	Leave on surface 10 minutes	Rinses clean	Mild solvent
Pro Strength Parts Cleaner	30548	19 oz. net wt. aerosol	5-15 minutes	No rinse and no residue	Mild solvent
Pro Strength Varnish Remover	30529	12 oz. net wt. aerosol	5 minutes	No rinse and no residue	Aromatic
Electrical Contact & Parts Cleaner	25791	11 oz. net wt. aerosol	<30 seconds	No rinse and No residue	Mild solvent
Multi-Purpose Glass Cleaner	30546	18.75 oz. net wt. aerosol	Wipes dry	No residue, wipes clean	Orange scent
Non-Flammable Electrical Contact Cleaner	24379	15 oz. net wt. aerosol	<30 seconds	No rinse and No residue	Mild solvent
Paint Stripper	81716	18 oz. net wt. aerosol	10 minutes	Rinses residue free with water	Acrid
Plastic Cleaner	30559	16 fl. oz. can	<4 minutes	Water-repellent anti-static shield, wipes clean	Mild petroleum
Chisel® Gasket Remover	79040	18 oz. net wt. aerosol	Leave on surface 10-15 minutes. Wipe/scrape clean	Waxy residue	Mild solvent
Chisel® MC-Free Gasket Remover	34663	15.25 oz. net wt. aerosol	Leave on surface 5-10 minutes. Wipe/scrape clean	Oily residue	Solvent

Loctite offers a variety of coatings to protect, seal, insulate, prevent corrosion, color code and add gripping power. Many products provide excellent resistance to acids, alkalis, salt and moisture that can damage equipment.

COATINGS

Color Guard®
Tough Rubber Coating

Inhibits rust and corrosion; seals, insulates, and identifies almost any material in minutes. Creates a non-slip gripping surface. Rubber coating won't crack or chip. Acid and alkali resistant. Lasts for years. Use to 200°F. Dip, spray, or brush to apply. Suggested applications include: tools, metal, electrical connections, masonry, wood, conveyors, glass, rope, fabric.

Belt Dressing & Conditioner

Extends belt life. Penetrates the cord fibers of "V" belts to restore pliability and flexibility. Prevents belt slippage due to heat, cold, dampness, and dust. Eliminates squeaking and glazing.

Extend® Rust Treatment

One-step rust treatment goes on white and converts rust to a durable, black, metal-protective coating in 10 minutes. Wirebrush parts and apply with brush or spray. Surface rust must be present. Use as a primer or finish coat. Resists temperatures to 250°F intermittent, 200°F continuous.

Rubberized Undercoating

This heavy-duty undercoating seals, protects, and insulates. Rubberized for maximum durability.

Maxi-Coat

Heavy-duty coating provides long-term protection for metal parts, equipment, and machinery. Forms a protective, waxy film which seals out moisture, air, acid, and other corrosive elements. Great for protecting parts in storage. Removable.

Cold Galvanizing Compound

Sprays on metal surfaces to prevent corrosion even when surface is scratched. Ideal touch-up for welded seams. Highly resistant to salt corrosion and water. Not resistant to acid or alkaline solutions. Contains no ozone-depleting compounds.

PROPERTIES CHART

PRODUCT	Item Number	Container	Coating Appearance	Coating Thickness	Dry Time	Temperature Resistance	Moisture Resistance	Salt Spray Test	Accelerated Weather Test
Color Guard® Tough Rubber Coating	34894 81812 81808 34895 81814 81810 34896 81811 81807 34897 81813 81809	11 oz. aerosol 14.5 fl. oz. can 1 gal. can 11 oz. aerosol 14.5 fl. oz. can 1 gal. can 11 oz. aerosol 14.5 fl. oz. can 1 gal. can 11 oz. aerosol 14.5 fl. oz. can 1 gal. can	Black Black Black Blue Blue Blue Red Red Red Yellow Yellow Yellow	1 dip: 8-10 mil 1 Spray: 3-5 mil	4 hours (allow 30 minutes between coats)	-30°F to 200°F	Excellent/ ASTM E-96	Passed 1000 hours/ ASTM B-117	10 years with slight loss of thickness/ ASTM G-53-84
Primer for Color Guard® Tough Rubber Coating	81857	1 gal. can	Grey	.5-1 mil	10-15 minutes	–	–	–	–
Thinner for Color Guard® Tough Rubber Coating	81835	1 gal. can	–	–	–	–	–	–	–

PROPERTIES CHART

PRODUCT	Item Number	Container	Coating Appearance	Dry Time	Temperature Resistance	Key Specifications
Belt Dressing & Conditioner	30527	12 oz. net wt. aerosol	White	N/A	Up to 200°F (93°C)	–
Extend® Rust Treatment	30539 75430 75448 75465	10.5 oz. net wt. aerosol 1 qt. bottle 1 gal. bottle 5 gal. pail	Converts from a white liquid to a black coating	30 minutes to touch	Up to 250°F (121°C)	–
Rubberized Undercoating	30538	16 oz. net wt. aerosol	Brown to black film	20 minutes to touch	Up to 200°F (93°C)	–
Maxi-Coat	51211 51213	16 oz. net wt. aerosol 1 gal. can	Brown	1-2 hours	Up to 200°F (93°C)	–
Cold Galvanizing Compound	82039	15 oz. net wt. aerosol	Low gloss grey	15 minutes to touch	Up to 400°F continuous; 600°F intermittent	Conforms to MIL-P-26915A Conforms to MIL-T-26433 Conforms to MIL-T-21035 Conforms to MIL-P-46105 Conforms to ASTM A239-41

Fixmaster® filled and general-purpose epoxies repair, rebuild, and restore damaged parts to quickly return equipment to service. Cured epoxies can be drilled, tapped, and machined – just like the original metal. These non-shrinking products are available in a range of performance characteristics for specific applications. Each epoxy is capable of bonding to metal, ceramic, wood, glass, and some plastics.

EPOXIES

Fixmaster® 4 Minute Epoxy

Translucent, gel-like adhesive. Sets up in 4-6 minutes. Temperature resistant up to 160°F. Ideal for emergency repairs or where reduced fixturing time is desirable. Cartridge requires manual dispenser gun (item number 983531).

Fixmaster® Fast Cure Poxy Pak™ Epoxy

This fast-cure, high-strength, thick liquid reaches handling strength in 4-6 minutes. Bonds virtually any material to repair, fill, and seal holes, cracks, and worn surfaces.

Fixmaster® Fast Cure Epoxy Mixer Cups

Premeasured epoxy mixer cups. Bonds in 5-15 minutes. Excellent chemical resistance. Fills porosities and can be used to build up worn parts. Ideal for bonding glass, hard plastics, rubber, and metal.

Fixmaster® General Purpose Epoxy Mixer Cups

Premeasured epoxy mixer cups. One-hour working time. Fills porosities and can be used to build up worn parts. Ideal for bonding glass, hard plastics, rubber, and metal.

Fixmaster® High Performance Epoxy

Fiberglass reinforcement gives this adhesive outstanding tensile, shear strength, and shock resistance up to 180°F. Recommended for forming permanent, water-resistant bonds in production and maintenance applications. Cartridge requires Fixmaster® Applicator Gun.

Fixmaster® Underwater Repair Epoxy

This putty-like material is ideal for plumbing, irrigation, and marine applications because it is unaffected by chlorinated or salt water. It is hand kneadable and fully cures in 1 hour.

Fixmaster® Fast Set Steel Epoxy

Steel filled. Reaches functional cure in 10 minutes. Temperature resistant up to 200°F. Recommended for repairing pipes and other equipment that must be back in service in minutes. Cartridge requires applicator gun.

Fixmaster® Static Mixers

Mixing nozzles for use with Fixmaster® 50 ml epoxy cartridges. (Not for use with Rapid Rubber Repair).

Fixmaster® Aluminum Liquid

Two-part, pourable epoxy system heavily reinforced with aluminum powder. For casting and repairing of aluminum parts, and for making molds and fixtures.

Fixmaster® Aluminum Putty

Aluminum-filled epoxy rebuilds and repairs aluminum equipment, forming a non-rusting finish.

Fixmaster® Fast Set Steel Putty

Steel-filled, non-sagging epoxy for filling and repairing damaged metal parts quickly. Functional cure in about 10 minutes.

Fixmaster® Metal Magic Steel™

Steel epoxy in stick form. Cut off a section, knead, and apply to leaking pipes or damaged equipment. Cures in 10 minutes. NSF approved, Standard 61.

Fixmaster® Stainless Steel Putty

Stainless steel filled. Forms a non-rusting, very hard, durable finish on damaged stainless steel surfaces.

Fixmaster® Steel Liquid

Steel filled. Pourable and self-leveling. Epoxy is recommended for casting into hard-to-reach areas, anchoring and leveling, and forming molds and fixtures.

Fixmaster® Steel Putty

Steel-filled, non-sagging, two-part epoxy that cures to a metal-like finish for rebuilding or repairing metal parts.

Fixmaster® Superior Metal

Ideal for renewing or protecting surfaces subject to corrosion, abrasion, and harsh environments. Ferro-silicon-filled epoxy has outstanding compressive strength, chemical resistance. Non-rusting.

Fixmaster® Wear Resistant Putty

Ceramic fibers give this trowelable putty excellent wear and abrasion resistant properties. Cures to smooth, low friction surface. For surfaces exposed to wear, erosion, and cavitation. Non-rusting.

Fixmaster® Wet Surface Repair

Use this unique, trowelable epoxy to repair and rebuild wet, even underwater, surfaces. Bonds to wood, concrete, steel, iron, aluminum, brass, and some plastics.

