LOXEAL®

ENGINEERING ADHESIVES

Technical Information

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ISO 9001 / ISO 14001 Registered Company

Made in Loxeal

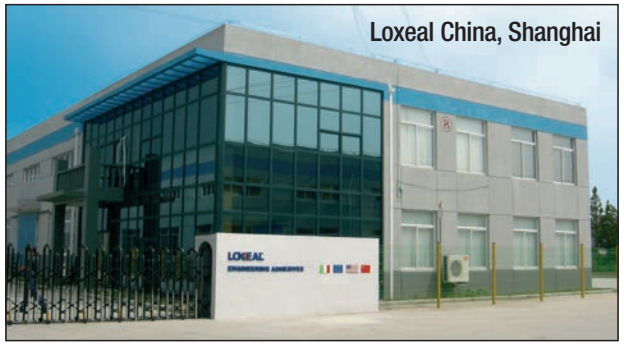
Loxeal® Engineering Adhesives is an Italian Company supplying a full range of high quality Adhesives and Sealants and providing industrial solutions for over 30 years. The Company Quality System was certified in 1993 and has been improved since then, granting the high quality level of our products. Our Anaerobic, Epoxy, Structural Acrylic, UV-light curing, Polyurethane Adhesives and other Complementary Products have been acknowledged to perform at the highest requirements. Many products have been tested by international Laboratories and certified according to regulations in the field of gas sealing, potable water and medical devices. Loxeal modern facilities are built in compliance with Safety and Environment Regulations. We are proud to offer a worldwide technical support to our Customers thanks to our qualified and dedicated staff.

Production Facilities


Loxeal Italy - 20811 Cesano Maderno, MB - 20020 Misinto, MI

Offices and facilities in America, Asia and Europe


Loxeal USA Pottstown, PA



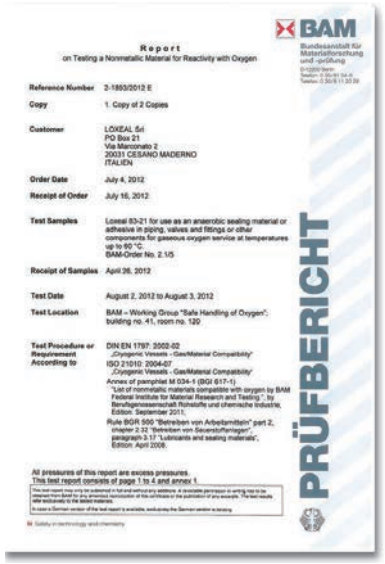
Loxeal China, Shanghai

Loxeal Spain, Madrid

LOXEAL®
ENGINEERING ADHESIVES

- Wide range of high quality products
- Development of customized formulations
- In-house prototype testing
- Sales and technical support to provide an ongoing application assistance
- Complete in-house manufacturing cycle

"Made in Loxeal" ensures a high quality for all our products, which is based on research, professionality and expertise. The best warranty of the quality of our products comes from all the international certifications and approvals that we achieved through the years in many different fields.



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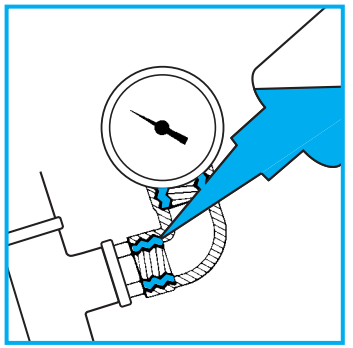
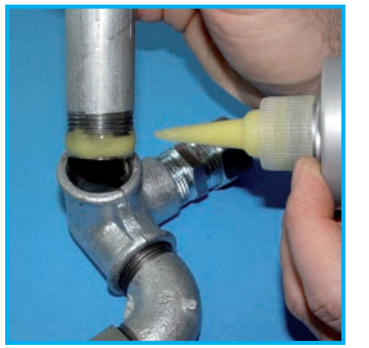


Threadsealing

Anaerobic threadsealing adhesives seal and lock threaded connections against pressure of gas, air, water, oils, hydrocarbons and many chemicals. They replace hemp and PTFE tapes and are available in various grades of locking strength with resistance to various chemicals. Certified according to various international standards, e.g. DVGW, NSF, WRAS, KTW, BAM, WATER MARK.



***REMARK

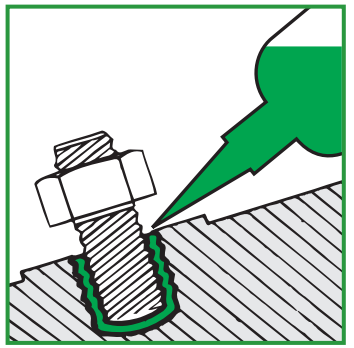
CLASS OF LOCKING
1 = LOW STRENGTH - EASY TO DISMANTLE
2 = MEDIUM STRENGTH - POSSIBLE TO DISMANTLE
3 = HIGH STRENGTH - PERMANENT LOCKING

BROOKFIELD VISCOSITY
HT = HIGH THIXOTROPY
MT = MEDIUM THIXOTROPY
LT = LOW THIXOTROPY

LOCKING TORQUE
BOLT M10 X 20 ZINC - QUALITY 8.8
NUT = 0,8 d
STANDARD ISO 10964

F = Fluorescent: when exposed to UV light by wood lamp (black light).
Thixotropy: capability of an adhesive to reduce its viscosity when exposed to stress.

