

LOXEAL®

ENGINEERING ADHESIVES



Iso 9001 2000 Registered Company

Technical Information
www.loxeal.com

Production Facilities

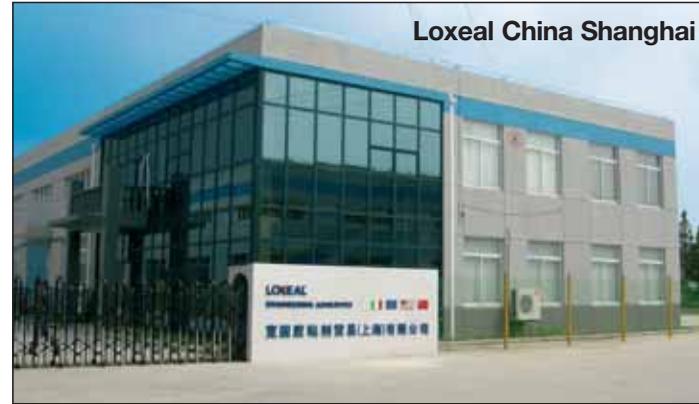


Loxéal Italy
20031 Cesano Maderno
20020 Misinto

Branch Offices & Warehouses



Loxéal USA Pottstown, PA



Loxéal China Shanghai

Certifications and Approvals



Who We Are

Loxéal® Engineering Adhesives is an Italian Company specialized in the manufacturing of a comprehensive range of Technically Advanced Adhesives and Sealants providing since over 30 years solutions to a wide variety of industrial uses.

The Company Quality System certified since 1993 has been maintained and improved along the time granting the high quality level of our products.

Our Anaerobic, Cyanoacrylate, Epoxy, Structural Acrylic, UV-light curing, Polyurethane Adhesives and other Complementary Products have been recognized to perform at the highest requirements.

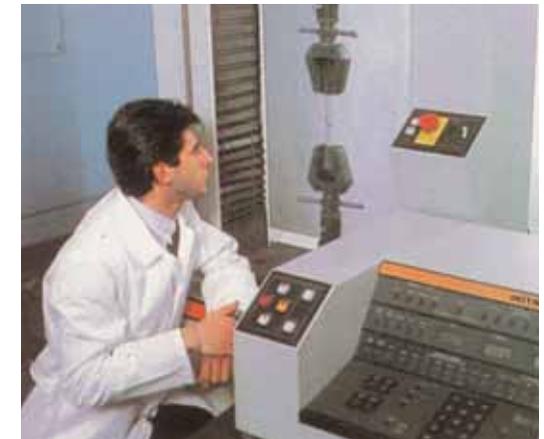
Selected products have been tested by worldwide accredited Laboratories and certified according to regulations in the field of gas sealing, potable water, medical devices.

Loxéal modern facilities are build in compliance with Safety and Environment Regulations.

We are proud to offer on worldwide basis a great technical support to our Customers thanks to the original technical know-how and qualified and motivated staff.



Research & Development



Quality Assurance



Loxéal chemical plants largely automated and designed to grant low environment impact, low hazard risk and high quality products. In-house complete manufacturing cycle, from R&D to final packing, allows monitoring of any production step, opening the opportunity to rapidly formulate customer tailored products. Quality, Flexibility, Professional Job are some of the distinctive features of the philosophy "Made in Loxéal".



ANAEROBIC ADHESIVES

Anaerobic adhesives are liquid resins polymerising when placed between two close fitting metal surfaces. The adhesive fills all microscopic crevices of the metal surfaces providing better stress distribution on the full joint surface. The cured adhesive gives an excellent seal against water, gas, oils, industrial fluids and chemicals. The fixture time is influenced by the gap between the surfaces, the kind of metal, surface treatments and temperature. Cure speed can vary from a few minutes to over an hour. The operating temperature range is between $-50 / + 150\text{ }^{\circ}\text{C}$ up to $+ 230\text{ }^{\circ}\text{C}$ for special grades.



INSTANT ADHESIVES

Cyanoacrylate adhesives are designed for the rapid bonding of rubber, metals, ceramic, leather, wood, and many plastics. It is recommended that surfaces to bond fit together tightly; best results can be obtained with joint gaps less than 0.1 mm up to 0.2 mm. The operating temperature range is between $- 50 / + 80\text{ }^{\circ}\text{C}$ up to $+200\text{ }^{\circ}\text{C}$ for special grades. The alkoxy-ethyl formulation is designed for no-blooming and low odour purposes.



EPOXY ADHESIVES

Two-part epoxies provide high strength structural joints. Suitable for bonding metals, ceramics, concrete, wood and some plastics, packed in practical two pack cartridges. Curing occurs by reaction of the two components when mixed (resin and hardener). Fixture time from 5-10 mins. to several hours depending on the grade. Heating speeds up the cure. Operating temperature is between -30 and $+ 80\text{ }^{\circ}\text{C}$. Single part epoxy are cured by heating at $130 / 180\text{ }^{\circ}\text{C}$ for 10 / 30 minutes. Temperature resistance is up to $200\text{ }^{\circ}\text{C}$.