PROPERTIES CHART

PRODUCT	Item Number	Container	Color (cured)	Temperature Resistance, °F	Adhesive Tensile Shear, psi	Working Time, Minutes	Fixture Time†	Full Cure
Fixmaster® 4-Minute Epoxy	97434	50 ml cartridge	Trans-luscent	160	2000	3-4	10 min.	1 hour
Fixmaster® Fast Cure Poxy Pak™ Epoxy	81120	1 oz. syringe	Clear	300	2300	1	4-6 min.	1 hour
Fixmaster® Fast Cure Epoxy Mixer Cups	21425 21426	10 - .12 fl. oz. cups 10 - 1 oz. cups	Grey	180	2000	5	10 min.	12 hours
Fixmaster® General Purpose Epoxy Mixer Cups	21427	10 - .12 fl. oz. cups	Trans-luscent	180	2000	60	1.5 hrs.	24 hours
Fixmaster® High Performance Epoxy	99393 99394 99392	1 oz. cartridge 50 ml cartridge 2 gallon kit	Tan	180	3800	30	8 hrs.	24 hours
Fixmaster® Underwater Repair Epoxy	82093	4 oz. stick	White	300	700	2	5 min.	1 hour
Fixmaster® Fast Set Steel Epoxy	96604	50 ml cartridge	Grey	200	2600	3-4	10 min.	1 hour
Manual Cartridge Dispenser Gun	983531	Required for use with 50 ml Fixmaster® Epoxies						
Fixmaster® Static Mixers	39634	Packaged 6/bag - for mixing and dispensing epoxies in 50 ml containers						

Properties based on ultimate cure.
Epoxy properties based on mixing 20 g mass at 77°F.
† Time to reach handling strength.

BONDING CHARACTERISTICS

PRODUCT	Gap Filling	Fast Cure Time	Ferrous Metal Repair	Toughened Formulation	Shock Resistance	Water Resistance	Plastic Bonding	Rubber Bonding	Metal Bonding	Sandable Finish	Paintable Finish
4-Minute Epoxy	●	●	○		○	○	○		◒	●	●
Fast Cure Poxy Pak™ Epoxy		●					◒		◒	●	●
Fast Cure Epoxy Mixer Cups	◒	◒					○	○	◒	●	○
General Purpose Epoxy Mixer Cups	◒						○	○	◒	●	○
High Performance Epoxy	●		○	●	●	●	◒	○	●	●	●
Underwater Repair Epoxy	●	●			●	●	◒		●	●	●
Fast Set Steel Epoxy	●	●	●		○	○			○	○	●

● Preferred choice ◒ Good choice ○ Acceptable choice

METAL-FILLED EPOXIES PROPERTIES CHART

PRODUCT	Item Number	Container	Coverage, ft.² @ 1/4" Thickness	Color	Maximum Operating Temperature, °F	Compressive Strength, psi †	Tensile Strength, psi †	Hardness (Shore D)	Working Time, Minutes	Functional Cure, Hours	Mix Ratio by Volume, r : h	Mix Ratio by Weight, r : h
Aluminum Liquid	97453	1 lb. kit	17 in.³	Alumin.	200	17,000	6,000	85	20	6	5:1	9:1
Aluminum Putty	97463	1 lb. kit	0.5	Alumin.	225	11,300	4,000	87	20	6	4:1	6.3:1
Fast Set Steel Putty	39917	1 lb. kit	0.4	Grey	200	10,800	4,600	80	3	10 min.	1:1	6.3:1
Metal Magic Steel™	98853	4 oz.	7 in.²	Grey	250	12,000	2,500	80	3	10 min.	N/A	N/A
Stainless Steel Putty	97443	1 lb. kit	0.25	Grey	225	12,000	4,600	85	20	6	4:1	9:1
Steel Liquid	97483 97484 97482	1 lb. kit 4 lb. kit 16 lb. kit	13 in.³ 52 in.³ 208 in.³	Grey	225	13,500	6,000	86	25	6	4:1	9.5:1
Steel Putty	99913 99914 99912	1 lb. kit 4 lb. kit 25 lb. kit	0.3 1.2 7.5	Grey	225	11,100	4,900	85	30	6	2.5:1	6.25:1
Superior Metal	97473	1 lb. kit	0.25	Dark Grey	250	18,000	5,500	90	20	6	4:1	7.25:1
Wear Resistant Putty	98742 98743	1 lb. kit 3 lb. kit	0.36 1.1	Grey	225	11,600	4,900	89	30	6	4:1	8:1
Wet Surface Repair Putty	96583	1 lb. kit	0.5	Grey	150	12,500	3,500	85	30	18	1:1	10:9

Properties are based on mixing one lb. mass at 77°F, 7 days cure.
†Ultimate cure.

APPLICATION SELECTION GUIDE

PRODUCT	Emergency Metal Repairs	Corrosion Protection	Repairing Pipes, Tanks	Rebuilding Shafts, Keyways, Bearings	Repairing Threaded Parts	Restoring Tube Sheets	Pump Repair	Repairing Engine Blocks	Fixtures and Prototypes	Rebuilding Impellers, Valves	Repairing Aluminum Parts	Repairing Stainless Steel Parts	Forming Molds, Fixtures	Wet Surface Repairs
Aluminum Liquid									●		●	◒	●	
Aluminum Putty		◒								●	●	◒		
Fast Set Steel Putty	●		●					◒						
Metal Magic Steel™	●		◒											◒
Stainless Steel Putty		◒								●	◒	●		
Steel Liquid			●		●				◒				●	
Steel Putty			●					●		◒			●	
Superior Metal		●		●	●	●	●	●		●				
Wear Resistant Putty		●		◒		●	●	●		●				
Wet Surface Repair Putty		◒	◒											●

● Preferred Choice ◒ Good Choice

Fixmaster® flooring products are specialty repair materials that fill or level industrial surfaces. A cost-effective, high-performance alternative to conventional flooring systems, these epoxies are non-shrinking and have good chemical and corrosion resistance, and high compression strength.

FLOORING & GROUT

Fixmaster® Deep Pour Grout

Aggregate-filled, epoxy system for pours up to 6" deep, including self-leveling applications under rails and sole plates. High-strength material bonds to steel, concrete, and itself. Withstands high torque loading.

Fixmaster® Super Grout

Fixmaster® Super Grout aggregate filled epoxy system is designed for grouting up to 18" deep, including self leveling applications under rails and sole plates under typical dry service temperatures of -29°C to +107°C (-20°F to +225°F). Super Grout is a 100% solids epoxy system that is non-shrinking, chemical and corrosion resistant, stronger than concrete, and withstands high torque loading.

Fixmaster® Fast Set Grout

Self-leveling, non-shrinking grout for installing machinery, setting anchor bolts. Cures quickly. Can be poured up to 1" thick. Compression strength and chemical resistance are superior to concrete. Forms strong bonds to old concrete and to itself.

Fixmaster® High Performance Quartz

Trowelable epoxy for repairing and protecting floors exposed to concentrated acids, alkalis, and solvents. Recommended for restoring and protecting old concrete.

Fixmaster® Floor Fill

Trowelable. For repairing and resurfacing cracks in concrete floors. Bonds to old and new concrete and provides greater strength and chemical resistance.

Fixmaster® Magna-Crete®

A two-component, rapid-setting concrete repair and grouting system. Chemically resistant to most common liquids and chemicals. Bonds to concrete, wood, glass, steel, and other construction materials.

Fixmaster® Marine Chocking

Self-leveling, fast-curing, non-shrinking grout. Outstanding chemical and vibration resistance and compressive strength to withstand maximum loads. Approved by The American Bureau of Shipping.

PROPERTIES CHART

PRODUCT	Item Number	Container	Coverage	Color	Mixed Viscosity, cP	Maximum Temperature, °F	Compressive Strength, psi	Working Time, Minutes	Functional Cure, Hours	Mix ratio by Volume, r : h	Mix ratio by Weight, r : h
Deep Pour Grout	99545	5 gal. kit	660 in.^{3}	Black	Pourable	225	14,500	30	24	–	–
Fast Set Grout	39637	2 gal. kit	347 in.^{3}	Red	5,500	200	14,500	10	12	100:11.7	100:6.5
Floor Fill	99361 99365	10 lb. kit 40 lb. kit	133 in.^{3} 532 in.^{3}	Grey	Semi-Pourable	225	15,000	40	24	–	–
High Performance Quartz	96495	42 lb. kit	15 ft.^{2}*	Grey	Paste	150	12,000	60	24	–	–
Magna-Crete®	95551 95555	1 gal. kit 5 gal. kit	4.8 ft.^{2}* 21.6 ft.^{2}*	Grey	–	2000	13,000	15	1-2	–	–
Marine Chocking	97572 96102	2 gal. kit 2 gal. kit	370 in.^{3}	Green Orange	15,000	250	22,000	10	24	100:11.6	100:6.9
Super Grout	33510	5 gal. kit	620 in.^{3}	Red	Pourable	225	12,900	285	24	–	–

* Coverage at 1/4" thickness

APPLICATION SELECTION GUIDE

PRODUCT	Anchor Bolt Fastening	Chocking (ships)	Concrete Floor Repair	Engine Installation	Grout Heavy Equipment 1" to 6"	Grout Heavy Equipment to 18"	Grout Light Equipment 1" or Less	Leveling Equipment	Acid/Chemical Resistant Floor Repair	Ramps, Loading Docks	Highways, Roadways	Leveling Floors
Deep Pour Grout				◓	●		◓	◓				
Fast Set Grout	●			◓	◓		●	●				
Floor Fill			●	◓					◓			
High Performance Quartz			◓						●			
Magna-Crete®			●		◓		◓			●	●	●
Marine Chocking		●		●			◓	◓				
Super Grout				◓	◓	●		◓				

● Preferred choice ◓ Good choice

Loctite® innovative gasketing products offer precise, reliable sealing. They can be applied manually or — for high volume assembly — can be applied by automated methods, such as tracing, stenciling, and screen printing.

A leader in form-in-place gasket makers, gasket dressings, and general purpose sealants, Loctite offers a choice of anaerobics, RTV Silicones, or solvent-based products to meet broad gasketing and sealing needs.

GASKETING & SEALING

510 Gasket Eliminator® Flange Sealant

A high-temperature sealant specially engineered for making or dressing gaskets in rigid assemblies. Withstands temperatures to 400°F (204°C). Fills gaps up to 0.010" (0.254 mm) and permits clamping loads to be maintained for strong, leakproof assemblies. UL classified.

Instant Gasket

Makes high-performance, leakproof gaskets in one minute. Equipment can be returned to service immediately. Blowout resistant. Outperforms precut gaskets.

518 Gasket Eliminator® Flange Sealant

Ideal for on-the-spot and emergency repairs, or when a conventional gasket is out of stock. Seals to 300°F (149°C) and fills gaps to 0.050" (1.27 mm). Can be used on a variety of metal surfaces, including aluminum. Forms a flexible, solvent-resistant seal that will not tear or decay. Parts disassemble easily even after extended service.
NSF/ANSI 61 certified.

Aviation Gasket Sealant

Reliable, liquid gasket sealant, dressing, and coating. Thin, brushable dressing or sealer for close-fitting parts. Use to 400°F. Resistant to gasoline and other solvents. Tested to MIL-S-45180 D.

