Ultra K85 MV

LOW-ODOR, LOW-BLOOMING, INSTANT ADHESIVE

TECHNICAL DATA SHEET

September 2024



PRODUCT DESCRIPTION

Born2Bond™ Ultra K85 MV adhesive is low-odor, low-blooming, instant adhesive, specially designed to meet the demands of cutting-edge product designers and manufacturers looking for more durability and increased ease of dispensing. The formulation consistency has been designed for high bond strength, even in places that are subject to flexing. Born2Bond™ Ultra K85 is made from up to 60% bio-based content and has an exceptional resistance to humidity and high temperatures.

KEY FEATURES

- → Fixture time: 15 seconds*
- → High bonding strength
- → Low blooming
- → Less brittle than conventional instant adhesives
- → Bonds a large range of materials**
- → Transparent and easy to use
- → 60% biobased
- → High humidity and water resistance

DIRECTIONS FOR USE

1. Before applying Born2Bond Ultra K85 MV, make sure the surface is clean, dry and grease-free.
2. Apply adhesive to one surface. Do not use items like tissues or a brush to spread the adhesive.
3. Assemble the parts within a few seconds. The parts should be accurately positioned, as the short fixture time leaves little opportunity for adjustment.
4. Bonds should be fixed or clamped until the adhesive has reached fixture.
   - → The product should be allowed to develop to full strength before subjecting it to any service loads (typically 24 to 72 hours after assembly, depending on bond gap, materials and ambient conditions).

APPLICATIONS

Typical applications for this product are MRO, general assembly, toy manufacturing and prototyping, outdoors, medical devices, automotive and consumer electronics.

STORAGE/SHELF LIFE

Optimal storage: 2°C to 8°C (35.6°F to 46.4°F). Storage below 2°C (35.6°F) or greater than 8°C (46.4°F) can adversely affect the product's properties. If stored properly, this product has a shelf life of 12 months from the packaging date.

HEALTH/SAFETY

The Safety Data Sheet is available on the Bostik website and should be consulted for proper handling, cleanup and spill containment before use. Keep containers covered to minimize contamination.

LIMITATIONS

This product is not recommended for use in pure oxygen and/or oxygen-rich systems and should not be selected as a sealant for chlorine or other strong oxidizing materials. Material removed from containers may be contaminated during use. Do not return product to the original container. Bostik will not assume responsibility for product that has been contaminated or stored under conditions other than those previously indicated. If additional information is required, please contact your local Technical Service Center or customer service representative.

*Depending on substrates. **Except polyolefins. Always use glasses and gloves when applying adhesives.

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PRODUCT CHARACTERISTICS

Base tehnology	*n*-Heptyl Cyanoacrylate
Components 1k - 2k	1k
Appearance/Color	Transparent
Temperature Use Range	-40°C to 100°C (-40°F to 212°F)
VOC Content (ISO 11890-2)	63 g/L

UNCURED PHYSICAL PROPERTIES

Viscosity at 25°C (77°F)*	140 - 200 cP
Specific Gravity (ASTM D1875: 23°C / 73.4°F	0.97 g/mL
Refractive Index, ABBE	1.45

*based on Brookfield viscometer: Brookfield, 25 °C, Spindle 52z, 100 rpm

CURED PHYSICAL PROPERTIES

Soft Point - HDT (ASTM E2092-18a)	48.2°C (118.8°F)
Glass Transition Temperature (ISO 6721)	92°C (197.6°F)
Coefficient of Linear Thermal Expansion (ISO 10545-8)	6.53 x 10^{-5}°C^{-1}
Water Absorption (after 24 hrs) (ASTM D570-98)	0.24%
Impact Resistance (after 24 hrs) (ISO 9653)	4.0 kJ/m^2
Corrected Dissipation Factor, Dielectric Constant (ASTM D150-22)	
D @ 1 kHz	0.028
k' @ 1 kHz	2.788
D @ 1 MHz	0.023
k' @ 1 MHz	2.496

CONVERSIONS

(°C x 1.8) + 32 = °F
kV/mm x 25.4 = V/mil
mm / 25.4 = in
µm / 25.4 = mil
N x 0.225 = lb
N/mm x 5.71 = lb/in
N/mm^2 x 145 = psi
MPa x 145 = psi
N·m x 8.851 = lb·in
N·mm x 0.142 = oz·in
mPa·s = cP