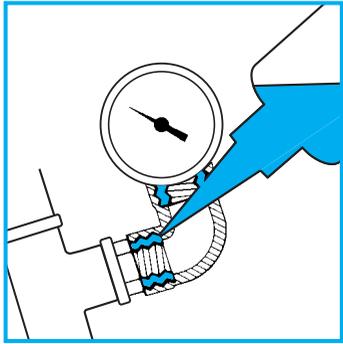
SILICONE GREASE

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



UV CURING ADHESIVES

UV-curable adhesives set in seconds by irradiation with ultraviolet or visible light, forming a solid adhesive film that does not turn yellow over time. These adhesives are designed to bond glass, crystal, metal and some plastics. Special grades are designed for bonding medical devices. The operating temperature range is $- 50 / + 120\text{ }^{\circ}\text{C}$.



ThreadSealing

Anaerobic threadsealing adhesives seal and lock threaded connections against pressure of gas, air, water, oils, hydrocarbons and many chemicals. They replace hemp and P.T.F.E. 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

*** CLASS OF LOCKING**

- 1 = LOW STRENGTH - EASY TO DISMANTLE
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**** BROOKFIELD VISCOSITY**

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***** LOCKING TORQUE**

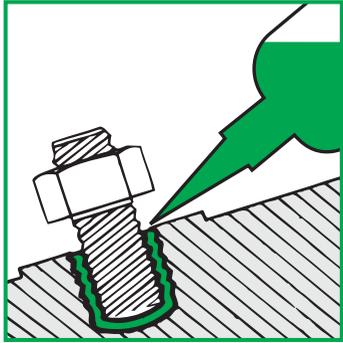
- BOLT M10 X 20 ZINC - QUALITY 8.8
- NUT = 0,8 d
- STANDARD ISO 10964

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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)		**** COLOR	CURING TIME		*** LOCKING TORQUE N.m (ISO 10964)		SHEAR STRENGTH (ISO 10123) N/mm ²	TEMPERATURE RANGE °C	DESCRIPTION SUGGESTED APPLICATIONS
							HANDLING MINUTES	FUNCTIONAL HOURS	BREAKAWAY	PREVAILING			
15-36	1	2"	0,30 mm	3000-6000	LT	BLUE/F	15 - 30	1 - 3	8 - 14	4 - 8	4 - 6	-55 to +180	1. EASY TO DISMANTLE Threadsealant high temperature, approved for gas, DIN-DVGW and potable water - elastic film. High viscosity PTFE sealant for liquids and gas - to gas and potable water (A.G.A./DIN-DVGW) - Elastic film (WRAS-ANSI/NSF). Low strength sealant for small threads and pneumatic fittings.
18-10	1	2"	0,30 mm	17000-50000	HT	WHITE IVORY	20 - 40	1 - 3	6 - 11	2 - 5	4 - 6	-55 to +150	
23-18	1	3/4"	0,15 mm	600-800	LT	BLUE	15 - 30	1 - 3	5 - 8	2 - 5	3 - 5	-55 o +150	
53-14	2	3/4"	0,15 mm	500	LT	BROWN/F	10 - 20	1 - 3	12 - 18	10 - 20	8 - 12	-55 to +150	2. MEDIUM STRENGTH-POSSIBLE TO DISMANTLE Hydraulic sealant. General purpose for pneumatic and hydraulic connectors up to 3/4". Approved for gas (DVGW). Sealant for fittings - General purpose. Sealant for steam, gas, liquids. Approved for gas (DVGW) - Elastic film Sealant for large tolerance fittings. High viscosity PTFE sealant, fast curing - Approved for gas - Gaz de France. High viscosity sealant approved for gas. (DIN-DVGW) GPL high pressure (AGA), oxygen (BAM) and potable water (WRC-WRAS). Certified NSF - Category P1
55-14	2	2"	0,30 mm	2500-12000	MT	RED/F	10 - 20	1 - 3	12 - 18	20 - 30	8 - 12	-55 to +150	
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 to +150	
56-03	2	2"	0,30 mm	6000-30000	MT	BLUE/F	15 - 30	1 - 3	10 - 16	12 - 20	8 - 12	-55 to +150	
58-10	2	2"	0,30 mm	25000-90000	HT	WHITE/F	5 - 10	0,5 - 1	18 - 25	10 - 20	6 - 13	-55 to +150	
58-11	2	2"	0,30 mm	20000-70000	HT	YELLOW/F	15 - 30	1 - 2	18 - 24	7 - 14	6 - 13	-55 to +150	
82-01	3		0,15 mm	250	LT	GREEN/F	2 - 5	1 - 3	20 - 35	50 - 70	20 - 30	-55 to +175	3. PERMANENT LOCKING Low viscosity, fast curing. High temperature, low viscosity - approved for gas DVGW, potable water WRAS. Maximum locking torque on yellow brass fittings. High resistance, fast curing, large tolerances. Approved for gas - Gaz de France. For high temperatures, approved for gas and potable water (DIN-DVGW-TZW). Sealant and locker high temperature resistant up to 250°C. Outstanding performances with yellow brass fittings. Delayed curing. Delayed curing sealant. Maximum locking torque on yellow brass fittings.
83-50	3	3/4"	0,20 mm	400-600	LT	GREEN/F	5 - 10	1 - 3	25 - 35	40 - 50	25 - 35	-55 to +200	
83-58	3		0,15 mm	500-700	LT	BLUE	15 - 30	1 - 3	25 - 35	45 - 55	15 - 25	-55 to +150	
85-21	3	1 1/2"	0,20 mm	2600-3100	LT	GREEN/F	2 - 5	1 - 3	30 - 40	50 - 70	25 - 35	-55 to +150	
85-86	3	2"	0,30 mm	2200-4000	LT	GREEN/F	20 - 40	6 - 12	25 - 36	40 - 55	15 - 25	-55 to +200	
85-90		1 1/2"	0,20 mm	3000-5000	LT	GREEN/F	40 - 60	6 - 12	> 30			-55 to + 250	
86-55	3	2"	0,30 mm	5000-8000	LT	RED/F	60 - 90	12 - 24	20 - 35	30 - 45	10 - 20	-55 to +150	
86-58	3	2"	0,30 mm	5000-7000	LT	RED/F	30 - 60	6 - 12	35 - 40	40 - 50	15 - 25	-55 to +150	