Gasket Sealant #1

Reliable, paste-like gasket sealant/dressing/coating. Sets quickly to a hard set and is recommended for rigid, permanent assemblies. Use to 400°F. Resistant to gasoline and other solvents. Tested to MIL-S-45180 D.

Gasket Sealant #2

Reliable, paste-like gasket sealant/dressing/coating. Sets more slowly to a pliable film best suited for non-rigid, vibrating assemblies. Use to 400°F. Resistant to gasoline and other solvents. Tested to MIL-S-45180 D.

598 Black Silicone Gasket Maker

Retains high flexibility and oil resistance for longer gasket life. Temperature range -75°F to 625°F (-59°C to 329°C) intermittent. Low odor, non-corrosive, low volatility. Resistant to most chemicals and solvents. Fills gaps to .25".

587 Blue Silicone Gasket Maker

Forms tough, flexible gaskets directly on the flange. Offers excellent adhesion to oily surfaces. Low odor, non-corrosive, low volatility. Withstands temperatures to 500°F (260°C) intermittent. Resistant to most chemicals and solvents. Fills gaps to .25".

5920 Copper High Temp Silicone Gasket Maker

Premium silicone that can withstand operating environments to 700°F (371°C) intermittent. Superior oil resistance. Low odor, non-corrosive, low volatility, non-conductive. Resistant to most chemicals and solvents. Fills gaps to .25".

5699 Grey Silicone Gasket Maker

Remains flexible and withstands high vibration. Designed for high-torque applications. Withstands temperatures from -75°F to 625°F (-59°C to 329°C). Outstanding oil and shop fluid resistance. Non-corrosive, low odor.

Superflex™ Blue RTV Silicone Adhesive Sealant

Cures to a tough, flexible rubber. Makes reliable "formed-in-place" gaskets that resist shrinking, cracking, and migrating. Coats pre-cut gaskets to increase reliability. Temperature range -65°F to 500°F (-54°C to 260°C) intermittent. Low volatility. Fills gaps to .25".

Superflex™ Red High Temp Silicone Adhesive Sealant

Makes gaskets that resist temperatures to 600°F (315°C) intermittent. Resists aging, weather, and thermal cycling without shrinking, cracking, or hardening. Fills gaps to .25".

Superflex™ Non-Corrosive RTV Silicone Clear

Neutral curing and non-corrosive. For aluminum, concrete, and electrical applications. Temperature resistant to 400°F (204°C) continuous service, 500°F (260°C) intermittent. TT-S-00230C Type II. TT-S-001543A, Class A.

Superflex™ Silicone Adhesive Sealant

General-purpose, one-part silicone adhesive sealant cures at room temperature to form a tough rubber seal. Will not slump in overhead or vertical applications. Formulated to withstand extreme temperature cycling, U.V. light and ozone. Cannot be painted. Available in black, clear, and white.

Hi-Tack Gasket Sealant

Red-colored, liquid sealant that holds gaskets in place during assembly. Seals and bonds rubber, cork, paper, felt, metal, and asbestos gaskets. Sets quickly to a very tacky film. Suitable to 500°F (260°C). Contains no ozone-depleting compounds.

High Temperature Gasket Sealant

Slow-setting, non-hardening, high-temperature sealant. Recommended for heavy-duty applications. Temperature range -65°F to 600°F (-54°C to 315°C) intermittent. Resists common shop fluids.

Copper Gasket Adhesive

Fast-drying, metallic, copper sealant helps dissipate heat, prevent gasket burnout, and improve heat transfer. Fills hot spots and surface imperfections. Temperature range -50°F to 500°F (-45°C to 260°C). Resists shop fluids.

Instant Gasket — Return equipment to service immediately when you make leakproof gaskets in just one minute with Instant Gasket. Outperforms precut gaskets.

PROPERTIES CHART

PRODUCT	Item Number	Container	Color	Oil Resistance	Non-Corrosive	Temperature Resistance	Sealing Time	Key Specifications
Instant Gasket	30684 30509 30507	4 oz. can 5 oz. cartridge 7 oz. can	Black	Increased oil resistance	Non-corrosive	-75° to 500°F (-59° to 260°C)	Operating strength 15 psi -1 min.	GM 998-5990 Ford WSE-M4G 323-A6 Chrysler GF-44-A
Superflex™ RTV Silicone Adhesive Sealants	59330 59375 30563 59530 59575 30562 59430 59475 82518	80 ml tube 300 ml cartridge 7.25 oz. can 80 ml tube 300 ml cartridge 7.25 oz. can 80 ml tube 300 ml cartridge 7.25 oz. can	Black Black Black Clear Clear Clear White White White	–	–	-65° to 450°F (-54° to 232°C)	Tack free - 30 min. Full strength - 24 hrs.	–
Superflex™ Blue RTV Silicone Adhesive Sealant	30560 30533 30541 30518	80 ml tube 300 ml cartridge 7.25 oz. can 12 oz. tube	Blue	–	–	-65° to 500°F (-54° to 260°C)	Tack free - 30 min. Full strength - 24 hrs.	–
Superflex™ Red High Temp RTV Silicone Adhesive Sealant	59630 59675 30564 82279	80 ml tube 300 ml cartridge 7.25 oz. can 12 oz. tube	Red	–	–	-75° to 600°F (-59° to 316°C)	Tack free - 30 min. Full strength - 24 hrs.	–
Superflex™ Non-Corrosive RTV Silicone	51387 51388	80 ml tube 300 ml cartridge	Clear	Oil resistant	–	-75° to 400°F (-59° to 204°C)	Tack free - 25 min. Full strength - 24 hrs.	UL QMFZ294 HB
598 Black RTV Silicone Gasket Maker	34018 59830 59875 59866 59891	0.5 ml tube 70 ml tube 300 ml cartridge 8.75 oz. can 49 lb. pail	Black	Excellent oil resistance	Non-corrosive	-75° to 625°F (-59° to 329°C)	Tack free - 30 min. Full strength - 24 hrs.	–
587 Blue RTV Silicone Gasket Maker	58730 58775 30567 58791	70 ml tube 300 ml cartridge 8.75 oz. can 50 lb. pail	Blue	Increased oil resistance	Non-corrosive	-75° to 500°F (-59° to 260°C)	Tack free - 30 min. Full strength - 24 hrs.	–
5920 Copper RTV Silicone Gasket Maker	30542 82046	70 ml tube 300 ml cartridge	Copper	Increased oil resistance	Non-corrosive	-65° to 700°F (-54° to 371°C)	Tack free - 60 min. Full strength - 24 hrs.	–
5699 Grey RTV Silicone Gasket Maker	18718 18581	70 ml tube 300 ml cartridge	Grey	Increased oil resistance	Non-corrosive	-75° to 625°F (-59° to 329°C)	Tack free - 30 min. Full strength - 24 hrs.	–
Aviation Gasket Sealant	30517 30516	0.25 pt. brush can 1 pt. brush can	Dark red-dish brown	Oil resistant	Non-corrosive	-65° to 400°F (-54° to 204°C)	Full strength - 12 hrs.	Mil-S-45180 D Type III
Gasket Sealant #1	30510 30511 30512	1.5 oz. tube 3 oz. tube 11 oz. tube	Reddish brown	Oil resistant	Non-corrosive	-65° to 400°F (-54° to 204°C)	Full strength - 24 hrs.	Mil-S-45180 D Type I
Gasket Sealant #2	30513 30514 30515 80964	1.5 oz. tube 3 oz. tube 11 oz. tube 5 gal. can	Black	Oil resistant	Non-corrosive	-65° to 400°F (-54° to 204°C)	Remains tacky	Mil-S-45180 D Type II
Hi-Tack Gasket Sealant	30524 30525 30526	0.25 pt. brush can 1 pt. brush can 9 oz. aerosol	Red	Increased oil resistance	Non-corrosive	-65° to 500°F (-54° to 260°C) Aerosol to 600°F	5 min. to set	–
High Temperature Gasket Sealant	30558	7 fl. oz. tube	Black	Oil resistant	Non-corrosive	-50° to 600°F (-45° to 316°C)	3 to 5 hrs. to set	–
Copper Gasket Adhesive	30535	9 oz. aerosol	Copper	Oil resistant	Non-corrosive	-50° to 500°F (-45° to 260°C)	Remains tacky	–

PROPERTIES CHART

PRODUCT	Item Number	Container	Color	Viscosity cP/ Consistency	Cured State	Temperature Range	Sealing Time	Gap Fill	Recommended Primer
510 Flange Sealant	51031	50 ml tube	Red	188,000/500,000 thixotropic paste	Rigid	-65° to 400°F (-54° to 204°C)	30 minutes-4 hrs. w/primer 4-24 hrs. without primer	.020" w/primer .010" w/o primer	7649 Primer N
518 Flange Sealant	51817 51831	6 ml tube 50 ml tube	Red	800,000/3,750,000 thixotropic paste	Flexible	-65° to 300°F (-54° to 149°C)	30 minutes-4 hrs. w/primer 4-24 hrs. without primer	.050" w/primer .010" w/o primer	7649 Primer N

Formulated to remove grease, grime, paint, and adhesives, Loctite® waterless hand cleaners also contain multiple skin conditioners to help counteract the drying effects of frequent washing.

HAND CLEANERS

Fast Orange® Cream Hand Cleaner Fine Pumice Formula

Thicker consistency to scoop straight from container or use with dispenser (can only). Biodegradable, waterless, and petroleum-solvent-free; cleans with fresh-scented, natural citrus power. Contains aloe, lanolin, jojoba, and other premium skin conditioners.

Fast Orange® Lotion Hand Cleaner Smooth Formula

For use by those who prefer a hand cleaner without pumice or have extra-sensitive skin. Biodegradable, waterless, and petroleum solvent-free; cleans with fresh-scented, natural citrus power. Contains aloe, lanolin, jojoba, and other premium skin conditioners.

Fast Orange® Cream Hand Cleaner Smooth Formula

The fresh orange-scented alternative to traditional petroleum-based, smooth, cream hand cleaners. Thicker consistency to scoop straight from container or use with dispenser (can only). Biodegradable, waterless, and petroleum-solvent-free; cleans with pure natural citrus power. Contains aloe, lanolin, jojoba, and other premium skin conditioners.

