



Henkel

Henkel — Your Partner Worldwide

Solutions for the Automotive Industry

World Leader in Adhesives, Sealants and Surface Treatments



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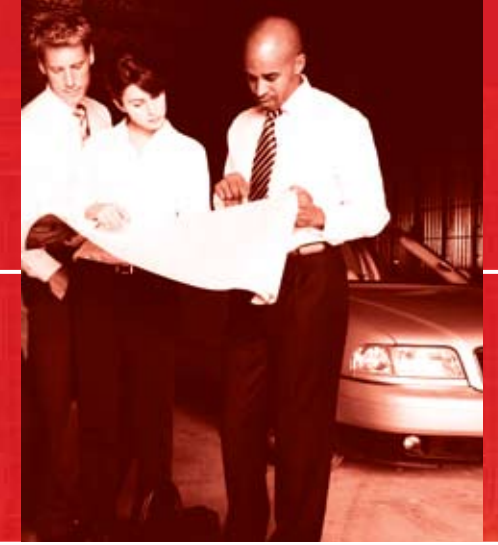
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adhesives & sealants

Henkel is the global leader in adhesives and sealants for the automotive industry. The company's portfolio represents the most advanced structural adhesive and sealant technology for automotive applications.



BONDING - CYANOACRYLATES

High performance, application-specific instant adhesives.

General Purpose / Surface Insensitive

Loctite® 401™ Prism® Instant Adhesive – Medium Viscosity – Designed for the assembly of difficult-to-bond materials that require uniform stress distribution. Particularly suited for bonding a wide range of materials, including metals, plastics, and elastomers. Also formulated for faster cure speeds on dry or acidic surfaces and substrates.

Loctite® 406™ Prism® Instant Adhesive – Wicking Grade – Designed for the bonding of plastics and electrometric materials where very fast fixturing is required.

Loctite® 431™ Prism® Instant Adhesive – High Viscosity – For bonds that require greater gap fill. Bonds to a wide variety of substrates, including dry or acidic surfaces. Fixtures fast and stays fast throughout the life of the product.

Loctite® 454™ Prism® Instant Adhesive – Gel – Designed for the assembly of difficult-to-bond materials that require uniform stress distribution. Particularly suited for bonding porous or absorbent materials. Also formulated for faster cure speeds on dry or acidic surfaces and substrates.

Low Odor / Low Bloom

Loctite® 403™ Prism® Instant Adhesive – High Viscosity – Part of a family of low odor, low blooming, surface insensitive products designed to improve both the work environment and the cosmetic appearance. Products now have faster fixture speeds on plastics and metals.

Loctite® 455™ Prism® Instant Adhesive – Gel – Particularly suited for bonding porous or absorbent substrates where low odor and/or non-blooming properties are required.

Toughened

Loctite® 380™ Black Max® Instant Adhesive – The original elastomer-modified instant adhesive. Bonds metal, rubber, and plastic. Excellent peel, impact, and shear strength.

Loctite® 410™ Prism® Instant Adhesive – A rubber toughened adhesive with increased flexibility and peel strength along with enhanced shock resistance.

Loctite® 411™ Prism® Instant Adhesive – Clear – An adhesive formulated for excellent impact and peel strength in gap-filling applications.

Loctite® 426™ Prism® Instant Adhesive – Gel – Designed for porous surfaces and vertical or overhead applications with the added benefits provided by an elastomer-modified instant adhesive.

Loctite® 480™ Prism® Instant Adhesive – Low viscosity, elastomer-modified instant adhesive. Bonds metals and rubbers. Excellent peel, impact, and shear strength. NSF/ANSI 61 certified for potable water.



LOCTITE® PRODUCT	IDH NUMBER	PACKAGE TYPE / SIZE	TYPICAL USE	COLOR	GAP FILL	CATEGORY	VISCOSITY (cP)	SHEAR STRENGTH* (psi)	TEMPERATURE RANGE	CURE SPEED**	SPECIFIC GRAVITY	AGENCY APPROVALS	
GENERAL PURPOSE SURFACE INSENSITIVE	401™ PRISM®	233641 135429 135430	3 g tube 20 g bottle 1 lb. bottle	General purpose	Clear	0.005"	Ethyl	110	3,200	-65°F (-54°C) to 180°F (82°C)	Fixture – 15 sec Full – 24 hrs	1.05	CFIA
	406™ PRISM®	233684 135436 237295	3 g tube 20 g bottle 1 lb. bottle	Wicking grade	Clear	0.004"	Ethyl	20	3,200	-65°F (-54°C) to 180°F (82°C)	Fixture – 15 sec Full – 24 hrs	1.05	Commercial item std. A-A-3097
	431™ PRISM®	868350 868371 868372	3 g tube 20 g bottle 1 lb. bottle	Gap filling	Clear	0.008"	Ethyl	1,000	2,300	-65°F (-54°C) to 180°F (82°C)	Fixture – 15 sec Full – 24 hrs	1.10	N/A
	454™ PRISM®	233998 231346 135462 234004 088525	3 g tube 10 g syringe 20 g tube 200 g tube 300 g cartridge	Porous surfaces	Clear	0.010"	Ethyl	Gel	3,200	-65°F (-54°C) to 180°F (82°C)	Fixture – 15 sec Full – 24 hrs	1.05	CFIA, ABS
LOW ODOR / LOW BLOOM SURFACE INSENSITIVE	403™ PRISM®	233671 135433 233675	3 g tube 20 g bottle 1 lb. bottle	Gap filling	Clear	0.008"	Alkoxy	1,000	2,600	-65°F (-54°C) to 160°F (71°C)	Fixture – 50 sec Full – 24 hrs	1.10	N/A
	455™ PRISM®	231525 135258	10 g syringe 200 g tube	Porous surfaces	Clear	0.010"	Alkoxy	Gel	2,600	-65°F (-54°C) to 160°F (71°C)	Fixture – 90 sec Full – 24 hrs	1.10	N/A
TOUGHENED	380™ BLACK MAX®	232834 135423 135424	3 g tube 1 oz. bottle 1 lb. bottle	Close-fitting parts	Black	0.006"	Ethyl	300	3,750	-65°F (-54°C) to 225°F (107°C)	Fixture – 90 sec Full – 24 hrs	1.10	CFIA
	410™ PRISM®	233757 135444 135445	3 g tube 20 g bottle 1 lb. bottle	Gap filling	Black	0.008"	Ethyl	3,500	3,200	-65°F (-54°C) to 225°F (107°C)	Fixture – 90 sec Full – 24 hrs	1.07	CFIA
	411™ PRISM®	233768 135446 135447	3 g tube 20 g bottle 1 lb. bottle	Gap filling	Clear	0.008"	Ethyl	5,000	3,200	-65°F (-54°C) to 210°F (99°C)	Fixture – 30 sec Full – 24 hrs	1.07	N/A
	426™ PRISM®	231339 229732 229504 219289	10 g syringe 20 g tube 200 g tube 300 g cartridge	Porous surfaces	Black	0.010"	Ethyl	Gel	3,000	-65°F (-54°C) to 210°F (99°C)	Fixture – 20 sec Full – 24 hrs	1.10	N/A
	480™ PRISM®	135466 234048	20 g bottle 1 lb. bottle	General filling	Black	0.006"	Ethyl	200	3,800	-65°F (-54°C) to 180°F (82°C)	Fixture – 90 sec Full – 24 hrs	1.10	NSF/ANSI 61



BONDING – ELASTOMERIC ADHESIVES & SEALANTS

The newest in Loctite® elastomeric adhesives and sealants exhibit high resiliency while maintaining high tensile strength and good adhesion to substrates.

Loctite® 5510™ Adhesive / Sealant – Black, Grey, and White – A multi-purpose product based on Flextec™ Technology suitable for many adhesive and sealant applications. It offers a fast skin time and cures to a tack-free surface. Its outstanding adhesion and toughness make it ideal for bonding and sealing between dissimilar substrates that are subjected to joint movement or impact.

Loctite® 5512™ Adhesive / Sealant – High elongation and tensile strength give this product the best of both worlds. This product has good adhesion to many substrates, as well as good impact and peel resistance.

Loctite® 5570™ Adhesive – Clear and White – A strong bonding adhesive based on Flextec™ Technology with elastic properties for bonding dissimilar substrates. High initial tack and fast setting make it ideal for high productivity applications.

Loctite® 5572™ Adhesive – This product exhibits the highest shear strength on a majority of substrates versus the other products in this line.

Loctite® 5590™ Adhesive – A two-component adhesive for elastic bonding where the curing rate of one-component adhesives is too slow. The mixed adhesive is non-sag, has high tack, and fast set time. The cured product provides durable bonding to a wide variety of substrates.

LOCTITE® PRODUCT	IDH NUMBER	PACKAGE TYPE / SIZE	COLOR	EXTRUSION RATE** (g/min)	CURE METHOD	SKIN TIME (min)	TEMPERATURE RANGE	HARDNESS SHORE A	TENSILE STRENGTH* (psi)	ELONGATION AT BREAK (%)	SHEAR STRENGTH ON STEEL (psi)
5510™	1073344 1194277	300 ml cartridge 50 lb. pail	White	200	Moisture	30	-40°F (-40°C) to 200°F (93°C)	40	250	300	250
	1073346 1194276	300 ml cartridge 50 lb. pail	Grey								
	1073347 1197374	300 ml cartridge 50 lb. pail	Black								
5512™	877569 877641	300 ml cartridge 5 gallon pail	Black	90	Moisture	5	-40°F (-40°C) to 200°F (93°C)	55	390	500	270
5570™	1073348 1197375	300 ml cartridge 50 lb. pail	White	150	Moisture	30	-40°F (-40°C) to 200°F (93°C)	55	380	230	400
	1073349 1197372	300 ml cartridge 40 lb. pail	Clear	110							
5572™	877568 877630	300 ml cartridge 5 gallon pail	Black	90	Moisture	12	-40°F (-40°C) to 200°F (93°C)	55	475	225	425
5590™	1091896	400 ml dual cartridge	Black	N/A	Two-Component Static Mix	25	-40°F (-40°C) to 200°F (93°C)	60	435	130	290
5590™ PART A	1091892	5 gallon pail	Black								
5590™ PART B	1091893	5 gallon pail	Black								



MAGNET BONDING – STRUCTURAL ADHESIVES

Structural adhesives for magnet bonding combine the benefits of fast process speeds with tough, durable, environmentally resistant bond strengths, making them ideal for bonding components used in small engines and other devices.

Acid-Free Fast Fixture / No Mixing

Loctite® 331™ Structural Adhesive – Ultra-Fast Fixture – Single-component, toughened, activator-cure acrylic. Acid-free, non-corrosive to sensitive parts. Fixtures in 20 seconds and develops full strength in 30 minutes. Excellent high temperature resistance. Ideal for bonding close-fitting metals and magnets.

Loctite® E-214HP™ Hysol® Epoxy Adhesive – Oven Cure – Single-component, acid-free, heat cure epoxy. Light grey, temperature resistant, high strength, non-sag. Non-corrosive to sensitive parts.

Loctite® E-220IC™ Hysol® Epoxy Adhesive – Induction Cure – Single-component, acid-free, epoxy adhesive designed for induction cure operations. A fast curing paste formulated to reduce the risk of localized heating. Well suited for metal and magnet bonding. Non-corrosive to sensitive parts.

Fast Fixture / No Mixing

Loctite® 312™ Speedbonder™ Structural Adhesive – Ultra-Fast Fixture – Single-component, medium viscosity, activator-cure acrylic. Fixtures in 30 seconds with 75% of full strength developed in 10 minutes. Ideal for bonding a variety of close-fitting parts, including metal, glass, and ceramic.

Loctite® 325™ Speedbonder™ Structural Adhesive – Chemical Resistant – Solvent-resistant, activator-cured acrylic fixtures in minutes. Forms flexible bonds on gaps up to 0.04". Designed for severe environments and temperatures to 300°F.

Loctite® 334™ Structural Adhesive – High Temperature – Single-component, dual-cure acrylic. Forms tough, flexible bonds on gaps up to 0.02".

Loctite® 392™ Structural Adhesive – Toughened – Single-component, dual-cure acrylic. Provides fast fixture speed and tough, reliable bonds.

LOCTITE® PRODUCT	IDH NUMBER	PACKAGE TYPE / SIZE	FEATURES	CHEMISTRY	COLOR	VISCOSITY (cP)	GAP FILL (in.)	FIXTURE TIME	CURE TIME (hours)	SHEAR STRENGTH ¹ (psi)	IMPACT STRENGTH ¹ (kJ/M ²)	TEMPERATURE RESISTANCE	SUGGESTED ACTIVATOR
ACID-FREE FAST FIXTURING / NO MIXING	331™ (PATENTED)	1057673 1256398 1057674* 1062124*	25 ml syringe w/ manual plunger 25 ml EFD syringe 1 liter bottle 10 gallon pail	Ultra-Fast Fixture, Acid-Free	Two-Step Acrylic	Cream	20,000	0.04	20 seconds	24	3,100	>13	350°F (177°C) Loctite® 7387™ Activator
	E-214HP™	233999 234001	30 ml cartridge 300 ml cartridge	Oven Heat Cure, Acid-Free	One-Part Epoxy	Light Grey	Paste	–	N/A	2	4,820	–	300°F (149°C) N/A
	E-220IC™	1078250 1078261 1078499*	30 ml syringe 1 liter bottle 5 gallon pail	Induction Heat Cure, Acid-Free	One-Part Epoxy	Grey	Paste	–	N/A	0.03 (induction) 1 (oven)	5,900	>13	300°F (149°C) N/A
FAST FIXTURING / NO MIXING	312™ SPEEDBONDER™	228191 228173 135398 198103	10 ml kit ² 50 ml kit ² 50 ml bottle 1 liter bottle	General Purpose, Ultra-Fast Fixture	Two-Step Acrylic	Clear to Amber	1,000	0.003	30 seconds	24	>2,490	–	250°F (121°C) Loctite® 736™ Primer NF™
	325™ SPEEDBONDER™	135401	50 ml bottle	Severe Environment, Chemical Resistant	Two-Step Acrylic	Clear Brown	20,000	0.04	5 minutes	24	2,200	–	300°F (149°C) Loctite® 7075™ Activator
	334™	247075 232749	25 ml syringe 300 ml cartridge	Severe Environment, High Temperature	Two-Step Acrylic	Yellow	80,000	0.02	90 seconds	24	2,800	5.2	350°F (177°C) Loctite® 7387™ Activator
	392™	232855 232857 135427	50 ml tube 300 ml cartridge 1 liter bottle	High Toughness	Two-Step Acrylic	Amber	6,500	0.025	60 seconds	24	2,500	–	250°F (121°C) Loctite® 7387™ Activator

* Made-to-order item

¹ Steel

² 10 ml bottle of Loctite® 312™ Speedbonder™ and 40 g aerosol can of Loctite® 736™ Primer NF™

³ 50 ml bottle of Loctite® 312™ Speedbonder™ and 6 oz. aerosol can of Loctite® 736™ Primer NF™



BONDING - STRUCTURAL ADHESIVES

Henkel's structural adhesives are used in a variety of automotive applications to join components in autobody construction, modular component assembly and trim bonding applications. From one-component, heat-cured adhesives to two-component, room temperature-curing structural adhesives, Henkel develops advanced technologies and provides superior service to the automotive and transportation industries.

HEAT CURE

Terokal® 2300™ – This one-component, heat-cured, expandable structural adhesive is a low to medium performance product. It is a structural adhesive for stiffening and joining applications with a 50 percent expansion rate, and has limited fracture toughness.

Terokal® 2400™ – An epoxy-based, heat-cured, expandable, wash resistant, structural adhesive for use in body-in-white applications. The adhesive is applied between metal joints to improve stiffness, reduce spot weld requirements, or join metal where spot welds are not practical. This product is also used to increase vehicle rigidity. Terokal® 2400™ exhibits good adhesion to galvanized metal, aluminum, and other steel substrates coated with metal forming lubricants.

Terokal® 4555B™ – This one-component, solvent-free, impact resistant, heat curable structural resin is a very good all-around adhesive with good toughness and high peel resistance. It is a workhorse product for vehicle stiffening applications. Terokal® 4555B™ can be applied directly to oily substrates.

Terokal® 5089™ – This is a one-component, heat curable, high performance, impact resistant structural adhesive. Material has weld-through capability and will reach maximum strength with curing temperatures between 155°C and 190°C. Product exhibits excellent strength and corrosion resistance at temperature extremes or after extensive aging and weathering.

PRODUCT	IDH Number	Package Type / Size	Base Chemistry or Cure System	Color	Substrates	Viscosity	Cure Time/Temp @ PMT (Peak Metal Temperature) Cure rates may vary depending on time & temp	Shear Strength – CRS	T-Peel – CRS	Impact Resistance – CRS
Terokal® 2300™	887561	210 kg drum	1K Epoxy	Black	CRS, HDG, EG, Galveaneal	80-85 sec	>20 minutes at 160°C	2000 psi	25 pli	60 inch/lbs.
	887651	23 kg pail								
	888331	12 pack cartridge								
	1061206	105 kg 1/2 Drum								
Terokal® 2400™	1072897	256 kg drum	1K Epoxy	Black	CRS, HDG, EG, Galveaneal, Al	250-350 sec	20 minutes at 160°C	2000 psi	25 pli	60 inch/lbs.
	1076983	128 kg 1/2 drum								
	1072467	20 kg pail								
	1076981	12 pack cartridge								
Terokal® 4555B™	722150	227 kg drum	1K Epoxy	Black	CRS, HDG, EG, Al	0.104/80 18-26 sec	>15 minutes at 160°C	20 Mpa	10 N/mm	20 N/mm
	965871	18 kg pail								
	913559	12 pack cartridge								
Terokal® 5089™	1182927	220 kg drum	1K Epoxy	Purple	CRS, HDG, EG, Al	30-50 Pa.s	20 minutes at 177°C	20 MPa	N/A	25 N/mm
	1253838	110 kg 1/2 drum								
	1182761	19 kg pail								
	1182757	12 pack cartridge								

AMBIENT CURE

General Performance

Loctite® H4710™ Speedbonder™ Structural Adhesive – Corrosion Resistant, Fast Fixture – Thixotropic, two-component, room temperature-curing methacrylate adhesive designed for structural bonding of galvanized and galvaneal parts. Excellent environmental resistance. Its non-sag characteristics are well suited for filling gaps up to 0.375". Delivers excellent peel and impact strength with no surface preparation.

Loctite® H4720™ Speedbonder™ Structural Adhesive – Corrosion Resistant, Extended Work Life – Maintains superior strength in corrosive environments. Excellent general purpose metal bonder.

Steel Bonding

Loctite® H8500™ Speedbonder™ Structural Adhesive – Fast Fixture – Excellent peel strength on steel and aluminum. Contains 30 mil spacer beads to prevent excessive squeeze-out of adhesive due to over-clamping.

Loctite® H8510™ Speedbonder™ Structural Adhesive – Extended Work Life – Offers superior peel and impact strength on steel and aluminum. This grey, ultra-fracture toughened, two-component acrylic adhesive has an extended

open time, making it ideal for the assembly and adjustment of larger parts. Contains 30 mil spacer beads to prevent excessive squeeze-out of adhesive due to over-clamping.

Aluminum Bonding

Loctite® H8000™ Speedbonder™ Structural Adhesive – Medium Fixture – Exhibits excellent peel strength on multiple substrates, especially aluminum.

Loctite® H8010™ Speedbonder™ Structural Adhesive – Gap Control – Non-sag, two-component, room temperature-curing, methacrylate adhesive exhibits superior peel strength on multiple substrates, especially aluminum. Contains 5 mil spacer beads to prevent excessive squeeze-out of adhesive due to over-clamping.

Flexible Bonding

Loctite® U-05FL™ Hysol® Urethane Adhesive – High Strength – A two-part, high performance urethane adhesive for metal bonding with a 5-minute work life. Off-white, highly flexible, impact and moisture resistant, high peel, high shear.

