

ADBOND MK50209LV-2 2 Part Methacrylate

DESCRIPTION

ADBOND MK50209LV-2 is a two component, 100% reactive, toughened structural methacrylate adhesive specifically formulated for bonding wide variety of metals, thermoplastics, thermosets, and composite assemblies. ADBOND MK50209LV-2 is a 1:1 ratio, non-sagging, and thixotropic formulation. It has an excellent impact, peel, and shear resistance. Primer-less adhesion to most substrates and room temperature cured with short open time.

SPECIFICATION

- RoHS and REACH compliant

PHYSICAL PROPERTIES

Uncured @ 73°F (23°C) 50% R.H			
Test Description	U/M	Results	
		Part A (Resin)	Part B (Activator)
Color		Milky white	Tan
Viscosity (cps)	cPs	40,000 to 60,000	40,000 to 60,000
Density	lbs/gal. (Kg/l)	8.55 (1.02)	8.71 (1.04)
Mix ratio		1	1
V.O.C.	g/L	38	

Cure characteristics @ 73°F (23°C) 50% R.H		
Working time	Minutes	4 - 6
Fixture time	Minutes	12 - 15
Full cure	Hours	24

Cured properties			
Test description	Standard	U/M	Results
Gap Filling		Inch	0.375
Hardness (Shore D)	ASTM D2240	Points	72- 78
Elongation	ASTM D638	%	20- 30
Modulus	ASTM D638	PSI	75000- 100000
Tensile Strength	ASTM D638	PSI	3200- 3750
Service Temperature		°F (°C)	-40 – 250 (-40 – 121)
Lap Shear Strength (Stainless Steel)	ASTM D1002	PSI	3150 – 3480 (CF)
Lap Shear Strength (Aluminum)	ASTM D1002	PSI	3200 – 3750 (CF)
Lap Shear Strength (ABS)	ASTM D1002	PSI	1200 – 1500 (SF)
Lap Shear Strength (FRP)	ASTM D1002	PSI	1500 – 1700 (FT)
Lap Shear Strength (Aluminum / ABS)	ASTM D1002	PSI	2000 – 2200 (SF)
Cleavage Peel (Stainless Steel)	ASTM D3807	PPI	18- 20

CF = COHESIVE FAILURE, SF = SUBSTRATE FAILURE, FT = FIBER TEAR

CHEMICAL RESISTANCE

The chemical resistance of ADBOND MK50209LV-2 was studied by bonding aluminum to aluminum and cured for 7 days @ 77°F (25°C) then kept immersed for 1 month in the media here and tested for lap shear strength.

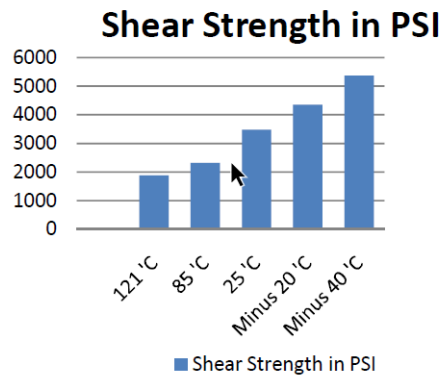
Media	Standard	U/M	Lap shear strength results
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Gasoline	ASTM D1002	PSI	2350
Acetic acid (10%)	ASTM D1002	PSI	3190
Xylene	ASTM D1002	PSI	3200
Lubricating oil HD 30	ASTM D1002	PSI	3300
Paraffin	ASTM D1002	PSI	3150
Water @ 73°F (23°C)	ASTM D1002	PSI	3145
Water @ 194°F (90°C)	ASTM D1002	PSI	3000

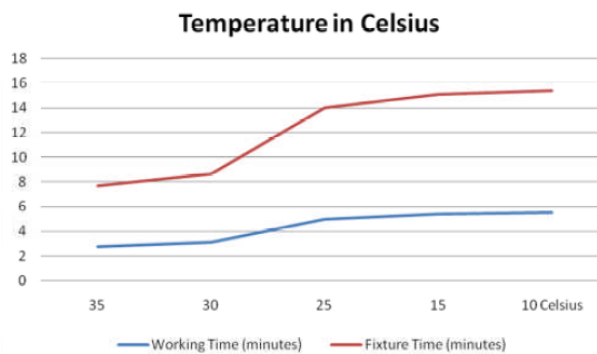
TEMPERATURE RESISTANCE

The lap shear strength (ASTM D1002) on aluminum to aluminum of the ADBOND MK50209LV-2 reduces with heat and increased in cold temperature. The failure mode was cohesive failure in all below cases.



EFFECT OF TEMPERATURE ON CURED SPEED

ADBOND methacrylate adhesives are designed to cure at room temperature, but the ambient temperature will affect the working and fixture times as follows.



We recommend using the product at around room temperature 77°F (25°C).

