Ultra HV

LOW-ODOR, LOW-BLOOMING, INSTANT ADHESIVE

TECHNICAL DATA SHEET

Revised 15/01/2021



PRODUCT DESCRIPTION

Born2Bond™ Ultra HV adhesives are low-odor, low-blooming, instant adhesives with a range of viscosities, specially designed for bonding most substrates including plastics and rubbers. The formulation consistency has been designed for high bond strength, even in places that are subject to flexing. Careful selection of the formulation ingredients ensures that the product does not stain areas close to the adhesive joint.

KEY FEATURES

- → Fixture time : 10 seconds*
- → High bonding strength
- → Long open time
- → Low blooming
- → Less brittle than conventional instant adhesives
- → Bonds a large range of materials**, including polystyrene
- → Transparent and easy to use

DIRECTIONS FOR USE

1. Before applying Born2Bond Ultra HV, 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 leather and rubber bonding, shoe assembly, automotive aftermarket applications, speaker assembly, and car wheel bonding.

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 Technology	Methoxyethyl Cyanoacrylate
Components 1k - 2k	1k
Appearance/Color	Transparent
Temperature Use Range	-40°C to 80°C (-40°F to 176°F)
VOC Content (ISO 11890-2)	42 g/L

UNCURED PHYSICAL PROPERTIES

Viscosity at 25°C (77°F)*	700 - 1,000 cP
Specific Gravity (ASTM D1875: 23°C / 73.4°F)	1.12 g/mL
Refractive Index, ABBE	1.47 - 1.48

*based on Brookfield viscometer

CURED PHYSICAL PROPERTIES

Soft Point - HDT (ASTM E2092-18a)	56°C (132.8°F)
Glass Transition Temperature (ISO 6721)	79°C (174.2°F)
Coefficient of Linear Thermal Expansion (ISO 10545-8)	30×10^{-6}
Water Absorption (after 24 hrs) (ASTM D542)	2.3%
Impact Resistance (after 24 hrs) (ISO 9653)	9.0 kJ/m²
Electrical Properties of Resistivity IEC 60093	
Surface resistivity DC 500 V (Ohm)	$2.9 \cdot 10^{14}$
Volume resistivity DC 1kV (Ohm.m)	$7.5 \cdot 10^{13}$
Corrected Dissipation Factor, Dielectric Constant IEC 60250	
D @ 1 kHz	0.0222
k' @ 1 kHz	3.22
D @ 1 MHz	0.0168
k' @ 1 MHz	3.04
DC breakdown voltage according to IEC 60243-2	67.3 kV/mm

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
$N/mm^2 \times 145$ = 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/mm²)	
Stainless Steel (A316)	15 - 25 seconds
Steel (Mild Steel)	5 - 15 seconds
Aluminum (A5754)	10 - 20 seconds
Neoprene	5 - 15 seconds
EPDM	5 - 15 seconds
Rubber, nitrile	10 - 20 seconds
ABS	10 - 30 seconds
PVC	10 - 40 seconds
Polycarbonate	25 - 50 seconds
Phenolic	40 - 60 seconds
Wood (Oak)	50 - 80 seconds
Wood (Pine)	5 - 20 seconds
Chipboard	10 - 15 seconds
Leather	5 - 10 seconds
PC/ABS	25 - 50 seconds
Paper	5 - 10 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)	11	+/- 1	
Aluminum (A5754)	4	+/- 1	
ABS	6	+/- 1	SF*
PVC	8	+/- 1	SF*
Phenolic	5	+/- 2	
Polycarbonate	4	+/- 1	SF*

@ 100mm/min after 24h Curing at RT

Nitrile	0.5	+/- 0.1	SF*
Neoprene	0.3	+/- 0.1	SF*

*Substrate failure

After 1 Week Curing at RT

Grit-Blasted Mild Steel (GBMS)	15	+/- 1	

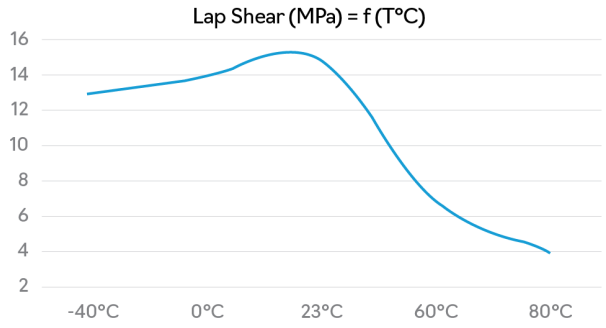
T-Peel Strength @ 23°C (73.4°F) (N/mm)

@100mm/min after 1 week curing @ RT

EPDM	2.0	+/- 0.4	SF

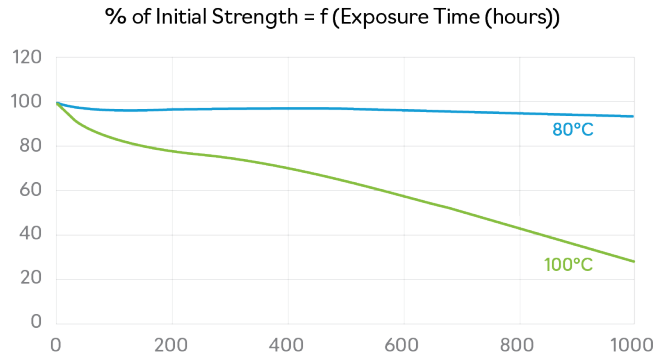
HOT STRENGTH

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 Polycarbonate		% of Initial Strength		
ENVIRONMENT	TEMP	100 H	500 H	1000 H
Motor Oil	40°C (104°F)	95	100	115
Water	23°C (73.4°F)	79	56	51

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 - 95% RH & 40°C (104°F)	100 H	500 H	1000 H
GBMS	62	37	0
Polycarbonate	99	77	78

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