LOCTITE® PRODUCT	IDH NUMBER	PACKAGE TYPE / SIZE	FEATURES	CHEMISTRY	COLOR	VISCOSITY (cP)	MIX RATIO	WORK LIFE (minutes)	FIXTURE TIME (min)	CURE TIME (hours)	SHEAR STRENGTH ¹ (psi)	IMPACT STRENGTH ¹ (kJ/m ²)	PEEL STRENGTH ¹ (psi)	HOT STRENGTH ¹ (psi)	
GENERAL PERFORMANCE	H4710™ SPEEDBONDER™	670790 1264965 625397 1251680	490 ml dual cartridge Part A 5 gallon pail Part A 55 gallon drum Part B 5 gallon pail	Fast Set, Corrosion Resistant	Two-Part Acrylic	Grey	15,000	10:1	5	15	48	4,520	>14	16	1,350
	H4720™ SPEEDBONDER™	625393 1264965 625397 625395	490 ml dual cartridge Part A pail Part A drum Part B pail	Extended Work Life, Corrosion Resistant	Two-Part Acrylic	Teal	70,000	10:1	65	100	48	4,200	8.5	25.3	1,100
	H8500™ SPEEDBONDER™	827608 828622 829325	490 ml dual cartridge 5 gallon pail, adhesive 5 gallon pail, activator	Fast Fixture	Two-Part Acrylic	Grey	60,000	10:1	10	25	72	2,899	26.3	46.4	960
STEEL BONDING	H8510™ SPEEDBONDER™	1107651	490 ml dual cartridge	Extended Work Life	Two-Part Acrylic	Grey	65,000	10:1	28	30	72	3,440	>14	58	413
ALUMINUM BONDING	H8000™ SPEEDBONDER™	411833 392457 392458	490 ml dual cartridge 5 gallon pail, adhesive 5 gallon pail, activator	Medium Work Life	Two-Part Acrylic	Green	190,000	10:1	15	30	24	3,250	>42	40	450
	H8010™ SPEEDBONDER™	769864	490 ml dual cartridge	Gap Control	Two-Part Acrylic	Grey	250,000	10:1	15	20	24	2,680	Not Tested	9 ¹	Not Tested
FLEXIBLE BONDING	U-05FL™ HYSOL®	237126 237127 234009 234010	200 ml dual cartridge 400 ml dual cartridge 5 gallon pail, resin 5 gallon pail, hardener	High Strength	Two-Part Urethane	Off-White	100,000	1:2	5	–	24	930 ³	636 ⁶	Not Tested	280

¹ Steel
² 220°F (104°C) shear on steel

³ Grit-blasted steel
⁴ Aluminum
⁵ Etched aluminum

⁶ Abraded and etched aluminum



PLASTIC BONDING

Structural adhesives that bond a wide variety of materials such as thermoplastics, polycarbonate, ABS, PVC, polyethylene and polypropylene. These are specially formulated to provide UV resistance, high impact resistance and peel resistance.

Loctite® 3032™ Structural Adhesive – A fast fixturing, thixotropic acrylic adhesive. Designed to bond low energy plastic substrates. Excellent polypropylene bonder.

Loctite® 3034™ Structural Adhesive – Extended open time allows for adjustment of parts. Excellent peel and shear strength on polyethylene plastics.

Loctite® 3038™ – An adhesive designed to primarily bond e-coated metals to glass fiber filled polypropylenes, but can also be used on other low energy substrates. This product is designed to work without a surface pretreatment.

PRODUCT	IDH Number	Package Type/Size	Chemistry	Viscosity (cP)	Mix Ratio	Work Life (min)	Fixture Time (min)	Cure Time (hrs)	Shear Strength (psi)	Peel Strength (pli)
Loctite® 3032™ Structural Adhesive	1051591	50 ml dual cartridge	Two-part acrylic	14,000	10:1	3	25	24	2,275	3
	797221	490 ml dual cartridge								
	1057610	5 gallon pail, adhesive								
	1070646	5 gallon pail, activator								
Loctite® 3034™ Structural Adhesive	1051330	50 ml dual cartridge	Two-part acrylic	63,000	10:1	14	55	24	2,450	6
	960973	490 ml dual cartridge								
	1057671	5 gallon pail, adhesive								
	1070646	5 gallon pail, activator								
Loctite® 3038™	1070182	490 ml dual cartridge	Two-part acrylic	1,500 to 15,000 for Part A 6,000 to 18,000 for Part B	10:1	1 to 2	70	72	1,160	N/A
	1070130/1070181	15 liter pail/18 kg drum								



LAMP BONDING

A full range of adhesive solutions for the bonding of external lighting assemblies.

PURFECT LOK® 34-858A – Moisture-curing hot melt adhesive designed to provide excellent adhesion to difficult surfaces, such as polycarbonate, acrylic polymers, BMC, nylon and treated polypropylene.

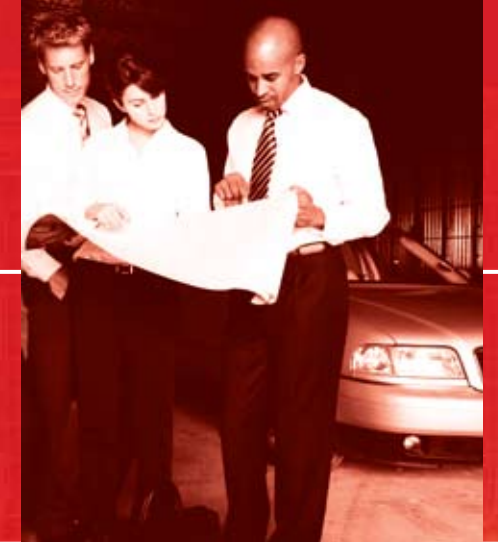
PURFECT LOK® 34-858B – Moisture-curing hot melt adhesive designed to provide excellent adhesion to difficult surfaces, such as polycarbonate, acrylic polymers, BMC, nylon and treated polypropylene. Higher processing sag resistance than PURFECT LOK® 34-858A.

PURFECT® LAMP 91-038A – Moisture-curing hot melt adhesive designed to provide excellent adhesion to difficult surfaces, such as polycarbonate, acrylic polymers, BMC, nylon and treated polypropylene. High heat resistance, high handling strength, high elongation, and cohesive failure on most substrates.

PURFECT® LAMP 91-038B – Moisture-curing hot melt adhesive designed to provide excellent adhesion to difficult surfaces, such as polycarbonate, acrylic polymers, BMC, nylon and treated polypropylene. High heat resistance, high handling strength, high elongation, and cohesive failure on most substrates.

PRODUCT	IDH Number	Package Type	Appearance	Solids	Viscosity, Brookfield, 27 spindle
PURFECT LOK® 34-858A	1217795	Pail	Pigmented Black Pigmented Grey Pigmented Grey	100%	9,000 cps @ 275°F
	1217327	Pail			
	1217326	Drum			
PURFECT LOK® 34-858B	1222997	Drum	Pigmented Black	100%	22,00 cps @ 275°F
	1222998	Pail			
PURFECT® LAMP 91-038A	1223166	Pail	Pigmented Grey	100%	22,000 cps @ 250°F
	1223165	Drum			
PURFECT® LAMP 91-038B	1219435	Drum	Pigmented Black	100%	22,000 cps @ 250°F





FRICITION BONDING

Henkel friction bonding adhesives have been developed to meet the demanding requirements of automotive and industrial friction applications. These products are designed to be tough at

temperatures as low as -40°F and at temperatures as high as 600°F. All of Henkel's friction adhesives are highly resistant to oils, transmission fluids and solvents.

SHOE DIPS

Henkel's shoe dip products are designed as corrosion protective primers for drum brake cores. When applied, these products act as barriers to oxidation of the metal surface so that cleaned cores can be stored and bonded at a later time.

A-602B™ – Adhesive shoe dip formulations are thermosetting, synthetic resin-based solutions. These primers dry fast and cure to form hard, non-tacky, heat- and abrasion-resistant surfaces. These dips are primarily used to protect brake shoes from corrosion.

PL1447™ – Adhesive shoe dip formulations are thermosetting, synthetic resin-based solutions in acetone. These primers dry quickly and cure to form hard, non-tacky, heat- and abrasion-resistant surfaces. These dips are primarily used to protect brake shoes from corrosion, as well as to improve the overall bond strength of finished parts.

PRODUCT	IDH Number	Package	Base Polymers	Color	Viscosity	Application	Carrier System
A-602B™	748577 1027773 889544	Drum Pail Pail	Phenolic	Amber	100 cps/min	Dip/Spray	Solvent
PL1447™	750303 750301 905057	Drum Pail Pail	Phenolic resin and nitrile rubber	Glossy Black	20-40 sec (#2 Zahn Cup)	Dip/Spray	Solvent



DISC BRAKE PRODUCTS

Adhesives used to bond the friction material to the backing plate.

AL6000™ – Environmentally sustainable friction bonding adhesive solution for disc brake applications.

AL6004™ – Environmentally sustainable friction bonding adhesive solution for disc brake applications.

AL6002™ – Water-based adhesive for bonding friction materials that is designed to provide superior melt-flow during cure and is suitable for bonding applications where a certain amount of gap-filling is required.

PRODUCT	IDH Number	Package	Base Polymers	Color	Viscosity	Application	Carrier System
AL6000™	848202 851399	Drum Pail	Phenolic resin and nitrile rubber	Black	5,000-7,000 cps	Brush, Spray, Roll-Coat, Curtain-Coat	Water
AL6002™	836543 848185	Drum Pail	Phenolic resin and nitrile rubber	Black	15,000-18,000 cps	Brush, Spray, Roll-Coat, Curtain-Coat	Water
AL6004™	851398 748725 848181 748724	Drum Pail Pail	Phenolic resin and nitrile rubber	Blue	3,500-7,000 cps	Brush, Spray, Roll-Coat, Curtain-Coat	Water

LINING ADHESIVES

Used to couple the brake lining to the brake housing.

PL605-4™ – Lining adhesive for drum brake applications.

PL605-15™ – Lining adhesive for drum brake applications.

PL605-51™ – Lining adhesive for drum brake applications.

PRODUCT	IDH Number	Package	Base Polymers	Color	Viscosity	Application	Carrier System
PL605-4™	750351 750352 750350 1018967	Drum Drum Pail Pail	Phenolic resin and nitrile rubber	Black	4,000-6,000 cps/min	Brush, Spray	Solvent
PL605-15™	750345 917866	Drum Pail	Phenolic resin and nitrile rubber	Black	14,000-22,000 cps/min	Brush, Extrusion	Solvent
PL605-51™	854844 864598 750356	Drum Pail Pail	Phenolic resin and nitrile rubber	Black	43,000 cps/min	Extrusion	Solvent



FRICITION PAPER BONDING

Friction paper adhesives bond friction material "paper" to a metal substrate; mainly used in the bonding of transmission bands and clutch plates.

AL6000™ – A heat-curing, water-based adhesive that when cured furnishes excellent resistance to thermal shock and chemicals. The cured bond can withstand temperatures exceeding 500°F (260°C).

PL700™ – A heat-curing, solvent-based, friction material adhesive. The viscosity of PL700™ is suitable for brush, spray, and curtain-coating applications. The cured bond withstands temperatures exceeding 600°F (316°C).

AL6002™ – A water-based adhesive for bonding friction materials that is designed to provide superior melt-flow during cure and is suitable for bonding applications where a certain amount of gap-filling is required.

PL606M™ – A black, solvent-based adhesive designed to bond friction material. The viscosity is suitable for roll-coating applications. The cured bond withstands intermittent temperatures exceeding 600°F (316°C).

AL6004™ – A heat-curing, water-based adhesive that when cured furnishes excellent resistance to thermal shock and chemicals. The cured bond can withstand temperatures exceeding 500°F-600°F (260°C-316°C).

PL605-4™ – A black, heat-curing solvent-based adhesive. Cured product furnishes excellent resistance to thermal shock, chemicals, and water. The cured bond withstands temperatures exceeding 600°F (316°C). The primary application is for bonding brake, clutch, and other friction materials to metal.

PRODUCT	IDH Number	Package	Base Polymers	Color	Viscosity	Application	Carrier System
AL6000™	848202	Drum	Phenolic resin and nitrile rubber	Black	5,000-7,000 cps	Brush, Spray, Roll-Coat, Curtain-Coat	Water
AL6002™	836543	Drum	Phenolic resin and nitrile rubber	Black	15,000-18,000 cps	Brush, Spray, Roll-Coat, Curtain-Coat	Water
AL6004™	851398 748725	Drum Drum	Phenolic resin and nitrile rubber	Blue	3,500-7,000 cps	Brush, Spray, Roll-Coat, Curtain-Coat	Water
PL700™	750434	Drum	Phenolic resin and nitrile rubber	Black	2,000-2,400 cps	Brush, Spray, Roll-Coat, Curtain-Coat	Solvent
PL606M™	750362	Drum	Phenolic resin and nitrile rubber	Black	1,200-1,900 cps	Brush, Spray, Roll-Coat, Curtain-Coat	Solvent
PL605-4™	750351 750352	Drum Drum	Phenolic resin and nitrile rubber	Black	4,000-6,000 cps	Brush, Spray, Roll-Coat, Curtain-Coat	Solvent



RETAINING

Retaining compounds are used to join non-threaded metal cylindrical assemblies.

Close-Fitting Parts

Loctite® 609™ Retaining Compound – Press Fit / General Purpose – A low viscosity retaining compound that bonds rigid metal assemblies. Ideal for gap distances up to 0.005" diametral. 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.

Loctite® 648™ Retaining Compound – Press Fit / High Strength / Rapid Cure – A retaining compound recommended for continuous working temperatures up to 300°F. Fills gaps up to 0.006" diametral clearance. Fixtures in 5 minutes.

Loctite® Axle Tube Sealant – An anaerobic sealant specifically designed for sealing axle tubes.

Loctite® LV Core Plug – An anaerobic sealant specifically designed for sealing and retaining engine cup plugs.

High Temperature

Loctite® 620™ Retaining Compound – Slip Fit / 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 0.015" diametral clearance. Prevents metal fretting and corrosion. Seals against leakage.

Loose-Fitting Parts

Loctite® 638™ Retaining Compound – Slip Fit / Maximum Strength – A maximum strength retaining compound for use where high dynamic force or cyclic loading is expected. Locks cylindrical assemblies up to 0.010" diametral clearance. Fixtures in 5 minutes.

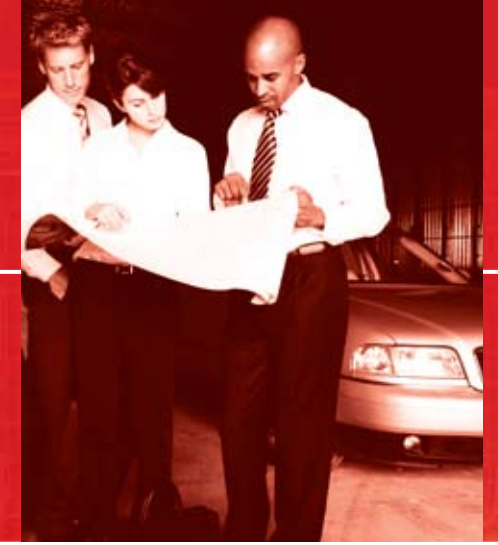
Loctite® 680™ Retaining Compound – Slip Fit / High Strength – A high strength, high viscosity, room temperature-curing adhesive used to join fitted cylindrical parts. It fixtures in 10 minutes and provides a shear strength of 4,000 psi after 24 hours. Capable of filling diametral gaps up to 0.015" (0.27 mm). Loctite® 680™ allows relaxed machining tolerances and replaces clamp rings, set screws, and snap rings.



LOCTITE® PRODUCT	IDH NUMBER	PACKAGE TYPE & SIZE	TYPICAL USE	COLOR	MAXIMUM GAP FILL (DIAMETER)	VISCOSITY (cP)	SHEAR STRENGTH STEEL/STEEL* (psi)	TEMPERATURE RANGE	CURE SPEED*	
CLOSE-FITTING PARTS	609™	135512 135513 209763	50 ml bottle 250 ml bottle 1 liter bottle	1st generation to augment press fits	Green	0.005"	125	2,300 (minimum)	-65°F (-54°C) to 300°F (149°C)	Fixture – 10 min Full – 24 hrs
	648™	231105 237050	50 ml bottle 250 ml bottle	Fast fixturing for close-fitting parts, high strength for stainless steel	Green	0.006"	500	3,900	-65°F (-54°C) to 300°F (149°C)	Fixture – 5 min Full – 24 hrs
	Axle Tube Sealant	228258	1 liter bottle	–	Red	–	–	–	-65°F (-54°C) to 300°F (149°C)	–
	LV Core Plug	228259	1 liter bottle	–	Green	–	–	–	-65°F (-54°C) to 300°F (149°C)	–
HIGH TEMPERATURE	620™	135514 135515 234787	50 ml bottle 250 ml bottle 1 liter bottle	For high temperature applications	Green	0.015"	8,500	3,800	-65°F (-54°C) to 300°F (149°C)	Fixture – 30 min Full – 24 hrs
LOOSE-FITTING PARTS	638™	231111 231113	50 ml bottle 250 ml bottle	High strength for loose-fitting parts	Green	0.015"	2,500	4,500	-65°F (-54°C) to 300°F (149°C)	Fixture – 5 min Full – 24 hrs
	680™	135534 271211 234954	50 ml bottle 250 ml bottle 1 liter bottle	High strength for slip-fitted parts	Green	0.015"	1,250	2,800	-65°F (-54°C) to 300°F (149°C)	Fixture – 10 min Full – 24 hrs

* Varies with substrates.





THREADLOCKING

A revolutionary method to lock and seal threaded fasteners, Loctite® threadlockers are used in the automotive industry to ensure component security. Loctite® threadlockers are available in varying viscosities and strengths for virtually any application, including exposure to extreme environments.

Removable Strength

Loctite® 242® Threadlocker – Medium Strength – Removable strength, general purpose threadlocking adhesive well suited for fasteners between 1/4" to 3/4" diameter (6 mm to 20 mm). Applied to threaded components before assembly, Loctite® 242® Threadlocker has controlled lubricity for accurate clamp loads. Parts can be separated using hand tools.

High Strength

Loctite® 262™ Threadlocker – Medium to High Strength – A permanent, high strength product that is applied to fasteners up to 3/4" (20 mm) in diameter before assembly. High lubrication for easy assembly. Excellent for preventing rust and corrosion in extreme chemical/environmental conditions. Localized

heat and hand tools are required to separate parts. Solvents will not weaken the adhesive bond.

Loctite® 271™ Threadlocker – High Strength – A high strength, low viscosity threadlocker for fasteners up to 1" (25 mm) in diameter.

Wicking

Loctite® 290™ Threadlocker – Medium Strength / Green – A low viscosity, medium strength threadlocker for pre-assembled bolts up to 1/2" (12 mm) to secure them in place. Penetrates threads by capillary action. Seals porosities in welds and metal parts. 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.

	LOCTITE® PRODUCT	IDH NUMBER	PACKAGE TYPE & SIZE	COLOR	TYPICAL USE	VISCOSITY (cP)*	TORQUE IN./LBS. (M10 STEEL NUTS & BOLTS) BREAK/PREVAIL	TEMP RANGE	CURE SPEED (STEEL AT 25°C)	OIL TOLERANT	RECOMMENDED PRIMER	SPECIFIC GRAVITY
REMOVABLE STRENGTH	242®	135355	50 ml bottle	Blue	Removable grade, up to 1/4" to 3/4" bolts	1,200/5,000 Thixotropic	110/43	-65°F to 300°F (-54°C to 150°C)	Fixture – 10 minutes Full – 24 hours	N/A	7088™, N™ or T™	1.07
		135357	250 ml bottle									
		209729	1 liter bottle									
HIGH STRENGTH	262™	135374	50 ml bottle	Red	High strength locking, up to 3/4" bolts	1,800/5,000 Thixotropic	189/275	-65°F to 300°F (-54°C to 150°C)	Fixture – 5 minutes Full – 24 hours	N/A	7088™, N™ or T™	1.05
		135375	250 ml bottle									
		231928	1 liter bottle									
	271™	135381	50 ml bottle	Red	High strength for fasteners up to 1" in diameter	500	250/275	-65°F to 300°F (-54°C to 150°C)	Fixture – 10 minutes Full – 24 hours	N/A	7088™, N™ or T™	1.10
		088441	250 ml bottle									
		209743	1 liter bottle									
WICKING	290™	135392	50 ml bottle	Green	Wicking grade for pre-assembled parts	12	85/250	-65°F to 300°F (-54°C to 150°C)	Fixture – 6 minutes Full – 24 hours	N/A	7088™, N™ or T™	1.08
		135393	250 ml bottle									
		209745	1 liter bottle									

* Break loose value.
† Brookfield RVT spindle 3.20 RPM/25 RPM.