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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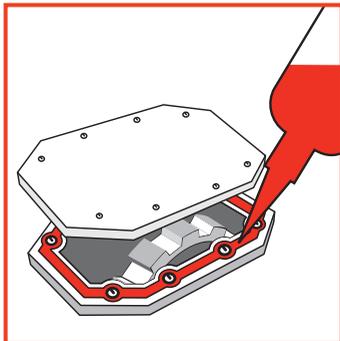
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							HANDLING MINUTES	FUNCTIONAL HOURS	BREAKAWAY	PREVAILING			
24-18	1	M24	0,20 mm	800-1400	MT	PURPLE/F	15 - 30	1 - 3	5 - 8	2 - 5	3 - 5	-55 +150	1. THREADLOCKING EASY TO DISMANTLE Low strength locking and anti-vibration. General purpose.
32-18	1	M12	0,10 mm	125	LT	VIOLET/F	15 - 20	3 - 6	6 - 10	3 - 6	5 - 7	-55 +150	
52-03	2	M12	0,10 mm	125	LT	BLUE/F	10 - 20	1 - 3	10 - 14	14 - 24	8 - 12	-55 +150	2. THREADLOCKING MEDIUM STRENGTH Medium strength locking for small diameter screws and fasteners. Nut-lock general purpose. Medium strength locking suitable on oily surfaces. Approved for gas and potable water (DVGW-T2W). Locking of large diameter studs.
54-03	2	M24	0,20 mm	1000	MT	LIGHT BLUE/F	10 - 20	1 - 3	14 - 20	4 - 9	8 - 12	-55 +150	
55-03	2	M36	0,25 mm	1700-9000	MT	BLUE/F	10 - 20	1 - 3	18 - 23	9 - 16	9 - 13	-55 +150	
55-04	2	M36	0,25 mm	1500-8600	MT	RED/F	10 - 15	1 - 3	20 - 25	40 - 50	10 - 15	-55 +150	
70-10		M5	0,07 mm	10-20	LT	GREEN/F	40- 80	3 - 6	5 - 15	2 - 10	5 - 10	-55 +150	3. THREADLOCKING HIGH STRENGTH Penetrating threadlocker. Suitable for sealing of copper pipes on aluminium plates. Penetrating. For use on assembled parts or to seal metal porosity. High strength. General purpose. High strength stud lock, even for oily surfaces. Retaining, sealing, threadlocking. Large tolerances threadlocking and sealing. High strength threadlocking and sealing, high temperature resistance up to +230°C. DVGW approved for gas.
70-14	3	M5	0,07 mm	10-20	LT	GREEN/F	10 - 20	1 - 3	10 - 25	25 - 40	8 - 12	-55 +150	
83-54	3	M20	0,15 mm	500	LT	GREEN/F	10 - 20	1 - 3	25 - 35	50 - 65	15 - 20	-55 +150	
83-55	3	M20	0,15 mm	500	LT	RED/F	10 - 20	1 - 3	25 - 35	50 - 65	15 - 20	-55 +150	
85-56	3	M56 2"	0,30 mm	2500-4500	LT	BLUE/F	15 - 30	3 - 6	35 - 40	40 - 50	15 - 25	-55 +150	
86-54	3		2" 0,30 mm	8000-24000	MT	GREEN/F	15 - 30	3 - 6	40 - 50	45 - 55	15 - 25	-55 +150	
86-72	3		2" 0,30 mm	5000-28000	MT	RED	20 - 40	3 - 6	25 - 35	45 - 70	10 - 20	-55 +230	



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. Forms a flexible and / or elastic gasket which is resistant to vibration, heat, oil and other industrial fluids. Parts can be disassembled using normal tools.