PRODUCT NUMBER	*** CLASS OF LOCKING	MAX DIAMETER OF THREAD MAX GAP FILLING	*** VISCOSITY 25°C mPa s (LT-MT-HT)	COLOUR	CURING TIME		*** LOCKING TORQUE N m (ISO 10964)		SHEAR STRENGTH (ISO 10123) N/mm²	TEMPERATURE RANGE °C	DESCRIPTION SUGGESTED APPLICATIONS
					HANDLING (min.)	FUNCTIONAL (h)	BREAKAWAY	PREVAILING			
											EASY TO DISMANTLE
15-36	1	2" 0,30 mm	3000-6000 LT	BLUE/F	15 - 30	1 - 3	8 - 14	4 - 8	4 - 6	-55 +180	Hgh temperature resistant, approved for gas (DVGW). Elastic film.
18-10	1	2" 0,30 mm	17000-70000 HT	WHITE	20 - 40	1 - 3	6 - 11	2 - 5	4 - 6	-55 +150	High viscosity PTFE sealant for liquids and gas, approved for gas (AGA/DVGW), Elastic film.
23-18	1	3/4" 0,15 mm	600-800 LT	BLUE/F	15 - 30	1 - 3	5 - 8	2 - 5	3 - 5	-55 +150	Low strength sealant for small threads and pneumatic fittings.
											MEDIUM STRENGTH-POSSIBLE TO DISMANTLE
53-14	2	3/4" 0,15 mm	430-630 LT	BROWN/F	10 - 20	1 - 3	12 - 18	10 - 20	8 - 12	-55 +150	Hydraulic sealant. General purpose for pneumatic and hydraulic connectors up to 3/4". Approved for gas (DVGW).
55-14	2	2" 0,30 mm	2500-12000 MT	RED/F	10 - 20	1 - 3	12 - 18	20 - 30	8 - 12	-55 +150	Sealant for fittings - General purpose.
55-37	2	1 1/2" 0,25 mm	2500-4500 LT	RED/F	15 - 30	1 - 3	15 - 32	25 - 45	10 - 14	-55 +150	Sealant for steam, gas, liquids. Approved for gas (DVGW). Elastic film.
56-03	2	2" 0,30 mm	5000-30000 MT	BLUE	15 - 30	1 - 3	10 - 16	12 - 20	8 - 12	-55 +150	Sealant for large tolerance fittings.
58-10	2	2" 0,30 mm	25000-90000 HT	WHITE/F	5 - 10	0,5 - 1	18 - 25	10 - 20	6 - 13	-55 +150	High viscosity sealant, fast curing. Approved for gas (Gaz de France).
58-11	2	2" 0,30 mm	20000-80000 HT	YELLOW/F	15 - 30	1 - 2	18 - 24	7 - 14	6 - 13	-55 +150	High viscosity sealant approved for gas (DVGW) LPG high pressure (AGA), oxygen (BAM) and potable water (WRAS). Certified NSF P1.
58-12	2	2" 0,30 mm	20000-80000 HT	YELLOW	15 - 45	6 - 12	18 - 24	7 - 14	4 - 10	-55 +150	Sealant paste "green", no Risk Phrases, blank MSDS.
											PERMANENT LOCKING
82-01	3	0,15 mm	220-300 LT	GREEN	2 - 5	1 - 3	20 - 35	50 - 70	20 - 30	-55 +175	Low viscosity, fast curing.
83-05	3	3/4" 0,20 mm	500-1000 LT	GREEN	2 - 5	1 - 3	25 - 35	50 - 70	25 - 35	-55 +200	High strength, especially suitable for stainless steel and passivated metal surfaces.
83-50	3	3/4" 0,20 mm	400-1000 LT	GREEN/F	2 - 5	1 - 3	25 - 35	40 - 50	25 - 35	-55 +200	High temperature, low viscosity. Approved for gas (DVGW), potable water (WRAS).
83-58	3	0,15 mm	500-700 LT	BLUE	15 - 30	1 - 3	25 - 35	45 - 55	15 - 25	-55 +150	High strength on yellow brass fittings.
84-90	3	1 1/2" 0,20 mm	1000-1500 LT	GREEN	15 - 30	3 - 6	20 - 30	30 - 40	10 - 20	-55 +250	Sealant, locker for high temp. Keeps sealing properties up to +250°C.
85-21	3	1 1/2" 0,20 mm	2600-3400 LT	GREEN/F	2 - 5	1 - 3	30 - 40	55 - 70	25 - 35	-55 +150	High strength, fast curing, large tolerances. Approved for gas (Gaz de France).
85-86	3	2" 0,30 mm	2200-4000 LT	GREEN/F	10 - 40	6 - 12	25 - 35	40 - 55	15 - 25	-55 +200	For high temperatures, approved for gas, potable water and oxygen (DVGW-TZW-BAM).
86-55	3	2" 0,30 mm	5000-8000 LT	RED/F	60 - 90	12 - 24	15 - 35	15 - 45	10 - 20	-55 +150	Delayed curing sealant.
86-58	3	2" 0,30 mm	5000-7000 LT	RED/F	30 - 60	6 - 12	35 - 40	40 - 50	15 - 25	-55 +150	High strength sealant for yellow brass fittings.



Threadlocking

Anaerobic threadlockers lock studs, nuts, screws and any threaded fasteners. The adhesive prevents loosening caused by vibration, mechanical and thermal shock.
Threadlocking adhesive also inhibits fretting corrosion and prevents the seizure and galling.

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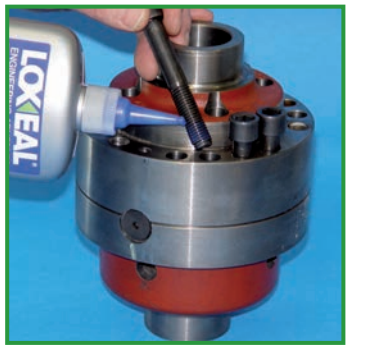
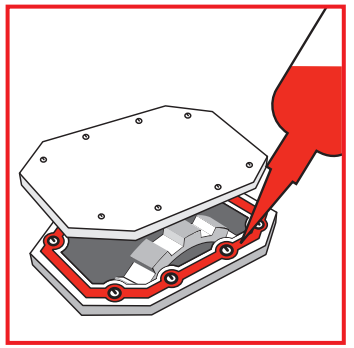