THREAD SEALING

Loctite® thread sealers are paste-like anaerobic liquid products that seal threaded fittings on automotive axles, engines and transmissions. Loctite® PST® sealants contain PTFE which aid in assembly while also providing locking power to maintain a leak-proof threaded fitting.

General Purpose

Loctite® 565™ PST® Thread Sealant – Controlled Strength – Formulated specifically for metal tapered pipe thread fittings, this product cures rapidly to provide immediate low pressure sealing. Controlled lubricity prevents galling and protects from rust and corrosion. Can be used on fittings up to 2" (50 mm) in diameter.

Loctite® 577™ Thread Sealant – Coarse Threads – Medium strength, general purpose sealant for use on coarse-threaded components.

Low Strength

Loctite® 572™ Thread Sealant – Low Strength – Low strength sealant with moderate fixture speed for use on coarse threads.

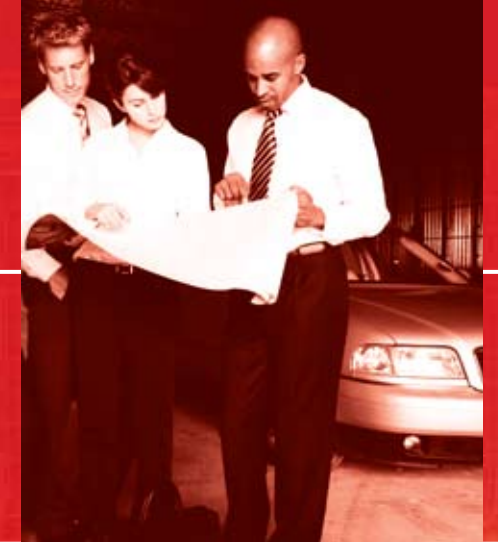
High Temperature

Loctite® 567™ PST® Thread Sealant – High Temperature – This product has excellent solvent resistance, allows easy assembly, prevents galling, and can withstand temperatures up to 400°F. Excellent for high pressure applications: locks and seals tapered metal, pipe threads and fittings. Ideal for stainless steel, aluminum, galvanized metal, and other inert metals. Disassembles with hand tools.

Loctite® 592™ PST® Thread Sealant – Slow Cure – Locks and seals threaded fittings. Parts may be repositioned up to 24 hours after application.

	LOCTITE® PRODUCT	IDH NUMBER	PACKAGE TYPE & SIZE	TYPICAL USE	COLOR & APPEARANCE	VISCOSITY (cP)	TEMPERATURE RANGE	PRESSURE RESISTANCE (psi)	RECOMMENDED PRIMER
GENERAL PURPOSE	565™ PST®	088551	50 ml tube	Controlled strength	White	300,000	-65°F to 300°F	10,000	7088™, N™ or T™
		088552	250 ml tube						
		234444	300 ml cartridge						
		234440	1 liter bottle						
		234442	10 liter bottle						
	577™	231119	50 ml tube	Medium strength, coarse threads	Yellow	24,000/80,000 Thixotropic	-65°F to 300°F	10,000	7088™, N™ or T™
		209719	250 ml tube						
LOW STRENGTH	572™	231115	50 ml tube	Coarse threads	White	17,000/50,000 Thixotropic	-65°F to 300°F	10,000	7088™, N™ or T™
HIGH TEMPERATURE	567™ PST®	135491	50 ml tube	For stainless steel and all other metal fittings	White	540,000	-65°F to 400°F	10,000	7088™, N™ or T™
		234458	250 ml tube						
		250318	350 ml brush can						
		234469	1 liter bottle						
	592™ PST®	209761	50 ml tube	Medium strength	White	350,000	-65°F to 400°F	10,000	NF™
		088568	250 ml tube						
		209762	1 liter bottle						





PRE-APPLIED THREADLOCKERS/THREAD SEALANTS

Henkel offers environmentally sustainable Dri-Seal™, Dri-Loc®, Vibra-Seal®, Brass-Loc® and Anti-Seize pre-applied coatings for locking and sealing threaded parts.

In addition, Henkel has Loctite® Preapplied Centers and partners throughout the world that offer a complete range of services and guarantee total satisfaction at every stage. A complete range of products for specific customer applications is available with various strengths, temperature resistance, and lubricating properties. Plus, Henkel's global reach assures that the advanced technology and diligent service provided by these centers is locally available in all regions.

Loctite® DRI-LOC® Bulk Containers

Loctite® 200™ Dri-Loc® – High strength threadlocker and sealant. Suitable for phosphate and oil substrates only.

Loctite® 201™ Dri-Loc® – 400°F, high strength threadlocker and sealant.

Loctite® 202™ Dri-Loc® – Medium strength threadlocker and sealant.

Loctite® 203™ Dri-Loc® – Low strength threadlocker and sealant.

Loctite® 204™ Dri-Loc® – Designed for plated and stainless steel fasteners. High dried adhesion, high strength.

Loctite® 205™ Dri-Loc® – High strength, low/controlled on-torque assembly. Meets GM6175M.

Loctite® 2045™ Dri-Loc® – Designed for plated and stainless steel fasteners. High dried adhesion, high strength, fast cure, high temperature (400°F). Meets GME151 and WX200.

Loctite® STS™ Dri-Loc® – Sealing and medium strength threadlocking, fast cure. Meets GM6124m, Chrysler MSc 76-b.

Loctite® BRASS-LOC® Products

Loctite® 2020™ Brass-Loc® – Low to medium strength; will not corrode brass. Also works on plated finishes and stainless steel.

Loctite® DRI-LOC® Activator

Loctite® P-2™ Dri-Loc® – Small microcapsules, excellent for all size fasteners, especially fine threads.

Loctite® P-3™ Dri-Loc® – Works best with 2045™ and STS™. NOT suggested for fine threads and small fasteners.

Loctite® Pre-Applied Lubricants

Loctite® Anti-Seize – To prevent galling and corrosion of metals, especially stainless steel and aluminum.

Loctite® VIBRA-SEAL® Lubricants

Loctite® 503™ Vibra-Seal® – This is a low viscosity sealant that will provide “constant on” torque. Also meets NSF approval.

Loctite® 503HV™ Vibra-Seal® – This is a high viscosity sealant that will provide gap filling capability. Also meets NSF approval.

Loctite® 516HV™ Vibra-Seal® – This is a high viscosity sealant, with “constant on” torque.

Loctite® 517™ Vibra-Seal® – This is a low viscosity sealant, with “constant on” torque.

Loctite® DRI-SEAL™ Products

Loctite® 513™ Dri-Seal™ – High temperature (350°F) sealant for metal and plastics. NSF approved. Flow-coatable.

Loctite® 513HV™ Dri-Seal™ – High viscosity, high temperature (350°F) sealant for metal and plastics. NSF approved. Flow-coatable.

Loctite® 5030™ Dri-Seal™ – UL-approved sealant for propane, similar properties as 503™ VIBRA-SEAL®.

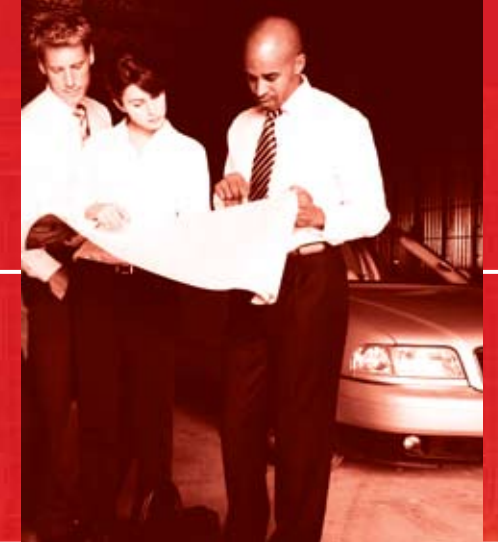


Product	IDH Number	Pkg. Size
Loctite® DRI-LOC® Bulk Containers		
Loctite® 200™ Dri-Loc®	12402	40 lb. Pail
Loctite® 201™ Dri-Loc®	38347	40 lb. Kit
Loctite® 202™ Dri-Loc®	12403	40 lb. Pail
Loctite® 203™ Dri-Loc®	12405	40 lb. Pail
Loctite® 204™ Dri-Loc®	18723	40 lb. Pail
Loctite® 205™ Dri-Loc®	19840	40 lb. Pail
Loctite® 2045™ Dri-Loc®	36806	20 lb. Kit
Loctite® STS™ Dri-Loc®	18872	40 lb. Pail
Loctite® BRASS-LOC® Products		
Loctite® 2020™ Brass-Loc®	30177	40 lb. Pail
Loctite® DRI-LOC® Activator		
Loctite® P-2™ Dri-Loc®	19881	5 lbs.
Loctite® P-3™ Dri-Loc®	36933	1 kg
Loctite® Pre-Applied Lubricants		
Loctite® Anti-Seize	17015	40 lb. Pail
Loctite® VIBRA-SEAL® Products		
Loctite® 503™ Vibra-Seal®	25662	1 liter
	28264	10 liter
	25663	152 liter
Loctite® 503HV™ Vibra-Seal®	28262	1 liter
	25664*	10 liter
	25665	152 liter
Loctite® 516HV™ Vibra-Seal®	25666	1 liter
	25667*	10 liter
	25668	152 liter
Loctite® 517™ Vibra-Seal®	25670	152 liter
Loctite® DRI-SEAL™ Products		
Loctite® 513™ Dri-Seal™	51343	1 liter
	51391	18 liter
	51397*	180 liter
Loctite® 513HV™ Dri-Seal™	33956	18 liter
	26959	180 liter
Loctite® 5030™ Dri-Seal™	34578	10 liter

* Special package – 30-day lead time required.



To locate a Preapplied Center in your area, please call 866.332.7024 or visit www.henkelna.com/automotive.



POROSITY SEALING

Henkel is the world's leading supplier of porosity sealing products and technologies. With a full range of Loctite® impregnation sealant products, Henkel can meet the reliability needs for modern automotive applications by sealing cast metal parts, plastic parts and electrical components against leaks. In addition, Henkel also supports a worldwide network of Application Process Centers (APCs) with sealant, equipment, technology and expertise. Each center provides comprehensive evaluations and technical support to meet customers' porosity sealing needs.

Loctite® Resinol® AT – Low viscosity liquid sealant that is readily soluble in water for supreme washability and cleanliness. The refined monomer composition also provides excellent integrity in aggressive chemical environments and elevated temperatures in its polymer form.

Loctite® Resinol® RTC™ – Self-curing anaerobic sealant formulated with a unique proprietary surfactant monomer washable in plain water. RTC has no “soap” blended into the sealant resulting in a more chemical- and temperature-resistant polymer.

Loctite® Resinol® 88C™ – Low viscosity liquid sealant that cures at elevated temperatures and is readily soluble in water for exceptional part cleanliness after the vacuum impregnation process.

Loctite® Resinol® 90C™ – Single-component, water-washable, heat cure sealant that cures to a polymer at elevated temperatures (>80°C) for impregnation of porous materials, especially castings.

Loctite® Resinol® 90R™ – Low viscosity heat cure sealant that is formulated with a chemistry that allows the material to be washed from the surface of the casting and later separated and reused in the process tank.

Loctite® 5110™ – Electrical grade anaerobic sealant in which no solvents exist and ionic contaminants are minimized in its monomer (liquid) state, providing excellent insulating properties in its polymer form. This material also maintains its integrity in harsh chemical environments. Specifically optimized to cure in confined spaces of non-metallic components.

Loctite® Flexseal™ 5100™ – Self-curing, electrical grade anaerobic sealant that cures to form a tough, flexible, thermoset plastic with excellent environmental resistance. Due to its flexible characteristics, this product is exceptional for sealing interfaces or voids between dissimilar materials.

Loctite® PM 5120™ – Powder metal sealant used for improving aesthetics when preceding a plating, painting, or coating operation.

Loctite® PMS-50E™ – Tough and durable anaerobic sealant designed to provide superior solvent and temperature resistance in extremely demanding environments. Only product with E85 fuel approval.

Loctite® PMS-10E™ – Self-curing anaerobic sealant widely used for high volume OEM manufacturing operations such as automotive castings and powder metal parts, and fiber-reinforced composites.



Products	IDH Number	Package Size	Cure Mechanism, Plastic / Polymer Type	Preferred Applications
Loctite® Resinol® AT	315341	4 gallon cubitainer	Anaerobic, Thermoset	Die castings, sand castings, and fiber-reinforced composites where cleanliness is imperative and part geometries make washing difficult. Where high performance and FTQ are essential.
Loctite® Resinol® RTC™	220647	4 gallon cubitainer	Anaerobic, Thermoset	Die castings, sand castings, powder-metal parts, and fiber-reinforced composites. Where high performance and FTQ are essential.
Loctite® Resinol® 88C™ 2-Component	311792	5 gallon cubitainer	Heat Cure, Thermoset	Die castings, sand castings, and fiber-reinforced composites where low maintenance and simple process monitoring are desired, and cleanliness prior to assembly is a must.
Loctite® Resinol® 90C™	229651	4 gallon cubitainer	Heat Cure, Thermoset	Die castings, sand castings, and fiber-reinforced composites where low maintenance and simple process monitoring are desired.
Loctite® Resinol® 90C™ 2-Component	209549	4 gallon cubitainer	Heat Cure, Thermoset	Die castings, sand castings, and fiber-reinforced composites where low maintenance and simple process monitoring are desired.
Loctite® Resinol® 90R™ 2-Component	192718	5 gallon cubitainer	Heat Cure, Thermoset	Die castings, sand castings, and fiber-reinforced composites where manufacturing resources are not readily available and water treatment may present problems with production throughput.
Loctite® 5110™	231642	1 liter bottle	Anaerobic, Thermoset	Electronic components that will be exposed to aggressive chemical environments and high temperatures but do not require flexible properties in a polymer form.
Loctite® Flexseal™ 5100™	233057	4 gallon cubitainer	Anaerobic, Thermoset	Electronic components where superior insulating properties are imperative and flexibility during assembly is beneficial.
Loctite® PM 5120™	448762	5 gallon cubitainer	Anaerobic, Thermoplastic	Powder metal components being plated, painted, or coated.
Loctite® PMS-50E™	228344	4 gallon cubitainer	Anaerobic, Thermoset	Components that will be exposed to high temperatures and aggressive chemical environments.
Loctite® PMS-10E™	234378	4 gallon cubitainer	Anaerobic, Thermoset	Die castings, sand castings, powder-metal parts, and fiber-reinforced composites.

To locate an APC in your area, please call 866.332.7024 or visit www.henkelna.com/automotive.

BODY SHOP PRODUCTS

Automotive industry approved sealers for body shop applications.

ANTI-FLUTTER ADHESIVES

BMW

Terostat® 3230AB-25™ – A solvent-free, reactive adhesive/sealant based on rubber that softens at higher temperatures.

Terostat® 3211-2F-01™ – A solvent-free, reactive adhesive/sealant material that exhibits excellent sag resistance and is wash-off resistant without pre-gelling or pre-curing against aqueous cleaning and pretreating agents used on the production line of the automotive industry.

Terostat® 3230-CU-01™ – A solvent-free, reactive adhesive/sealant that exhibits excellent sag resistance and is wash-off resistant without pre-gelling or pre-curing against aqueous cleaning and pretreating agents used on the production line of the automotive industry.

Chrysler

Terostat® SA-4250.E™ – A cold-applied, pumpable anti-flutter adhesive, which is also suitable for sealing applications and has excellent adhesion to oily steel.

Terostat® SA-4510™ – A cold-applied, pumpable adhesive that is applied between inner and outer panels to prevent metal-to-metal contact and to reduce vibration.

Terostat® 4010.9™ – A soft, expandable, non-solvent mastic adhesive.

Terostat® 4010.9AL™ – A cold-applied, pumpable adhesive that is applied between inner and outer panels to prevent metal-to-metal contact and to reduce vibration.

Ford

Terostat® 1805™ – A material that cures and expands upon heating, designed to act primarily as an anti-flutter though it can be used in a sealing capacity.

GM

Terostat® 06-1273™ – A pumpable, weld-through, gas resistant, controlled expansion body shop sealer designed for oily or galvanized steel. Offers good corrosion resistance, high elasticity, and bond without read-through.

Terostat® 1297™ – An expanding, weld-through semi-structural sealer that offers good corrosion resistance, high elasticity, and bond without read-through.

Terostat® 06-1242™ – A pumpable, highly expandable, weld-through, gas resistant body shop sealer designed for oily or galvanized steel. Offers good corrosion resistance, high elasticity, and bond without read-through.

Terostat® 06-1236™ – A pumpable, highly expandable, weld-through, gas resistant body shop sealer designed for oily or galvanized steel.

Terostat® 06-1272™ – A non-expanding, weld-through sealer for body-in-white applications.

Terostat® 5918™ – Pumpable, highly expandable, weld-through, gas-resistant body shop sealer designed for oily or galvanized steel.

Terostat® 6100G™ – A pumpable, highly expandable, weld-through, gas-resistant body shop sealer designed for oily or galvanized steel.

Honda

Terostat® SA-490™ – A cold-applied, pumpable, non-PVC sealer that is applied between inner and outer panels to prevent metal-to-metal contact and to reduce

vibration. Terostat™ SA-490® has good adhesion on oily metal and aluminum surfaces and excellent wash-off resistance.

Terostat® SA-491™ – A cold-applied, pumpable, non-PVC sealer that is applied between inner and outer panels to prevent metal-to-metal contact and to reduce vibration.

Mazda

Terostat® SA-459™ – A cold-applied, pumpable, weld-through sealer that is for use on spot-welded joints to prevent passage of water or dust.

Mercedes

Terostat® 3221AA-01™ – A solvent-free, reactive adhesive/sealant material that exhibits excellent sag resistance and is wash-off resistant without pre-gelling or pre-curing against aqueous cleaning and pretreating agents used on the production line of the automotive industry.

Mitsubishi

Terostat® SA-4800™ – A cold-applied, pumpable, anti-flutter adhesive designed to expand when subjected to heat to form a soft closed-cell foam. Can be applied on roofs, hoods, doors and deck-lids to prevent metal-to-metal contact and limit vibration.

Terostat® 4980™ – A cold-applied, pumpable, weld-through sealer. Applied between inner and outer panels to prevent metal-to-metal contact and to reduce vibration.

Terostat® SA-465™ – A cold-applied, pumpable, weld-through sealer for use on spot welded joints to prevent passage of water or dust. It may also be used for anti-flutter applications to prevent metal-to-metal contact and reduce vibration.

Nissan

Terostat® SA-463™ – A cold-applied, pumpable, weld-through sealer that is for use on spot-welded joints to prevent passage of water or dust.

Terostat® SA-4810™ – A cold-applied, pumpable, anti-flutter adhesive that is applied between inner and outer panels to prevent metal-to-metal contact and to reduce vibration.

Subaru

Terostat® SA-464™ – A cold-applied, pumpable, weld-through sealer for use on spot-welded joints to prevent passage of water or dust. It may also be used for anti-flutter applications to prevent metal-to-metal contact and reduce vibration.

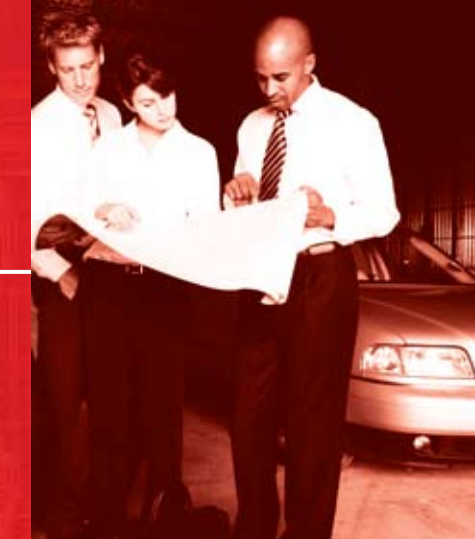
Terostat® SA-476.3™ – A non-expandable, high temperature cure, wash-off resistant sealer for use in body-in-white applications. The sealer is applied between the inner and outer metal sheets when assembling the hood, trunk lid, door and roof.

Terostat® SA-477™ – A heat curing, solvent-free, metal-to-metal mastic adhesive that exhibits excellent strength and corrosion resistance at temperature extremes or after extensive aging and weathering.