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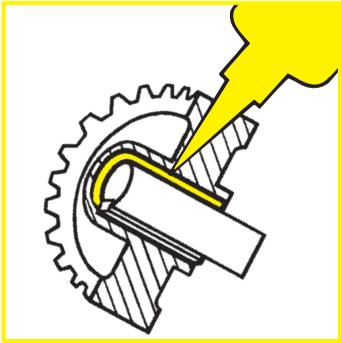
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					HANDLING MINUTES	FUNCTIONAL HOURS	SHEAR (ASTM D 1002) N/mm ²	TENSILE (ASTM D 2095) N/mm ²	IMPACT (ASTM D 905) N/mm ²			
28-10	1	0,30 mm	17-60	HT	GREEN/F	20 - 40	3 - 6	4 - 6	2 - 4	4 - 8	-55 +150	Excellent resistance to vibration resistant for flexible flanges.
58-14	2	0,50 mm	28-100	HT	ORANGE/F	15 - 30	3 - 6	5 - 10	5 - 8	5 - 10	-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	8 - 15	-55 +180	High temperature, elastic. Hot oil and fuel resistant, high dynamic loads, high performance applications.
59-10	2	0,50 mm	50-300	HT	RED/F	15 - 30	3 - 6	5 - 10	6 - 8	5 - 10	-55 +200	High viscosity gasketing. Gearboxes for trucks and tractors.

Elastomeric & Plastic Gasket

PRODUCT NUMBER	** VISCOSITY 25°C Pa.s	**** COLOR	CURING TIME		ELONGATION AT BREAK %	TENSILE STRENGTH N/mm ²	HARDNESS SHORE A	TEMPERATURE RANGE °C	DESCRIPTION SUGGESTED APPLICATIONS
			INITIAL STRENGTH minutes	CORD Ø 2 mm					
59-20	PASTY	TRASPARENT	15 - 30	24 h	400 - 600	0,8 - 2	15 - 25	-50 +180	Odourless silicone. Oil resistant.
		GREY	15 - 35	24 h	400 - 600	0,8 - 2	15 - 25	-50 +180	Odourless silicone. Oil resistant.
		BLACK	15 - 35	24 h	400 - 600	0,6 - 1,5	15 - 25	-50 +180	Odourless silicone. Oil resistant.
59-30	PASTY	RED	8 - 20	24 h	300 - 500	0,8 - 1,5	15 - 25	-60 +300	Silicone for high temperature applications.
59-40	PASTY	TRASPARENT	3 - 8	24 h	200 - 300	1 - 2	35 - 45	-40 +90	MS polymer odourless, UV resistant, can be painted. Seals and bond different kind of materials
		BLACK	5 - 10	24 h	200 - 300	1,5 - 2,5	55 - 65	-40 +90	
		GREY	5 - 10	24 h	200 - 300	1,5 - 2,5	55 - 65	-40 +90	
08-07	1000 -6000	HT	BLUE/F	IMMEDIATE SEALING				-55 +120	Non curing solventless plastic sealant for threads and flange joints. Designed to cover preformed gaskets.
104N	14-22	MT	GREY	5 - 10	24 h	400 - 800	2 - 4	-55 +120	Solvent based elastomeric gasket.



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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							HANDLING MINUTES	FUNCTIONAL HOURS	BREAKAWAY	PREVAILING			
53-11	2	M20	0,12 mm	550	LT	YELLOW/F	10 - 20	1 - 3	11 - 20	15 - 30	10 - 14	-55 +150	MEDIUM STRENGTH LOCKING, EASY TO DISMANTLE WITH STANDARD TOOLS Retaining of bearings. General purpose.
82-13	3	M12	0,10 mm	125	LT	GREEN/F	30 - 60	12 - 24	15 - 25	35 - 45	15 - 30	-55 +150	PERMANENT LOCKING Precision assembling, delayed curing.
82-21	3	M12	0,10 mm	125	LT	GREEN/F	5 - 10	1 - 3	24 - 35	50 - 60	17 - 22	-55 +150	Fast curing for precision assembling.
82-33	3	M12	0,10 mm	125	LT	GREEN/F	5 - 10	1 - 3	20 - 30	45 - 60	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	1 - 5	1 - 3	25 - 35	55 - 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	500	LT	GREEN/F	2 - 5	1 - 3	25 - 35	55 - 70	25 - 35	-55 +175	Retainer and sealer fast curing. High temperature performance. Approved for oxygen - BAM.
85-02		M36 1 1/4"	0,20 mm	3000-4000	MT	GREEN/F	2 - 5	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 1/4"	0,20 mm	2600-3100	LT	GREEN/F	2 - 5	1 - 3	30 - 40	50 - 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 1/4"	0,20 mm	2600-3100	LT	GREEN/F	2 - 5	1 - 3	30 - 40	50 - 70	25 - 35	-55 +150	Anaerobic and UV high strength retainer for metal cylindrical assemblies. Curing is effected in seconds by UV light and in a few minutes between mating surfaces by anaerobic curing.
86-86	3	2"	0,30 mm	5000-35000	MT	GREEN/F	20 - 40	3 - 6	25 - 30	40 - 70	10 - 20	-55 +230	Retainer and Sealant. High mechanical strength at high temperatures. Approved for gas-DIN DVGW.
89-51	3	2"	0,30 mm	60000-720000	HT	SILVER	15 - 30	3 - 6	40 - 45	15 - 20	20 - 30	-55 +150	Paste retainer to repair damaged shafts and threads.