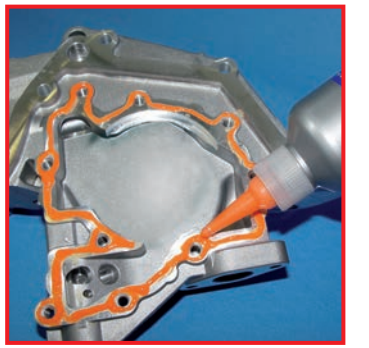
PRODUCT NUMBER	*** CLASS OF LOCKING	MAX DIAMETER OF THREAD MAX GAP FILLING	*** VISCOSITY 25°C mPa s (LT-MT-HT)	COLOUR	CURING TIME		*** LOCKING TORQUE N m (ISO 10964)		SHEAR STRENGTH (ISO 10123) N/mm²	TEMPERATURE RANGE °C	DESCRIPTION SUGGESTED APPLICATIONS
					HANDLING (min.)	FUNCTIONAL (h)	BREAKAWAY	PREVAILING			
											THREADLOCKING EASY TO DISMANTLE
24-18	1	M24 0,20 mm	800-1400 MT	PURPLE/F	15 - 30	1 - 3	5 - 8	2 - 5	3 - 5	-55 +150	Low strength locking and anti-vibration. General purpose.
32-18	1	M12 0,10 mm	120-170 LT	VIOLET/F	15 - 20	3 - 6	6 - 10	3 - 6	5 - 7	-55 +150	Low strength locking of small precision screws.
											MEDIUM STRENGTH THREADLOCKING
54-03	2	M24 0,20 mm	900-1500 MT	LIGHT BLUE/F	10 - 20	1 - 3	14 - 20	4 - 9	8 - 12	-55 +150	Nut-lock general purpose.
55-02	2	M36 0,25 mm	2500-12000 MT	BLUE	20 - 40	6 - 12	18 - 25	9 - 16	9 - 13	-55 +150	Medium locker "green", no Risk Phrases, blank MSDS.
55-03	2	M36 0,25 mm	1700-9000 MT	BLUE/F	10 - 20	1 - 3	18 - 23	9 - 16	9 - 13	-55 +200	Medium strength locking suitable on oily surfaces. Approved for gas and potable water (DVGW-TZW). High temperature resistant up to +200°C.
55-04	2	M36 0,25 mm	1500-8600 MT	RED/F	10 - 15	1 - 3	20 - 25	40 - 50	10 - 15	-55 +150	Locking of large diameter studs.
											HIGH STRENGTH THREADLOCKING
70-10	3	M5 0,07 mm	10-20 LT	GREEN	40 - 80	3 - 6	5 - 15	2 - 10	5 - 10	-55 +150	Penetrating threadlocker. Suitable for sealing of copper pipes on aluminium plates.
70-14	3	M5 0,07 mm	10-20 LT	GREEN	10 - 20	1 - 3	10 - 25	25 - 40	8 - 12	-55 +150	Penetrating. For use on assembled parts or to seal metal porosity.
83-52	3	M20 0,15 mm	450-650 LT	GREEN	10 - 20	1 - 3	25 - 35	50 - 65	15 - 20	-55 +150	High strength locker "green", no Risk Phrases, blank MSDS.
83-54	3	M20 0,15 mm	450-650 LT	GREEN	10 - 20	1 - 3	25 - 35	50 - 65	10 - 20	-55 +200	High strength. General purpose. High temperature resistant up to +200°C.
83-55	3	M20 0,15 mm	450-600 LT	RED/F	10 - 20	1 - 3	25 - 35	50 - 65	15 - 20	-55 +150	High strength stud lock, even for oily surfaces.
85-56	3	M56 2" 0,30 mm	2500-4500 LT	BLUE/F	15 - 30	3 - 6	30 - 40	40 - 50	15 - 25	-55 +150	Sealing, threadlocking.
86-54	3	M56 2" 0,30 mm	8000-24000 MT	GREEN/F	15 - 30	3 - 6	40 - 50	45 - 55	15 - 25	-55 +150	Large tolerances threadlocking and sealing.
86-72	3	M56 2" 0,30 mm	5000-28000 MT	RED	20 - 40	3 - 6	25 - 35	40 - 70	10 - 20	-55 +230	High strength threadlocking and sealing, high temperature resistant up to +230°C. DVGW approved for gas.

LOXEAL ENGINEERING ADHESIVES



Liquid Gasketing

Gasketing anaerobic adhesive seals flat mating surfaces and joins flanges on pumps, gearboxes and differential housings. It replaces preformed gaskets and allows contact between metal parts forming a seal which is not prone to creep or relaxation. It forms a flexible and / or elastic gasket resistant to vibration, heat, oil and other industrial fluids. Parts can be disassembled using normal tools.



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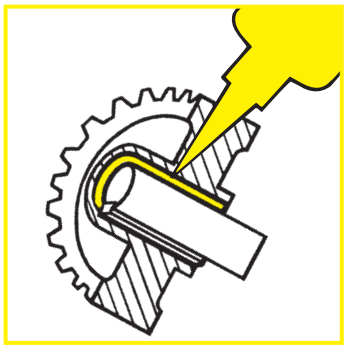
PRODUCT NUMBER	*** CLASS OF LOCKING	MAX GAP FILLING	*** VISCOSITY +25°C Pa s		COLOUR	CURING TIME		ADHESIVE STRENGTH			TEMPERATURE RANGE °C	DESCRIPTION SUGGESTED APPLICATIONS
						HANDLING (min.)	FUNCTIONAL (h)	SHEAR (ISO 4587) N/nm²	TENSILE (ISO 6922) N/nm²	IMPACT (ASTM D 950) KJ/m²		
28-10	1	0,30 mm	17-60	HT	GREEN/F	20 - 40	3 - 6	4 - 6	2 - 4	2 - 4	-55 +150	Suitable for flexible flanges. Elastic film. Easy dismantle.
58-14	2	0,50 mm	28-100	HT	ORANGE	15 - 30	3 - 6	5 - 10	5 - 8	3 - 5	-55 +150	General gasketing applications. General purpose.
58-31	2	0,50 mm	70-600	HT	RED/F	10 - 20	1 - 3	8 - 13	7 - 10	4 - 7	-55 +180	Suitable for high performance applications. Elastic film. High temperature and vibration resistant. Very high oil resistant.
59-10	2	0,50 mm	50-300	HT	RED/ORANGE	15 - 30	3 - 6	5 - 10	6 - 8	3 - 5	-55 +200	Suitable for rigid flange joints with a high tolerance coupling.