Toyota

Terostat® SA-351-2B™ – A cold-applied, pumpable, weld-through sealer that is applied between inner and outer panels to prevent metal-to-metal contact and to reduce vibration.

Body Shop Anti-Flutters	IDH NUMBER	Package Type	Color	Chemical Basis	% Expansion	Application Temperature °C	Spec Number
BMW							
Terostat® 3230AB-25™	686845	Drum	Black	Rubber	5	30	CB 91067
Terostat® 3211-2F-01™	598266	Drum	Black	Rubber	85	35 - 60	GS97028.9
Terostat® 3230-CU-01™	772687	Drum	Black	Rubber	5	25 - 40	CB 91067
CHRYSLER							
Terostat® SA-4250.E™	598394 611565 930821	Drum Drum Drum	Light Yellow	PVC/Rubber	>350	RT	MS-CD 476
Terostat® SA-4510™	598336 598535 635756 870909	Pail Drum Drum Drum	Pale Yellow	PVC/Rubber	240 - 310	RT	MS-CD 470F
Terostat® 4010.9™	981276	Drum	Pale Yellow	PVC/Rubber	100	RT	MS-CD 470A
Terostat® 4010.9AL™	916717	Drum	Pale Yellow	PVC/Rubber	100	RT	MS-CD 470B
FORD							
Terostat® 1805™	595951	Drum	Cream to Tan	PVC/Rubber	150	RT	WSSM-4G348-A3
GM							
Terostat® 06-1273™	594176 772151	Drum Drum	Black	PVC/Rubber	200	RT	998-4247B 998-4296
Terostat® 1297™	1250698	Hobcock	Black	PVC/Rubber	<50	RT	998-5800
Terostat® 06-1242™	594164	Drum	Black	PVC/Rubber	500	RT	9981273
Terostat® 06-1236™	594751	Drum	Black	PVC/Rubber	300	RT	998-4236
Terostat® 06-1272™	592972 594755	Drum Drum	Grey	PVC/Rubber	0	RT	998-4539 998-4273
Terostat® 5918™	597769	Drum	Black	PVC/Rubber	500	RT	998-5918
Terostat® 6100G™	1194500	Drum	Grey to Black	PVC/Rubber	1,000	RT	998-6312
HONDA							
Terostat® SA-491™	1174007	Drum	Grey	Rubber	0 - 10	RT	0097Z-SLOC-0000
Terostat® SA-490™	1066011	Drum	Grey	Rubber	2	RT	0097Z-SLOC-0000
MAZDA							
Terostat® SA-459™	598407 1081082	Drum Drum	Off-White	PVC/Rubber	0	RT	MESMN342 TBD
MERCEDES							
Terostat® 3221AA-01™	695274	Drum	Black	Rubber	20	35-60	VBT 04860V8
MITSUBISHI							
Terostat® SA-4800™	598376	Drum	White	PVC/Rubber	30	RT	ES-X61017-B
Terostat® 4980™	718861	Drum	Off-White	PVC/Rubber	2	RT	MES ES-X61017
Terostat® SA-465™	841607	Drum	Light Brown	PVC/Rubber	0	RT	ES-X61214
NISSAN							
Terostat® SA-463™	598450 598485	Pail Pail	Black	PVC/Rubber	0	RT	NES M8513 Type 1.3
Terostat® SA-4810™	677522	Drum	Black	PVC/Rubber	15 - 45	RT	NES M8513 Type 2
SUBARU							
Terostat® SA-464™	627026	Drum	Black	PVC/Rubber	0	RT	TS420-6-22
Terostat® SA-476.3™	598383	Drum	Black	PVC/Rubber	0	RT	TS 420-6-22
Terostat® SA-477™	598913 790282	Drum Drum	Black	PVC/Rubber	"slight expansion"	23 - 35	TS420-6-22
TOYOTA							
Terostat® SA-351-2B™	598378 598402	Drum Drum	Off-White	Rubber	15 - 45	RT	TSK-5506G-2B



BODY SEALANTS

Chrysler

Terostat® 475.3™ – A non-expandable, high temperature cure, wash-off resistant sealer for use in body-in-white applications.

Terostat® SA-4000.5™ – A cold-applied, pumpable, weld-through sealer that is for use on spot-welded joints to prevent passage of water or dust.

Terostat® 4600™ – A cold-applied, pumpable, weld-through sealer that is for use on spot-welded joints to prevent passage of water or dust.

Terostat® 2060.1™ – A modified vinyl plastisol that is paintable and non-expandable, and is designed for sealing non-cosmetic seams of the vehicle body that are not accessible in the paint shop.

Terostat® 2102-AC/BC™ – A solvent-free, two-component sealant dispensed using high-pressure pumps. Mixed statically and starts reacting at ambient temperature.

Ford

Terostat® 4000-F™ – An ambient-applied material that cures and expands upon heating. Designed to act primarily as sealant/adhesive for the sealing of welded interior body panels.

GM

Terostat® 06-1201™ – A pumpable, highly expandable, weld-through, gas resistant body shop sealer designed for oily or galvanized steel.

Honda

Terostat® 3210Z™ – Cold-applied, weld-through sealer. Designed to adhere to oily metal and seal against water, dust and exhaust.

Mazda

Terostat® TSA-53C™ – A cold-applied, pumpable, weld-through sealer for use on spot-welded joints to prevent passage of water or dust.

Nissan

Terostat® SA-463™ – A cold-applied, pumpable, weld-through sealer for use on spot-welded joints to prevent passage of water or dust.

Subaru

Terostat® SA-415™ – An expandable, acrylic vinyl plastisol, wash-off resistant sealer for use in body-in-white applications. Applied between the inner and outer metal sheets when assembling the hood, truck lid, door and roof.

Toyota

Terostat® SA-440™ – A cold-applied, pumpable, non-PVC sealer that is applied between inner and outer panels to prevent metal-to-metal contact and to reduce vibration.

Terostat® SA-407D™ – An elastomeric-based, cold-applied, pumpable, anti-flutter adhesive, which is also suitable for sealing applications. Adhesion is excellent to oily steel.

Body Sealants	IDH NUMBER	Package Type	Color	Chemical Basis	% Expansion	Application Temperature °C	Spec Number
CHRYSLER							
Terostat® 475.3™	598350	Drum	Black	PVC/Rubber	0	RT	MS-CD 473A
Terostat® SA-4000.5™	598439	Tote	Tan	PVC/Rubber	>200	RT	MS-CD 473B
	593074	Drum					
	598514	Drum					
Terostat® 4600™	598393	Drum	Pale Yellow	PVC/Rubber	450	RT	MS-CD 473H
Terostat® 2060.1™	598438	Drum	Off-White	PVC/Rubber	0	RT	MS-CD 473D
	598442	Drum					
Terostat® 2102-AC/BC™	1145896	Any kind of pack	Black	Rubber	0	35°C	No spec
FORD							
Terostat® 4000-F™	847256	Drum	Dark Grey	PVC/Rubber	175	RT	MES-MN 340B WSBM 4660 B4
	847258	Drum					
GM							
Terostat® 06-1201™	594178	Pail	Black	PVC/Rubber	150	RT	998-4236, 998-4247
HONDA							
Terostat® 3210Z™	1253831	Drum	Black	Rubber	± 5	RT	0095Z-SJD-0000
MAZDA							
Terostat® TSA-53C™	598512	Drum	Black	Rubber	4 - 5	RT	MES-MN 340B
NISSAN							
Terostat® SA-463™	598450	Pail	Black	PVC/Rubber	0	RT	NES M8513 Type 1.3
	598485	Pail					
SUBARU							
Terostat® SA-415™	693537	Hobbock	Black	Rubber	60	RT	TS 420-6-22
TOYOTA							
Terostat® SA-440™	751403	Drum	Beige	Rubber	30 - 80	RT	TSK-5506G-4, TSK-6524G-4
Terostat® SA-407D™	593076	Pail	Black	PVC/Rubber	0	RT	TSK-6525G-1

POTTING

Henkel's Loctite® brand potting liquids have been trusted to protect delicate automotive parts, ranging from electrical connectors to integrated starter-generators. Potting liquids seal components from thermal, chemical and mechanical shock.

Loctite® 5031™ Nuva-Sil® – A UV or visible light curing silicone for high speed potting, coating, and sealing applications. High adhesion for difficult-to-bond substrates.

Loctite® 5091™ Nuva-Sil® – A low viscosity, self-leveling, UV curing silicone that provides excellent adhesion to plastics and metals.

Loctite® 5092™ Nuva-Sil® – A low viscosity, self-leveling, UV curing silicone that provides low outgassing cure characteristics.

Loctite® 5025™ – A low viscosity, self-leveling, UV curing, non-silicone liquid rubber. Suitable for potting electrical switches and other devices.

Loctite® 193124 R 5GA™ – A UV curing epoxy that provides structural strength and flexible potting characteristics. This two-component product must be used in combination with Loctite® 193125 H 5GA.

Loctite® 193125 H 5GA™ – A UV curing epoxy that provides structural strength and flexible potting characteristics. This two-component product must be used in combination with Loctite® 193124 R 5GA.

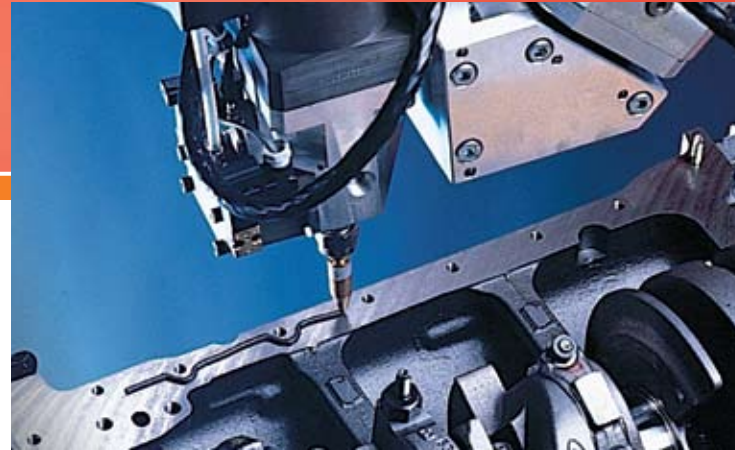
Loctite® 3865HV™ – A two-component, UV curing epoxy that provides a good combination of strength and flexibility.

Product	IDH Number	Container Size	Cure Type	Key Substrates	Viscosity (cP)	Temperature Range °C
Loctite® 5031™ Nuva-Sil®	693986	300 ml cartridge	Visible, ultraviolet, moisture, acetoxo	Plastics, metals	5,500	-65 to 175
	693987	40 lb. pail				
Loctite® 5091™ Nuva-Sil®	135257	300 ml cartridge	Ultraviolet, moisture, acetoxo	Plastics, metals	5,500	-65 to 175
	229664	40 lb. pail				
Loctite® 5092™ Nuva-Sil®	158527	300 ml cartridge	Ultraviolet, moisture, alkoxy	Plastics, metals	5,500	-65 to 175
Loctite® 5025™	261798	40 lb. pail	Ultraviolet, moisture, alkoxy	Plastics, metals	3,000	-40 to 120
Loctite® 193124 R 5GA™ Loctite® 193125 H 5GA™	777700	5 gallon pail	Ultraviolet, 2-part catalyst	Plastics, metals	4,000	-40 to 140
	777701	5 gallon pail				
Loctite® 3865HV™	1038416	5 gallon pail, hardener	Ultraviolet, 2-part catalyst	Plastics, metals	5,000	-40 to 140
	1038417	5 gallon pail, resin				



GASKETING & SEALING

Loctite® liquid gaskets are low cost, high quality alternatives to molded rubber, paper, metal and other hard gaskets. Liquid gaskets can provide up to 95% material savings over hard gaskets while offering the engineer flexibility in design to use lower cost manufacturing methods.



Formed-In-Place Gaskets

- Loctite® 5900™** – Heavy Body RTV Silicone – Superior flexibility and adhesion. Provides instant seal. Excellent fluid resistance. Non-corrosive, low odor, low volatility. Black in color.
- Loctite® 5904™** – RTV Silicone – Provides the performance of 5900™ while offering more robust resistance to other fluids including water/glycol.
- Loctite® 5910™** – RTV Silicone – Superior flexibility and adhesion. Excellent fluid resistance. Medium body and easy to dispense. Non-corrosive, low odor, low volatility. Black in color.
- Loctite® 5915™** – RTV Silicone – Similar properties of 5910™ with better resistance to oil foaming.
- Loctite® 5999™** – Heavy Body/Grey High Performance RTV Silicone Gasket Maker – For rigid flange assemblies. Provides instant seal. Excellent fluid resistance. Non-corrosive, low odor, low volatility. Grey in color.
- Loctite® 5699™** – For rigid flange assemblies. Excellent fluid resistance. Easy to dispense, non-corrosive, low odor, low volatility. Grey in color.
- Loctite® 5945™** – Flange sealant provides superior flexibility and adhesion. Provides an instant seal with extended open time for processing flexibility. Excellent fluid resistance. Non-corrosive. Low odor. Low volatility.
- Loctite® 5970™** – A non-oxime gasket maker. Excellent oil resistance.
- Loctite® 5810A™** – A non-silicone polyacrylate, formed-in-place flange sealant. Provides instant seal, excellent fluid resistance. Non-corrosive. Low odor. Low volatility. Demonstrates superior hot oil resistance.
- Loctite® 5810F™** – A polyacrylate, formed-in-place flange sealant. Provides instant seal, excellent fluid resistance. Non-corrosive. Low odor. Low volatility. Demonstrates superior hot oil resistance.
- Loctite® 509™** – A flexible product that withstands minor flange movement caused by vibrations. It will not run when applied to vertical surfaces. Fluorescent blue properties allow easy visual inspection during assembly.
- Loctite® 5182™** – A flexible, solvent-resistant flange sealant that will not tear or decay.
- Loctite® 518™** – Forms a flexible, solvent-resistant seal that will not tear or decay. Seals to 300°F and fills gaps to 0.50". Can be used on flexible metal assemblies, including aluminum surfaces. Easy disassembly and cleaning.
- Loctite® 5188™** – Designed for use on rigid metal flanged connections, such as gearboxes and engine casings, particularly where minor oil contamination of the flange surfaces can occur.

Cured-In-Place Gaskets

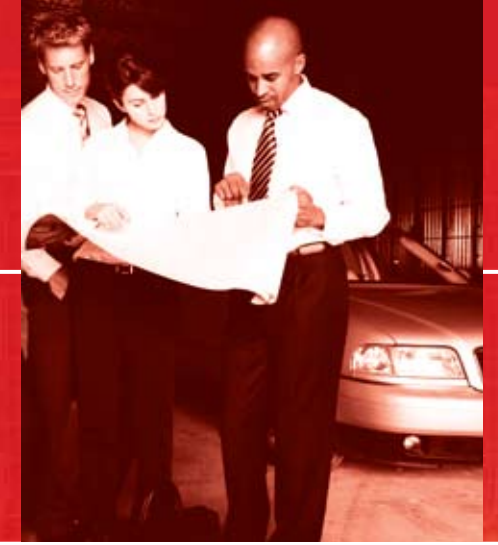
- Loctite® 5033™** – A UV or visible light- and moisture-curing silicone with high aspect ratio and good adhesion to primary substrates.
- Loctite® 5038™** – Provides the properties of 5039™ while offering improved humidity/moisture resistance.
- Loctite® 5039™** – A UV or visible light- and moisture-curing silicone with great knit line dispensing capabilities and high adhesion to primary substrates.
- Loctite® 5964™** – A one-component, heat cure silicone, cured-in-place gasket with high elongation, low durometer, and good compression set resistance.
- Loctite® 5251™** – An acrylic cured-in-place gasket that cures 100% by UV light. Very good combination of bead aspect ratio and knit line capability.
- Loctite® 5251A™** – An acrylic cured-in-place gasket that cures 100% by UV light. Very good combination of bead aspect ratio and knit line capability.

There are three types of flange gaskets.

1. Conventional pre-cut compression gaskets are 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 are applied as liquids by tracing machines that dispense the gasket material in precise beads to one of the flanges. The material is cured by ultraviolet (UV) light or heat to form an elastomeric material with adhesion to the flange surface. Sealing is achieved through compression of the cured gasket during flange assembly.

Formed-In-Place Gaskets	IDH Number	Package Type	Type	Extrusion Rate grams / minute	Cure Mechanism	Tensile / Elongation @ Break	Durometer (Shore A)	Typical Use / Characteristic
Loctite® 5900™	212184 230153 230154	300 ml cartridge 50 lb. pail 550 lb. drum	Silicone	35	Moisture, Oxime	200 psi/ 550%	35	Powertrain/high elongation, blowout resistance
Loctite® 5904™	1173146 1173147 1173148	300 ml cartridge 50 lb. pail 550 lb. drum	Silicone	70	Moisture, Oxime	330 psi/ 450%	40	Powertrain/high elongation, engine, transmission, water/glycol resistant
Loctite® 5910™	231232 231234 231236	300 ml cartridge 50 lb. pail 550 lb. drum	Silicone	500	Moisture, Oxime	200 psi/ 550%	30	Powertrain/lower viscosity
Loctite® 5915™	1107019 1107018	300 ml cartridge 50 lb. pail	Silicone	250	Moisture, Oxime	300 psi/ 575%	40	Improved foaming resistant of 5910™
Loctite® 5999™	231230 233100 230155	300 ml cartridge 50 lb. pail 550 lb. drum	Silicone	105	Moisture, Oxime	500 psi/ 175%	60	Powertrain/gear oil, ATF, coolant, blowout resistance
Loctite® 5699™	135270 135271 229770	300 ml tube 50 lb. pail 550 lb. drum	Silicone	250	Moisture, Oxime	435 psi/ 160%	55	Powertrain/lower viscosity
Loctite® 5945™	669901 374248	300 ml cartridge 50 lb. pail	Silicone	75	Moisture, Oxime	200 psi/ 400%	30	Powertrain/slow skinning, long open time
Loctite® 5970™	660095 360232 360231	300 ml cartridge 50 lb. pail 550 lb. drum	Silicone	70	Moisture, Alkoxy	290 psi/ 270%	50	Powertrain/alkoxy
Loctite® 5810A™	648433 648435	50 lb. pail 300 ml cartridge	Polyacrylate	45	Moisture, Alkoxy	145 psi/ 200%	30	Powertrain/superior oil resistance, low foaming, permeation resistant
Loctite® 5810F™	1134466 1110824	300 ml cartridge 50 lb. pail	Polyacrylate	45	Moisture, Alkoxy	145 psi/ 200%	30	Fluorescent version of 5810A™
Loctite® 509™	135473	850 ml cartridge	Anaerobic	65,000 cps @ 20 rpm	Anaerobic	N/A	N/A	Powertrain/rigid assemblies, flexible
Loctite® 5182™	88128	850 ml cartridge	Anaerobic	140,000 cps @ 20 rpm	Anaerobic	N/A	N/A	Powertrain/rigid assemblies, deaerated
Loctite® 518™	135482	300 ml cartridge	Anaerobic	800,000 cps @ 20 rpm	Anaerobic	N/A	N/A	Powertrain/rigid assemblies, general purpose
Loctite® 5188™	1104312	300 ml cartridge	Anaerobic	23,000 cps @ 20 rpm	Anaerobic	N/A	N/A	Powertrain/high elongation

Cured-In-Place Gaskets	IDH Number	Package Type	Type	Extrusion Rate grams / minute	Bead Aspect Ratio (height to width)	Cure Mechanism	Tensile / Elongation @ Break	Durometer (Shore A)	Typical Use / Characteristic
Loctite® 5033™	693988 693989	300 ml cartridge 40 lb. pail	Silicone	145	0.80:0.90	UV+Moisture, Acetoxy	450 psi/ 170%	55	Auto components/high aspect ratio, adhesion
Loctite® 5038™	1119563	40 lb. pail	Silicone	375	0.70:0.80	UV+Moisture, Acetoxy	220 psi/ 175%	35	Similar to 5039™, but with improved humidity resistance
Loctite® 5039™	742348 742350	300 ml cartridge 40 lb. pail	Silicone	250	0.70:0.80	UV+Moisture, Acetoxy	200 psi/ 200%	35	Auto components/visible light cure, fluorescent
Loctite® 5964™	294935 829326	300 ml cartridge 50 lb. pail	Silicone	120	0.70:0.80	Heat (150°C for 10 min)	635 psi/ 530%	30	Auto components/high elongation, good compression set resistance
Loctite® 5251™	699363	180 liter drum	Acrylic	75	0.70:0.80	UV Only	725 psi/ 200%	60	Auto components/knit line, adhesion
Loctite® 5251A™	1196370	180 liter drum	Acrylic	N/A	0.80+	UV Only	200 psi/ 300%	15	Auto components/low durometer