Activators & Surface Conditioners for Anaerobic 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.

ACTIVATOR 11

Solvent based formulated accelerator, available in liquid and aerosol form. Fixture time about 1 minute.

ACTIVATOR 18

Liquid accelerator, solvent free, odourless. Fixture time about 1 minute.

ACTIVATOR 20

Liquid accelerator, solvent free, for contact curing adhesives and anaerobic. Fixture time 1- 2 minutes.

CLEANER 10

Fast drying cleaner and degreaser to optimally prepare the surfaces to be bonded. Suitable for metal, glass, ceramics, rubber and plastic. Available in aerosol form.

Activators Primers & Surface Conditioners for Cyanacrylate Adhesives

ACTIVATOR 7

Solvent based primer which allows bonding of polyolefin plastics (polyethylene, polypropylene), thermoplastic rubbers, EPDM, PTFE, silicones and other difficult to bond surfaces.

ACTIVATOR 9

For instant curing of Cyanacrylate adhesives on porous or acidic surfaces. Eliminates the blooming effect. To be used as primer or for post curing excess adhesive. Available as liquid formulation or aerosol.

CLEANER 10

Fast drying cleaner and degreaser to optimally prepare the surfaces to be bonded. Suitable for metal, glass, ceramic, rubber and plastic. Available as aerosol.

FILLER

To use in combination with the instant adhesive in case the surfaces to be bonded are not exactly fitting, or to fill large gaps, to repair cracks and holes. Dramatically reduces the setting time in any difficult situation. Increases the bonding strength of the adhesive joint.



Instant Adhesives



Cyanacrylate adhesives are for the 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 200°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 (ASTM D 2095) N/mm ²	SHEAR STRENGTH N/mm ²	PROPERTIES
STANDARD GRADES	14	METHYL	1,15	80 - 150	10 - 100	2	25 - 30	20 - 25 (1)	For rigid materials, like rubber-metal. Slow setting. High strength.
	23	ETHYL	1,06	40 - 80	10 - 60	3	12 - 25	13 - 18 (2)	General purpose for rubbers and plastics. Medium setting.
	25	ETHYL	1,07	350 - 450	10 - 150	3	15 - 23	13 - 20 (1)	Fills large gaps, for rubbers, plastics, metals and ceramics.
	32	ETHYL	1,05	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	1,06	20 - 40	10 - 100	5	12 - 25	13 - 18 (2)	Very fast curing. Very good results on EPDM and foam rubbers, difficult rubbers and plastics.
	43	ETHYL	1,06	80 - 150	10 - 150	4	22 - 25	15 - 20 (1)	General purpose, for bonding plastics, metals, leather, wood and rubbers.
	435	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.
	63	ALCOXI	1,07	80 - 150	10 - 150	1	10 - 25	12 - 22 (1)	General purpose, odour free, no blooming.
SPECIAL GRADES	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.
	27	ETHYL	1,08	1400 - 2000	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.
	41	ETHYL	1,05	5 - 10	10 - 40	5	18 - 25	13 - 18 (1)	Low viscosity, fast setting on acidic surfaces.
	45	ETHYL	1,06	600 - 1200	10 - 200	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.
	54	ETHYL	1,05 - 1,07	< 15	10 - 40	3	18 - 25	13 - 18 (1)	General purpose, for joints exposed to high temperatures up to 120°C.
	61	ALCOXI	1,06	10 - 20	10 - 40	2	10 - 20	12 - 22 (1)	Low viscosity, odour free, no blooming.
	67	ALCOXI	1,1	1000 - 1500	10 - 200	1	10 - 25	12 - 22 (1)	High viscosity, fills large gaps, odour free, no blooming.
	73	ETHYL	1,06	100 - 200	10 - 150	2	12 - 25	15 - 25 (1)	General purpose, flexible, transparent, high temperature resistance 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.

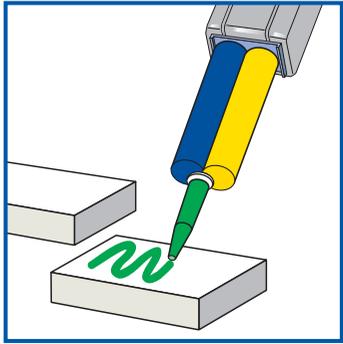
(1) ISO 4587 Norm

(2) ISO 10123 Norm

(*) Relative setting time (5= max, 1 = min.)

PHYSICAL PROPERTIES

FLASH POINT (ISO 2592)	OPERATING TEMPERATURE	SOFTENING RANGE	REFRACTIVE INDEX n_D^{20}	ELECTRICAL RESISTIVITY ASTM D 257 (Ω .mm)	DIELECTRIC STRENGTH ASTM D 149 (Kv/mm)	DIELECTRIC CONSTANT ASTM D 150 (1 Mhz)
87°C	-50°C +80°C (120°C)	160 / 170°C	SIMILAR TO GLASS	> 10 ¹⁵	25	> 2,65



Two Part Epoxy Adhesives

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.



