

KRYLEX®
Adhesives and sealants

KB014
Instant Adhesive
(Cyanoacrylate)

Document No:	KX-01-600-2280
Issue:	1
Amendment:	a
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TECHNICAL DATA

PRODUCT DESCRIPTION

KRYLEX® KB014 is a very fast curing, medium-low viscosity modified ethyl cyanoacrylate adhesive. It is suitable for the bonding of a very wide range of materials, including acidic surfaces and some porous ones, where rapid bonding times are required.

TYPICAL APPLICATIONS

KRYLEX® KB014 is especially formulated for instant bonding of paper, leather, wood, plastics, rubbers, metals and other common substrates. KB014 will be used in many markets such as assembly of plastic and rubber parts, shoe manufacture and repair, luggage manufacturing, sports equipment manufacture, the electrical and electronic device industry, medical devices, maintenance and repair and many others. Although KB014 has a degree of gap filling ability, it is generally recommended for use on close-fitting parts and fairly smooth, even surfaces.

PROPERTIES OF MATERIAL

		Value
Chemical type		Modified Ethyl
Appearance		Clear Liquid
Specific Gravity		1.06
Viscosity ¹	cPs	90-130
Typical Value	cPs	110
Tensile Strength ²	(M Pa)	
- after 2 minutes		7.5 -12.5
- after 24 hours		15 - 25
Fixture Time ³	(secs)	1 - 30
Full Cure	(hours)	24
Flash Point	(°C)	> 85
Shelf Life @ 5°C	1	12
Max Gap Fill	(mm)	0.15
Temperature Range	(°C)	
	Continuous	-50 to +80

¹ Cone and Plate Rheometer, controlled stress

² ISO 6922

³ Depending on substrates and application conditions

CURING PERFORMANCE

Typical Speed:

Steel (Degreased)	5 - 20	seconds
Aluminium	2 - 10	seconds
Chromated Steel	<3	seconds
Nitrile Rubber	<5	seconds
EPDM	3 - 10	seconds
ABS	<3	seconds
PVC	3 - 10	seconds
Polycarbonate	4 - 10	seconds
Phenolic	<3	seconds
Wood (Balsa)	1 - 3	seconds
Wood (Oak)	90 - 180	seconds
Chipboard	25 - 70	seconds
Fabric	<10	seconds
General Leathers	3 - 20	seconds
Fully Finished Leather	<5	seconds
Paper	2 - 10	seconds
Card	< 2	seconds

Strength Development

After 2 minutes on steel: 50% of final strength

After 10 minutes on rubber: 6MPa

Cure speed vs. bond gap

KRYLEX® cyanoacrylates give best results on close fitting parts. The product should be applied in a very thin line in order to ensure rapid polymerisation and a strong bond. Excessive bond gaps will result in slower cure speeds.

Cure speed vs. activator

KRYLEX® Activator KP4527 may be used in conjunction with **KRYLEX®** cyanoacrylates where cure speed needs to be accelerated. Cure speeds of less than 2 seconds can be obtained with most **KRYLEX®** cyanoacrylates. The use of an activator can reduce the final bond strength by up to 30% - Chemence recommends testing on the parts to measure the effect.

Cure speed vs. environmental conditions

Cyanoacrylate adhesives require surface moisture on the substrates in order to initiate the curing mechanism. The speed of cure is reduced in low humidity conditions. Low temperatures will also reduce cure speed. All figures relating to cure speed are tested at 21°C.

Cure speed vs. substrate

The speed of cure of cyanoacrylates varies according to the substrates to be bonded. Acidic surfaces such as leather and paper have longer cure times than most plastics and rubbers. Some plastics such as polyethylene, polypropylene and PTFE require the use of **KRYLEX®** KP707 Primer (see KP707 TDS for further info).

ENVIRONMENTAL RESISTANCE

Hot strength

KRYLEX® ethyl cyanoacrylate adhesives are suitable for use at temperatures up to 80°C. At 80°C the bond will be approximately 70% of the strength at 21°C. The bond strength at 100°C is approximately 50% of full strength at 21°C.

Heat ageing

KRYLEX® ethyl cyanoacrylates retain over 90% of their strength when heated to 80°C for 90 days and then tested at 21°C. Heating the bond to 100°C and then testing at 21°C gives bond strength of approximately 50% of initial strength.

Chemical / Solvent Resistance

KRYLEX® cyanoacrylates exhibit excellent chemical resistance to most oils and solvents including motor oil, leaded petrol, ethanol, propanol and freon. Cyanoacrylates are not resistant to high levels of moisture or humidity over time.



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DIRECTIONS FOR USE

Bond speed is very fast so ensure that parts are properly aligned before bonding.

KRYLEX® Activators may be required if there are gaps or porous surfaces. Some plastics may require application of **KRYLEX**® KP707 Primer.

Ensure parts are clean, dry and free from oil and grease.

Product is normally hand applied from the bottle. Apply sparingly to one surface and press parts firmly together until handling strength is achieved. As a general rule, as little cyanoacrylate as possible should be used – over application will result in slow cure speed and lower bond strength.

Please contact your **KRYLEX**® representative for further advice on dispensing solutions.

PRESENTATION

Bottles: 20g, 50g and 500g.
Available in bulk for use with dispensing systems.

STORAGE

Store in a cool area out of direct sunlight. Refrigeration to 5°C gives optimum storage stability.

REMOVAL OF CURED CYANOACRYLATE

Cured cyanoacrylate may be removed from most substrates, and parts disassembled, with **KRYLEX**® KP687 Debonder. It is not possible to fully remove cyanoacrylate from fabrics

GENERAL INFORMATION

For safe handling of this product consult the Material Safety Data Sheet.

DATA RANGES

The data contained in this data sheet may be reported as typical value and/or range. Values are based on actual test data and are verified on a regular basis.

NOTES

The information contained herein is produced in good faith and is believed to be reliable but is for guidance only. Chemence Ltd and its agents cannot assume liability or responsibility for results obtained in the use of its product by persons whose methods are outside or beyond our control. It is the user's responsibility to determine the suitability of any of the products and methods of use or preparation prior to use mentioned in our literature and furthermore the user's responsibility to observe and adapt such precautions as may be advisable for the protection of personnel and property in the handling and use of any of our products.

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