WEATHERSTRIP PRODUCTS

Acheson™ EMRALON® dry film lubricant weatherstrip coatings are recognized by industries throughout the world for their processing and end-use performance. Widely used in automotive sealing systems, the one- and two-part products are flexible, low friction coatings that are easily applied by spray onto EPDM or thermoplastic substrates and provide the following benefits:

- Cost-effectiveness
- Superior noise suppression
- Abrasion resistance
- UV resistance
- Improved appearance

PRODUCT	IDH Number	Typical % Solids Value (Weight)	Color	Gloss @ 60°	Crosslinker	Substrate Pretreatment	Squeak / Itch Suppression (1=High - 3=Fair)	UV / Weather Resistance (1=High - 3=Fair)	Application				
									Glass Run	Outerbelt	Sponge	Dense	Dry Film Thickness, Typical (um)
HIGH QUALITY WEATHERSTRIP COATINGS													
TW-005A™	1224512 1224513	22	Black	2-5	1-Part	Substrate Dependent	3	3	No	No	Yes	Yes	8-20
TW-081™	1224330	34	Black	2-4	2-Part	Substrate Dependent	2	2	Yes	Yes	Yes	Yes	12-20
TW-017B™	1224501	21	Clear	6-12	1-Part	Substrate Dependent	1	3	No	No	Yes	Yes	12-20
TW-044™	1224376	35	Black	2-4	1-Part	Substrate Dependent	2	3	Yes	No	Yes	Yes	15-30
PREMIUM WEATHERSTRIP COATINGS													
8370A™	1224939	35	Black	3-5	2-Part	Yes	1	2	Yes	No	Yes	Yes	10-30
8370APA™	1224411	37	Black	2-4	2-Part	Substrate Dependent	1	2	Yes	No	Yes	Yes	10-30
TW-020™	1224530	34	Black	3-6	2-Part	Substrate Dependent	1	2	Yes	No	Yes	Yes	10-30
TW-023HS™	1224525	36	Black	3-6	2-Part	Yes	1	2	Yes	No	Yes	Yes	20-40
TW-040™	1224471	34	Black	2-5	2-Part	Yes	1	2	Yes	No	Yes	Yes	15-30
TW-067™	1224328	40	Black	3-6	2-Part	Substrate Dependent	2	1	Yes	Yes	Yes	Yes	15-30
TW-067G™	1224342	40	Black	3-6	2-Part	Yes	1	1	Yes	No	Yes	Yes	15-30
TW-068™	1224060	39	Black	5-8	2-Part	Yes	N/A	1	No	Yes	No	Yes	12-20
TW-070™	1224384	35	Black	2-4	2-Part	Substrate Dependent	1	2	Yes	No	Yes	Yes	12-20
TW-084™	1224286	34	Clear	3-6	2-Part	Yes	2	2	No	Yes	Yes	Yes	12-20
TW-090™	1262902	34	Black	<5	2-Part	Substrate Dependent	1	2	No	No	Yes	No	10-20
TW-092™	1224263	36	Black	<5	2-part	Yes	1	2	Yes	No	No	Yes	10-25

TW-005A™ – Effective for application onto hotter than normal substrates (>120°C). Excellent general purpose coating.

TW-081™ – Mar resistant, smooth, low gloss coating for multiple seal requirements of seal protection, including glassrun and door seal applications. Generally a faster cure system.

TW-017B™ – Good scuff abrasion resistance and applicable for use on colored EPDM and TPV substrates.

TW-044™ – Deep black strength of finished parts.

8370A™ – Industry standard for high abrasion and noise resistance requirements. Very user friendly.

8370APA™ – Lower gloss product using EMRALON® TW-020™ chemistry.

TW-020™ – Provides more effective abrasion resistance without need for substrate pretreatment in most cases. Well suited for TPV substrates.

TW-023HS™ – Coarse particulate coating that is very capable of suppressing squeak and itch for aggressive seal movement such as folding car top seals.

TW-040™ – Deep black coating with UV tracer and functionality for both sponge and dense seal applications.

TW-067™ – High performance, high abrasion resistance coating with extremely good UV resistance.

TW-067G™ – Fine particulate version of EMRALON® TW-067™, providing added squeak and itch suppression with high UV durability. Lower gloss than EMRALON® TW-023HS™.

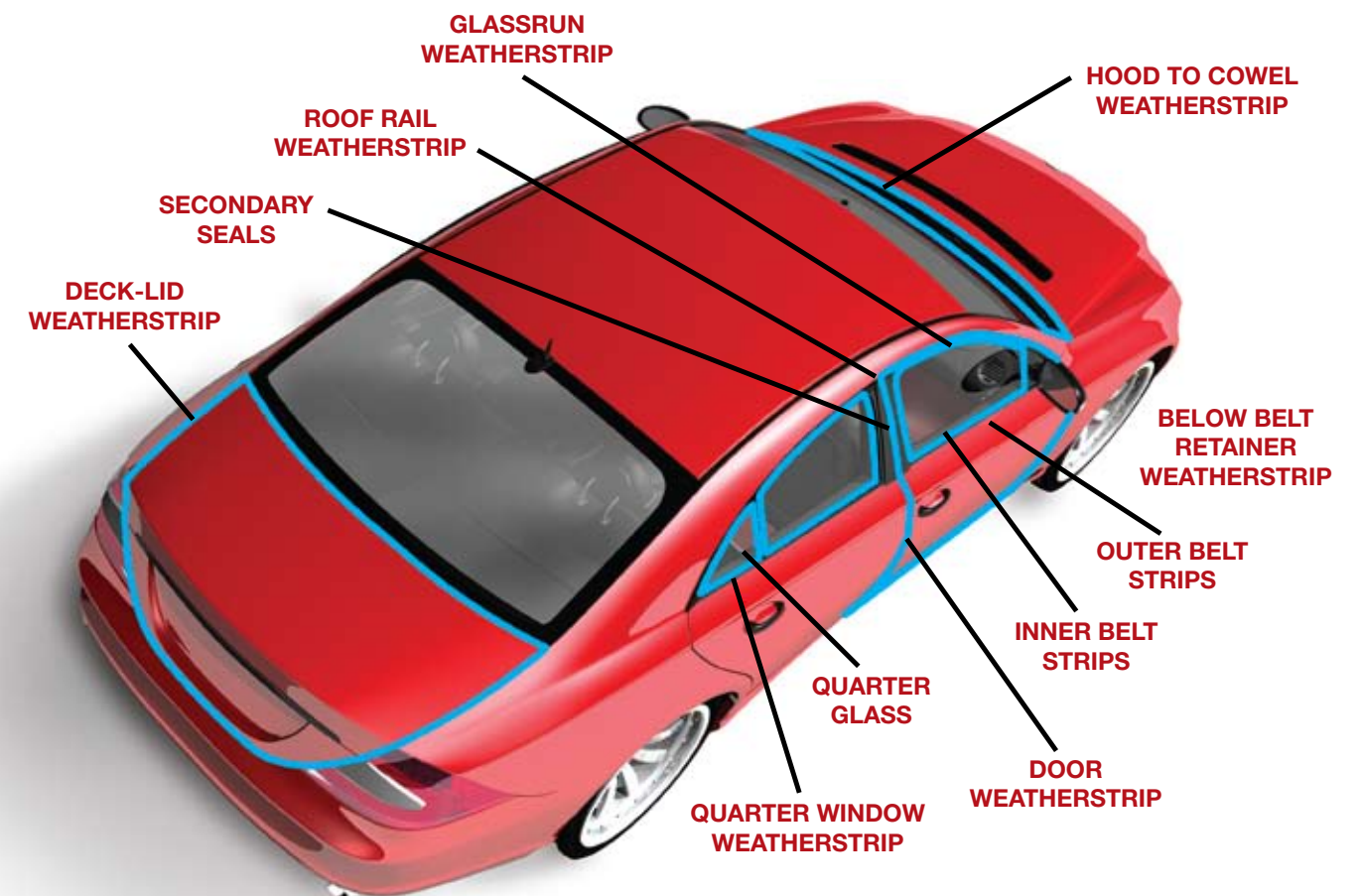
TW-068™ – Highly UV resistant appearance coating where functionality is not required.

TW-070™ – Very smooth, lower gloss coating with excellent abrasion resistance for glassruns and door seals.

TW-084™ – Clear coating with faster cure speeds and effective internal UV resistance. Suitable for TPV substrates and EPDM.

TW-090™ – Superior noise suppression for sponge seals.

TW-092™ – Superior noise suppression and abrasion protection for dense seals.



Henkel also offers state-of-the-art lab testing capabilities for seal noise (approved by Ford and GM for PPAP), friction and abrasion. Please call 866.332.7024 for additional information.

NVH & structural solutions

Henkel is the leading source for NVH (noise, vibration, and harshness), structural, and sealing solutions for automotive body assembly applications.

Our innovative solutions make vehicles quieter and more durable, while providing comfort, strength and safety. Henkel's technologies ensure vehicles not only look great in the showroom, but also stand up to the rigors of everyday driving. More specifically, our body assembly technologies deliver quality, consistency and integrity throughout the stamping, body shop, paint line, trim and assembly processes.

Our user-friendly products – ranging from pumpables to preforms to semi-assemblies – enable our customers to achieve targets for vehicle weight reduction, economy of assembly, and efficient use of floor space. Among the many sustainable benefits Henkel offers are potential reductions in waste, energy usage, and labor – all of which further contribute to our customers' productivity and profitability.



NVH, STRUCTURAL, AND SEALING SOLUTIONS FOR VEHICLE BODY ASSEMBLY

As the global market leader in NVH, structural and sealing solutions, Henkel provides innovative and advanced technologies, as well as comprehensive design and engineering support, to enable you to meet and exceed your performance requirements for body assembly applications, for today and tomorrow.

Our innovative sealing solutions, including Teroson®, Terostat® and Terolan® multi-functional automotive sealants, play a critical role in vehicle comfort and durability, while providing strength and safety.

Throughout the stamping, body shop, paint line, trim and assembly processes, our body assembly technologies deliver quality, consistency and integrity.

Vehicle body assembly solutions enable customers to achieve targets for vehicle weight reduction, economy of assembly, and efficient use of floor space. Additional sustainable benefits include:

- Reduction in waste
- Decreased energy usage and labor
- Increased productivity

Structural Solutions

Henkel provides complete engineering, design, prototyping, and manufacturing of Terocore® parts to meet the most demanding automotive requirements.

Terocore® structural foams, Terokal® adhesives and patches:

- Address vehicle stiffness, mass, reinforcement and energy management
- Provide added structural integrity to automobiles without increasing vehicle weight
- Provide unrivaled and enhanced durability, strength, stiffness and NVH improvements



NVH Solutions

Henkel's acoustics lab is equipped with state-of-the-art instrumentation for engineering, testing, and analysis to validate noise reduction solutions for components as well as full vehicles.

Our versatile Terophon® product line consists of pumpable materials and custom designed parts that meet OEM requirements for both airborne and structure-borne noise control. Terophon® customizable acoustic coatings contribute to:

- Quieter vehicles
- Superior adhesion that dampens and deadens noise created by direct impingement and vibration

Lab Capabilities/Services

- State-of-the-art engineering, testing, analysis and validation equipment
- F.E.A. modeling capabilities
- Proprietary FemSpire software
- Henkel engineers utilize a complete portfolio of products to develop full-service solutions
- Technical support capabilities provided by our team of experts



Henkel's patented Aquence® autodeposition process chemistries deliver extreme corrosion protection while increasing process efficiency over traditional finishing methods. The Aquence® process coats complex parts evenly and can stand alone as the finished surface or accept topcoat paint for aesthetics. The Aquence® process combines metal pretreatment, coating and finishing, and provides a lasting finish both inside of parts and out.

By streamlining the metal finishing process, the Aquence® process reduces in-plant space requirements, energy consumption and processing steps, while increasing corrosion resistance and life expectancy of critical components.



CLEANERS

Alkaline Cleaners

- Aquence® 1772™** – A powdered, non-silicated, strong alkaline cleaner formulated for use in spray process equipment for heavy duty cleaning of ferrous metals prior to autodeposition.
- Aquence® 2592™** – A liquid, alkaline cleaner formulated for heavy duty, general purpose cleaning of ferrous metals and is used to remove soils, oils and forming lubricants from steel prior to the application of autodeposited coatings.
- Aquence® 2599™** – An alkaline cleaner designed to prepare steel surfaces to receive an Aquence® coating.
- Aquence® 2600™** – A liquid, phosphate- and silicate-free, strong alkaline cleaner formulated for heavy duty cleaning of ferrous metal surfaces prior to autodeposition.
- Aquence® 2810™** – A non-silicated, liquid, alkaline cleaner formulated for heavy duty, general purpose cleaning of ferrous metals used to remove a variety of soils, oils and forming lubricants from steel prior to the application of autodeposited coatings.
- Aquence® 2819™** – Prepares steel, electrogalvanized and hot-dip galvanized surfaces to receive an Aquence® coating. This strongly alkaline treatment can be applied by spray or immersion.
- Aquence® 2860™** – A liquid, non-silicated, strong alkaline cleaner formulated for use in immersion process equipment for heavy duty cleaning and oxide removal from ferrous metal surfaces prior to autodeposition.

Acid Cleaners

- Aquence® 182A™** – This phosphoric acid-based, detergent-type metal cleaner and rust remover with biodegradable organic surfactants destroys corrosion stimulators and can be used in spray or immersion systems to remove rust and light deposits of mill oil on steel parts.
- Aquence® 7005™** – An acidic composition that when diluted with water produces a mixed mineral acid-solvent-detergent liquid metal cleaner and rust remover. It will effectively remove rust, scale and light deposits of mill oil from the surface of metals and properly condition steel surfaces.
- Aquence® 7150™** – An acidic composition for use in spray washing systems prior to Aquence® paint films and for removing light rust and oxidation from iron and steel surfaces. For effective derusting, articles must be free of grease and oil before cleaning.
- Aquence® 7310™** – An acidic composition spray cleaning solution for removing light rust and oxidation from iron and steel surfaces prior to the application of an Aquence® paint film.
- Aquence® 7320™** – An acidic composition that when diluted with water produces a spray/dip cleaning solution for removing light rust, oxidation, and oily soils from iron and steel surfaces prior to the application of Aquence® coating chemicals. The performance of the coated part is improved when cleaning is followed by ultrasonic-assisted rinsing.

Products	IDH Number (Drum)	Liquid	Powder	Alkaline	Acid	Spray	Immersion	Steel	Galvanized / Zinc	Light Duty	Medium Duty	Weldments / Scale	Removes Flash Rust	Drawing Compounds	Temperature Range °F	Oil Emulsify	Oil Split-Out	Phosphates
Aquence® 1772™	593954		X	X		X	X	X		0	X		0		140 to 190		X	X
Aquence® 2592™	594106	X		X		0	X	X			X		0	X	180 to 200	X		
Aquence® 2599™	594400	X		X		X	0	X			X		0		120 to 160			
Aquence® 2600™	595095	X		X		X	0	X		0	X				150 to 180		X	
Aquence® 2810™	833557	X		X		0	X	X			X		0		120 to 160		X	trace
Aquence® 2819™	594399	X		X		X	X	X	X	0			0		140 to 180	X		X
Aquence® 2860™	594555	X		X		X	0	X		X	0		X		150 to 200		X	X
Aquence® 182A™	595889	X			X	X	X	X		X	0	X	X		80 to 180		X	X
Aquence® 7005™	596158	X			X	X	X			0	X	X	X		120 to 190		X	X
Aquence® 7150™	594107	X			X	X	0	X		X	X	0	X		135 to 165		X	trace
Aquence® 7310™	611209	X			X	X	0	X		X	0	0	X		145 to 175		X	
Aquence® 7320™	1048507	X			X	X	0	X		0	X	0	X		145 to 175		X	

X = Primary Attribute 0 = Secondary Attribute

COATINGS

- Aquence® 866™** – A smooth, black, water-based, organic coating for ferrous metal surfaces. When deposited uniformly on the metal surface, it will coat recessed or partially enclosed surfaces to provide low cure solvent and heavy metal-free coatings with good corrosion resistance, solvent resistance, adhesion, flexibility and hardness.
- Aquence® 866IX™** – High efficiency replenisher used to produce a smooth, black, water-based, organic coating on ferrous metal surfaces. When deposited uniformly on the metal surface, it will coat recessed or partially enclosed surfaces to provide low cure coating with good corrosion resistance, solvent resistance, adhesion, flexibility and hardness-free of solvents or heavy metals.
- Aquence® 915™** – A concentrated liquid chemical used to produce a black, water-based, organic coating on ferrous metal surfaces. When deposited uniformly on the metal surface, it will coat recessed or partially enclosed surfaces.
- Aquence® 915IX™** – A high efficiency, concentrated, water-based, liquid chemical used to produce a black organic coating on ferrous metal surfaces. When deposited uniformly on the metal surface, it will coat recessed or partially enclosed surfaces.

- Aquence® 925G™** – Coating chemicals consist of two components of concentrated, liquid chemicals used to produce a grey, organic, water-based coating on ferrous metal surfaces. When deposited uniformly on the metal surface, it will coat recessed or partially enclosed surfaces. The design of this coating is for a lighter, non-black primer for accepting color specific topcoats.
- Aquence® 930™** – This epoxy-acrylic urethane coating is environmentally responsible, heavy metal free, with low VOC that delivers enhanced corrosion performance for demanding applications like frames and chassis components.
- Aquence® 930IX™** – A high efficiency, concentrated, water-based, liquid chemical used to produce a black organic coating on ferrous metal surfaces. When deposited uniformly on the metal surface, it will coat recessed or partially enclosed surfaces.

Products	IDH Number (Drum)	Resin Base	High Operating Temperature Resistance	Gloss Range	Flexibility	Salt Spray Resistance	Cyclic Corrosion	VOC, EPA Method 24 lbs./gallon	Impact Resistance (in./lbs.)	Pencil Hardness	Process Efficiency	Flash-Off Oven	Cure Temperature Range °F	Paint Solids (% weight)	Paint Solids (% volume)
Aquence® 866™ Replenisher	594104	PVDC		5 - 10	X	X	X	None	120 - 160	4H - 7H	Medium - High	No	200 to 220	38%	25%
Aquence® 866IX™ Replenisher	595762	PVDC		5 - 10	X	X	X	None	120 - 160	4H - 7H	Very High	No	200 to 220	38%	26%
Aquence® 915™ Make Up	773630	Epoxy/Acrylic Urethane	X	30 - 80	0	X	X	<0.3	60 - 80	H - 3H	Medium - High	Yes	350 to 385	33%	30%
Aquence® 915™ Replenisher	597514	Epoxy/Acrylic Urethane	X	30 - 80	0	X	X	<0.3	60 - 80	H - 3H	Very High	Yes	350 to 385	33%	30%
Aquence® 915IX™ Make Up	751404 (NRT)	Epoxy/Acrylic Urethane	X	30 - 80	0	X	X	<0.3	60 - 80	H - 3H	Very High	Yes	350 to 385	33%	30%
Aquence® 915IX™ Replenisher	739915 (NRT)	Epoxy/Acrylic Urethane	X	30 - 80	0	X	X	<0.3	60 - 80	H - 3H	Medium - High	Yes	325 to 365	33%	30%
Aquence® 925G™ Make Up A	1038992	Epoxy/Acrylic Urethane		30 - 80	0	X	X	Not Detm.	60 - 80	H - 3H	Medium - High	Yes	325 to 365	<80%	75%
Aquence® 925G™ Replenisher A	1039221	Pigmentation Component		30 - 80	0	X	X	Not Detm.	60 - 80	H - 3H	Medium - High	Yes	325 to 365	<80%	75%
Aquence® 925G™ Component B	1034637	Pigmentation Component		30 - 80	0	X	X	Not Detm.	60 - 80	H - 3H	Medium - High	Yes	325 to 365	<80%	75%
Aquence® 930™ Make Up	1056531	Epoxy/Acrylic Urethane	X	20 - 80	0	X	X	<0.1	60 - 100	H - 3H	Medium - High	Yes	350 to 385	33%	30%
Aquence® 930™ Replenisher	1197548	Epoxy/Acrylic Urethane	X	20 - 80	0	X	X	<0.1	60 - 100	H - 3H	Medium - High	Yes	350 to 385	33%	30%
Aquence® 930IX™ Make Up	1241388 (NRT)	Epoxy/Acrylic Urethane	X	20 - 80	0	X	X	<0.1	60 - 100	H - 3H	Medium - High	Yes	350 to 385	33%	30%
Aquence® 930IX™ Replenisher	1241451 (NRT)	Epoxy/Acrylic Urethane	X	20 - 80	0	X	X	<0.1	60 - 100	H - 3H	Medium - High	Yes	350 to 385	33%	30%

X = Primary Attribute 0 = Secondary Attribute NRT = Non-Returnable Tote
The Aquence® IX products are specifically formulated for use with Henkel's proprietary Lineguard® ion-exchange equipment.