Elastomeric & Plastic Gasket

PRODUCT NUMBER	*** VISCOSITY +25°C Pa s	COLOUR	CURING TIME		ELONGATION AT BREAK %	TENSILE STRENGTH N/nm²	HARDNESS SHORE A	TEMEPERATURE RANGE °C	DESCRIPTION SUGGESTED APPLICATIONS
			INITIAL STRENGTH MINUTES	BEAD ø 2 mm					
59-20	PASTY	TRANSPARENT GREY/BLACK	15 - 30 15 - 30	24 h 24 h	400 - 600 400 - 600	0,8 - 2 0,6 - 1,5	20 - 30 20 - 30	-55 +180 -55 +180	Odourless silicone. Oil resistant. Odourless silicone. Oil resistant.
59-30	PASTY	RED/BLACK	10 - 20	24 h	300 - 600	1,5 - 2,5	25 - 35	-60 +250	Silicone for high temperature applications.
59-40	PASTY	TRANSPARENT	10 - 20	24 h	80 - 150	1 - 2	40 - 50	-40 +90	MS polymer odourless, UV resistant. It can be painted. Seals and bonds different kind of materials.
104N	14000-22000	GREY			450 - 650			-50 +120	For sealing flange joints of pumps, gearboxes, motor flanges and threaded pipes joints. Replaces preformed gaskets and PTFE tapes. Allows easy disassembly
08-07	1000-6000 HT	BLUE/F	IMMEDIATE SEALING					-55 +120	Permanently plastic sealant.



Retaining

Retaining anaerobic adhesives lock and fit bushes, bearings, sleeves, pin hubs, pulleys, gears and other cylindrical components. They are ideal for increasing the strength of press fit parts or retaining loose fitting parts, allow larger machining tolerances, reducing manufacturing costs, prevent fretting corrosion, vibration loosening and distortion. Retaining adhesives have excellent chemical resistance and seal against most fluids.

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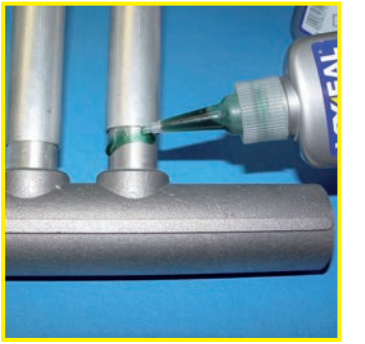

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					HANDLING (min.)	FUNCTIONAL (h)	BREAKAWAY	PREVAILING			
											MEDIUM STRENGTH LOCKING, EASY TO DISMANTLE WITH STANDARD TOOLS
53-11	2	M20 0,12 mm	400-650 LT	YELLOW/F	10 - 20	1 - 3	11 - 20	15 - 25	8 - 12	-55 +150	Retaining of bearings. General purpose.
											PERMANENT LOCKING
82-13	3	M12 0,10 mm	120-180 LT	GREEN/F	30 - 60	12 - 24	15 - 25	35 - 45	15 - 30	-55 +150	Precision assemblies, delayed curing.
82-21	3	M12 0,10 mm	120-180 LT	GREEN	5 - 10	1 - 3	24 - 35	50 - 60	17 - 22	-55 +150	High strength, fast curing, for precision assemblies.
82-33	3	M12 0,10 mm	120-180 LT	GREEN	2 - 5	1 - 3	20 - 30	45 - 55	17 - 22	-55 +150	High strength retainer, recommended on oily surfaces.
83-03	3	M20 3/4" 0,20 mm	800-1200 LT	GREEN/F	2 - 5	1 - 3	25 - 35	50 - 70	25 - 35	-55 +200	Retainer and sealant. Very fast curing. High temperature performance for automatic assembling. Approved for gas (Gaz de France).
83-21	3	M20 3/4" 0,15 mm	400-600 LT	GREEN	2 - 5	1 - 3	25 - 35	50 - 70	25 - 35	-55 +175	Fast curing retainer and sealant. High temperature performance. Approved for oxygen (BAM).
85-02	3	M36 1 ½" 0,20 mm	3000-4000 MT	GREEN/F	1 - 4	1 - 3	30 - 40	55 - 70	25 - 35	-55 +175	Fast curing retainer and sealant. High temperature resistant. Allows large connection tolerances.
85-21	3	M36 1 ½" 0,20 mm	2600-3400 LT	GREEN/F	2 - 5	1 - 3	30 - 40	55 - 70	25 - 35	-55 +150	Fast curing retainer allows larger machining tolerances. Approved for gas (Gaz de France).
85-61 UV AE	3	M36 1 ½" 0,20 mm	3000-4000 LT	BLUE/F	5 - 10	1 - 3	30 - 40	50 - 60	20 - 25	-55 +150	Retains and seals, ideal for tamper-proof seals upon expore to UV rays.
86-21	3	2" 0,30 mm	7000-30000 THIXO	GREEN/F	1- 4	1 - 3	30 - 40	50 - 70	25 - 30	-55 +150	Retainer and Sealant for locking threads and retaining of cylindrical components, highly resistant to thermal shocks and vibrations.
86-86	3	M56 2" 0,30 mm	5000-35000 MT	GREEN/F	20 - 40	3 - 6	25 - 30	40 - 70	10 - 20	-55 +230	Retainer and Sealant. Very high mechanical strength at high temperatures. Approved for gas (DVGW).
89-51	3	2" 0,30 mm	60000-720000 HT	SILVER	15 - 30	3 - 6	40 - 45	15 - 20	25 - 30	-55 +150	Pasty retainer to repair damaged shafts and threads.

Instant Adhesives

Cyanacrylate adhesives are for instant and structural bonding of rubber, metals, ceramic, leather and a variety of plastics. Best results can be obtained with joint gaps of less than 0.1mm up to 0.2mm for special grades.
The service temperature range is between -50°C and +80°C, although new high-temperature resistant formulations are available for use up to 180°C. For porous surfaces or for vertical application a gel grade is available.