Blue Label™ Hand Cleaner

Cream-formula waterless hand cleaner. Cleans many difficult-to-remove substances. Gentle to hands, no greasy residue after use.

Fast Orange® Lotion Hand Cleaner Fine Pumice Formula

Quickly removes ground-in grease and grime without abrading skin like coarser pumice hand cleaners. Biodegradable, waterless, and petroleum-solvent-free; cleans with fresh-scented natural citrus power. Contains aloe, lanolin, jojoba, and other premium skin conditioners.

Gold Label™ Antiseptic Hand Cleaner

Cleans deeply but gently with maximum skin-conditioning emollients. Regular use can inhibit the growth of microorganisms commonly found on skin.

Industrial Hand Wipes

Pre-moistened with a powerful, citrus scented cleaning formula, each 9.5" X 12" towel is abrasive enough to scrub off the toughest grease and grime without scratching hands. Quick and easy to use, no rinsing, no drying, no residue left behind. These wipes are perfect for industrial and commercial working hands in the painting, printing, maintenance, transportation, and construction industries.

PARR® Paint & Resin Removing Hand Cleaner

A safer alternative to harsh thinners and potentially toxic solvents. Fortified with four premium skin conditioners, this freshly scented, fine pumice formula quickly removes the toughest soils. Readily biodegradable, non-toxic, and non-flammable.

Trounce® Cream or Lotion with Pumice

Pleasantly scented, with fine ground pumice for deep scrubbing to remove the most difficult soils. This fast-acting formula won't irritate hands or leave a greasy residue. Professional strength. Available in cream or lotion formulas.

Hand Cleaner Dispensers and Accessories

The sturdy Universal Dispenser allows metered use of Fast Orange®, Blue Label™ and Trounce® hand cleaners. Consistently controls the amount of hand cleaner dispensed, eliminating waste. The wire wall bracket holds pump gallons of Trounce or Fast Orange.

HAND CLEANERS ORDERING INFORMATION

PRODUCT	Item Number	Container
Fast Orange® Cream Hand Cleaner (fine pumice formula)	35013 35406	14 oz. plastic tub 4.5 lb. plastic can
Fast Orange® Cream Hand Cleaner (smooth formula)	33013 33406	14 oz. plastic tub 4.5 lb. plastic can
Fast Orange® Lotion Hand Cleaner (fine pumice formula)	25108 25116 25217 25218 25104 25915	7.5 fl. oz. squeeze bottle 15 fl. oz. squeeze bottle 64 fl. oz. bottle with pump 1 gal. bottle with pump 1 gal. flat-top bottle 2x1 gal. bottle with pump
Fast Orange® Lotion Hand Cleaner (smooth formula)	23108 23116 23217 23218 23104 23915	7.5 fl. oz. squeeze bottle 15 fl. oz. squeeze bottle 64 fl. oz. bottle with pump 1 gal. bottle with pump 1 gal. flat-top bottle 2x1 gal. bottle with pump
Blue Label™ Cream Hand Cleaner	01013 01406	14 oz. can 4.5 lb. can
Gold Label™ Antiseptic Hand Cleaner	40013 40406	14 oz. can 4.5 lb. can
Industrial Hand Wipes	34943 34944	75 count canister 130 count bucket
PARR® Paint & Resin Removing Hand Cleaner with Fine Pumice	65108 65116 65216	7.5 fl. oz. squeeze bottle 15 fl. oz. squeeze bottle 60 fl. oz. bottle with pump
Trounce® Cream Hand Cleaner with Pumice	03406	4.5 lb. can
Trounce® Lotion Hand Cleaner with Pumice	21116 21218	15 fl. oz. squeeze bottle 128 fl. oz. bottle with pump
Hand Cleaner Dispensers and Accessories	90126 90127 90128 95140	Replacement plastic pump (for 21218, 23218, 25218) Replacement plastic pump (for 65216) Wall bracket (for 21218, 23218, 25218) Push type, wall-mount universal dispenser (for 01406, 03406, 23104, 25104, 33406, 35406, 40406)

A variety of penetrants, greases, and oils are available for lasting, general-purpose lubrication or specific applications.

Formulated in partnership, Loctite® DuPont® Krytox® RFE Lubricants are, quite simply, the most advanced lubricants in the world. Featuring astonishing lubricity, extreme temperature resistance, nonflammability, and chemical inertness; Krytox® RFE Lubricants are the cost-effective solution to a broad range of challenging lubrication problems in a variety of industries.

Super Lube® synthetic-based lubricants last four times longer than traditional petroleum-based greases and work in high and low temperature, food grade, and multi-purpose applications.

LUBRICANTS

Krytox® RFE PFPE Bearing Lubricant

The ultimate, high-performance, synthetic grease specifically designed to provide long-lasting lubrication for all types of bearings. PFPE Bearing Lubricant provides excellent wear resistance in the most challenging applications and severe environments. It is effective over a broad temperature range and provides protection from corrosion.

Krytox® RFE PFPE O-Ring Lubricant

The ultimate, high-performance, synthetic grease specifically designed to increase o-ring seal and service life. PFPE O-Ring Lubricant has excellent lubrication properties over a broad temperature range, will not cause cracking or swelling, and protects against undue wear. It eliminates sticking and aids in disassembly.

Krytox® RFE Synthetic PFPE Lubricating Oil

A high-performance, synthetic oil specifically designed to provide long-lasting lubrication for all maintenance activities. Synthetic PFPE Lubricating Oil provides long-lasting protection against friction and wear over a broad temperature range. It lubricates, penetrates, and protects, and does not dry out, separate, or migrate.

Krytox® RFE PFPE High Performance Lubricant

Specially-formulated, synthetic grease designed to provide long-lasting lubrication for all types of moving and/or sliding parts. PFPE High Performance Lubricant provides corrosion protection and wear resistance over a broad temperature range.

For technical information and/or product availability, call 1-800-LOCTITE or on the web

Visit www.loctite.com

Krytox® RFE Bearing Lubricant CP

Non-flammable, chemically-inert synthetic grease formulated specifically for severe environments. Compatible with chlorine,* Bearing Lubricant CP provides long-lasting lubrication for all types of bearings over a broad temperature range.

Krytox® RFE Advanced PTFE Dry Lubricant

A high-performance, synthetic lubricant designed to provide long-lasting lubrication for parts that require a dry, thin lubricating film. Advanced PTFE Dry Lubricant provides excellent lubrication properties over a broad temperature range, and dries to the touch in 60 seconds. It is non-oily, non-staining, and non-migrating, and won't attract dirt or dust.

Krytox® RFE Cleaner

A multi-purpose cleaner formulated to remove Krytox® RFE Lubricants. It will also remove standard hydrocarbon and synthetic-based lubricants. Krytox RFE® Cleaner is fast drying, residue-free, and formulated for tough industrial use. Cleans bearings, o-rings, seals, flanges, motors, sliding mechanisms, pumps, bushings, and more.

PROPERTIES CHART

PRODUCT	Item Number	Container	Temperature Resistance	Non-Flammable	High Load Capability	Corrosion Inhibitors	Compatible with all Plastics, Metals, Elastomers	Chemically-Resistant	Oxygen* Compatible	Thermally Stable	Water/Steam Resistant	NLGI Grade
Krytox® RFE PFPE Bearing Lubricant	29709	16 oz. net wt. cartridge	-15°F to 500°F (-26°C to 260°C)	●	●	●	●	●	●	●	●	2
Krytox® RFE PFPE O-Ring Lubricant	29710	2 oz. tube	-15°F to 500°F (-26°C to 260°C)	●	●		●	●	●	●	●	2
Krytox® RFE PFPE High Performance Lubricant	29711	2 oz. tube	-15°F to 500°F (-26°C to 260°C)	●	●	●	All plastics & metals	●	●	●	●	2
Krytox® RFE Advanced PTFE Dry Lubricant	30138	8 oz. net wt. aerosol	-15°F to 500°F (-26°C to 260°C)	Once film is dry			●	●		●	Water repellant	–
Krytox® RFE Synthetic PFPE Lubricating Oil	30394	8 oz. net wt. aerosol	-94°F to 350°F (-70°C to 177°C)	●	●		●	●		●	Water	–
Krytox® RFE Bearing Lubricant CP	31360 31361	16 lb pail 16 oz. net wt. cartridge	-15°F to 500°F (-26°C to 260°C)	●	●		●	●	●	●	●	2
Krytox® RFE Cleaner	30615	10 oz. net wt. aerosol	–	–	–	–	–	–	–	–	–	–

*Per BAM 8104-411 & MSFC 106B under specific conditions. Test the proposed application thoroughly before use.

** See Product Description Sheet for test results.*

C-200® Solid Film Lubricant

Solid-film protection for engine parts, bearings and servo-mechanisms. Temperature resistant up to 750°F (400°C) as a dry film lubricant, 2400°F (1315°C) as an anti-seize.

Extreme Pressure Grease

Lubricates gears, bearings, and slides up to 450°F (232°C). NLGI #1 rated. Withstands extremes of pressure, resists water washout. Maintains pumpability at low temperatures; will not take a hard set after cooling.

Gear, Chain & Cable Lubricant

Protects and prolongs the life of gears, chains, wire rope, and cable. Repels dirt, sand and dust with minimum "throw-off" from centrifugal force. Contains no ozone-depleting compounds.

Maintain™ Lubricant, Moisture Displacer & Rust Preventer

Spray-on rust preventative for all metal parts. Unfreezes rusted parts. Displaces and seals out moisture. For use on steel, aluminum, brass, copper, magnesium, and other metals and alloys. Contains no ODCs.

Hydraulic Jack Oil

Non-corrosive oil improves lubrication in all types of hydraulic units (except hydraulic brakes). Contains antioxidant, anti-rust, and anti-wear additives.

Moly Dry Film

Solid film lubricant for sliding surfaces and slow-moving parts. Temperature resistant up to 750°F (400°C) as a dry film lubricant, 2400°F (1315°C) as an anti-seize. Won't squeeze out, burn off or pick up dirt.

Silicone Lubricant

Multi-purpose aerosol stops sticking, friction, squeaking, and binding of moving parts. Non-gumming. Will not mar paint, rubber, or plastic surfaces. Waterproofs and electrically insulates.

Penetrating Oil

Penetrates, lubricates, and displaces moisture. Protects against rust and corrosion. Contains no ODCs.