REACTION RINSES

Aquence® 2150™ – A liquid chemical used to improve the water resistance, corrosion resistance, and adhesion properties of cured Aquence® 800™ series coatings.

Aquence® 3416™ – An alkaline liquid chemical used as an immersion reaction rinse for surfaces treated with Aquence® coating chemicals to improve the uniformity and gloss of coating appearance.

Aquence® E2™ – A liquid chemical used to improve the water and corrosion resistance along with improved adhesion properties of cured Aquence® 900 series coatings.

Aquence® E3™ – A liquid chemical used to improve the corrosion resistance, coverage and appearance of cured Aquence® ACC® 900 series coatings.

Products	IDH Number (Drum)	Coating Series	Multi-Component	Neutral	Alkaline	Acid	CRS	HRS	Forgings	Castings	Phosphonate	Zirconium	Calcium / Phosphate	Salt Spray Resistance	Cyclic Corrosion Resistance	Chemical Fluid Resistance	Solvent Resistance	Bending / Forming	Gloss	Surface Smoothness	Concentration	Process Tank Temperature °F
Aquence® 2150™	594105	800		X			X	X	0	0				X	0	X	0	X	Low	Low	1% - 3%	RT
Aquence® 3416™	643678	800			X		X	X	X	X	X			X	0	0	0	X	Medium	High	1% - 10%	RT
Aquence® E2™	833558	900				X	X	X	X	X	X			X	0	X	X	X	Medium	Medium	1% - 4%	125 to 140
Aquence® E3™	E3A - 597424 E3B - 597329 E3C - 597425	900	X			X	X	X	X	X		X	X	X	X	0	0	X	High	Medium	0.36% E3A 3.6% E3B 1% E3C	125

X = Primary Attribute 0 = Secondary Attribute.



surface treatments

For steel, galvanized, aluminum or plastic, we offer a complete line of cleaning, conditioning and conversion coating solutions. Our expertise and products help ensure outstanding quality throughout body-in-white, body shop, paint line and assembly applications. These automotive technologies ensure vehicles not only look great in the showroom, but also stand up to the rigors of everyday driving.



ALKALINE CLEANERS

Applied by spray or immersion, these strong alkaline treatments are recommended for the removal of organic soils prior to Bonderite® processes.

Parco® Cleaner 319™ – Designed to prepare aluminum, steel, electrogalvanized and hot-dip galvanized surfaces to receive a conversion coating or prior to a plating operation.

Parco® Cleaner 2087X™ – Liquid cleaner formulated for the removal of lubricants and other drawing compounds or oils.

Parco® Cleaner ZX-1™ – Designed to prepare aluminum, steel, electrogalvanized and hot-dip galvanized surfaces to receive a conversion coating or prior to a plating operation. Primarily for use in spray systems.

Parco® Cleaner ZX-4™ – A non-silicated, heavy duty, liquid, spray alkaline cleaner designed for cleaning ferrous metals.

Products	IDH Number (Drum)	APPLICATION		SUBSTRATE			ETCH		TEMPERATURE Temperature Range °F	BUILDERS			
		Spray	Immersion	Steel / Heavy Duty	Multi-Metal	Heavy Etch on Al and Zn	No Etch on Al & Zn	Sodium		Potassium	Phosphate	Gluconate	
Parco® Cleaner 319™	593897	X	X		X	X			120 to 140 Aluminum 140 to 180 Steel/Galv.		X	X	X
Parco® Cleaner 2087X™	593929	X	X	X					175 to 210	X	X		X
Parco® Cleaner ZX-1™	594331	X			X	X			120 to 140 Aluminum 140 to 180 Steel/Galv.	X	X	X	X
Parco® Cleaner ZX-4™*	596474	X	X	X			X		70 to 180		X		X

*Inter-Stage Protection

ACID CLEANERS

Full line of acid-based cleaners designed to clean off scale and other inorganic soils for parts and maintenance cleaning.

Deoxidine® 182B™ – A phosphoric acid-based cleaner designed to remove rust and oxides left from laser cutting and welding on steel surfaces.

Deoxidine® 2530™ – Specifically formulated for removal of scale from closed-loop stainless steel heat transfer systems.

Deoxidine® 2520™ – A heat-exchange cleaner with an ambient operating temperature. Specifically formulated for removal of scale from

closed-loop stainless steel heat transfer systems.

Deoxidine® A-500™ – A specially formulated, liquid acid inhibitor used to clean power-spray processing equipment. The solution minimizes labor required for cleaning and prolongs equipment life.

Deoxidine® 7005™ – A liquid cleaner that will effectively remove rust, scale and light deposits oil from the surface of metals while destroying corrosion stimulators.

Products	IDH Number (Drum)	APPLICATION		ACID TYPE			TEMPERATURE Temperature Range °F
		Spray	Immersion	Hydrochloric	Nitric	Phosphoric	
Deoxidine® 182B™	596557	X	X			X	70 to 180
Deoxidine® 2530™	598923		X			X	120 to 150
Deoxidine® 2520™	598893		X		X		135 ± 15
Deoxidine® A-500™	598846		X	X			<130
Deoxidine® 7005™	595269		X			X	120 to 190

CONDITIONERS

These surfaces may be treated individually or in mixed production by either spray or immersion processing. Promotes the formation of a dense, fine-grained phosphate coating that is preferred as a paint base for the automotive industry and also offers superior adhesion and durability in corrosive environments.

Fixodine® M – A powdered conditioning agent used for articles of iron and steel prior to Parco® Lubrite treatments.

Fixodine® ZL – A titanium-based conditioner formulated to prepare iron, steel, aluminum, zinc, and zinc-alloy surfaces for subsequent phosphate coating applications. These surfaces may be treated individually or in mixed

production by either spray or immersion processing.

Prepalene® X – A patented zinc-based, easy-to-handle liquid conditioning rinse that prepares iron, steel, aluminum, zinc, and zinc-alloy surfaces for subsequent phosphate coating applications.

Products	IDH Number (Drum)	FORM		SUBSTRATE		APPLICATION		PRETREATMENT		TEMPERATURE Temperature Range °F
		Liquid	Powder	Steel	Multi-Metal	Spray	Immersion	Manganese Coatings	Zinc Coatings	
Fixodine® M	594557		X	X		X	X	X		70 to 180
Fixodine® ZL	593918	X			X	X	X		X	70 to 120
Prepalene® X	687530	X			X	X	X		X	70 to 120

MANGANESE PHOSPHATES

Coating that provides superior corrosion resistance as well as protection during initial "break-in" of parts with metal-to-metal contact, gears and various powertrain components.

Parco® Lubrite LT-10™ – Formulated to produce a non-metallic, corrosion resistant coating on iron and steel surfaces.

Parco® Lubrite 5™ – Formulated to produce a non-metallic, corrosion resistant coating on iron and steel surfaces.

Parco® Lubrite 2™ – Formulated to produce non-metallic, oil-absorptive coatings on iron and steel bearing surfaces. The process increases lubrication of treated surfaces due to the oil-absorptive coating and removes light metal scratches remaining from machining operations, as well as helps inhibit corrosion.

Products	IDH Number (Drum)	APPLICATION		SUBSTRATE	CHEMICAL CONTENT			TEMPERATURE Temperature Range °F
		Immersion			Steel	Internal Acceleration	External Acceleration	
Parco® Lubrite LT-10™	MU - 598100, Rep - 597708	X		X	X			135 to 155
Parco® Lubrite 5™	594401	X		X		X	X	180 to 200
Parco® Lubrite 2™	593831	X		X		X	X	200 to 220



ZINC PHOSPHATES

This process converts the metal surface to a non-metallic, polycrystalline coating containing iron, manganese, nickel and zinc phosphates. The metals may be treated individually or in mixed production.

Bonderite® ZM-1™ – Nickel-free conversion coating that converts metallic substrate surfaces to a fine-crystalline, non-metallic zinc phosphate coating that inhibits corrosion and increases the adhesion and durability of organic paints and finishes.

Bonderite® 1994™ – Nickel-free conversion coating that converts the metal surfaces to a non-metallic, fine-crystalline, polycrystalline phosphate coating that inhibits corrosion and increases the adhesion and durability of electrodeposited finishes.

Bonderite® 958™ – Formulated for immersion application on steel, galvanized steel, electrogalvanized steel, zinc-alloy coated steel and aluminum.

Bonderite® 2010™ – Formulated for immersion application on steel, galvanized steel, electrogalvanized steel, zinc-alloy coated steel and aluminum.

Bonderite® 3080™ – The treatment converts the metal surface to a nonmetallic, polycrystalline zinc phosphate coating which inhibits corrosion and increases the adhesion and durability of paint finishes.

Bonderite® CD-3020™ – Converts the metal surface to a nonmetallic, polycrystalline coating containing iron, manganese, nickel and zinc phosphates. This coating provides high alkaline resistance and is preferred as a paint base offering superior adhesion and durability.

Bonderite® CD-3042™ – Zinc phosphating conversion coating chemical specifically formulated for immersion application of aluminum in mixed metal production. The process converts the metal surface to nonmetallic, polycrystalline coating. This coating provides superior corrosion resistance and is preferred as a paint base offering superior adhesion and durability.

Products	IDH Number (Drum)	APPLICATION		SUBSTRATE		CHEMICAL CONTENTS			TEMPERATURE
		Spray	Immersion	Steel	Multi-Metal	Internal Acceleration	External Acceleration	Manganese	Temperature Range °F
Bonderite® ZM-1™	MU - 595068, Rep - 595426	X	X	X	X	X		X	120 to 135
Bonderite® 1994™	MU - 595096, Rep - 594201		X	X	X	X		X	110 to 130
Bonderite® 958™	MU - 594297, Rep - 594604		X	X	X		X	X	110 to 120
Bonderite® 2010™	MU - 595975, Rep - 597939	X	X	X	X	X		X	120 to 135
Bonderite® 3080™	MU - 596101, Rep - 597830		X	X	X		X		140 to 190
Bonderite® CD-3020™	MU - 594600, Rep - 593955		X	X	X		X		140 to 190
Bonderite® CD-3042™	MU - 989150, Rep - 1014611		X	X	X		X		105 to 115

MU = make up Rep = replenisher

PHOSPHATE-FREE

Conversion coating that is free of heavy metals.

Bonderite® NT-1™ – Phosphate-free reactive conversion coating designed to increase the adhesion and corrosion resistance on metal surfaces.

Products	IDH Number (Drum)	APPLICATION		SUBSTRATE	TEMPERATURE
		Spray	Immersion	Multi-Metal	Temperature Range °F
Bonderite® NT-1™	611359	X	X	X	Ambient

LIGHT METAL PROCESS

Conversion coatings that are chrome-free.

Alodine® 5200™ – A chrome-free product specifically formulated for treating non-ferrous metals.

Alodine® 4595™ – A chrome-free conversion coating formulated for treating aluminum and its alloys.

Alodine® 5220™ – A replenisher that can be used with Alodine® 5200™.

Products	IDH Number (Drum)	APPLICATION		SUBSTRATE		CHEMICAL CONTENTS		TEMPERATURE
		Spray	Immersion	Magnesium / Aluminum	Zinc	Internal Acceleration	Reactive	Temperature Range °F
Alodine® 5200™	594142	X	X	X	X	X	X	70 to 120
Alodine® 5220™	594425	X	X	X	X	X	X	70 to 120
Alodine® 4595™	599033	X	X	X			X	100 to 135





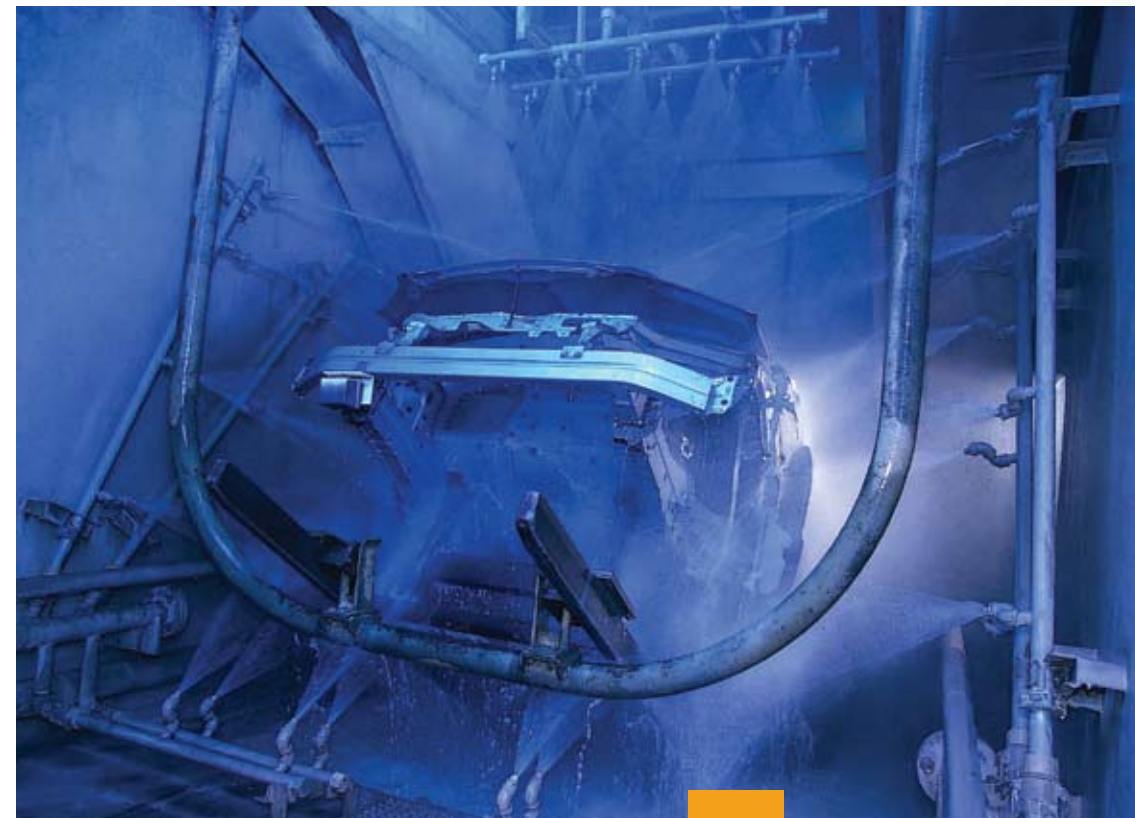
CHROME-FREE POST TREATMENTS

Post treatment is the final stage in the pretreatment process. It removes the effects of hard-water salts and provides enhanced corrosion resistance and paint adhesion on the vehicle's body and exterior.

Parcolene® 99X™ – A patented chrome- and phosphate-free post treatment specially formulated for use on all types of conversion coatings and is used in the pretreatment processing of steel, zinc, and aluminum surfaces.

Parcolene® 50 NC™ – The treatment is designed for use over phosphate coatings and is applied by spray or immersion. The chrome-free conversion coating agent increases the corrosion resistance of the coatings when painted.

Products	IDH Number (Drum)	APPLICATION		SUBSTRATE			CONTENTS		TEMPERATURE Temperature Range °F	COMPATIBLE PAINT SYSTEM		
		Spray	Immersion	Steel	Galvanized	Aluminum	Inorganic	Organic		Wet	Powder	E-Coat
Parcolene® 99X™	665553	X	X	X	X	X	X	X	Ambient	X	X	X
Parcolene® 50 NC™	594378	X	X	X	X	X	X		70 to 100	X	X	X



PLASTIC TREATMENTS

Products used on plastic substrates prior to painting.

P3® PolyPrep® 2595™ Cleaner – A mildly acidic cleaner specially formulated for cleaning plastic surfaces. The cleaning solution is used in spray wash systems prior to the application of paint films or other surface treatment.

P3® PolyPrep® 3293™ Cleaner – A phosphate-based acid cleaner formulated for cleaning plastic substrate surfaces.

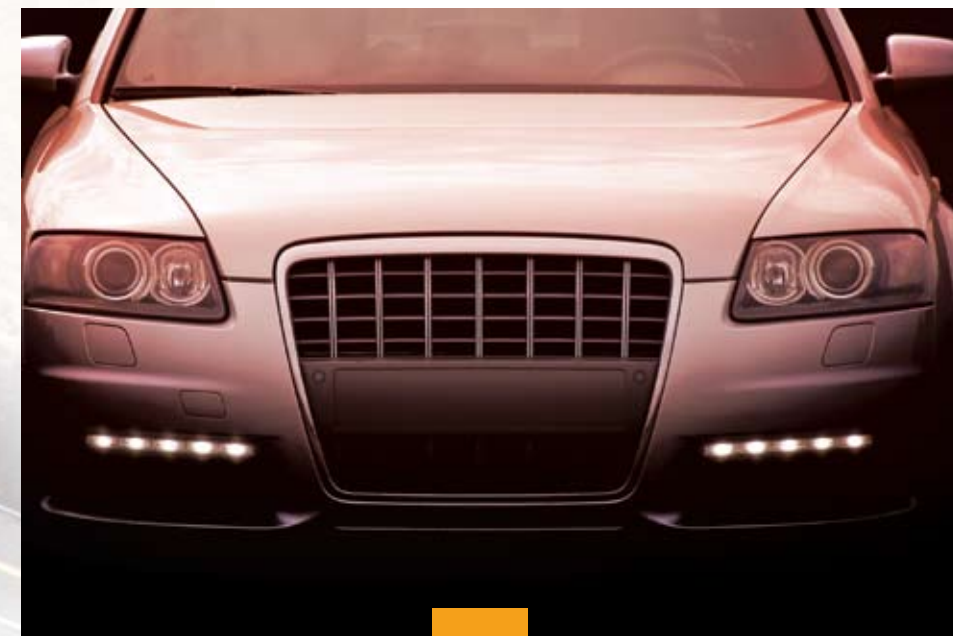
P3® PolyPrep® 110™ Cleaner – A phosphate-free, low-temperature cleaner designed for cleaning plastic substrates prior to painting or for adhesive applications.

P3® PolyPrep® 400™ Rinse Aid – A rinsing aid designed for use after the cleaning of plastic substrates in pretreatment operations. It assists in the displacement and removal of solids-laden water, thereby minimizing water spotting on cleaned plastic and painted plastic parts.

P3® PolyPrep® 205™ Rinse Aid – A rinse aid specially designed for use after plastic cleaning in plastic pretreatment operations. The rinse aid imparts a hydrophilic finish to many plastics that eliminates water spotting of cleaned plastic and plastic painted parts.



Products	IDH Number (Drum)	APPLICATION	TEMPERATURE	CONTENTS		
		Spray	Temperature Range °F	Phosphoric Acid	Citric Acid	Etched Mild Steel
P3® PolyPrep® 2595™ Cleaner	597383	X	130 to 160	X		
P3® PolyPrep® 3293™ Cleaner	594055	X	130 to 150	X		X
P3® PolyPrep® 110™ Cleaner	952836	X	110 to 140		X	X
P3® PolyPrep® 400™ Rinse Aid	593070	X	Ambient			
P3® PolyPrep® 205™ Rinse Aid	596554	X	Ambient			



Henkel's metalworking lubricants, neutral cleaners, and corrosion preventative products are designed to produce quality parts and reduce overall manufacturing costs. We have an extensive portfolio of products, including a line of coolants that resist biological activity

resulting in a preferred work environment. In addition to typical ferrous and aluminum substrates, they are suitable for use on brass, copper and other exotic metals, and will work in light to heavy applications.



