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Product Information

Elan-tech®

PU 8505 A/PU 8505 B

100:112

ADHPU 8505

Rigid thixotropic black polyurethane adhesive

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Structural adhesive	Resin PU 8505 A	Hardener PU 8505 B	Mixing ratio by weight 100:112
Cartridges kit	ADHPU 8505		Mixing ratio by volume 100:100

Application: Structural bonding for rigid, semi rigid plastic substrates. Medium-fast setting time. Suitable for bonding of various substrates as wood, metal, glass, ceramic and natural or artificial stones.

Processing: Dispensing with manual dispenser for two components cartridge complete with static mixer. Before the application on the parts it's recommended a small purge of material from the mixer. The product must be applied directly on the surfaces to bond. It is a tixotropic and non-sagging system, with fast curing. In case of partial use of the cartridge, leave the static mixer in its original position and insert a new one only before the following use.

Manual equipment for dispensing and mixing:

The cartridges are of the twinned type equipped with static mixer to allow optimal mixing. For dispensing we suggest the use of manual or pneumatic dispenser.

Description: Two components, semi-rigid polyurethane with good elongation specifically developed for thermoplastic and thermosetting bonding. Please contact our technical support service for the most suitable equipment for your application. The system is RoHS compliant (European directive 2002/95/EC) and the new RoHS Directive 2011/65/EU (RoHS 2) entered into force on 21 July 2011 and requires Member States to transpose the provisions into their respective national laws by 2 January 2013.

SYSTEM SPECIFICATIONS

Resin

Viscosity at:	25°C	IO-10-50 (ISO3219)	mPas	1.500	3.500
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Hardener

Viscosity at:	25°C	IO-10-50 (ISO3219)	mPas	2.000	4.000
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TYPICAL SYSTEM CHARACTERISTICS

Processing Data

Resin Colour				Black
Hardener Colour				Amber
Mixing ratio by weight		for 100 g resin	g	100:112
Mixing ratio by volume		for 100 ml resin	ml	100:100
Density	25°C Resin	IO-10-51 (ASTM D 1475)	g/ml	1,02 1,06
Density	25°C Hardener	IO-10-51 (ASTM D 1475)	g/ml	1,18 1,22
Pot life	25°C (40mm;100ml)	IO-10-53 (*)	min	4 6
Exothermic peak	25°C (40mm;100ml)	IO-10-53 (*)	°C	60 80
Initial mixture viscosity at:	20°C	IO-10-50 (ISO3219)	mPas	40.000 60.000
Curing time		(*)	h	8
Setting time	25°C 0,1 mm	(*)	min	15
Suggested curing cycles		(**)		+10°C/+40°C

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TYPICAL CURED SYSTEM PROPERTIES

Properties determined on specimens cured: 48h at RT

Density 25°C	IO-10-54 (ASTM D 792)	g/ml	1,10	1,14
Hardness 25°C	IO-10-58 (ASTM D 2240)	Shore D/15	75	85
Glass transition (Tg) 7days at RT	IO-10-69 (ASTM D 3418)	°C	55	60
Water absorption (24h RT)	IO-10-70 (ASTM D 570)	%	0,05	0,10
Water absorption (2h 100°C)	IO-10-70 (ASTM D 570)	%	0,05	0,10
Max recommended operating temperature	(***)	°C	-40°C/+90°C	
Shear strength by tension:				
- ABS cured 48h RT (tested RT)	IO-10-80 (ASTM D 1002)	MPa	6,0	8,0
- PVC cured 48h RT (tested RT)		MPa	6,0	8,0
- Polycarbonate cured 48h RT (tested RT)		MPa	5,0	7,0
- Polyamide cured 48h RT (tested RT)		MPa	3,0	5,0
- SMC cured 48h RT (tested RT)		MPa	9,0	11,0
- Aluminium cured 48h RT (tested RT)		MPa	10,0	12,0
Dielectric constant	IO-10-59 (ASTM D 150)		2,5	3,0
Loss factor	IO-10-59 (ASTM D 150)		10*10 ⁻³	30*10 ⁻³
Volume resistivity	IO-10-60 (ASTM D 257)	Ohm*c	1,0*10 ¹⁵	5*10 ¹⁵
Dielectric strength	IO-10-61 (ASTM D 149)	kV/mm	>	18
Tensile strength	IO-10-63 (ASTM D 638)	MN/m ²	20	25
Elongation at break	IO-10-63 (ASTM D 638)	%	12	18

IO-00-00 = Elantas Italia's test method. The correspondent international method is indicated whenever possible.

nd = not determined na = not applicable RT = TA = laboratory room temperature (23±2°C)

Conversion units: 1 mPas = 1 cPs 1MN/m2 = 10 kg/cm2 = 1 MPa

(*) for larger quantities pot life is shorter and exothermic peak increases

(**) the brackets mean optionality

(***) The maximum operating temperature is given on the basis of laboratory information available being it function of the curing conditions used and of the type of coupled materials. For further possible information see post-curing paragraph.

ADHPU 8505**Instructions:**

The surfaces must be clean and dry. Generally a mechanical abrasion or sanding followed by degreasing with solvent (ex. acetone) is sufficient. For plastics substrates a pre-treatment with ethers or iso-propanol is generally recommended. For polyolefinic substrates (such as PP - PE) or PET substrate a "corona effect" or flaming treatment is highly recommended just before bonding the substrates. Avoid the use of other solvents that can damage the surfaces or react with the adhesive. The reaction speed is affected by the application temperature and the thickness. The reaction is exothermic so the speed of reaction decreases at lower thickness and at lower temperature. The thermal conductivity of the substrate is also important; higher reactivity is observed for insulating materials respect to conductive ones. Apply the adhesive evenly in thickness of 0,2÷5 mm maintaining a uniform contact pressure on the joint. Once applied, the system is moisture and carbon dioxide sensible: avoid to glue substrates with an humidity content higher than 10%.