Dielectric Grease

Provides a moisture-proof barrier that lubricates and protects electrical equipment from salt, dirt, and corrosion. High dielectric strength. Good thermal, oxidation, and chemical stability.

Solvo-Rust® Super Penetrating Oil

Frees rusted parts and keeps them lubricated and protected from rust after use. May be applied on or near moving parts. Will not harm painted surfaces. Contains no ODCs.

White Lithium Grease

General-purpose lubricating paste for metal-to-metal and metal-to-plastic applications. Provides corrosion protection. Contains no ODCs.

Food Grade Grease

Extreme pressure grease with temperature resistance to 450°F (232°C). NLGI #2 rated. Protects after flushouts and steam cleaning.

Super Lube® Synthetic-Based Lubricant with PTFE Grease

Lasts four times longer than petroleum-based lubricants. Withstands temperatures from -45°F to 450°F (550°F intermittent). Contains PTFE for added protection against friction and wear. Non-flammable (aerosol is flammable). Contains no ODCs. NLGI #2 grease. Translucent white to slightly yellow.

Super Lube® Synthetic-Based Lightweight Oil 10 weight

Lasts four times longer than petroleum-based oil. Withstands temperatures from -45°F to 450°F (650°F intermittent). 10 weight oil. Non-flammable. Translucent white to slightly yellow.

Super Lube® Synthetic-Based Oil with PTFE 90-140 weight

Won't gum up or form carbon like traditional petroleum-based gear oils. Withstands temperatures from -45°F to 450°F (550°F intermittent). 90-140 weight. Non-flammable. Translucent white to slightly yellow.

PROPERTIES CHART

PRODUCT	Item Number	Container	Temperature Resistance	Type of Lubricant	Viscosity	ISO Grade	Drop Point (ASTM D 556)	Pour Point (ASTM D 97)	Four Ball Test (ASTM D2783)	Four Ball E.P. Scar Test (ASTM D 4172)	TAN ASTM D974	Salt Spray Test (ASTM B 117)
Super Lube® Grease with PTFE	82340 82324 82325 20029 82328 82329 82330 82331 82357	1 cc kit sized packet 0.5 oz. tube 3 oz. tube 11 oz. aerosol 14.1 oz. grease cartridge 400 gm can 5 lb. pail 30 lb. pail 120 lb. pail	-45°F to 450°F (-43° to 232°C) continuous	Synthetic hydrocarbon (polyalphaolefin-based) with PTFE	NLGI #2 grease	–	>500°F (260°C)	–	Load wear Index >40 kg Weld Point >250 kg	<.5	0.04 max.	Pass
Super Lube® Lightweight Oil	82337 82338	1 gal. bottle 5 gal. pail	-45°F to 450°F (-43° to 232°C) continuous	Synthetic hydrocarbon (polyalphaolefin-based)	8-10 cSt @ 100°C 50-70 cSt @ 40°C	100	–	<30°F (base fluid oil)	Load wear Index >40 kg Weld Point >250 kg	<.5	0.04 max.	Pass
Super Lube® Oil With PTFE	24575 82333 82334 82335	32 fl. oz. pump spray bot. 0.25 oz. precision oiler 1 gal. bottle 5 gal. pail	-65°F to 450°F (-54° to 232°C) continuous	Synthetic hydrocarbon (polyalphaolefin-based) with PTFE	14-17 cSt @ 100°C 118-122 cSt @ 40°C	220	–	<30°F (base fluid oil)	Load wear Index >40 kg Weld Point >250 kg	<.5	0.02 max.	Pass

PROPERTIES CHART/APPLICATION SELECTION GUIDE

PRODUCT	Item Number	Container	Temperature Resistance	Food Processing Equipment	Close Fitting Parts	High Temperature	Electrically Conductive	Electrical Equipment	Gears, Bearings, Cable, Conveyors	Hydraulic Units (not brakes)	For High Speed Bearings	For Low Speeds, High Loads	Chain-Driven Equipment	Disc Braking Systems	Solid Film
C-200® Solid Film Lubricant	39893 39894	1.3 lb. can 10 lb. can	2400°F (1315°C)			●	◒					◒			●
Dielectric Grease	30536	0.33 oz. tube	400°F (204°C)			○	○	○							
Extreme Pressure Grease	51242	14.5 oz. cartridge	450°F (232°C)			○					●				
Food Grade Grease	51252	14.5 oz. cartridge	450°F (232°C)	●		○					●				
Gear, Chain & Cable Lubricant	81251	12 oz. aerosol	–						●				●		
Hydraulic Jack Oil	30522 30523	1 qt. can 1 gal. can	120°F (48°C)							●					
Maintain™ Lubricant	81204	16 oz. aerosol	–		●			●							
Moly Dry Film	39895 39896 39897 39898	12 oz. aerosol 1.3 lb. can 10 lb. can 50 lb. pail	750°F (400°C)			◒	◒	●				◒	●		●
Penetrating Oil	80032 51221	1 pt. spout can 12 oz. aerosol	100°F (38°C)		◒										
Silicone Lubricant	81246 51360	13 oz. aerosol 5.3 oz. tube	400°F (204°C)	●		○			◒				◒		
Solvo-Rust® Super Penetrating Oil	81252	13 oz. aerosol	–		◒										
White Lithium Grease	30530 30543	1.5 oz. tube 10.75 oz. aerosol	380°F (193°C) (dropping point)						◒				◒		
Super Lube® Grease with PTFE	82340 82324 82325 20029 82328 82329 82330 82331 82357	1 cc kit sized packet 0.5 oz. tube 3 oz. tube 11 oz. aerosol 14.1 oz. grease cartridge 400 gm can 5 lb. pail 30 lb. pail 120 lb. pail	450°F (232°C)	●		○		●					●		
Super Lube® Lightweight Oil	82337 82338	1 gal. bottle 5 gal. pail	450°F (232°C)	●		○		●					◒		
Super Lube® Oil with PTFE	24575 82333 82334 82335	32 oz. pump spray bot. 0.25 oz. precision oiler 1 gal. bottle 5 gal. pail	450°F (232°C)	●		○		◒					◒		

● Preferred Choice ◒ Good Choice ○ Acceptable Choice

Clover® compounds have been in demand for over 80 years for cutting, smoothing, and polishing metal surfaces. Clover compounds allow final finishing of metal surfaces not practical with mechanical methods alone. Available in petroleum and water-based carriers. Common applications include: producing an ultra-flat surface such as the lapping of gauges, valve seats, and mechanical seal faces; smoothing shaft surfaces and bearing races; creating perfectly-mated parts for running-in gears and finishing industrial valves; cleaning surfaces and removing material too difficult to remove by other methods, as in finishing hardened tool steel.

MACHINING COMPOUNDS

Clover® Silicon Carbide Grease Mix

The standard abrasive paste for fast metal removal. Produces a smooth, flat surface but not a polished one. Leaves a rust-preventing film on lapped surfaces.

Clover® Silicon Carbide Pat Gel® Water Mix

Paste formulation for fast metal removal. Biodegradable, recommended for applications where cleanup with water is required.

Clover® Duplex Packaging

Silicon Carbide Grease Mix in two convenient grit sizes (120 and 180). Item number 39598. (Kit)

GRADE AND GRIT SELECTOR GUIDE

GRADE	Grit		Average Particle Size of Abrasive Grains: 1/1000 Inches	Average Particle Size of Abrasive Grains: Microns (0.001mm)
7A **6A** **5A**	1200 1000 800	**Extremely Fine** Polishing, high precision lapping	0.12 0.20 0.38	3 5 9
4A **3A** **2A**	600 500 400	**Very Fine** For fine polishing and lapping	0.56 0.68 0.90	14 17 23
1A **A**	320 280	**Fine** For finishing, valve lapping, bearings, dies and gauges	1.28 1.75	33 44
B **C**	240 220	**Medium Fine** For cylinder lapping	2.48 2.60	63 66
D **NC**	180 150	**Medium** General purpose for controlled metal removal	3.40 4.80	86 122
E **F** **G**	120 100 80	**Coarse** For the initial “cut” fast removal of metal	5.60 6.80 15.00	142 173 267
J	54	**Very Coarse** For fastest metal removal	18.00	463

CLOVER ITEMS

PRODUCT	Item Number	Container	Grit	Grade
Clover® Silicon Carbide Grease Mix	39598	Kit - 4 oz. can	120/280	E/A
	39587	1 lb. can	1200	7A
	39574	1 lb. can	1000	6A
	39561	1 lb. can	800	5A
	39549	1 lb. can	600	4A
	39536	1 lb. can	500	3A
	39523	1 lb. can	400	2A
	39510	1 lb. can	320	1A
	39401	1 lb. can	280	A
	39413	1 lb. can	240	B
	39426	1 lb. can	220	C
	39439	1 lb. can	180	D
	39499	1 lb. can	150	NC
	39452	1 lb. can	120	E
	39463	1 lb. can	100	F
	39473	1 lb. can	80	G
	39483	1 lb. can	54	J
	39589	25 lb. pail	1200	7A
	39551	25 lb. pail	600	4A
	39512	25 lb. pail	320	1A
	39441	25 lb. pail	180	D
	39465	25 lb. pail	100	F
	39404	100 lb. drum	280	A
	39455	100 lb. drum	120	E
	39466	100 lb. drum	100	F
	39476	100 lb. drum	80	G
	39486	100 lb. drum	54	J
Clover® Silicon Carbide Pat Gel® Water Mix	39592	1 lb. jar	1200	7A
	39579	1 lb. jar	1000	6A
	39566	1 lb. jar	800	5A
	39554	1 lb. jar	600	4A
	39541	1 lb. jar	500	3A
	39528	1 lb. jar	400	2A
	39515	1 lb. jar	320	1A
	39406	1 lb. jar	280	A
	39418	1 lb. jar	240	B
	39431	1 lb. jar	220	C
	39444	1 lb. jar	180	D
	39504	1 lb. jar	150	NC
	39457	1 lb. jar	120	E
	39468	1 lb. jar	100	F
	39478	1 lb. jar	80	G
	39488	1 lb. jar	54	J
	39542	25 lb. pail	500	3A
	39458	25 lb. pail	120	E
	39479	25 lb. pail	80	G

Use Loctite® liquid or paste Retaining Compounds to bond non-threaded, cylindrical metal assemblies. Fill the inner voids in close-fitting press fits, keyways, and splines. Mount bearings and bushings, and make press fits even stronger.