METAL REMOVAL

Henkel's line of high quality metal removal products for cutting and grinding are available in a variety of chemistries including synthetics, semi-synthetics, soluble oils or straight oils.

Synthetic

Multan® 9103™ – Water soluble oil-rejecting synthetic fluid with multiple uses in today's manufacturing environment. Use on ferrous alloys only.

Multan® 3015™ – A synthetic lubricant suitable for ferrous alloys in light machining operations. Multan® 3015™ is exceptional as a roll-forming lubricant in tube mills.

Multan® 5500™ – A synthetic metal removal fluid with excellent biological control. It is used on steel, cast iron and aluminum alloy operations.

Multan® 3105™ – An oil-rejecting, synthetic fluid designed for machining, grinding and roll-forming ferrous and non-ferrous alloys. It is also suitable for use on brass, copper and other exotic metals.

Semi-Synthetic

Multan® B-204™ – Its combination of lubricity additives and cooling ability allow it to work in light to moderate applications. This bio-resistant product has been designed for applications where lubricity, cooling and finish are critical. It is ideal for applications where RO/DI water is used.

Multan® B-400™ – This bio-resistant product can be used from automotive to aerospace applications. Its wide applicability makes it suitable for use on brass, copper and other exotic metals.

Soluble Oil

Multan® 5600D™ – An all-purpose soluble oil designed for machining and grinding ferrous and aluminum alloys. Its high oil content provides excellent lubricity for various types of difficult operations.

Multan® 2140™ – A non-sulfonate soluble oil that has minimal impact in the presence of bioactivity.

Multan® 5005M™ – A heavy duty soluble oil used in metal removal applications. Its high level of extreme pressure additives make this product suitable for heavy machining operations including broaching. This product is fine for both ferrous and non-ferrous applications.

Straight Oil

Multan® CR 67™ – Tool grinding oil for light machining applications.

Multan® CR 10™ – Its moderate viscosity and additive package make Multan® CR 10™ useful in general machining applications such as hobbing, milling or shaping. Applications for using this product range from steel gear machining to cutting tool manufacturing.

Multan® CR 20™ – Tool grinding oil for light to moderate machining applications.

Multan® CR 67IC™ – Low viscosity, chlorinated, tool grinding oil.

Multan® CR 26™ – Its unique composition of corrosion inhibitors, Extreme Pressure (EP) additives, anti-mist agents, and lubricity additives provide a durable product for today's moderate broaching operation.

Metalworking Maintenance Cleaner

P3® Multan® S™ – A system cleaner designed to emulsify tramp oils and other contaminants in coolant systems. The product circulates with the coolant, while production continues to operate, and cleans the machine.



IDH NUMBER (DRUM)	CONCENTRATE COLOR	RUST FREE CONC. (% - CAST IRON)	VISCOSITY - H ₂ O SOLUBLES (cP), OILS (SUS @ 100°F)	OIL CONTENT RANGE (%)	TYPICAL CONCENTRATION	EP ADDITIVES			SUBSTRATE COMPATIBILITY												
						PHOSPHORUS	SULFUR	CHLORINE	STEEL	CAST IRON	ALUMINUM**	YELLOW (COPPER / BRASS)**									
SYNTHETIC																					
Multan® 9103™	593832	Blue	3	35	0	5% - 10%				A	b	A	b								
Multan® 3015™	594286	Yellow	4	23	0	5% - 10%				a	b	a	b								
Multan® 5500™	597726	Amber	3	35	0	5% - 10%	X			a	B	c	a	B	c	b	c				
Multan® 3105™	598807	Pale Amber	4	70	0	5% - 10%				a	b	a	b	A	B	c	A	B	c		
SEMI-SYNTHETIC																					
Multan® B-204™	1052551	Amber	2	200	20-25	5% - 10%	X			A	B	c	A	B	c	A	b	A	b		
Multan® B-400™	677532	Amber	2	275	25-30	5% - 10%	X	X		a	B	C	b	C	a	B	C	a	B	C	
SOLUBLE OIL																					
Multan® 5600D™	594510	Amber	N/A	170	85-90	5% - 10%				a	B	C	a	B	C	b	c	b	c		
Multan® 2140™	593822	Amber	N/A	160	50-55	5% - 10%				a	B	C	a	B	C	a	B	C	a	B	C
Multan® 5005M™	598607	Amber	N/A	350	80-85	5% - 10%			X	a	B	C	a	B	C	a	B	c	a	B	C
STRAIGHT OIL																					
Multan® CR 67™	594463	Amber	N/A	75	90-95	100%	X			A	B		A	B	a	b	a	b			
Multan® CR 10™	593816	Amber	N/A	120	90-95	100%	X			A	B		A	B	a	b	a	b			
Multan® CR 20™	594248	Amber	N/A	220	90-95	100%	X			A	B		A	B	a	b	a	b			
Multan® CR 67IC™	595879	Amber	N/A	100	90-95	100%	X	X		A	B		A	B	a	b	a	b			
Multan® CR 26™	910511	Amber	N/A	220	75-80	100%	X	X		A	B	c	A	B	c	a	b	a	b		
METALWORKING MAINTENANCE CLEANER																					
P3® Multan® S™	596164					2% - 5%															

** Individual alloys should be tested prior to recommendation.

A - Highly Recommend for Grinding
a - Recommend for Grinding
B - Highly Recommend for General Machining (Turning, Drilling, Milling, Reaming, Sawing, Cutting)
b - Recommend for General Machining (Turning, Drilling, Milling, Reaming, Sawing, Cutting)
C - Highly Recommend for Heavy Machining (Threading, Broaching, Deep Hole Drilling, Reaming)
c - Recommend for Heavy Machining (Threading, Broaching, Deep Hole Drilling, Reaming)



METAL FORMING

Henkel's full line of quality metal forming products for stamping and drawing are available in a variety of chemistries including straight oils, emulsions, synthetics or dry films.

Synthetic

- Multan® F 737™** – A synthetic metal forming fluid that is used as a replacement for vanishing oils in light applications. This product provides a non-VOC alternative suitable for all metal alloys.
- Multan® F 750™** – A synthetic metal forming lubricant that is used on all metals including aluminum and copper alloys.
- Multan® F 6740™** – A synthetic metal forming lubricant that is used on all metals. This polymer type product also has excellent biological control.
- Multan® F 7160™** – A synthetic metal forming lubricant that is used on all metals including aluminum and copper alloys. The product's unique combination of extreme pressure additives and polymer technology provide excellent lubricity in light to heavy forming applications. This product provides low foam in subsequent washing operations.
- Multan® F 7270™** – A synthetic compound designed for drawing and stamping of ferrous and aluminum alloys.
- Multan® F 1009™** – Low viscosity, synthetic, heavy duty forming lubricant.
- Multan® F 2004™** – A synthetic compound designed for drawing and stamping of ferrous and aluminum alloys. Its unique composition of corrosion inhibitors, Extreme Pressure (EP) additives and lubricity additives provide a durable product for today's moderate to heavy drawing and stamping operations.

Soluble Oil

- Multan® F 981ND™** – A general purpose metal forming fluid that can be used on steel and stainless applications. It contains a biological control package for use in recirculating system.
- Multan® F 985™** – A metal forming fluid suitable on steel, galvanized, aluminum and stainless applications. Its high viscosity allows it to have a range of dilutions and still maintain consistent fluid integrity.
- Multan® F 927KW™** – A soluble oil designed for drawing and stamping of ferrous, galvanized, aluminum, and copper alloys. Its unique composition of corrosion inhibitors and Extreme Pressure (EP) additives provide a durable product for today's heavy drawing and stamping operations.



Oil Base

- Multan® PL 633™** – A vanishing oil product that is best used on light metal forming applications. This product can be used on all metal types including ferrous, galvanized, stainless, aluminum and copper alloys. Good on non-washed stampings.
- Multan® PL 1439™** – Low VOC; use with Appli-Coater® for light stamping, high speed.
- Multan® PL Prelube MP-404™** – A stamping and drawing lubricant backed with multiple OEM approvals. It can be coil-applied through multiple application methods, including electrostatically. It is typically used as a pre-lubricant on ferrous and non-ferrous materials during automotive stamping.

- Multan® PL 298™** – Low viscosity hydroforming die side lubricant.
- Multan® PL 198™** – High viscosity hydroforming die side lubricant.

Paste

- Multan® FP 1212™** – A paste designed for cold forging, forming, drawing, and bending of ferrous, stainless steel and non-ferrous alloys.

Dry Film

- Multan® DFL 55HS™** – Micro-wax dispersion suitable for the toughest of draws.
- Drawco® DFL 767™** – An organic coating that can be mill-applied to ferrous and non-ferrous substrates to replace mill oils, pre-lubes and drawing compounds. Can be applied via coil coater; weldable, cleanable, acrylic, clear film. Its unique composition of corrosion inhibitors and lubricity additives provide a durable product for today's heavy drawing, stamping, and forming operations.

IDH NUMBER (DRUM)	VISCOSITY (cP)	TYPICAL DILUTION	TYPE / WATER SOLUBILITY	FATTY ACIDS	ESTERS	PIGMENT	CHLORINE	PHOSPHORUS	SULFUR	FILM	BOUNDARY	EP ADDS	SUBSTRATE COMPATIBILITY												
										PLAIN STEEL	GALVANIZED / ZINC ALLOY**	YELLOW METALS**	STAINLESS STEEL	ALUMINUM**											
SYNTHETIC																									
Multan® F 737™	595800	13	100%	W1	X	X							A	b	A	b	A	b	A	b	A	b			
Multan® F 750™	595446	120	20% - 100%	F1	X			X					A	B	c	a	b	c	a	B	c	a	B	c	
Multan® F 6740™	877749	200	5% - 20%	F1	X				X				A	B		a	b	c	A	B		A	B		
Multan® F 7160™	595388	210	25% - 100%	SF2	X			X					a	B	c	a	b	c	a	B	c	a	b		
Multan® F 7270™	915861	850	20% - 100%	F2									A	B	c				a	B	c	a	b	c	
Multan® F 1009™	593857	460	15% - 100%	F2	X			X					B	C		a	b	c	B	C		a	b	c	
Multan® F 2004™	635811	1200	5% - 100%	F2	X			X					B	C					B	C					
SOLUBLE OIL																									
Multan® F 981ND™	594617	765	10% - 100%	F2	X		X	X					B	C						b	c		b	c	
Multan® F 985™	594260	1420	10% - 100%	O2	X	X		X					B	C		b	c			B	C		b	c	
Multan® F 927KW™	595294	1850	10% - 100%	O2	X		X						B	C		b	c		b	c	B	C		b	c
OIL BASE																									
Multan® PL 633™	594867	30	100%	N/A									A		A		A		A		A		A		
Multan® PL 1439™	994018	55	100%	O3									A	b	a	b	A	b	a			A	b		
Multan® PL Prelube MP-404™	594622	180	100%	O3		X							a	B	a	B	a	B	a	b		a	B		
Multan® PL 298™	928485	250	100%	O3	X			X					b	C						b	C				
Multan® PL 198™	772632	1850	100%	O3		X		X	X				b	C						b	C				
PASTE																									
Multan® FP 1212™	593209	-	100%	H3	X	X	X						B	C					B	C		B	C	B	C
DRY FILM																									
Multan® DFL 55HS™	599089	200	50% - 100%	W2									B	C					B	C		B	C	B	C
Drawco® DFL 767™	910122	-	50% - 100%	W2									B	c					B	C		B	c	B	C

** Individual alloys should be tested prior to recommendation.

Film Key

Type: F - Fluid / T - Tacky / S - Split Phases / C - Crystalline / P - Plastic / W - Waxy / O - Oily
 Water Solubility: 1 - Rinses Freely in Cold Water / 2 - Rinses Freely in Hot Water / 3 - Not Free Rinsing

A - Highly Recommend for Light Forming (Stamping, Punching, Piercing)
a - Recommend for Light Forming (Stamping, Punching, Piercing)
B - Highly Recommend for Medium Forming (Heavy Stamping, Bending, Roll Forming, Single Hit Die)
b - Recommend for Medium Forming (Heavy Stamping, Bending, Roll Forming, Single Hit Die)
C - Highly Recommend for Heavy Forming (Deep Drawing, Deep Bending, Tube Bending, Hydroforming, Extruding, Progressive Dies)
c - Recommend for Heavy Forming (Deep Drawing, Deep Bending, Tube Bending, Hydroforming, Extruding, Progressive Dies)



CLEANERS WITH CORROSION PREVENTION

Cleaners with unique compositions of alkalinity, corrosion inhibitors, and surfactants for today's light-to moderate-duty cleaning and protecting needs.

Neutral

- P3® Neutraceutical® 5088™** – Neutral cleaner that is applied on both ferrous and aluminum substrates. This product is used at a moderate bath temperature that allows it to maintain in-process rust protection. It also rejects oils to assist in removal and is recommended in vibratory washer applications.
- P3® Neutraceutical® 5156™** – A neutral cleaner applied on ferrous substrates. This product is used at a low bath temperature and provides in-process rust protection. This product also rejects oils to assist in extending bath life.
- P3® Neutraceutical® 5175™** – Neutral cleaner that is applied on ferrous substrates. This product is used at a moderate bath temperature that allows it to maintain in-process rust protection and rejects oils to assist in removal.
- P3® Neutraceutical® 200™** – Neutral-based in-process cleaner with corrosion inhibitors designed for in-process corrosion protection on ferrous and aluminum alloys. Its unique composition of alkalinity and corrosion inhibitors provides a durable low foaming product for light to moderate duty cleaning and protecting needs.

Parco® Cleaner 220-WB™ – A mildly alkaline liquid cleaner formulated for use in power-spray washing of ferrous and non-ferrous metals. It was designed for a wide temperature range and operations where splitting of the oil is preferred. Parco® Cleaner 220-WB™ provides maximum rust inhibition and foam control with a moderate alkaline, nitrite-free solution.

P3® Neutraceutical® 300™ – A neutral-based in-process cleaner with organic corrosion inhibitors designed for short-term corrosion protection on ferrous or aluminum alloys.

P3® Neutraceutical® 5220-1™ – Neutral cleaner that is applied on ferrous, aluminum and copper substrates. This product is used at a moderate bath temperature that allows it to maintain in-process rust protection. It also rejects oils to assist in removal.

Emulsion

P3®-Emulpon C64™ – A water-soluble emulsion cleaner and rust inhibitor.

P3®-Emulpon 314™ – A water-soluble emulsion cleaner and rust inhibitor used for cleaning cutting fluid, drawing compounds, or any other greasy, oily soil from production parts quickly and safely.

IDH NUMBER (DRUM)	CLEANER TYPE	OIL SPLITTING	TEMPERATURE			BUILDERS		APPLICATION		METALS		
			AMBIENT TO 120°F	120°F TO 160°F	160°F +	BORATES	PHOSPHATES	SPRAY	IMMERSION	FERROUS	ALUMINUM**	COPPER
NEUTRAL												
P3® Neutraceutical® 5088™	593241	Organic	X	X				X	X	X	X	
P3® Neutraceutical® 5156™	594045	Organic	X	X				X	X	X		
P3® Neutraceutical® 5175™	594672	Organic	X	X		X	X	X	X	X		
P3® Neutraceutical® 200™	597612	Organic	X	X	X			X	X	X	X	X
Parco® Cleaner 220-WB™	598064	Organic	X	X	X	X		X	X	X	X	
P3® Neutraceutical® 300™	805665	Organic	X	X	X	X		X	X	X	X	X
P3® Neutraceutical® 5220-1™	594241	Organic	X	X		X	X	X	X	X	X	X
EMULSION												
P3®-Emulpon C64™	594918	Emulsion	N/A	X	X			X		X	X	
P3®-Emulpon 314™	598743	Emulsion	N/A	X	X			X	X	X	X	

** Individual alloys should be tested prior to recommendation.

NOTE: ALL PRODUCTS ARE FOR IN-PROCESS RUST PROTECTION.

CORROSION PREVENTATIVES

Corrosion inhibitors designed for in-process corrosion protection on ferrous and non-ferrous alloys. Available in synthetic, soluble and oil-based formulas.

Synthetic

- P3® Prevox® 501™** – A synthetic corrosion inhibitor designed for in-process corrosion protection on ferrous alloys. Its unique composition provides a durable, low-foaming product for today's moderate duty corrosion protecting needs.
- P3® Prevox® 4232™** – A short-term rust preventative that can be used at a wide concentration range. It can be used on ferrous and non-ferrous metals and is applied either in a spray or immersion system.
- P3® Prevox® 505™** – A synthetic corrosion inhibitor designed for short-term corrosion protection on ferrous alloys. Its unique composition provides a durable, low-foaming product for today's moderate duty corrosion protecting needs.

Soluble

P3® Prevox® SN400C™ – A water-emulsifiable corrosion preventative that is specifically formulated for coating phosphated and painted parts. It contains a special additive system that provides a durable, self-healing, corrosion-resistant film.

P3® Prevox® 6767™ – A soluble oil corrosion inhibitor designed for extended corrosion protection on ferrous alloys. Its unique composition provides a durable product for today's heavy duty corrosion protecting needs.

P3® Prevox® 5800™ – A soluble oil, corrosion inhibitor designed for extended corrosion protection on ferrous and non-ferrous alloys. Its unique composition provides a durable product for today's corrosion protecting needs.

Oil Base

P3® Prevox® 6041CR™ – A solvent-based corrosion inhibitor designed for extended corrosion protection on ferrous and galvanized alloys.

Multan® PL 101™ – A stamping and drawing lubricant that has multiple OEM approvals. It is approved to be used in metal forming and rust prevention applications. This straight oil can be easily removed in alkaline cleaning systems.

P3® Prevox® 4141™ – A high flash point (143°F) rust preventative that leaves a thin protective film after applied. This product is suitable for all substrates that require long-term corrosion protection.

IDH NUMBER (DRUM)	CONTAINER WEIGHT (KG)	STORAGE	% SOLIDS	TYPICAL DILUTION	TYPICAL STORAGE TIME***	APPLICATION		FILM			METALS		
						SPRAY	DIP	WAX	TACKY	OIL	FLUID	PLASTIC / CRYSTALLINE	STEEL
SYNTHETIC													
P3® Prevox® 501™	594014	236	In Process	45	3% - 20%	2 wk	X	X		X		X	X
P3® Prevox® 4232™	594762	206	Short Term	35	3% - 20%	4 wk	X	X		X		X	X
P3® Prevox® 505™	594827	213	Short Term	49	3% - 20%	4 wk	X	X		X		X	X
SOLUBLE													
P3® Prevox® SN400C™	595510	186	Extended	90	25%	3 mo	X	X		X		X	X
P3® Prevox® 6767™	595793	184	Extended	100	3% - 20%	3 mo	X	X		X		X	X
P3® Prevox® 5800™	772735	184	Extended	99	3% - 20%	3 mo	X	X		X		X	X
OIL BASE													
P3® Prevox® 6041CR™ 142°F flash point	594850	163	Extended	23.5	100%	6 mo	X	X		X		X	X
Multan® PL 101™	594526	179	Extended	100	100%	6 mo	X	X		X		X	X
P3® Prevox® 4141™	879524	161	Extended	10	100%	6 mo	X	X	X			X	X

** Individual alloys should be tested prior to recommendation.

*** Typical Storage Time – Will vary depending upon concentration, environmental conditions and storage.



Henkel's dedication to sustainability resulted in ecommitment, a grassroots approach to help build sustainable thinking and practices into the daily work routine.

Innovation drives sustainability. Sustainability means future viability.

Henkel offers sustainable technologies and solutions that benefit customers by reducing costs while achieving superior quality and productivity. As environmental sustainability becomes a greater corporate responsibility, Henkel's products help our customers deliver on the legal, social, and financial requirements of their customers and the environment.

Throughout its history, Henkel and its employees have demonstrated a commitment to protecting the workplace and the environment while creating technologies that achieve world-class quality and value. From research and development techniques to the selection of raw materials and considerations for logistics, use and disposal, Henkel continuously improves the cost-effectiveness, safety, and environmental impact of its products. Henkel's safe, functional products and processes unite customer benefits with ecological progress.

Benefits

Henkel understands that only economically successful companies can contribute to effective environmental protection and social progress. That's why Henkel delivers highly effective products and solutions that help reduce costs and improve quality, while remaining ecologically responsible.