PRODUCT NUMBER	CHARACTERISTICS	COLOR	VISCOSITY (25°C Pa.s)	HANDLING TIME (25°C)	FUNCTIONAL HOURS	SHEAR STRENGTH (ASTM D1002) N/mm ²	PEEL STRENGTH (ISO 4578) N/25 mm	DESCRIPTION
31-10	TOUGH	AMBER	12 - 18 (1) 10 - 25 (2)	90 - 150 mins (*)	12 - 24 hrs	12 - 14	10 - 25	Slow curing, tough.
31-40	FAST CURING	COLORLESS	12 - 18 (1) 15 - 30 (2)	10 - 20 mins (*)	30 - 40 mins	10 - 12	4 - 20	Fast curing, colorless, non yellowing.
31-42	VERY FAST CURING	COLORLESS	12 - 18 (1) 15 - 30 (2)	3 - 8 mins (*)	20 - 30 mins	12 - 14	4 - 20	Very fast curing, colorless, non yellowing.
34-15	VERY FLEXIBLE	IVORY	20 - 35 (1) 20 - 50 (2)	15 - 35 mins (*)	12 - 24 hrs	5 - 10	40 - 70	Longer setting time, very flexible, high peel and shock resistant.
35-44	TOUGH	COLORLESS	10 - 20 (1) 14 - 24 (2)	10 - 20 mins (*)	40 - 60 mins	5 - 9	25 - 60	Fast setting, very good peel resistance, excellent adhesion to metals.
36-10	TOUGH/FLEXIBLE	IVORY	14 - 28 (1) 10 - 25 (2)	90 - 150 mins (*)	12 - 24 hrs	12 - 18	25 - 40	Slow curing, tough, flexible.

Viscosity = (1) Resin - (2) Hardener

(*) Time measured on 1 gr. Part A and 1 gr. Part B mixed product

PHYSICAL PROPERTIES

CHEMICAL COMPOSITION	SPECIFIC GRAVITY	TEMPERATURE RANGE	THERMAL CONDUCTIVITY (W/mK)	COEFFICIENT OF THERMAL EXPANSION (1/K)	DIELECTRIC STRENGTH (Volts/mil)	VOLUMETRIC RESISTIVITY (ohms/cm)
EPOXY RESINS	1,1 - 1,2 g/cc	50°C +80°C	0,10 - 0,11	60 - 210 x 10 ⁻⁶	520 - 860	3,5 - 5x10 ¹²

Single Part Epoxy Adhesives

Heat Curing Structural Adhesives give an excellent adhesion on metals, ceramics and some composite materials. The high adhesion strength avoids the need for mechanical fastening and soldering. Curing occurs heating at temperatures of between 120°C and 200°C. The curing time is reduced by increasing the temperature.

GRADE	CHARACTERISTICS	COLOR	VISCOSITY (25°C Pa.s)	HANDLING TIME	SHEAR STRENGTH (ASTM D1002) N/mm ²	PEEL STRENGTH (ISO 4578) N/25 mm	TEMPERATURE RANGE °C	DESCRIPTION
35-69	TOUGH	BLACK	1000 - 2000 Thixo	15 - 30 mins (*) a 150°C	18 - 25	80 - 150	-40 +180	Very tough, high tensile, peel and shear strength. Non drip during heat cure.

(*) | Curing time belongs to temperature.



Light Curing Adhesives



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.

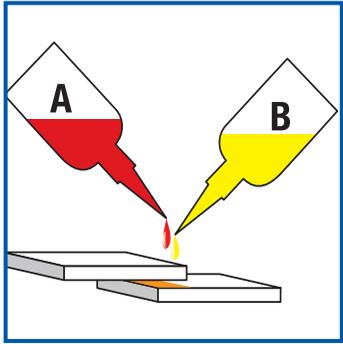
Operating temperature range between -50°C and +120°C.

A gel formulation is available for non-drip / vertical applications.

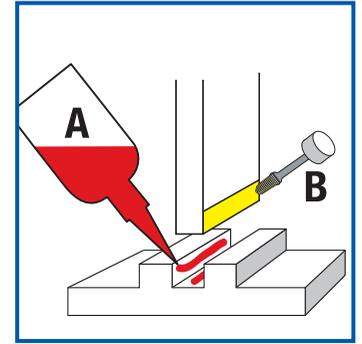
PRODUCT NUMBER	VISCOSITY (25°C mPa.s)	GAP FILLING mm	CURING TIME (in secondi) (*)	TENSILE STRENGTH (DIN 53288) N/mm ²	DESCRIPTION
30-11	200 - 300	0,03 - 0,20	6 - 55		Low viscosity, for bonding plastics like PC, ABS, PVS. Designed for joining medical components.
30-11 HV	3000 - 20000	0,03 - 0,50	6 - 55		Higher viscosity version of 30-11 to fill larger gaps.
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 - 1,5	6 - 10	12 - 16	Medium viscosity for glass on metal bonding, tough
30-27	90 - 150	0,03 - 0,20	6 - 10	20	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.
30-37	2200 - 2900	0,03 - 1,5	6 - 10	6 - 10	Flexible, shock resistant, ideal for bonding glass on plastic parts.
30-60	GEL	0,03 - 2,5	8-15	4-8	Non-drip gel, for vertical bonding of glass and crystal.