RETAINING

609 General Purpose Retaining Compound

A low-viscosity, fast-curing adhesive used for bonding rigid metal assemblies. Ideal for gap distances up to 0.005" (0.13mm). 609 fixtures in just 10 minutes and provides shear strength of 3,000 psi after 24 hours. It easily joins dissimilar metals and withstands temperatures up to 300°F (149°C).

620 High Temperature Retaining Compound

A high-temperature adhesive that has the capability to operate at 450°F (232°C) for long periods. 620 fixtures in 30 minutes at room temperature, but requires a secondary heat cure to generate the high temperature resistance. Used to bond cylindrical parts with gaps up to 0.015" (0.35mm). 620 provides a shear strength of 3,800 psi on steel after 24 hours.

660 Quick Metal® Retaining Compound

A creamy, non-running gel that is applied onto cylindrical parts to fill surface imperfections and repair worn areas. It contains no metal, but once assembled hardens to a strength that often doubles that of a press fit. Use 660 to salvage worn metallic parts, or to keep machinery running until new parts arrive. Use to 300°F (149°C).

680 High Strength Retaining Compound

A high-strength, room-temperature-curing adhesive used to join fitted cylindrical parts. It fixtures in 10 minutes and provides a shear strength of 4,000 psi after 24 hours. Capable of filling diametral gap distances up to 0.010" (0.27mm). 680 allows relaxed machining tolerances and replaces clamp rings, set screws, and snap rings.

PROPERTIES CHART

PRODUCT	Item Number	Container	Appearance	Maximum Gap Fill (Diametral)	Shear Strength Steel/Steel (psi)*	Temperature Range	Set-Up Time	Recommended Primer	Key Specifications
609 General Purpose Retaining Compound	60921 60931 60941	10 ml bottle 50 ml bottle 250 ml bottle	Green Liquid	.005"	3,000 psi	-65° to 300°F (-54° to 149°C)	Set-up: 10 minutes Full strength: 24 hrs.	7649 Primer N	Conforms to MIL-R-46082B Type 1
620 High Temperature Retaining Compound	62015 62040 62070	10 ml bottle 50 ml bottle 250 ml bottle	Green Liquid	.015"	3,800 psi	-65° to 450°F (-54° to 232°C)	Set-up: 30 minutes Full strength: 24 hrs.	7649 Primer N	–
660 Quick Metal® Retaining Compound	66010 66040	6 ml tube 50 ml tube	Silver Paste	.020"	3,300 psi	-65° to 300°F (-54° to 149°C)	Set-up: 10 minutes Full strength: 24 hrs.	7649 Primer N	–
680 High Strength Retaining Compound	68015 68035 68060	10 ml bottle 50 ml bottle 250 ml bottle	Green Liquid	.015"	4,000 psi	-65° to 300°F (-54° to 149°C)	Set-up: 10 minutes Full strength: 24 hrs.	7649 Primer N	NSF/ANSI 61 approved

*Varied with substrates

Loctite® 55 is the newest technology in pipe sealing. When you need a fast, sure pipe seal, don't mess with tape, dope or wicking. Get a quick, clean seal with new Loctite® 55 Pipe Sealing Cord. It's the one-step solution that makes sealing easier than ever.

SEALING CORD

55 PIPE SEALING CORD

A general-purpose threaded pipe and fitting sealant. 55 is a non-curing, coated multifilament cord, that seals out air and other common gases and fluids. It comes in a handy container with a built-in cutter to easily apply the proper amount of cord.

Loctite® 55 is recommended for sealing metal and plastic tapered pipe threads and fittings up to 4" NPT. It has a temperature resistance up to 150°C (300°F). Loctite® 55 allows assemblies to be adjusted after assembly, making it particularly well suited for those applications where small adjustments are necessary before use. It's UL Listed and certified to CSA international (formerly AGA) and ANSI/NSF Standard 61.

USAGE/APPLICATION INFORMATION

Pipe Diameter	Number of Wraps	Number of Applications
1/2"	6	381
	7	333
	8	292
3/4"	7	303
	8	263
	9	232
1"	8	184
	9	168
	10	151
	11	137
	12	125

WRAPS PER APPLICATION

Pipe Diameter	Number of Wraps	
	Metal	Plastic
1/2"	6 – 8	12 – 15
3/4"	7 – 9	15 – 25
1"	8 – 12	20 – 30
1½"	10 – 15	25 – 35
2"	15 – 25	–
2½"	20 – 30	–
3"	25 – 35	–
3½"	30 – 40	–
4"	35 – 45	–

Apply the recommended amount of Pipe Sealing Cord. Too much material may make pipe assembly difficult.

APPLYING IS AS EASY AS 1, 2, 3

Hold the end of the Pipe Sealing Cord against the male nipple with one finger approximately 2 threads away from the end.

Wind the cord onto the pipe threads in the same direction as the thread. It is not necessary to follow the valley of the thread.

Cut the required amount of cord with the integrated cutting tool and smooth the loose end onto the pitches of the thread.

WHEN TO USE

Use Loctite 55 Pipe Sealing Cord for your everyday pipe and fitting sealing. Instead of carrying thread tape, pipe dope, and wicking, Loctite 55 replaces these common sealants in one convenient package. Eliminate the confusion of whether to use dope or tape, or a combination of sealants, Loctite 55 can solve your non-critical sealing applications.

BENEFITS/FEATURES

- Allows for post assembly adjustments up to 90˚
- Resistant to common solvents and chemicals
- Seals high pressure lines up to 10,000 psi
- Out seals tapes and dopes
- No curing, no waiting
- Faster and cleaner to use than dopes
- Provides lubrication for assembly/disassembly
- Over 350 applications per container*
- Integrated cutting tool for easier application
- Tough, durable container that won't unspool
- Seals out air, common fluids, petroleum-based fluids, propane, and natural gas

USE LOCTITE 55 ON:

- Black Iron
- Stainless Steel
- Steel
- Brass
- Plastic

TYPICAL APPLICATIONS INCLUDE:

- Tanks
- Pumps
- In-plant Utilities
- Drums
- Natural & L.P. Gas Lines
- Pneumatics
- Steam Systems
- Water Lines
- Oil Lines

PROPERTIES CHART

PRODUCT	Item Number	Container	Appearance	Temperature Resistance	Pressure Resistance	Key Specifications
55 Pipe Sealing Cord	35082	5,700 inches per dispenser	White, coated cord	Up to 300°F (150°C)	10,000 psig	UL listed CSA International ANSI/NSF Std. 61

*On 1/2" metal pipe using 6 wraps per application.

From the creator of liquid threadlocking, choose the strength, temperature range, and cure speed you need to prevent loosening from shock and vibration, and stop rust and corrosion of threaded metal fasteners. Loctite offers removable to permanent strength threadlockers to fit a variety of thread sizes and conditions.

THREADLOCKING

222MS Low Strength Threadlocker

A low-strength product that is perfect for small fasteners up to 1/4" diameter (6mm), long engagement length fasteners, and components requiring occasional adjustment. This purple threadlocker is applied to threaded parts before assembly. Parts can be disassembled with hand tools.

242® Removable Threadlocker

A removable-strength, general-purpose threadlocking adhesive especially well suited for fasteners between 1/4" and 3/4" diameter (6 to 20 mm). Applied to threaded components before assembly, blue 242® has controlled lubricity for accurate clamp loads. Parts can be separated using hand tools.

262 High Strength Threadlocker

Red 262 is a, high strength product that is applied to fasteners up to 3/4" (20 mm) in size before assembly. Localized heating and hand tools are required to separate parts. Solvents will not weaken the adhesive bond.

290 Penetrating Threadlocker

A low-viscosity, threadlocking liquid, green 290 wicks along the threads of pre-assembled fasteners to secure them in place. Also seals porosities in welds and metal parts. Ideal for fasteners ranging from #2 to 1/2" (2.2 to 12 mm) in size. Localized heating and hand tools are needed for disassembly.

7649 Locquic® Primer N

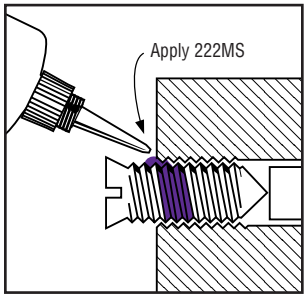
Locquic® Primer N decreases the set-up time of Loctite® threadlockers and increases breakaway torque on most fastener surfaces. Allows cold weather application. Contains no ozone-depleting compounds. Certified to NSF/ANSI Standard 61.

PROPERTIES CHART

PRODUCT	Item Number	Container	Color	Fastener Size	Break/Prevail Torque*	Temperature Range**	Cure Speed, Steel @ 25°C	Recommended Primer	Key Specifications
222MS Low Strength Threadlocker	22221 22231 22241	10 ml bottle 50 ml bottle 250 ml bottle	Purple	#2 to 1/4" (2.2 to 6 mm)	62/27	-65° to 300°F (-54° to 149°C)	Fixture - 20 minutes (5 minutes w/primer) Full strength - 24 hrs.	7649 Primer N	Conforms to MIL-S-46163A
242® Removable Threadlocker	24221 24231 24241	10 ml bottle 50 ml bottle 250 ml bottle	Blue	1/4" to 3/4" (6 to 20 mm)	115/53	-65° to 300°F (-54° to 149°C)	Fixture - 10 minutes (3 minutes w/primer) Full strength - 24 hrs.	7649 Primer N	Conforms to MIL-S-46163A, NSF/ANSI 61 approved
262 High Strength Threadlocker	26221 26231 26241	10 ml bottle 50 ml bottle 250 ml bottle	Red	Up to 3/4" (up to 20 mm)	190/275	-65° to 300°F (-54° to 149°C)	Fixture - 20 minutes (5 minutes w/primer) Full strength - 24 hrs.	7649 Primer N	Conforms to MIL-S-46163A
290 Penetrating Threadlocker	29021 29031 29041	10 ml bottle 50 ml bottle 250 ml bottle	Green	#2 to 1/2" (2.2 to 12 mm)	85/250	65° to 300°F (-54° to 149°C)	Fixture - 20 minutes (5 minutes w/primer) Full strength - 24 hrs.	7649 Primer N	Conforms to MIL-S-46163A, NSF/ANSI 61 approved
7649 Primer N	21347 21348	25 gm aerosol 4.5 oz. aerosol	–	–	–	–	–	–	NSF/ANSI 61 approved

* Break & Prevail Torque values cited are for M10 steel nuts and bolts.
** Temperature range is for continuous service.