ENVIRONMENTAL RESISTANCE

ADBOND MK50209LV-2 has excellent resistance to harsh environment conditions. The lap shear strength has increased after environmental cycle. ADBOND MK50209LV-2 performs better under these conditions compared to the substrates bonded. Substrates may have less resistance to these conditions compared to adhesives.

condition	Lap shear strength (ASTM D1002) on stainless steel	Failure mode
Initial	3150 - 3480 psi	cohesive

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Environmental cycle – 30 days	3550 - 3750 psi	cohesive
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Environmental cycle =

- 8 hours @ 86°F (30°C).
- 8 hours @ 185°F (85°C).
- 8 hours @ 86°F (30°C) / 100% R.H.

APPLICATIONS

- Ideal for bonding all types of thermoplastics, thermosets, and composites as well as metals.
- Widely used for automotive components, marine assemblies, electronics enclosure, appliances, furniture, sign & display, metal fabrication, etc.

SURFACE PREPARATION, MIXING AND METHOD OF USE

All surfaces must be clean, dry, dust and grease free. Best result will be achieved with surfaces that have been lightly abraded immediately prior to bonding. Use ADSOLVE 6002 to clean all surfaces. Let evaporate for 20 minutes before adhesive application. Proper mixing is required for the curing and adhesive strength development. Carefully secure or clamp parts to prevent joint movement while the adhesive sets. Adhesive bond should be allowed to develop full strength before subjecting to any service load. Excess adhesive can be wiped away with organic solvent before curing. Removed the excess of adhesive mechanically when cured. For more details consult our document: [Surface Preparations](#).

CURING

Working time is the approximate time, after mixing components A and B that the adhesive remains fluid and bondable. Fixture time is the approximate time after mixing components A and B required for the adhesive to develop sufficient strength to allow careful movement, unclamping, or demolding of assembled parts. Parts can generally be put in service when 80 percent of full strength is developed. The time to achieve 80% cure is approximately 2-3 times that required for fixturing.

CLEAN UP

Adhesive components and mixed adhesive should be removed from mixing and application equipment with a suitable industrial solvent or cleaner before the mixed adhesive cures. Once the adhesive cures, soaking in a strong solvent or paint remover will be required to soften the adhesive for removal. If the wait becomes too long, mechanical cleaning will be necessary.

DISPENSING EQUIPMENT

Dispensing directly from disposable cartridges or meter-mix-dispensing equipment is strongly recommended. Both methods employ convenient static motionless mixer technology. Product supplied in pre-measured cartridges is dispensed from approved manual or pneumatic powered guns. When meter-mix dispense systems are used, care must be taken to assure compatibility between the adhesive components and the materials in the equipment that they contact. All wetted metal components should be constructed of stainless steel or aluminum or have a sufficient thickness of chemically resistant material that prevents contact between the adhesive components and the base metal. Contact with copper, zinc, brass, or other alloys containing these materials must be strictly prevented. All non-metallic seals and gaskets should be fabricated from Teflon® or UHMW polyethylene-based materials.

PACKAGING

- 400ml, 200ml or 50ml dual cartridges
- Pail or drum kit

**ADBOND MK50209LV-2
2 Part Methacrylate****STORAGE AND SHELF LIFE**

Shelf life of adhesive (Part A) is 9 months from day of shipment. Shelf life of activator (Part B), including cartridges that contain activators, is 9 months from day of shipment. Shelf life is based on continuous storage between 55°F and 75°F. (13°C and 24°C) Long term exposure above 75°F (24°C) will reduce the shelf life of these materials. Prolonged exposure of activators, including cartridges which contain activators, above 100°F quickly diminishes the product's reactivity and should be avoided. Shelf life can be extended by refrigeration (45°F - 55°F / 7°C - 13°C). These products should never be frozen.

SAFETY RECOMMENDATIONS

Observe the standard industrial hygiene procedures. Wear protective goggles and gloves. Remove cured adhesive mechanically, never remove with flame. For further information on product safety and handling, refer to the information on the container. If you need additional information, do not hesitate to contact your technical representative. Always test product on your application prior to use. Please refer to SDS (Safety Data Sheet) before use. For Industrial Use Only.

Note: the chemical curing reaction that occurs when components A and B are mixed generates heat. The amount of heat generated is controlled by the mass and thickness of the mixed product. Large masses over ½ inch thick can develop heat more than 250°F (121°C) and can generate harmful, flammable vapors. Large curing masses should be carefully moved to a well-ventilated area where the chance of personal contact is minimized.

**IMPORTANT
READ CAREFULLY**

The information and recommendations contained herein are derived from our research and information from other reliable sources. This data applies only to our products and not when used with other products. We believe in the reliability of our information. However, no guarantee is offered to that effect. It is the responsibility of the buyer to verify this data according to their own operating conditions to ensure that they conform to the purpose for which the product is intended, even before using it.

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