PHYSICAL PROPERTIES

COMPOSITION	SPECIFIC GRAVITY	FLASH POINT	TEMPERATURE RANGE	LIGHT TRANSMITTANCE	REFRACTIVE INDEX n _D ²⁰	TERMAL CONDUCTIVITY (W/mK)	COEFFICIENT OF THERMAL EXPANSION (1/K)	DIELECTRIC STRENGTH DIN 53481 (Kv/mm)	DIELECTRIC CONSTANT DIN 53483 (25°C a 1 MHz)
URETHANE METHACRYLATE RESIN	1,1 gr/ml	80 - 100°C	-55°C +120°C	> 98%	1,48 - 1,51	≈ 0,1	85 x 10 ⁻⁶	30 - 80	4



Structural Acrylic Adhesives



2-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 TIME (minutes)	SHEAR STRENGTH (ASTM D 1002) N/mm ²	PEEL STRENGTH (ISO 4578) N/mm	JOINT THICKNESS mm	PROPERTIES
30-55 (+Att. 20)	70.000 - 200.000	1 - 4 mins	30' - 60'	12 - 25	3 - 5	0,05 - 1	Highly thixotropic, high peel and shock resistant contact curing acrylic adhesive.
33-00 (+Att. 20)	20.000 - 100.000	1 - 4 mins	30' - 60'	13 - 30	2 - 3	0,05 - 1	General purpose, contact curing acrylic adhesive.
33-47 (A+B)	5.000 - 12.000	1 - 3 mins	30' - 60'	12- 25	3 - 5	0,05 - 0,5	For bonding metals, ceramics and plastics.
33-47M (+Att. 17)	20.000 - 70.000	1 - 3 mins	30' - 60'	12- 25	3 - 5	0,05 - 0,5	For bonding of some plastics, e.g. ABS, polystyrene, polycarbonate on metal, and metal on metal

PHYSICAL PROPERTIES

CHEMICAL COMPOSITION	TEMPERATURE RANGE	THERMAL CONDUCTIVITY (W/mK)	COEFFICIENT OF THERMAL EXPANSION (1/K)	DIELECTRIC STRENGTH
ACRYLIC RESINS	-50°C +120°C	0,1	80 - 210 x 10 ⁻⁶	4,6 (1Mhz)



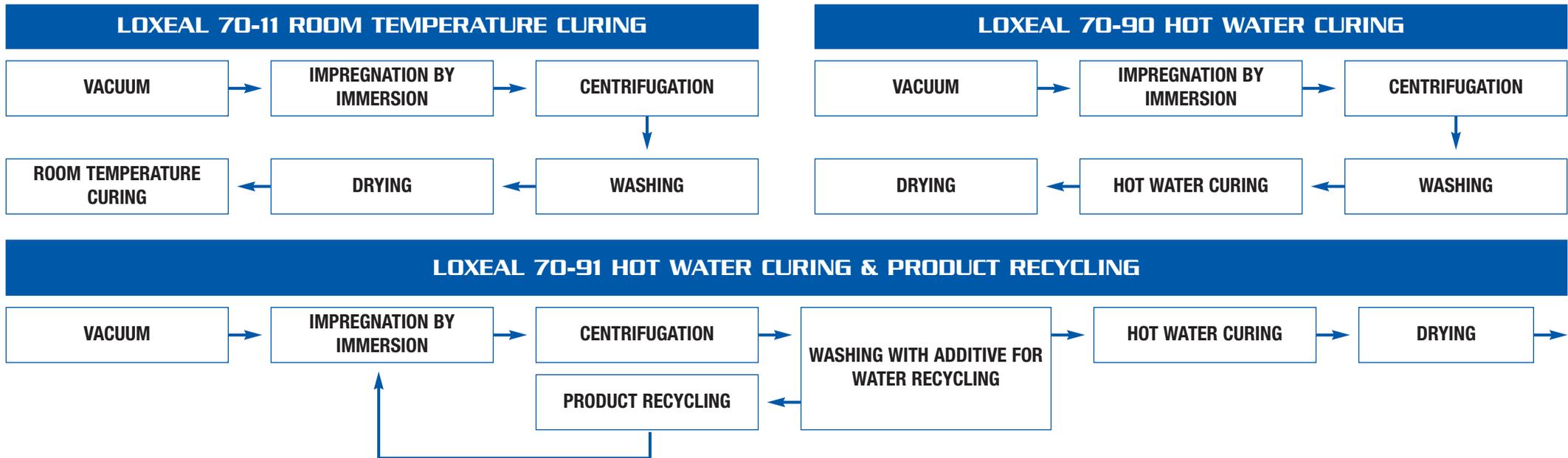
Impregnation of Porous Metal Parts



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	COLOR	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°C	≈ 2h/20°C (room temperature)
70-90	METHACRYLATE	AMBER TRANSPARENT	10 - 20	1,0	YES	-55 +150°C	5-15 min. (75°/90°C) (hot water)
70-91	METHACRYLATE	AMBER TRANSPARENT	10 - 20	0,9	YES	-55 +150°C	5-15 min. (75°/90°C) (hot water)

*Impregnation products are designed to be room temperature curing.
Impregnation cycle is performed in dedicated plants, according to the following scheme:*



Dosing System

Loxéal® 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.