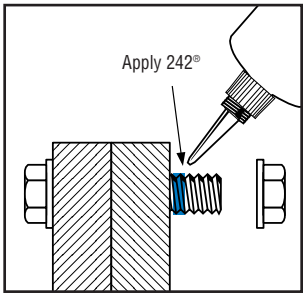
LOW STRENGTH



LOCTITE® 222MS THREADLOCKER

- Set screws
- Adjustment screws
- Calibration screws
- Meters and gauges

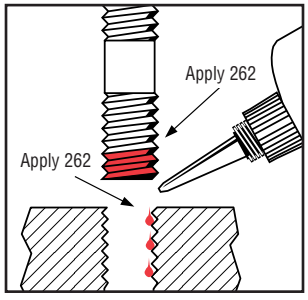
REMOVABLE



LOCTITE® 242® THREADLOCKER

- Machine tools and presses
- Pumps and compressors
- Mounting bolts
- Gear boxes

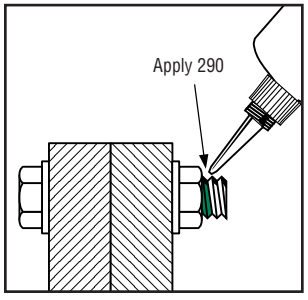
HIGH STRENGTH



LOCTITE® 262 THREADLOCKER

- Heavy equipment
- Suspension bolts
- Motor and pump mounts
- Bearing cap bolts and studs

PENETRATING



LOCTITE® 290 THREADLOCKER

- Preassembled fasteners
- Instrumentation screws
- Electrical connectors
- Carburetors

Loctite® thread sealants seal and secure plastic and metal pipes and fittings. By filling the space between threaded metal parts, thread sealants harden to prevent leaking. Designed for low and high pressure applications, thread sealants seal instantly for low pressure testing. When fully cured, they seal to the burst strength of most piping systems. For repairs, parts may be disassembled with basic hand tools.

THREAD SEALANTS

564 Thread Sealant

Thread Sealant 564 cures rapidly to provide immediate low-pressure sealing. Its lower strength allows easy disassembly, and is recommended even on larger (>2") diameter pipes. 564 protects mated threaded areas from rust and corrosion.

565 PST® Thread Sealant

Formulated specifically for metal, tapered, pipe thread fittings, 565 cures rapidly to provide immediate low pressure sealing. Its controlled lubricity prevents galling and it protects mated threaded areas from rust and corrosion. 565 can be used on fittings up to 2" (50 mm) in diameter.

567 PST® Thread Sealant

A high-performance sealant that locks and seals metal, tapered pipe threads, and fittings. Ideal for stainless steel, aluminum, galvanized metal, and other inert metals. 567 has excellent solvent resistance, allows easy assembly and prevents galling. Excellent for high-pressure applications.

Pipe Joint Compound

Economical, general-purpose pipe thread sealant that won't shred like Teflon® tape and allows easy disassembly. Resists common shop fluids.

545 Thread Sealant

Designed for both hydraulic and pneumatic systems, 545 contains no fillers or particles which could contaminate system fluids, foul valves, or clog fine filters and screens. Suitable for fittings up to 2" (50mm) in diameter, 545 has excellent solvent resistance.

H.V.A.C. Blue Pipe Joint Compound

Tough, pliable sealant specially formulated for heating, air conditioning, and refrigeration applications. Sets up quickly to allow immediate assembly and to keep joints tight in areas of high vibration and thermal cycling. Seals oils, refrigerants, butane, propane, natural gas, and more. Easy cleanup.

No More Leaks™ Plastic Pipe Sealant

Seals plastic pipes and allows easy disassembly. Specially formulated without the added lubricity of Teflon® to avoid cracked fittings caused by over-tightened plastic joints.

Thread Sealant with Teflon®

A general-purpose sealant with the added lubricity of Teflon® for metal pipes. Won't shred like Teflon® tape and allows easy disassembly. Resists common shop fluids.

Teflon® Tape

Plastic spool and shell. Meets MIL-T-27730.

PROPERTIES CHART

PRODUCT	Item Number	Container	Appearance	Pressure Resistance (psi)	Viscosity cPs	Temperature Range	Seal to Operating Pressure	Recommended Primer	Key Specifications
545 Hydraulic/Pneumatic Thread Sealant	32429 54531 54541	10 ml bottle 50 ml tube 250 ml tube	Purple Liquid	10,000	14,000	-65° to 300°F (-54° to 149°C)	4 hours	7649 Primer N	–
564 Thread Sealant	28753 28754 28755 34759	6 ml tube 50 ml tube 250 ml tube 350 ml brush can	White Paste	10,000	90,500	-65° to 300°F (-54° to 149°C)	4 hours	7649 Primer N	CSA 3319-81 CSA 3319-01
565 Thread Sealant	56507 56531 56541 56571	6 ml tube 50 ml tube 250 ml tube 300 ml cartridge	White Paste	10,000	300,000	-65° to 300°F (-54° to 149°C)	4 hours	7649 Primer N	UL approved AGA approved NSF/ANSI 61 approved
567 Thread Sealant	56707 56747 56765 33241	6 ml tube 50 ml tube 250 ml tube 16 oz. brush can	White Paste	10,000	540,000	-65° to 400°F (-54° to 204°C)	3 hrs. (stainless steel) 30 min. (carbon steel)	7649 Primer N	UL approved

PROPERTIES CHART

PRODUCT	Item Number	Container	Temperature Resistance	Adhesive Appearance	Pressure Resistance
H.V.A.C. Blue Pipe Joint Compound	82480 82481	0.25 pt. brush can 1 pt. brush can	-65° to 400°F (-54° to 204°C)	Blue Paste	5000 psi
No More Leaks™ Plastic Pipe Sealant	80725 80724 80726	2 fl. oz. tube 7 fl. oz. tube 1 pt. brush can	-65° to 400°F (-54° to 204°C)	White Paste	5000 psi
Pipe Joint Compound	30556 30557	0.25 pt. brush can 1 pt. brush can	-65° to 400°F (-54° to 204°C)	Black Paste	5000 psi
Teflon® Tape	39904	1/2" x 520" x .003"	Up to 500°F	White Tape	Pressure Rating of Pipe
Thread Sealant with Teflon®	30534 30561	0.25 pt. brush can 1 pt. brush can	-60° to 300°F (-51° to 149°C)	White Paste	5000 psi

Nordbak® Wearing Compounds combine the superior wear properties of ceramic and the convenience of two-part epoxies to protect equipment from corrosion, abrasion, and other wear encountered in harsh industrial environments. Available in trowelable and brushable formulations with special fillers for tough conditions.

WEARING COMPOUNDS

Nordbak® Wearing Compound

Large ceramic beads and fine silicon carbide in a high-performance epoxy system protect against sliding abrasion to 250°F. Non-sagging. Trowelable.

Nordbak® Fast Cure Wearing Compound

A faster version of Wearing Compound, this epoxy renews worn surfaces fast, reducing downtime to put equipment back in service in as little as three hours. Trowelable.

Nordbak® High Temperature Wearing Compound

Resists sliding abrasion and temperatures to 450°F. Must be post-cured for maximum temperature resistance and performance. Trowelable.

Nordbak® Ultra High Temperature Wearing Compound

Resists sliding abrasion and temperatures to 550°F. Must be post-cured for maximum temperature resistance and performance. Trowelable.

Nordbak® High Impact Wearing Compound

Rubber-modified epoxy protects against sliding abrasion and impact to 250°F. Trowelable.

Nordbak® Castable Wearing Compound

For casting wear-resistant parts. Pourable ceramic compound can be cast into any shape. Resists temperatures to 225°F.

Nordbak® Pneu-Wear

Filled with small ceramic beads and silicon carbide for maximum protection against fine particle abrasion to 250°F. Trowelable.

Nordbak® Fast Cure Pneu-Wear

Fast cure version of standard Pneu-Wear protects against fine particle abrasion to 225°F and cures in just 3 hours. Trowelable.

Nordbak® High Temperature Pneu-Wear

Protects against fine particle abrasion and temperatures to 450°F. Must be post-cured for maximum temperature resistance and performance. Trowelable.

Nordbak® Ultra High Temperature Pneu-Wear

Protects against fine particle abrasion and temperatures to 550°F. Must be post-cured for maximum temperature resistance and performance. Trowelable.

Nordbak® Combo Bead Wearing Compound

This epoxy system combines the abrasion-resistance qualities of both large and small ceramic beads and silicon carbide. Protects against hard sliding abrasion and extends the life of material handling equipment. Trowelable.

Nordbak® Brushable Ceramic

Brushes on to form a smooth, corrosion-resistant coating. Protects against turbulence, abrasion, and cavitation. Can also be used as a top coat over Nordbak wearing compounds for surface rebuilding and lasting protection. Resists temperatures to 200°F.