GRADE	CHEMICAL COMPOSITION	SPECIFIC GRAVITY	VISCOSITY (+25°C mPa s)	GAP FILLING (microns)	SPEED OF CURE (*)	TENSILE STRENGTH (ISO 6922) N/mm²	SHEAR STRENGTH N/mm²	DESCRIPTION SUGGESTED APPLICATIONS
14	METHYL	1,10	80 - 150	10 - 100	2	25 - 30	20 - 25 (1)	For rigid materials, like rubber-metal. Slow setting. High strength.
17	METHYL	1,19	1200 - 1800	10 - 200	1	25 - 30	20 - 25 (1)	High viscosity, for rigid materials, fills large gaps, slow setting, high resistance.
23	ETHYL	1,06	40 - 80	10 - 60	3	12 - 25	13 - 18 (2)	General purpose for rubbers and plastics. Medium setting.
25	ETHYL	1,10	350 - 450	10 - 150	3	15 - 23	13 - 20 (1)	Fills large gaps, for rubbers, plastics, metals and ceramics.
27	ETHYL	1,10	1200 - 1800	10- 200	2	18 - 25	13 - 18 (1)	High viscosity, for rubbers, plastics, fills large gaps.
29	ETHYL/BLACK	1,06	500 - 1500	10 - 200	1	18 - 25	13 - 18 (1)	General purpose, elastomeric, flexible.
32	ETHYL	1,10	5 - 10	10 - 40	5	12 - 25	13 - 18 (2)	Very fast curing. Very good results on EPDM and foam rubbers, difficult rubbers and plastics.
34	ETHYL	1,10	10 - 30	10 - 100	5	12 - 25	13 - 18 (2)	Very fast curing. Very good results on EPDM and foam rubbers, difficult rubbers and plastics.
37	ETHYL	1,05	1000 - 2000	10 - 200	3	12 - 25	16 - 20 (1)	Flexible, mid/high viscosity, high impact strength, for rubber, plastic, metals and ceramics.
41	ETHYL	1,10	5 - 10	10 - 40	5	18 - 25	13 - 18 (1)	Low viscosity, fast setting on acidic surfaces.
43S	ETHYL	1,06	80 - 150	10 - 150	5	15 - 25	15 - 20 (1)	General purpose, faster setting on acidic surfaces, for leather, wood and metals. High temperature resistant up to +120°C.
45	ETHYL	1,06	600 - 1200	10 - 150	4	12 - 25	12 - 20 (1)	Medium viscosity, general purpose, fast setting on acidic surfaces.
47	ETHYL	1,08	GEL	10 - 300	2	18 - 25	13 - 18 (1)	Gel, fills large gaps, for vertical bonding and porous surfaces. High temperature resistant up to +120°C.
48	ETHYL	1,05	2000 - 2500 THIXO	10 - 500	2	18 - 25	13 - 18 (1)	Fluid gel, to bond porous and vertical surfaces, recommended for assembly lines.
52	ETHYL	1,06	80 - 110	10 - 150	2	18 - 25	18 - 25 (1)	General purpose, for assemblies subjected to temperature up to +180°C.
55	ETHYL	1,06	600 - 1000	10 - 200	2	18 - 25	13 - 18 (1)	General purpose, for assemblies subjected to temperature up to +130°C.
63	ALCOXY	1,07	80 - 150	10 - 150	1	10 - 25	12 - 22 (1)	General purpose, odor free, non-blooming.
67	ALCOXY	1,1	1000 - 1500	10 - 200	1	10 - 25	12 -22 (1)	High viscosity, fills large gaps, odor free, non-blooming.
73	ETHYL	1,06	100 - 200	10 - 150	2	12 - 25	15 - 25 (1)	General purpose, flexible, transparent, high temperature resistant up to +100°C.
74	ETHYL/BLACK	1,06	100 - 200	10 - 150	2	12 - 25	15 - 25 (1)	General purpose, flexible, high temperature resistance up to +100°C.
75	ETHYL	1,10	4000 - 5000	10 - 250	2	12 - 25	15 - 25 (1)	Tough, viscous, high peel and impact resistant, general purpose.
77	ETHYL/BLACK	1,10	2000 - 4000	10 - 250	2	12 - 25	15 - 25 (1)	Tough, flexible, viscous, high impact resistant, high temperature resistant up to +120°C.

(1) ISO 4587 Standard (2) ISO 10123 Standard (*) Relative setting time (5= max, 1 = min.)

Activators & Surface Conditioners for Anaerobic Adhesives, Acrylic Adhesives, Cyanoacrylate Adhesives

The activators are specially designed products to speed up the cure of Anaerobic Adhesives. Typical conditions of use are low temperatures, large gaps, inactive or passive surfaces.

For anaerobic and acrylic adhesives

ACTIVATOR 11	ACTIVATOR 17	ACTIVATOR 18	ACTIVATOR 20
Solvent based formulated accelerator, available in liquid and aerosol form. Fixture time about 1 minute.	Solvent free Activator to set up polymerisation of acrylic adhesives. Good polymerisation effects on ferrites, metals and ceramics. Fixture time about 1-2 minutes.	Liquid accelerator, solvent free, odourless. Fixture time about 1 minute.	Liquid accelerator, solvent free, for contact curing adhesives and anaerobics. Fixture time 1-2 minutes.

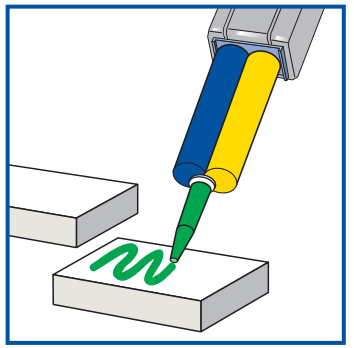
Cleaners and Removers

CLEANER 10	CR 1	CR 5
Fast drying cleaner and degreaser to optimally prepare the surfaces to be bonded. Suitable for metal, ceramics, rubbers and plastics. Available in aerosol form.	CA remover solvent based. To remove and clean from cured CA adhesive and to debond parts cured with CA adhesives.	Low odor, low volatility solvent to be used to detach and remove silicones, Ms Polymers and two-part modified epoxy adhesives from many kinds of surfaces. Also available in gel formulation (CR5 gel).

For cyanoacrylate adhesives

PRIMER 7	ACTIVATOR 9
Liquid primer for difficult plastics, PE, PP, Elastomers, Silicone and PTFE. Speed up curing and avoid blooming effect.	For instant curing of Cyanacrylate adhesives on porous or acidic surfaces. Eliminates the blooming effect. To be used as primer or after assembling, curing excess adhesive outside the joint. Available as liquid formulation or aerosol.

LOXEAL ENGINEERING ADHESIVES



Epoxy Adhesives

Available in dual cartridges with static mixer.

