



# Aquafast

## MOISTURE RESISTANT INSTANT ADHESIVE

**TECHNICAL DATA SHEET** 

**APRIL 2022** 



## PRODUCT DESCRIPTION

**Born2Bond™** Aquafast is a low-medium viscosity instant adhesive which proivdes high adhesion performance even in high humidity environment. The product has good bonding properties to a very broad range of materials such as metals (including aluminum), plastics and rubbers.

# **KEY FEATURES**

- → Fixture time: 15 seconds\*
- → High resistance to moisture.
- → Service temperature: -40 up to 120 °C
- → Excellent adhesion to metals
- → Exceptional resistance to most solvents and oils
- → Bonds a large range of materials\*\*
- → Transparent and easy to use

## **DIRECTIONS FOR USE**

- 1. Before applying Born2Bond Aquafast 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**

Substrate bonding that are subject to high humidity conditions, such us the applications that require cataplasma test.

## 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.





# **PRODUCT CHARACTERISTICS**

Base Technology	Ethyl Cyanoacrylate
Components 1k - 2k	1k
Appearance/Color	Transparent, colorless to straw colored gel
Temperature Use Range	-40°C to 120°C (-40°F to 248°F)
VOC Content (ISO 11890-2)	41 g/L

# **UNCURED PHYSICAL PROPERTIES**

Viscosity at 25°C (77°F)*	90-150 cP
Specific Gravity (ASTM D1875: 23°C / 73.4°F)	1.07 g/mL
Refractive Index, ABBE	1.45 - 1.46

<sup>\*</sup>based on Brookfield viscometer

# **CURED PHYSICAL PROPERTIES**

Soft Point - HDT (ASTM E2092-18a)	56°C (132.8°F)
Glass Transition Temperature (ISO 6721)	115 °C (239°F)
Coefficient of Linear Thermal Expansion (ISO 10545-8)	79 x 10 <sup>-6</sup>
Water Absorption (after 24 hrs) (ASTM D542)	0.8%
Impact Resistance (after 24 hrs) (ISO 9653)	12.6 kJ/m <sup>2</sup>
Electrical Properties of Resistivity Surface resistivity DC 500 V (Ohm) Volume resistivity DC 1kV (Ohm.m)	<b>IEC 60093</b> 1.7·10 <sup>15</sup> 1.2·10 <sup>14</sup>
Corrected Dissipation Factor, Diele D @ 1 kHz k' @ 1 kHz D @ 1 MHz	0.029 2.63
k' @ 1 MHz	0.018 2.35

## **CONVERSIONS**

$(^{\circ}C \times 1.8) + 32 = ^{\circ}F$
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/mm² x 145 = psi
MPa x 145 = psi
N·m x 8.851 = Ib·in
N·mm x 0.142 = oz·in
mPa·s = cP

## **FIXTURE TIME**

#### Fixture Time\* (0.1N/mm²)

Stainless Steel (A316)	10- 25 seconds
Steel (Mild Steel)	15 - 60 seconds
Aluminum (A5754)	15 - 25 seconds
Paper	5 - 10 seconds
EPDM	5 - 20 seconds
Rubber, nitrile	20 - 60 seconds
ABS	10 - 60 seconds
PVC	30- 70 seconds
Polycarbonate	20 - 70 seconds
Phenolic	20 - 60 seconds
PC/ABS	20 - 70 seconds
Wood (Pine)	40- 90 seconds
Chipboard	20 - 50 seconds
Leather	30- 80 seconds

<sup>\*</sup>if stored in proper conditions



## **BONDING PERFORMANCE**

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

#### After 24h Curing at RT

Grit-Blasted Mild Steel (GBMS)	18	+/- 1	
Aluminum (A5754)	13	+/- 1	
ABS	6	+/- 1	SF*
PVC	7	+/- 1	SF*
Phenolic	11	+/- 1	SF*
Polycarbonate	3	+/- 1	SF*

#### @ 100mm/min after 24h Curing at RT

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

<sup>\*</sup>Substrate failure

#### After 1 Week Curing at RT

Grit-Blasted Mild Steel (GBMS) 20 +/- 2

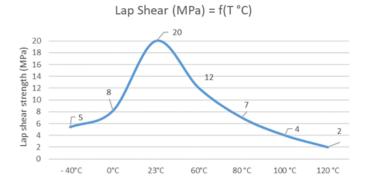
#### T-Peel Strength (ISO 11339) @ 23°C (73.4°F) (N/mm) @100mm/min

#### After 24 h curing @ RT

Mild steel	1.1	+/- 0.1

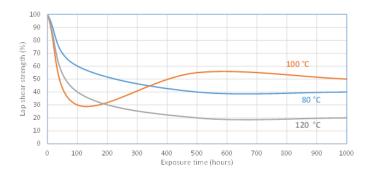
### **HOT STRENGTH**

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 @ 23°C (73,4°F).

% of Initial Strength vs. Exposure Time (hours) and vs. Type of Contaminant				
Testing on Grit-Blasted Mild Steel % of Initial Strength				
ENVIRONMENT	TEMP	100 H 500 H 1000		
Motor Oil	40°C (104°F)	70	70	55
Ethanol	23°C (73.4°F)	85	90	80
Gasoline	23°C (73.4°F)	80	95	75
IPA	23°C (73.4°F)	90	100	90
Water	60°C (140°F)	90	90	75

Testing on Aluminum - ABS		% of	Initial Str	ength
ENVIRONMENT TEMP		100 H	500 H	1000 H
Water	60°C (140°F)	85	85	85

# **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)	100 H	500 H	1000 H	
GBMS	70	70	20	
Aluminum A5754 35 40 35				





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	130	125	125		
Polycarbonate 110 120 150					

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