Nordbak® High Temperature Brushable Ceramic

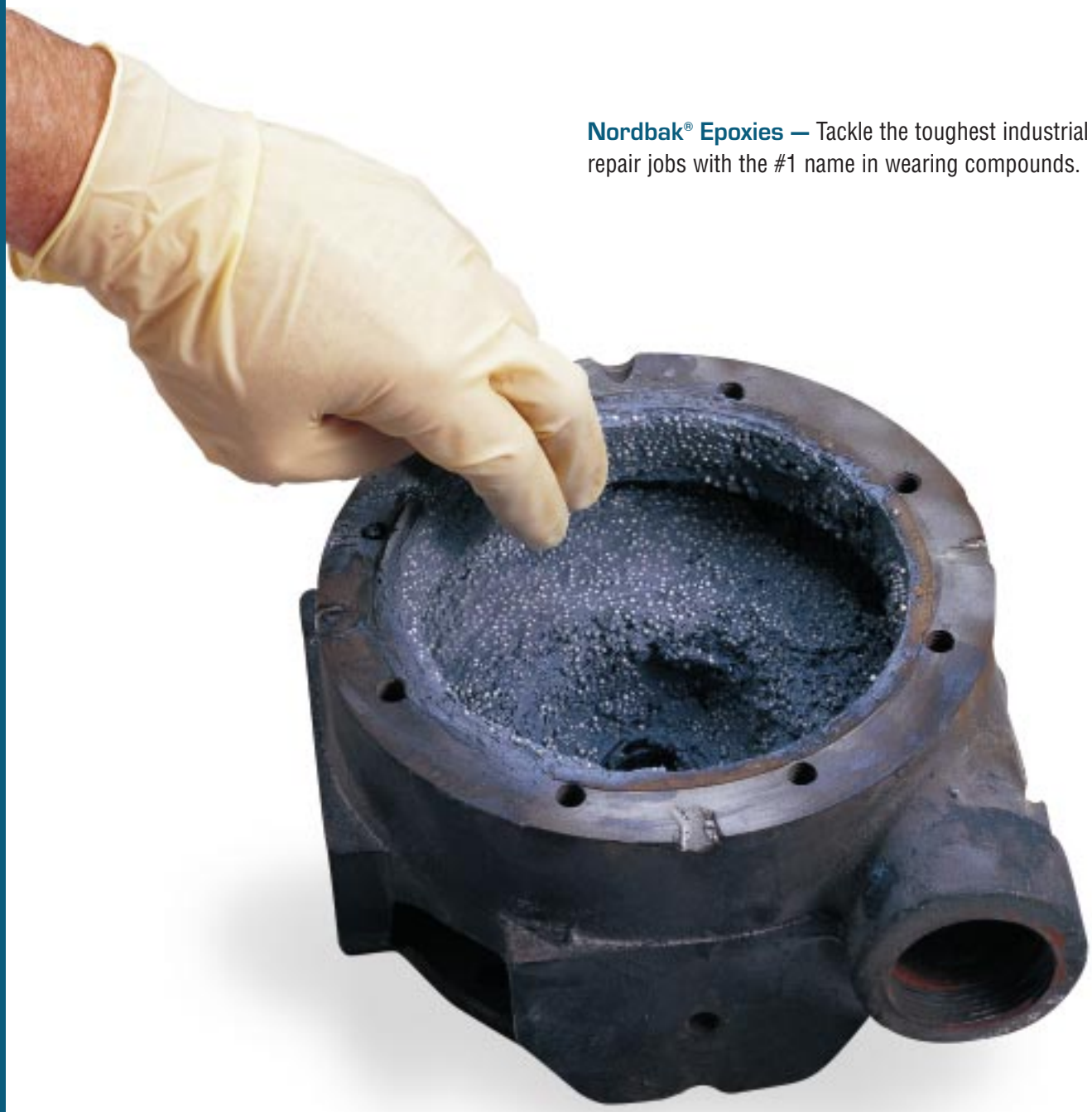
Provides protection against turbulence, abrasion, and cavitation up to 550°F. Must be post-cured for maximum temperature resistance and performance.

Nordbak® Chemical Resistant Coating

Smooth, glossy, low-friction finish protects against turbulence, abrasion, and cavitation. This advanced epoxy protects equipment from extreme chemical attack and corrosion. Low-viscosity epoxy can be applied by brush.

Nordbak® Ceramic Tile Adhesive

High strength. For securing tiles to vertical, horizontal, and overhead surfaces. Excellent shock and impact resistance. Trowelable. Resists temperatures to 200°F.



Nordbak® Epoxies — Tackle the toughest industrial repair jobs with the #1 name in wearing compounds.

PROPERTIES CHART

PRODUCT	Item Number	Container	Coverage, ft.² @ 1/4" Thickness	Color	Maximum Operating Temperature, °F	Compressive Strength, psi	Hardness (Shore D)	Working Time, Minutes, 77°F	Functional Cure, Hours, 77°F	Mix ratio by Volume, r : h	Mix ratio by Weight, r : h
Wearing Compound	99813 99812	5 lb. kit 25 lb. kit	1.75 8.75	Grey	250	16,000	90	30	7	2:1	2:1
Fast Cure Wearing Compound	96373	6 lb. kit	2.1	Blue	225	10,000	90	10	3	2:1	2:1
High Temperature Wearing Compound	99112	25 lb. kit	9	Grey	450	15,000	85	30	▲	4:1	3.9:1
Ultra High Temperature Wearing Compound	96392	25 lb. kit	9	Grey	550	–	90	30	▲	2.44:1	2.85:1
High Impact Wearing Compound	39918	25 lb. kit	8.75	Grey	250	15,000	85	30	6	2:1	2:1
Castable Wearing Compound	98992	25 lb. kit	277 in.³	Grey	225	18,500	90	30	6	2:1	6.8:1
Pneu-Wear	98383 98382	3 lb. kit 25 lb. kit	1.1 9	Grey	250	15,000	90	30	6	4:1	4:1
Fast Cure Pneu-Wear	96363	6 lb. kit	2.1	Blue	225	12,000	90	10	3	2:1	2:1
High Temperature Pneu-Wear	98372	25 lb. kit	8.8	Grey	450	15,000	90	30	▲	4:1	4:1
Ultra High Temp. Pneu-Wear	96332	25 lb. kit	8.8	Grey	550	–	90	30	▲	2:1	2.27:1
Combo Bead Wearing	96303	6 lb. kit	2.3	Grey	250	13,000	90	25	8	2:1	2:1
Brushable Ceramic	98733 98732 96443	2 lb. kit 6 lb. kit 2 lb. kit	12* 36* 12*	Grey Grey White	200 200 200	12,500 12,500 12,500	85 85 85	30 30 15	6 6 5	2.75:1 2.75:1 2.9:1	4.8:1 4.8:1 4.8:1
High Temperature Brushable Ceramic	96433	2 lb. kit	21.5*	Red	550	16,000	90	120	▲	2.6:1	4.25:1
Chemical Resistant Coating	96092	12 lb. kit	74*	Grey	150	10,000	83	20	16	2.2:1	3.7:1
Ceramic Tile Adhesive	97762	20 lb. kit	12	Beige	200	14,000	88	60	12	1:1	3.7:1

Properties based on mixing one lb. mass at 77°F, ultimate cure. *20 mil thickness. ▲ Requires heat cure. See Technical Data Sheet.

APPLICATION SELECTION GUIDE

PRODUCT	Fine Particle Abrasion	Multiple Particle Abrasion	Impact Resistance	Chemical Corrosion Protection	High Temperature Resistance	Fast Cure	Corrosion Protection	Tile Installation	Pump Repair	Elbows	Fan Housings	Cyclones	Chutes
Wearing Compound									◓	◓	●	◓	●
Fast Cure Wearing Compound						●			◓	◓	●	◓	●
High Temperature Wearing Compound					●				◓	◓	●	◓	●
Ultra High Temperature Wearing Compound					●				◓	◓	●	◓	●
High Impact Wearing Compound			●										
Castable Wearing Compound										●		●	
Pneu-Wear	●	◓							●	●	◓	●	◓
Fast Cure Pneu-Wear	●	◓				●			●	●	◓	●	◓
High Temp. Pneu-Wear	●	◓			●				●	●	◓	●	◓
Ultra High Temp. Pneu-Wear	●	◓			●				●	●	◓	●	◓
Combo Bead Wearing	◓	●								◓	◓	◓	◓
Brushable Ceramic				◓			●		◓				
High Temperature Brushable Ceramic				◓	●		●		◓				
Chemical Resistant Coating				●			◓						
Ceramic Tile Adhesive			◓					●					

● Preferred choice ◓ Good choice

These special support products provide uniquely designed, long-lasting solutions to frequent problems.

SPECIAL PRODUCTS

Urethane Sealant

Single-component, gun-grade caulk that bonds, seals, and waterproofs up to 180°F. Outstanding adhesion properties to concrete, masonry, glass, plastics, wood, aluminum, and most other metals.

Form-A-Thread® Stripped Thread Repair Kit

Permanently repairs stripped threads and fasteners in five minutes (up to SAE Grade 5 English and 8.8 metric). Allows up to 128 lb. torque and 300°F. Resists most shop fluids.

Prussian Blue

Aids precision fitting of machined surfaces. Locates high spots on close-to-tolerance components. Non-drying. Easy cleanup.

Pipe Repair Kit

Urethane-impregnated fiberglass tape, activated by water, for reliable, temporary repairs of metal, plastic, and composite pipes. Includes Metal Magic Steel™ epoxy stick and gloves. Cures in 30 minutes. NSF approved, Standard 61.

Quick Service Tool Kit

This compact kit contains everything needed to solve the most common mechanical failures. Included in the kit are: 242® Medium and 262 High Strength Threadlockers, 7649 Primer/Activator, Prism® 454 Instant Adhesive Gel, Quick Metal® 660 Retaining Compound, 565 Thread Sealant, Blue 587 Silicone Gasket Maker and 518 Gasket Eliminator®.

O-Ring Making Kit

Makes replacement, high performance o-rings in less than a minute. This compact kit contains three-foot lengths of common diameters of Buna N cord, Quick Set™ 404 Instant Adhesive, O-ring fixture, blade, a waterproofing solution, and a cleanup solution.

Pro Lock™ Tight®

Tight® is a multi-purpose anaerobic gel that seals, locks, and retains. It seals against most liquids and gases and works well on coarse threads, large gaps, and all overhead applications.

SPECIAL PRODUCTS ORDERING INFORMATION

PRODUCT	Item Number	Container	Max. Temperature Resistance	Adhesive Appearance
Form-A-Thread® Stripped Thread Repair Kit	28654	4.8 ml kit	300°F	Grey (mixed)
Pipe Repair Kit	96321 96322	2" x 6' tape 4" x 12' tape	250°F	Yellow
Prussian Blue	30520	0.75 oz. tube	N/A	Blue, oily paste
Pro Lock™ Tight®	51604 51642	50 ml tube 250 ml tube	300°F	Blue gel
Urethane Sealant	39916	10.2 oz. cartridge	180°F	Limestone
O-Ring Making Kit	00112	1 oz. waterproofing solution 1 oz. clean-up solvent 1/3 oz. 404 Quick Set™ instant adhesive Cord - 3/32", 1/8", 3/16" 1/4" Fixture and cutting blade	N/A	Clear
Quick Service Tool Kit	00101	10 ml, 242® Medium Strength Threadlocker 10 ml, 262 High Strength Threadlocker 4.5 oz. aerosol, 7649 Locquic® Primer N 3 gm tube, 454 Prism® Instant Adhesive Gel 6 ml tube, 660 Quick Metal® Retaining Compound 50 ml tube, 565 PST® Thread Sealant 70 ml tube, 587 Blue RTV Silicone Gasket Maker 50 ml tube, 518 Gasket Eliminator® Flange Sealant	N/A	–

Pipe Repair Kit