Two-part engineering adhesives provide high strength, structural joints. They are suitable for bonding metals, ceramics, wood and some plastics and they are supplied in a practical dual cartridge dispenser. Curing occurs upon mixing of the two components (resin and hardener). Fixture time is from 5 - 10 minutes to several hours. Applying heat will accelerate the cure speed. Temperature resistance is between -30°C and +80°C, +120°C for some products.

Two-part Epoxies

PRODUCT NUMBER	CHARACTERISTICS	COLOUR	VISCOSITY (+25°C Pa s)	HANDLING TIME (+25°C) MINUTES	FUNCTIONAL CURE TIME (+25°C)	SHEAR STRENGTH (ISO 4587) N/mm²	PEEL STRENGTH (ISO 4578) N/25 mm	DESCRIPTION **Viscosity** = (1) Resin - (2) Hardener (*) Time detected on a 2 g total mass mixture A + B (**) With hot curing for 60 minutes at +80°C
31-10	TOUGH	AMBER	12-18 (1) / 10-25 (2)	90 - 150 (*)	12 - 24 h	12 - 14	10 - 25	Slow curing, tough.
31-40	FAST CURING	COLOURLESS	12-18 (1) / 15-30 (2)	10 - 20 (*)	30' - 40'	10 - 12	4 - 20	Fast curing, colourless, non yellowing.
31-42	VERY FAST CURING	COLOURLESS	12-18 (1) / 15-30 (2)	3 - 8 (*)	20' - 30'	12 - 14	4 - 20	Very fast curing, colourless, non yellowing.
32-43	FAST CURING/FLEXIBLE	TRANSLUCENT	100-700 (1) / 30-100 (2)	7 - 10 (*)	10' - 20'	10 - 14	-	Fast curing, flexible, non-sag for ease of use on vertical surfaces.
34-15	VERY FLEXIBLE	IVORY	20-35 (1) / 20-50 (2)	15 - 35 (*)	12 - 24 h	5 - 10	40 - 70	Longer setting time, very flexible, high peel and impact resistant.
35-44	TOUGH/FLEXIBLE	COLOURLESS	10-20 (1) / 14-24 (2)	10 - 20 (*)	40' - 60'	5 - 9	25 - 60	Fast setting, very good peel resistance, excellent adhesion to metals.
36-10	TOUGH/FLEXIBLE	AMBER	14-28 (1) / 10-25 (2)	90 - 150 (*)	12 - 24 h	12 - 18	25 - 40	Slow curing, tough, flexible.
3614	TOUGH/FAST CURING	GREY	50-80 THIXO (1) / 50-80 THIXO (2)	30 - 50 (*)	3 - 4 h	15 - 25	40 - 70	Tough, viscous, full cure 24h.
4401	TOUGH/HIGH TEMPERATURE	GREY	60-120 THIXO (1) / 50-100 THIXO(2)	15 - 25	24 - 36 h	20 - 30	150 - 300 (**)	Mixing ratio 2:1. Tough, semi-flexible, temperature resistant up to +120°C, peaks at +140°C.
4428	TOUGH	IVORY	25-35 (1) / 15-20 (2)	10	24 - 36 h	18 - 22	150 - 200	Toughened, medium/high viscosity, ideal for composites bonding, temperature resistant up to +120°C.
4429	TOUGH	BLACK	100 THIXO (1) / 20-30 THIXO (2)	120	24 - 36 h	18 - 22	200	Toughened, semi-flexible, high temperature resistant, non-sag for ease of use on vertical surfaces.

Two-part modified flexible Epoxies

PRODUCT NUMBER	CHARACTERISTICS	COLOUR	VISCOSITY (+25°C Pa s)	HANDLING TIME (+25°C) MINUTES	FUNCTIONAL CURE TIME (+25°C)	SHEAR STRENGTH (ISO 4587) N/mm²	PEEL STRENGTH (ISO 4578) N/25 mm	DESCRIPTION
4807	FLEXIBLE	GREY	25000-45000 THIXO / 1500-3000	10 - 20	7 days	4 - 10	60 - 80	Flexible, high temperature resistant, ideal for fiberglass and metal frames.
4820	SELF LEVELLING	BLACK	20000-50000 / 200-300	25 - 50	72 h	4 - 7	-	Self-levelling, ideal for plastics such as PA, PC, ABS, PET, PMMA, PI, metals, ceramics and composites.
4821	TOUGH/FLEXIBLE	BLACK	THIXO	10 - 15	72 h	4 - 7	60 - 80	Toughened, flexible, suitable for plastics such PA, PC, ABS, PET, PMMA, PI, metals, ceramics and composites.
4826	SELF-EXTINGUISHING/THERMAL CONDUCTIVE	IVORY	THIXO	-	72 h	1 - 2	-	Self-extinguishing, thermal conductive, high temperature resistant up to +120°C and peaks up to +150°C.

Single-part Epoxies (structural, heat curing)

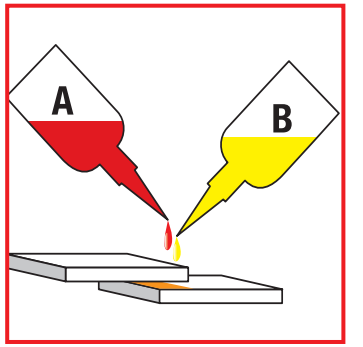
PRODUCT NUMBER	CHARACTERISTICS	COLOUR	VISCOSITY (+25°C Pa s)	HANDLING TIME AT + 150°C MINUTES	SHEAR STRENGTH (ISO 4587) N/mm²	PEEL STRENGTH (ISO 4578) N/25 mm	TEMPERATURE RANGE °C	DESCRIPTION (*) Curing time depends on temperature.
4500	TOUGH	GREY	800 - 3800 THIXO	30 - 45 (*)	20 - 30	80 - 120	-40 +180	High viscosity, non dripping, high tensile, peeling and shear strength. Fills large gaps.
4580	TOUGH	GREY	150 - 250 THIXO	45 - 60 (*)	18 - 25	80 - 120	-40 +180	Medium viscosity, self-levelling, fluidifies during hardening.
4620	TOUGH/FLUID	WHITE	15 - 30	30 - 45 (*)	18 - 25	-	-40 +180	Low viscosity, self-levelling.
4680	TOUGH/RAPID	IVORY	60 - 100	15 - 30 (*)	20 - 25	-	-40 +180	Medium/high viscosity, high impact strength, for bonding ferrite and magnets.
4690	TOUGH	BLACK	200 - 300 THIXO	45 - 60 (*)	18 - 25	80 - 150	-40 +180	Medium/high viscosity, high tensile, peeling and shear strength. Non-drip.
4700	TOUGH/FLUID	AMBER	8 - 12	60-90 (at +90°C)	15 - 25	-	-40 +180	Fluid, self-levelling, general purpose. Curing at +90°C.
4780	THERMOCONDUCTIVE	BLACK	400 - 600 THIXO	30 - 45 (*)	15 - 25	-	-40 +180	Thermal conductive, medium/high viscosity. Ideal for applications that require fast heat conduction.