Curing/Post-curing:

Normally the post-curing is not necessary.

Storage:

The adhesive in cartridges can be stored for 12 months in the original sealed containers in a cool, dry place. Over time the hardener (isocyanate) can increase slightly its viscosity without modifying the final typical properties. In case of storage at temperatures lower than 10°C the isocyanate can crystallize and if this occurs the adhesive will not be dispensed regularly and curing could be irregular. In this case to restore the original conditions, heat the material at for 2-6 hours in an oven at 60°C and, before use, cooled down the product at room temperature. In case of doubts it is advisable to contact our technical service.

Note: pay attention to the instructions given in paragraph 8 of the safety data sheet.

Handling precautions:

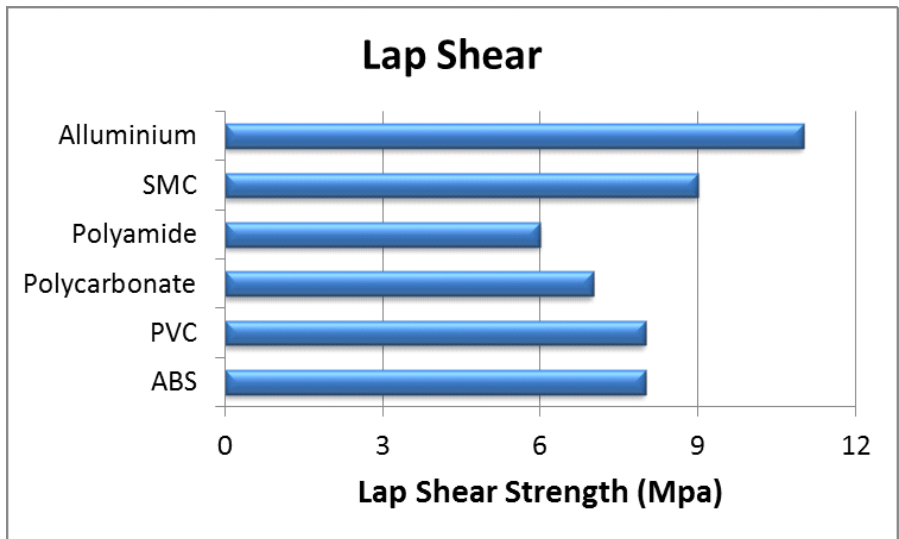
Refer to the safety data sheet and comply with regulations relating to industrial health and waste disposal.

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The information given in this publication is based on the present state of our technical knowledge but buyers and users should make their own assessments of our products under their own application conditions.

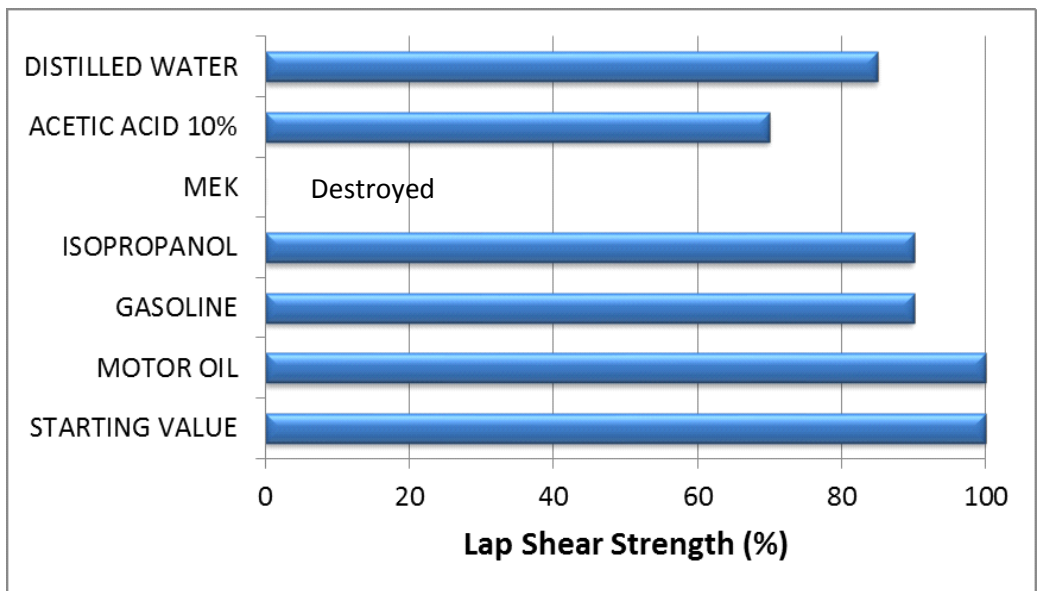
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Typical properties of the material cured 48hrs at rT (ASTM D1002)



- Material tested at room Temperature
- Materials surface were degreased with isopropanol and sanded

Lap shear strength after immersion in different media (ASTM D1002)



- Support: stainless steel
- Curing cycle: 48hrs at room temperature
- The lap shear strength was determined after immersion for 30 days at 23±2 °C.