Technical specification:

Dimension:	L490 x P390 x H250
Weight:	8 Kg.
Power supply:	230 V - 50 Hz
Max power:	75 W
Pressure rate:	from 4 to 8 bar
Dosing pressure adjustment:	from 0,1 to 5 bar
Reservoir capacity:	2,3 Liters
Dosing quantity:	0,03 ml to Continuous trace
Dosing time:	0,05" to Continuous



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. Does not require electrical power supply and is suitable for use in spark proof / flame proof environments.

Technical specification:

Dimension:	L490 x P390 x H390
Weight:	3,5 Kg.
Pressure rate:	from 4 to 8 bar
Dosing pressure adjustment:	from 0,1 to 5 bar
Reservoir capacity:	2,3 Litres
Dosing quantity:	Manual

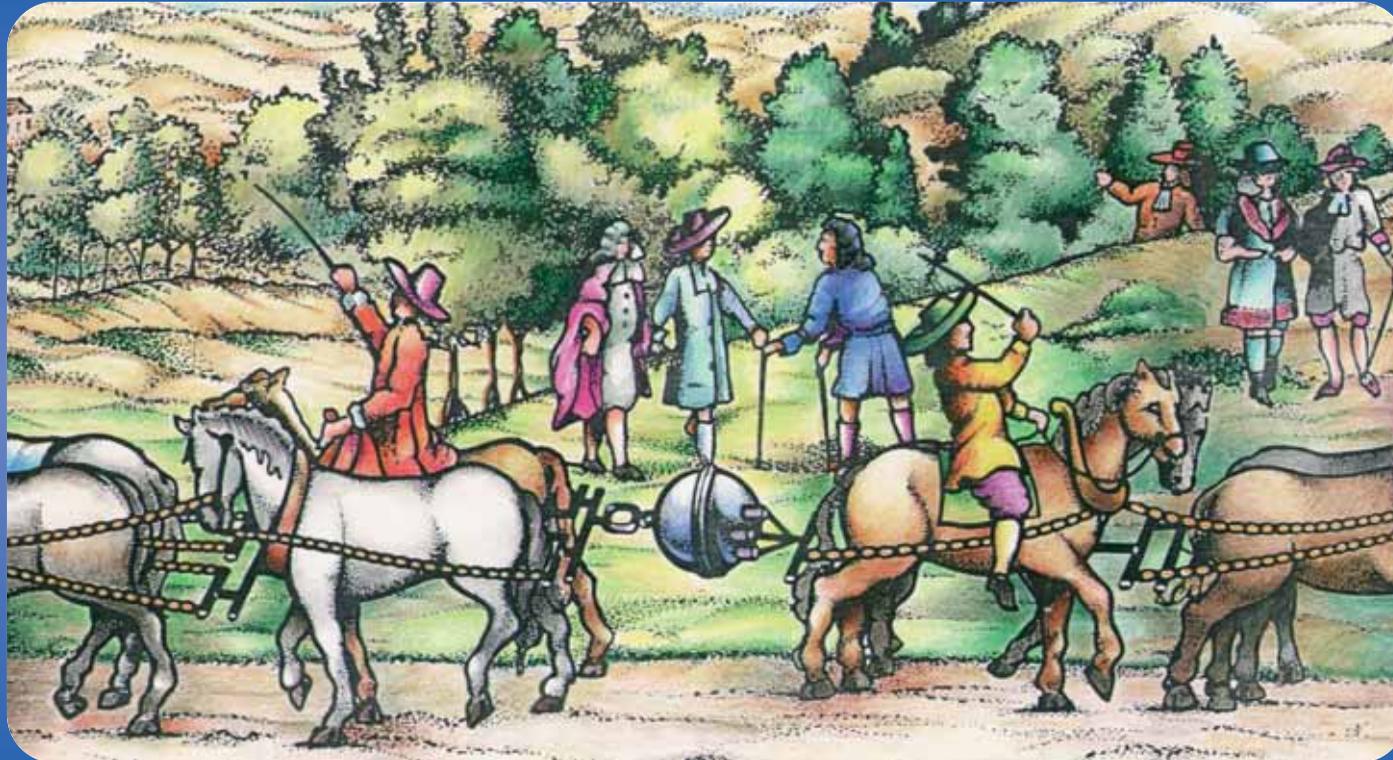


DE4 Syringe Dosing Unit

Versatile Electro Pneumatic Dosing Unit suitable for low and high viscosity adhesives and lubricants. Dosing is effected by syringe acting as reservoir for products, may dispense even micro drops. A vacuum suction system avoid dripping from the dosing syringe.

Technical specification:

Dimension:	L300 x P190 x H80
Weight:	2 Kg.
Power supply:	230 V - 50 Hz
Max power:	50 W
Dosing pressure adjustment:	from 0,1 to 5 bar
Syringes capacity:	10 - 35 ml
Dosing quantity:	0,001 ml to Continuous trace
Dosing time:	0,02" to Continuous



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ENGINEERING ADHESIVES

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