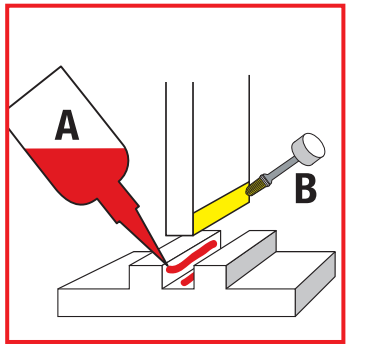
Light Curing Adhesive

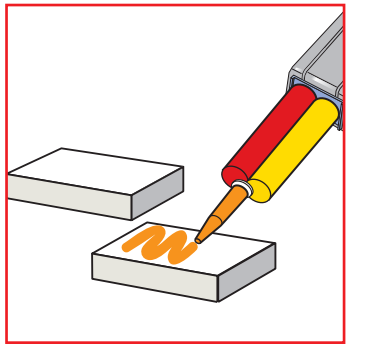
UV light curable adhesives polymerise in seconds by irradiation with UV and visible light, forming a solid adhesive film not yellowing over time. Designed to bond glass, crystal, metals and some plastics.
Operating temperature range between -50°C and +120°C.
A non-drip gel formulation is available for vertical applications.

PRODUCT NUMBER	VISCOSITY (+25°C mPa s)	GAP FILLING mm	CURING TIME (in seconds)	TENSILE STRENGTH (ASTM D 2095-69) N/mm²	DESCRIPTION
30-11	200 - 300	0,03 - 0,20	6 - 55	-	Low viscosity, for bonding plastics like PC, ABS, PVC. Designed for joining medical components. ISO 10993 certified for use with medical devices.
30-12	200 - 400	0,03 - 0,20	6 - 30	-	Fluid, for plastic bonding, fast and strong on PC and PMMA.
30-14	1000 - 2000	-	120 - 240	-	Specifically developed for PMMA bonding.
30-20	2200 - 2900	0,03 - 1,5	6 - 10	10 - 14	Medium viscosity, fast curing, designed for crystal figures, decorative objects.
30-21	600 - 1300	0,03 - 1,5	8 - 15	10 - 14	Low viscosity, for glass furniture, tough, for bonding on edges, plain glass and metals.
30-22	5500 - 7500	0,03 - 2	6 - 10	8 - 12	High viscosity, fills large gaps, to use for non co-planar surfaces and decorative objects.
30-23	50 - 100	0,03 - 1,5	8 - 15	10 - 14	Low viscosity, for glass furniture, for bonding on plain surfaces, simplifies cleaning of joined parts from excess adhesive after UV exposure.
30-24	2200 - 2900	0,03 - 2	6 - 10	12 - 16	Medium viscosity for glass on metal bonding, tough.
30-27	90 - 150	0,03 - 0,20	6 - 10	-	Low viscosity, suitable for application on medical devices like syringes and needles. Able to bond thermoplastics with glass and metals. ISO 10993 certified for use with medical devices.
30-30	500 - 800	0,03 - 1,5	5 - 10	8 - 14	Fluid, for float glass and precious crystals. Cleaning of excess of adhesive allowed after UV irradiation.
30-33	1000 - 2000	0,03 - 1,5	5 - 15	6 - 10	Fluid, high transparency in thickness, for glass/glass and glass/metals combinations.
30-34	2500 - 3500	0,03 - 1,5	6 - 10	8 - 14	Medium viscosity, fast, high transparency in thickness, ideal for small crystal objects and glasswares.
30-35	5000 - 8000	0,03 - 1,5	5 - 10	8 - 12	Medium/high viscosity, high transparency, glass/metals combinations. Excellent resistance to humidity.
30-36	5000 - 8000	0,03 - 2	5 - 10	8 - 12	Medium/high viscosity, high transparency in thickness, glass/glass and glass/metals.
30-37	2200 - 2900	0,03 - 1,5	6 - 10	6 - 10	Flexible, shock resistant, ideal for bonding glass on plastic parts.
30-38	20000 - 30000	0,03 - 2	5 - 10	5 - 10	High viscosity, transparent in thickness, fill large gaps, glass/glass and glass/metals.
30-60	GEL	0,03 - 2,5	8 - 15	4 - 8	Non-drip gel, for vertical bonding of glass and crystal.
30-83	1000 - 1600	0,03 - 1	3 - 4	-	For potting and coating of chips. Dry film.

Structural Acrylic Adhesives







Two-component adhesives cure by contact (drop on drop, bead on bead). Curing time from 1 to 5 minutes. Suitable for bonding metals, ferrite, ceramics, wood and some plastics forming high strength durable joints with high impact, peel and tensile strength.