- By reducing necessary energy, disposal, packaging and regulation costs, Henkel's innovative products help customers eliminate waste and meet their business and production goals.
- By reducing packaging material, transportation, distribution and storage needs, Henkel provides customers greater efficiency while helping them remain environmentally sustainable.
- Henkel's ecologically sustainable products help customers comply with environmental regulations.
- A global, standardized sustainability program ensures the safety of every Henkel product.
- Innovative products help customers meet the sustainability requirements of the market.



Henkel Automotive Solutions

Henkel is the global leader in adhesives, sealants and surface treatments to the automotive industry. Reaching into more than 100 countries, Henkel is engaged in all segments of the automotive industry including body, chassis, electronics, interior, exterior and powertrain. This unmatched, comprehensive portfolio has made Henkel the preferred source for automotive chemical solutions for more than 75 years.

www.henkeln.com/automotive

Henkel Sustainability

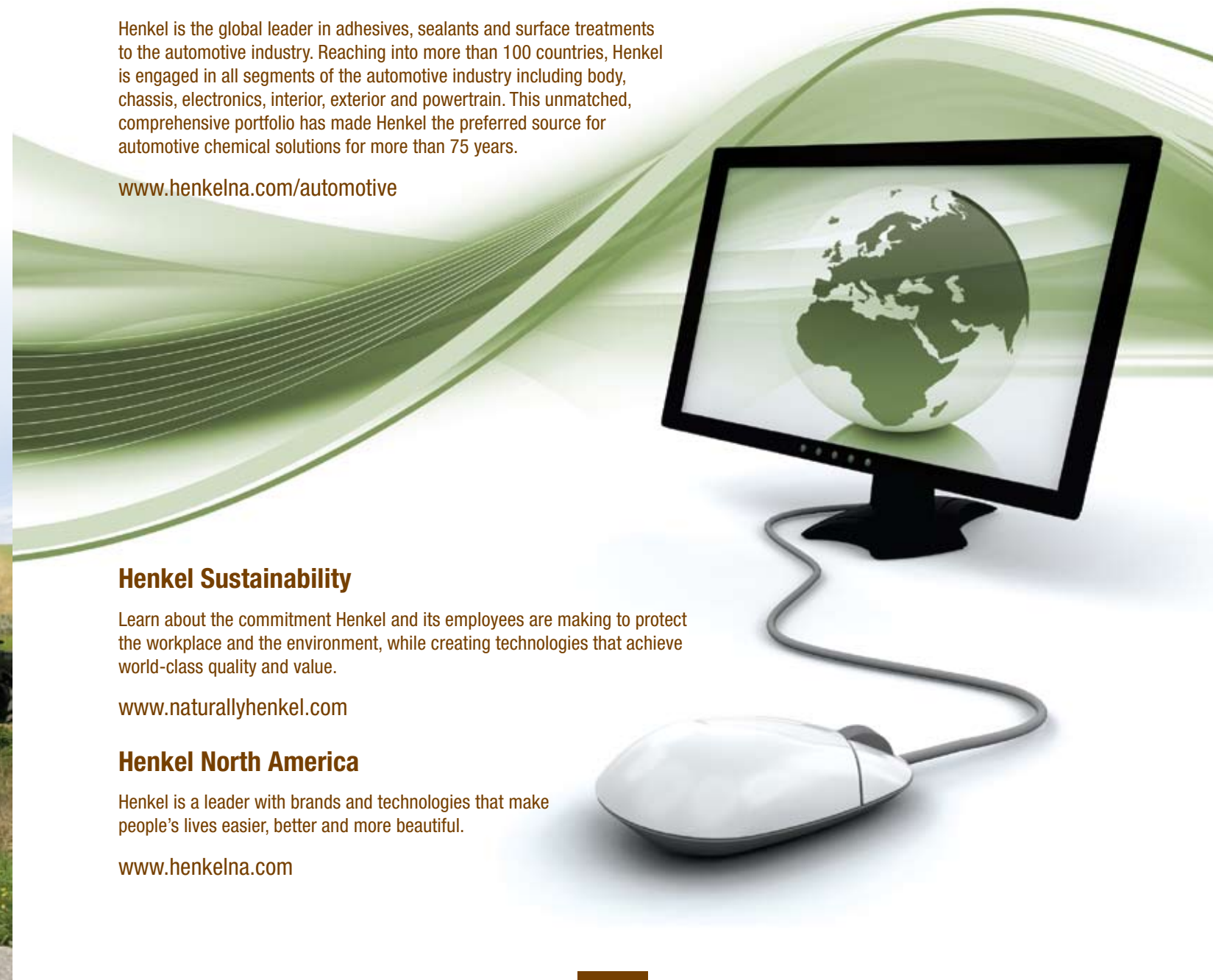
Learn about the commitment Henkel and its employees are making to protect the workplace and the environment, while creating technologies that achieve world-class quality and value.

www.naturallyhenkel.com

Henkel North America

Henkel is a leader with brands and technologies that make people's lives easier, better and more beautiful.

www.henkeln.com



8370APA™	28, 29	Bonderite® NT-1™	38	Loctite® 638™ Retaining Compound	14, 15	Loctite® H8500™ Speedbonder™ Structural Adhesive	9	P3® Neutrarcare® 300™	46	Terostat® 2060.1™	24
8370A™	28, 29	Bonderite® ZM-1™	38	Loctite® 648™ Retaining Compound	14, 15	Loctite® H8510™ Speedbonder™ Structural Adhesive	9	P3® Neutrarcare® 5088™	46	Terostat® 2102-AC/BC™	24
A-602B™	12	Deoxidine® 182B™	36	Loctite® 680™ Retaining Compound	14, 15	Loctite® LV Core Plug	14, 15	P3® Neutrarcare® 5156™	46	Terostat® 3210Z™	24
AL6000™	12, 13	Deoxidine® 2520™	36	Loctite® 2020™ Brass-Loc®	18, 19	Loctite® P-2™ Dri-Loc®	18, 19	P3® Neutrarcare® 5175™	46	Terostat® 3211-2F-01™	22, 23
AL6002™	12, 13	Deoxidine® 2530™	36	Loctite® 2045™ Dri-Loc®	18, 19	Loctite® P-3™ Dri-Loc®	18, 19	P3® Neutrarcare® 5220-1™	46	Terostat® 3221AA-01™	22, 23
AL6004™	12, 13	Deoxidine® 7005™	36	Loctite® 3032™ Structural Adhesive	10	Loctite® PM 5120™	20, 21	P3® PolyPrep® 110™ Cleaner	41	Terostat® 3230AB-25™	22, 23
Alodine® 4595™	39	Deoxidine® A-500™	36	Loctite® 3034™ Structural Adhesive	10	Loctite® PMS-10E™	20, 21	P3® PolyPrep® 205™ Rinse Aid	41	Terostat® 3230-CU-01™	22, 23
Alodine® 5200™	39	Drawco® DFL 767™	44, 45	Loctite® 3038™	10	Loctite® PMS-50E™	20, 21	P3® PolyPrep® 400™ Rinse Aid	41	Terostat® 4000-F™	24
Alodine® 5220™	39	Fixodine® M	37	Loctite® 3865HV™	25	Loctite® Resinol® 88C™	20, 21	P3® PolyPrep® 2595™ Cleaner	41	Terostat® 4010.9AL™	22, 23
Aquence® 182A™	32	Fixodine® ZL	37	Loctite® 5025™	25	Loctite® Resinol® 90C™	20, 21	P3® PolyPrep® 3293™ Cleaner	41	Terostat® 4010.9™	22, 23
Aquence® 866IX™	33	Loctite® 200™ Dri-Loc®	18, 19	Loctite® 5030™ Dri-Seal™	18, 19	Loctite® Resinol® 90R™	20, 21	P3® Previnox® 501™	47	Terostat® 4600™	24
Aquence® 866IX™ Replenisher	33	Loctite® 201™ Dri-Loc®	18, 19	Loctite® 5031™ Nuva-Sil®	25	Loctite® Resinol® AT	20, 21	P3® Previnox® 505™	47	Terostat® 4980™	22, 23
Aquence® 866IX™ Replenisher	33	Loctite® 202™ Dri-Loc®	18, 19	Loctite® 5033™	26, 27	Loctite® Resinol® RTC™	20, 21	P3® Previnox® 4141™	47	Terostat® 5918™	22, 23
Aquence® 915IX™	33	Loctite® 203™ Dri-Loc®	18, 19	Loctite® 5038™	26, 27	Loctite® STS™ Dri-Loc®	18, 19	P3® Previnox® 4232™	47	Terostat® 6100G™	22, 23
Aquence® 915IX™ Make Up	33	Loctite® 204™ Dri-Loc®	18, 19	Loctite® 5039™	26, 27	Loctite® U-05FL™ Hysol® Urethane Adhesive	9	P3® Previnox® 5800™	47	Terostat® SA-351-2B™	22, 23
Aquence® 915IX™ Replenisher	33	Loctite® 205™ Dri-Loc®	18, 19	Loctite® 5091™ Nuva-Sil®	25	Multan® 2140™	42, 43	P3® Previnox® 6041CR™	47	Terostat® SA-407D™	24
Aquence® 915™	33	Loctite® 242™ Threadlocker	16	Loctite® 5092™ Nuva-Sil®	25	Multan® 3015™	42, 43	P3® Previnox® 6767™	47	Terostat® SA-415™	24
Aquence® 915™ Make Up	33	Loctite® 262™ Threadlocker	16	Loctite® 5110™	20, 21	Multan® 3105™	42, 43	P3® Previnox® SN400C™	47	Terostat® SA-440™	24
Aquence® 915™ Replenisher	33	Loctite® 271™ Threadlocker	16	Loctite® 5182™	26, 27	Multan® 5005M™	42, 43	Parco® Cleaner 220-WB™	46	Terostat® SA-459™	22, 23
Aquence® 925G™	33	Loctite® 290™ Threadlocker	16	Loctite® 5188™	26, 27	Multan® 5500™	42, 43	Parco® Cleaner 319™	36	Terostat® SA-463™	22, 23, 24
Aquence® 925G™ Component B	33	Loctite® 312™ Speedbonder™ Structural Adhesive	7	Loctite® 5251A™	26, 27	Multan® 5600D™	42, 43	Parco® Cleaner 2087X™	36	Terostat® SA-464™	22, 23, 24
Aquence® 925G™ Make Up A	33	Loctite® 325™ Speedbonder™ Structural Adhesive	7	Loctite® 5251™	26, 27	Multan® 9103™	42, 43	Parco® Cleaner ZX-1™	36	Terostat® SA-465™	22, 23
Aquence® 925G™ Replenisher A	33	Loctite® 331™ Structural Adhesive	7	Loctite® 5510™ Adhesive / Sealant	6	Multan® B-204™	42, 43	Parco® Cleaner ZX-4™	36	Terostat® SA-476.3™	22, 23
Aquence® 930IX™	33	Loctite® 334™ Structural Adhesive	7	Loctite® 5512™ Adhesive / Sealant	6	Multan® B-400™	42, 43	Parco® Cleaner ZX-4™	36	Terostat® SA-477™	22, 23
Aquence® 930IX™ Make Up	33	Loctite® 380™ Black Max® Instant Adhesive	4, 5	Loctite® 5570™ Adhesive	6	Multan® CR 10™	42, 43	Parcolene® 50 NC™	40	Terostat® SA-4800™	22, 23
Aquence® 930IX™ Replenisher	33	Loctite® 392™ Structural Adhesive	7	Loctite® 5572™ Adhesive	6	Multan® CR 20™	42, 43	Parcolene® 99X™	40	Terostat® SA-491™	22, 23
Aquence® 930™	33	Loctite® 401™ Prism® Instant Adhesive	4, 5	Loctite® 5590™ Adhesive	6	Multan® CR 26™	42, 43	Parco® Lubrite 2™	37	Terostat® SA-497™	22, 23
Aquence® 930™ Make Up	33	Loctite® 403™ Prism® Instant Adhesive	4, 5	Loctite® 5590™ Adhesive Part A	6	Multan® CR 67C™	42, 43	Parco® Lubrite 5™	37	Terostat® SA-4000.5™	24
Aquence® 930™ Replenisher	33	Loctite® 406™ Prism® Instant Adhesive	4, 5	Loctite® 5590™ Adhesive Part B	6	Multan® CR 67™	42, 43	Parco® Lubrite LT-10™	37	Terostat® SA-4250.E™	22, 23
Aquence® 1772™	32	Loctite® 410™ Prism® Instant Adhesive	4, 5	Loctite® 5699™	26, 27	Multan® CR 67™	42, 43	PL605-4™	13	Terostat® SA-4510™	22, 23
Aquence® 2150™	34	Loctite® 411™ Prism® Instant Adhesive	4, 5	Loctite® 5810A™	26, 27	Multan® CR 67™	42, 43	PL605-15™	13	Terostat® SA-4800™	22, 23
Aquence® 2592™	32	Loctite® 412™ Prism® Instant Adhesive	4, 5	Loctite® 5810F™	26, 27	Multan® CR 67™	42, 43	PL605-51™	13	Terostat® SA-4810™	22, 23
Aquence® 2599™	32	Loctite® 413™ Prism® Instant Adhesive	4, 5	Loctite® 5900™	26, 27	Multan® CR 67™	42, 43	PL606M™	13	Terostat® TSA-53C™	24
Aquence® 2600™	32	Loctite® 414™ Prism® Instant Adhesive	4, 5	Loctite® 5900™	26, 27	Multan® F 737™	44, 45	PL700™	13	TW-005A™	28, 29
Aquence® 2810™	32	Loctite® 415™ Prism® Instant Adhesive	4, 5	Loctite® 5904™	26, 27	Multan® F 750™	44, 45	PL1447™	12	TW-017B™	28, 29
Aquence® 2819™	32	Loctite® 416™ Prism® Instant Adhesive	4, 5	Loctite® 5910™	26, 27	Multan® F 927KW™	44, 45	Prepalene® X	37	TW-020™	28, 29
Aquence® 2860™	32	Loctite® 417™ Prism® Instant Adhesive	4, 5	Loctite® 5915™	26, 27	Multan® F 981ND™	44, 45	PURFECT® LAMP 91-038A	11	TW-023HS™	28, 29
Aquence® 3416™	34	Loctite® 418™ Prism® Instant Adhesive	4, 5	Loctite® 5945™	26, 27	Multan® F 985™	44, 45	PURFECT® LAMP 91-038B	11	TW-040™	28, 29
Aquence® 7005™	32	Loctite® 419™ Prism® Instant Adhesive	4, 5	Loctite® 5964™	26, 27	Multan® F 1009™	44, 45	PURFECT LOK® 34-858A	11	TW-044™	28, 29
Aquence® 7150™	32	Loctite® 426™ Prism® Instant Adhesive	4, 5	Loctite® 5970™	26, 27	Multan® F 2004™	44, 45	PURFECT LOK® 34-858B	11	TW-067G™	28, 29
Aquence® 7310™	32	Loctite® 431™ Prism® Instant Adhesive	4, 5	Loctite® 5970™	26, 27	Multan® F 6740™	44, 45	Terokal® 2300™	8	TW-067™	28, 29
Aquence® 7320™	32	Loctite® 431™ Prism® Instant Adhesive	4, 5	Loctite® 5970™	26, 27	Multan® F 7160™	44, 45	Terokal® 2400™	8	TW-068™	28, 29
Aquence® E2™	34	Loctite® 431™ Prism® Instant Adhesive	4, 5	Loctite® 5970™	26, 27	Multan® F 7160™	44, 45	Terokal® 4555B™	8	TW-070™	28, 29
Aquence® E3™	34	Loctite® 431™ Prism® Instant Adhesive	4, 5	Loctite® 5970™	26, 27	Multan® F 7160™	44, 45	Terokal® 5089™	8	TW-081™	28, 29
Bonderite® 958™	38	Loctite® 431™ Prism® Instant Adhesive	4, 5	Loctite® 5970™	26, 27	Multan® F 7160™	44, 45	Terostat® 06-1201™	24	TW-084™	28, 29
Bonderite® 1994™	38	Loctite® 431™ Prism® Instant Adhesive	4, 5	Loctite® 5970™	26, 27	Multan® F 7160™	44, 45	Terostat® 06-1236™	22, 23	TW-090™	28, 29
Bonderite® 2010™	38	Loctite® 431™ Prism® Instant Adhesive	4, 5	Loctite® 5970™	26, 27	Multan® F 7160™	44, 45	Terostat® 06-1242™	22, 23	TW-092™	28, 29
Bonderite® 3080™	38	Loctite® 431™ Prism® Instant Adhesive	4, 5	Loctite® 5970™	26, 27	Multan® F 7160™	44, 45	Terostat® 06-1272™	22, 23		
Bonderite® CD-3020™	38	Loctite® 431™ Prism® Instant Adhesive	4, 5	Loctite® 5970™	26, 27	Multan® F 7160™	44, 45	Terostat® 06-1273™	22, 23		
Bonderite® CD-3042™	38	Loctite® 431™ Prism® Instant Adhesive	4, 5	Loctite® 5970™	26, 27	Multan® F 7160™	44, 45	Terostat® 475.3™	24		
		Loctite® 565™ PST® Thread Sealant	17	Loctite® 5970™	26, 27	Multan® F 7160™	44, 45	Terostat® 1297™	22, 23		
		Loctite® 567™ PST® Thread Sealant	17	Loctite® 5970™	26, 27	Multan® F 7160™	44, 45	Terostat® 1805™	22, 23		
		Loctite® 572™ Thread Sealant	17	Loctite® 5970™	26, 27	Multan® F 7160™	44, 45				
		Loctite® 577™ Thread Sealant	17	Loctite® 5970™	26, 27	Multan® F 7160™	44, 45				
		Loctite® 592™ PST® Thread Sealant	17	Loctite® 5970™	26, 27	Multan® F 7160™	44, 45				
		Loctite® 609™ Retaining Compound	14, 15	Loctite® 5970™	26, 27	Multan® F 7160™	44, 45				
		Loctite® 620™ Retaining Compound	14, 15	Loctite® 5970™	26, 27	Multan® F 7160™	44, 45				
				Loctite® 638™ Retaining Compound	14, 15	Multan® F 981ND™	44, 45				
				Loctite® 648™ Retaining Compound	14, 15	Multan® F 985™	44, 45				
				Loctite® 680™ Retaining Compound	14, 15	Multan® F 1009™	44, 45				
				Loctite® 2020™ Brass-Loc®	18, 19	Multan® F 2004™	44, 45				
				Loctite® 2045™ Dri-Loc®	18, 19	Multan® F 6740™	44, 45				
				Loctite® 3032™ Structural Adhesive	10	Multan® F 7160™	44, 45				
				Loctite® 3034™ Structural Adhesive	10	Multan® F 7270™	44, 45				
				Loctite® 3038™	10	Multan® FP 1212™	44, 45				
				Loctite® 3865HV™	25	Multan® PL 101™	47				
				Loctite® 5025™	25	Multan® PL 198™	44, 45				
				Loctite® 5030™ Dri-Seal™	18, 19	Multan® PL 298™	44, 45				
				Loctite® 5031™ Nuva-Sil®	25	Multan® PL 633™	44, 45				
				Loctite® 5033™	26, 27	Multan® PL 1439™	44, 45				
				Loctite® 5038™	26, 27	Multan® PL Prelube MP-404™	44, 45				
				Loctite® 5039™	26, 27	P3®-Emulpon 314™	46				
				Loctite® 5091™ Nuva-Sil®	25	P3®-Emulpon C64™	46				
				Loctite® 5092™ Nuva-Sil®	25	P3® Multan® S™	42, 43				
				Loctite® 5110™	20, 21	P3® Neutrarcare® 200™	46				
				Loctite® 5182™	26, 27						
				Loctite® 5188™	26, 27						
				Loctite® 5251A™	26, 27						
				Loctite® 5251™	26, 27						
				Loctite® 5510™ Adhesive / Sealant	6						
				Loctite® 5512™ Adhesive / Sealant	6						
				Loctite® 5570™ Adhesive	6						
				Loctite® 5572™ Adhesive	6						
				Loctite® 5590™ Adhesive	6						
				Loctite® 5590™ Adhesive Part A	6						
				Loctite® 5590™ Adhesive Part B	6						
				Loctite® 5699™	26, 27						
				Loctite® 5810A™	26, 27						
				Loctite® 5810F™	26, 27						
				Loctite® 5900™	26, 27						
				Loctite® 5904™	26, 27						
				Loctite® 5910™	26, 27						