FIXTURE TIME

Fixture Time* (0.1N/mm^2)	
Stainless Steel (AISI 316)	50 - 60 seconds
Steel (Mild Steel)	5 - 10 seconds
Aluminum (A5754)	10 - 20 seconds
Copper	30 - 40 seconds
EPDM	15 - 30 seconds
Rubber, nitrile	90 - 120 seconds
ABS	30 - 50 seconds
PVC	15 - 30 seconds
Polycarbonate	60 - 90 seconds
Phenolic	5 - 10 seconds
Wood (Beech)	10 - 30 seconds
Wood (Pine)	30 - 50 seconds
PMMA	90 - 120 seconds
Leather	100 - 140 seconds
PC/ABS	20 - 50 seconds
Paper	10 - 20 seconds
Polystyrene	15 - 30 seconds
TPU	5 20 seconds

*if stored in proper conditions

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BONDING PERFORMANCE

Lap shear strength (ISO 4587) @ 23°C (73.4°F)

(MPa) After 24h Curing at RT

Grit-Blasted Mild Steel (GBMS)	9 - 11
Aluminum (A5754)	6 - 8
ABS	9 - 10
PVC	4 - 5
Phenolic	6 - 8
Polycarbonate	7 - 9
Stainless Steel	9 - 10
Copper	5 - 7
Wood (Beech)	7 - 9
Wood (Pine)	5 - 6
Wood (Oak)	6 - 7
PMMA	4 - 6 SF*
PS	5 - 6
TPU	1 - 1.5 SF*

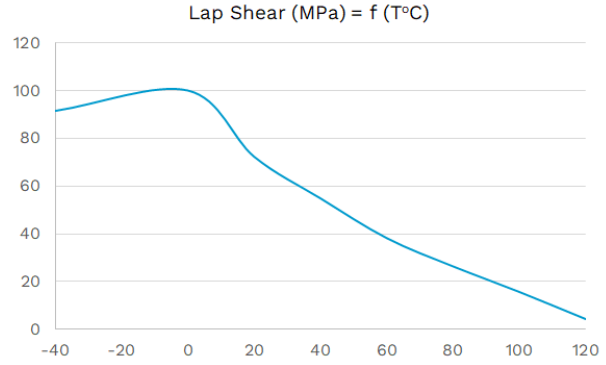
@ 100 mm/min after 24h Curing at RT

Nitrile	0.4 - 0.5 SF*
EPDM	0.5 - 0.7 SF*

*Substrate failure

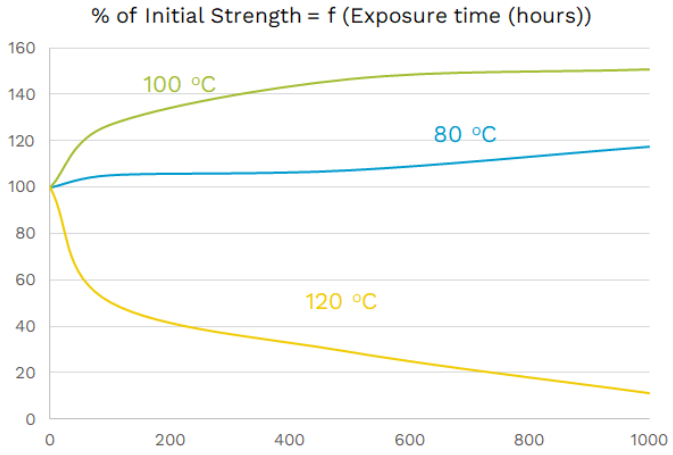
HOT STRENGTH

The graph below shows the adhesive performance on grit-blasted, mild steel (GBMS) at various temperatures. The adhesive was cured for one week at 22°C (71.6°F).The lap shear strength was tested according to ISO 4587. The strength test was performed in a climatic chamber that was set up for 30 minutes before testing at the indicated temperatures.



HEAT AGING

The graph below shows the heat aging results. The adhesive was aged at the temperature indicated, tested at 22°C (71.6°F) and cured for one week. The lap shear strength was tested according to ISO 4587 on grit-blasted, mild steel (GBMS).



CHEMICAL/SOLVENT RESISTANCE

Aged under conditions indicated and tested on GMBS

% of Initial Strength vs. Exposure Time (hours) and vs. Type of Contaminant				
Testing on GMBS		% of Initial Strength		
ENVIRONMENT	TEMP	100 H	500 H	1000 H
Oleic acid	23°C (73.4°F)	98	90	86
Isopropanol	23°C (73.4°F)	83	65	45
Ethanol	23°C (73.4°F)	73	54	32
Water	23°C (73.4°F)	92	87	86
Motor Oil	23°C (73.4°F)	100	100	100

HEAT/HUMIDITY RESISTANCE

Aged under conditions indicated and tested @ 23°C (73,4°F).

% of Initial Strength vs. Exposure Time (hours)			
	% of Initial Strength		
ENVIRONMENT - 85% RH & 85°C (185°F)	250 H	500 H	1000 H
GBMS	86	80	64
ABS	98	97	89

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