

# A-K321

## Two-component, fast curing, low odour and toughened structural adhesive

Based on methyl methacrylate and provides primer-less adhesion to most metals, thermoplastics, composites and other substrates common to the commercial vehicle industry<sup>1</sup>.

It is dedicated for bonding applications where high peel strength is desired. The ratio between working time and fixture time is optimised versus other methyl methacrylate systems to minimize cycle times.

A-K321 does not boil at higher bonding gaps and therefore is an ideal solution for repair or

backfill of large composite structures. Due to its low odour, this product can be accepted in metal working workshops and other places where the typical distinctive MMA odour is restricted.

Available in 50 ml & 490 ml cartridges, 20 L [5 GAL.] pails and 200 L [50 GAL.] drums.

### Technical Data

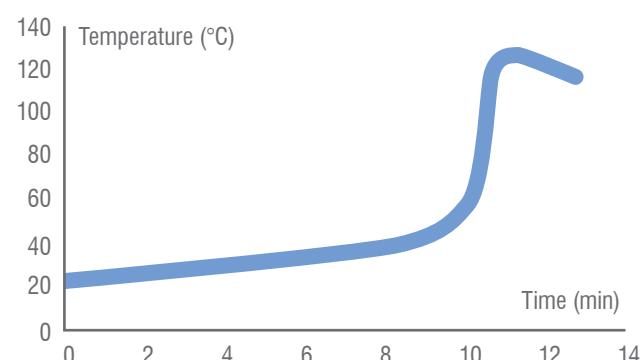
#### TYPICAL PROPERTIES

	XP-A-K321	Test Method
Physical Properties	Appearance	Part A: off White Part B: off white / Black Mixed product: Tan / Black
	Mix Ratio	10:1 (by vol)
	Open Time <sup>2</sup>	4-6min
	Fixture Time <sup>3</sup>	8-11min
	Viscosity part A-Brookfield - 25°C-spindle 7-20rpm (cps)	100 000 - 200 000
	Viscosity part B-Brookfield - 25°C-spindle 7-10rpm (cps)	To be defined
	Density part A (g/cc)	0,97 - 1,01
	Density part B (g/cc)	1,3 - 1,4
	Shore D Hardness	50-60
	Mixed Density	1,1
Mechanical Properties	Service Temperature <sup>4</sup>	-40 to 90°C [-40 to 194°F]
	Tensile Strength	19.0 MPa
	Modulus	930 MPa
	Strain-to-Failure	70-90%
	Peel Strength	14 N/mm
ASTM D638		
ASTM D638		
ASTM D638		
ASTM D1876		

#### RECOMMENDED SUBSTRATES

Composites	Metals	Thermoplastics
GRP Epoxy	Aluminium <sup>5</sup>	ABS
GRP Polyester	Stainless Steel <sup>5</sup>	ABS/PC
CFRP	Cold Rolled Steel <sup>5</sup>	PVC
Gelcoats		
DCPD		
SMC		

#### Exothermic Curve-10g



**Chemical Resistance**<sup>6</sup> Good resistance to common industrial chemicals. Should be tested against specific customer conditions and exposures. Not resistant to fuels, polar solvents, strong acids & bases.

### Shelf Life & Storage Conditions

**Shelf life:** Best results within 12 months – stored at < 25°C in original packaging. Long-term exposure to elevated temperature can cause the material to lose performance characteristics. Prolonged exposure above 37°C quickly diminishes the reactivity of the product and should be avoided.

Special Handling Material must NOT be frozen, keep away from direct sunlight and all sources of heat and ignition.

### Surface Preparation

**General:** The following recommendations are for informational purposes only. Before attempting any bonding application, users should test the adhesion to the surface using their specific material and application. Any applications involving critical or serial production should consult L&L Products Technical Service & Support Staff.

**Metals:** Must be clean, dry; and free of dust, debris and any loose oxides or coatings. Heavy oils and grease must be removed. Clean surfaces thoroughly using a general purpose industrial organic solvent. It may be necessary to use an additional surface preparation product. Consult L&L Products Technical Service & Support Staff.

**Thermoplastics:** Must be clean, dry; and free of dust, debris and any loose oxides or coatings. Excessive oily residue must be removed. Clean surfaces thoroughly.

**Composites:** Must be clean, dry; and free of dust, debris and any loose coatings, including heavy layers of release agent. Abrasion may be required. Composites using small amounts or no release agent should be cleaned as described.

**Other:** Consult L&L Products Technical Service & Support Staff.

### Application

**Cartridge Application:** Check each cartridge to ensure that the openings are free of obstruction or debris that would prevent flow. A-K321 is applied through a 10mmx18-element helical-type static mixer (except 50ml ctgs.). Before bonding, dispense a small amount of material through the static mixer (purge) until the product is uniformly mixed.

The information contained herein is, to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty, or guarantee is made regarding its accuracy, reliability, or completeness by L&L Products or any of its affiliates. It is the responsibility of the user to assure the suitability and completeness of such information and any depicted product for the particular use of the user. L&L Products and its affiliates accept no liability for any loss or damage that may occur from the use of this information or any depicted product. L&L Products and its affiliates specifically and expressly disclaim any and all warranties, express or implied, including warranties of merchantability, fitness for a particular purpose, and freedom from claims of infringement of the rights of others associated with the sale or use of any product depicted. L&L Products and its affiliates further disclaim any liability for consequential or incidental damages of any kind, including lost profits.

**Bulk Application:** A-K321 can be applied using several types of meter-mix equipment. The material is applied through a 10mmx18-element helical-type static mixer. Pumping equipment should be austenitic (300's grade) stainless-steel in construction. Seals and gaskets should be EPR or Teflon. Any components based on elastomers such as nitriles and Viton should be avoided. Hoses should be Teflon-lined. Consult L&L Products Technical Service & Support Staff and the equipment supplier to ensure compatibility.

**Bonding Process** Parts should be mated and in final position before the expiration of the working time and should remain in position, unstressed & undisturbed until the end of the fixture time has passed. Note that working and fixture times are heavily influenced by temperature. Warm temperatures shorten working times, and cooler temperatures lengthen fixture times. The application temperature for the adhesive and parts should be between 15-30°C [60-85°F].

Use enough adhesive to completely fill the desired bond area, and avoid entrapping air within the joint. Avoid oversqueezing the joint causing insufficient material to remain in the bond area once the clamps or jig is removed.

A-K321 cures by exothermic reaction. Large masses of material can result in overheating of the adhesive and substrate. Consult with L&L Products Technical Service & Support Staff.

**Clean-Up** Any clean-up of the bonded assembly using industrial solvent is not recommended as it could affect the cure.

### Health & Safety

**Safety Precautions** Avoid contact with skin and eyes. Consult product-specific Safety Data Sheet for all safety and environmental information concerning use and disposal of this product.

### Notes:

1. Test all applications according to anticipated production and service conditions.
2. The time period after mixing the components before the materials must be mated and positioned.
3. Varies with ambient conditions, bond size and substrate. Must be tested with customer parts.
4. Adhesive performance changes depending on service temperature. Evaluate adhesive performance at anticipated service conditions. Consult L&L Products Technical Service & Support staff.
5. Ultimate lap-shear strength on metals may require shot-blasting or special surface preparation.
6. Good resistance to common industrial chemicals. Should be tested against specific customer conditions and exposures. Not resistant to fuels, polar solvents, strong acids & bases. Consult L&L Products Technical Service & Support Staff.