PRODUCT NUMBER	VISCOSITY (+25°C mPa s)	HANDLING TIME (minutes)	FUNCTIONAL CURE (minutes)	SHEAR STRENGTH (ISO 4587) N/mm²	PEEL STRENGTH (ISO 4578) N/25 mm	JOINT THICKNESS mm	DESCRIPTION
30-55 (+Att. 20)	30000 - 60000 THIXO	1 - 4	30 - 60	15 - 25	85 - 100	0,05 - 1	High viscosity. General purpose.
33-00 (+Att. 20)	45000 - 80000 THIXO	1 - 4	30 - 60	15 - 30	45 - 65	0,05 - 1	Medium viscosity. General purpose.
33-47 (A+B)	5000 - 12000	1 - 3	30 - 60	8 - 20	45 - 65	0,05 - 0,5	Low viscosity. For bonding metals, ceramics and plastics.
33-47M	20000 - 30000	1 - 3	30 - 60	12 - 25	45 - 65	0,05 - 0,5	Fluid, metals, ceramics and plastics bonding.
3362	3000 - 4000 (A) 4000 - 5000 (B)	4 - 7	10 - 12	15 - 20	-	0,50	Two-components, toughened, low viscosity, low odor. For bonding plastics, metals, ceramics, fiberglass, and their combinations too.
3439 (+Att. 20)	600 - 1000	20-50 seconds	10 - 20	20 - 30	85 - 100	0,05 - 0,2	Fluid, high shear, peeling and impact strength, ideal for magnets, ferrites, metals and ceramics. High temperature resistant up to +165°C.
3452	4000 - 5000 (A) 4000 - 5000 (B)	2 - 3	8 - 10	19 - 21	-	0,50	Two components, toughened, low viscosity and low odor. High impact and peel resistance.
3459 (+Att. 20)	15000 - 25000 THIXO	20-40 seconds	10 - 20	20 - 30	85 - 100	0,05 - 0,2	Gel, high shear, peeling and impact strength, ideal for magnets, ferrite, metals and ceramics. High temperature resistant up to +165°C.
3460	THIXO (A) 15000 - 30000 (B)	2 - 4	24 hours	>4	-	1	Two-components, for bonding PP, PE, HDPE, LDPE, Polyolefins, copolymers, PTFE, EPDM among them and in combination with other plastics such as ABS and PVC and to metals (aluminium) as well.
3461	THIXO (A) 15000 - 30000 (B)	5 - 8	36 - 48 hours	>4	-	1	Two-components, for bonding PP, PE, HDPE, LDPE, Polyolefins, copolymers, PTFE, EPDM among them and in combination with other plastics such as ABS and PVC and to metals (aluminium) as well.
3592 (A+B)	10000 - 20000 (A) 3500 - 5500 (B)	<1	10 - 20	20 - 25	-	0,05 - 1	Structural bonder curing by contact, drop on drop or bead on bead. No mixing required. Setting time 10-30". Ideal for bonding of magnets and ferrite on high speed assembly lines.

Impregnation of Porous Metal Parts

Low viscosity methacrylate resins for sealing metal micro porosity by vacuum impregnation of castings and sintered metal parts for automotive, pneumatic and hydraulic components. LOXEAL impregnation products meet the standards MIL-STD276, MIL-I-17563B and most automotive companies specifications.

PRODUCT CODE	CHEMICAL COMPOSITION	COLOUR	VISCOSITY (25°C mPa s)	SPECIFIC GRAVITY (25°C gr/ml)	FLUORESCENT EFFECT	TEMPERATURE RANGE (°C)	METHOD OF CURING
70-11	METHACRYLATE	AMBER TRANSPARENT	10 - 20	1,0	YES	-55 +150	≈ 2h/+20°C (ROOM TEMPERATURE)
70-90	METHACRYLATE	AMBER TRANSPARENT	10 - 20	1,0	YES	-55 +150	5-15 minutes (+75°/+90°C) (HOT WATER)
70-91	METHACRYLATE	AMBER TRANSPARENT	10 - 20	0,9	YES	-55 +150	5-15 minutes(+75°/+90°C) (HOT WATER)

Silicone Greases

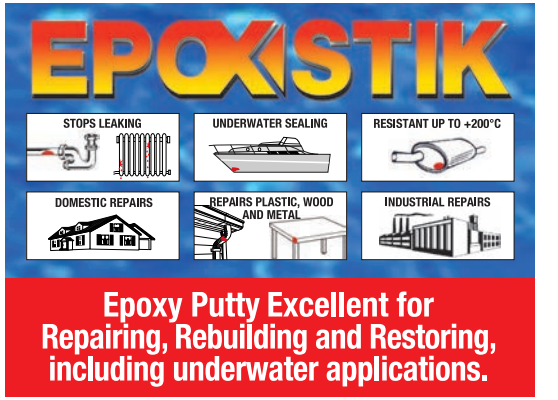
Silicone greases are waterproof, suitable for use in contact with potable water and food. They are resistant for use with temperatures up to +200°C, provide low friction coefficients between metals, rubber, plastics and do not cause rubber gaskets to swell.

Grease 4 PTFE modified

Grease 9 Multipurpose

Epoxstik

Epoxy-based plastic putty designed for fast or emergency maintenance and repair. Ideal to fill and seal cracks in plumbing and installations, either in automotive or marine fields, to stop leakages of pipes, tanks, valves without disassembling. Bonds most of materials: metals, ceramics, stones, concrete, wood, FRP and some rigid plastics. Easy to use, can be manually mixed and applied (protect skin with PVC, PE or Nitrile gloves); cures at room temperature, machinable with in 3-4 hours. Cures underwater within 24-48 hours. Resistant to water, hydrocarbons, industrial fluids and heat. Excellent resistance to UV light and moderate to solvents (preliminary testing suggested).



LOXEAL ENGINEERING ADHESIVES

Dosing Systems

Loxeal® Dosing Systems are designed to fulfil customer's dispensing needs.

DE1 Electro Pneumatic Dosing Unit

Electro Pneumatic Dosing Unit (time-pressure) for Anaerobic and Cyanoacrylate Adhesives. Including Control unit, Reservoir (with empty level sensor), Valve, Dosing nozzle, actuated by Foot Switch or metal part Sensor. Suitable for PLC connections, equipped with end cycle alarm Sensor. Tubing is made by PE and PTFE flexible hoses.

DE3 - DE3M Pneumatic Dosing Unit

Pneumatic Dosing Unit for manual dispensing of Anaerobic and Cyanoacrylate Adhesives. Equipped with foot switch or hand actuated dispensing valve. It does not require electrical power supply and is suitable for use in spark proof / flame proof environments.

DE4E Syringe Dosing Unit

Precise control time/pressure. Syringe terminal used as reservoir. Micro drops dispensing. Venturi technology to avoid dripping from syringe. Multipurpose dosing unit for different liquid products.

Visit our website loxeal.com to learn more about our full range of adhesives

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ENGINEERING ADHESIVES

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