

# Ultra K85 MV

**LOW-ODOR, LOW-BLOOMING, INSTANT ADHESIVE**

TECHNICAL DATA SHEET

September 2024



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.

## 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.

## PRODUCT CHARACTERISTICS

|                           |                                 |
|---------------------------|---------------------------------|
| Base technology           | <i>n</i> -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<br>(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<br>Temperature (ISO 6721)                              | 92°C (197.6°F)                       |
| Coefficient of Linear Thermal<br>Expansion (ISO 10545-8)                | $6.53 \times 10^{-5} \text{°C}^{-1}$ |
| Water Absorption (after 24 hrs)<br>(ASTM D570-98)                       | 0.24%                                |
| Impact Resistance (after 24 hrs)<br>(ISO 9653)                          | 4.0 kJ/m <sup>2</sup>                |
| <b>Corrected Dissipation Factor, Dielectric Constant (ASTM D150-22)</b> |                                      |
| D @ 1 kHz                                                               | 0.028                                |
| k' @ 1 kHz                                                              | 2.788                                |
| D @ 1 MHz                                                               | 0.023                                |
| k' @ 1 MHz                                                              | 2.496                                |

## CONVERSIONS

|                                                                 |
|-----------------------------------------------------------------|
| $(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$         |
| $\text{kV/mm} \times 25.4 = \text{V/mil}$                       |
| $\text{mm} / 25.4 = \text{in}$                                  |
| $\mu\text{m} / 25.4 = \text{mil}$                               |
| $\text{N} \times 0.225 = \text{lb}$                             |
| $\text{N/mm} \times 5.71 = \text{lb/in}$                        |
| $\text{N/mm}^2 \times 145 = \text{psi}$                         |
| $\text{MPa} \times 145 = \text{psi}$                            |
| $\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$  |
| $\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$ |
| $\text{mPa}\cdot\text{s} = \text{cP}$                           |

## FIXTURE TIME

### Fixture Time\* (0.1N/mm<sup>2</sup>)

|                            |                   |
|----------------------------|-------------------|
| 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

## 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* |

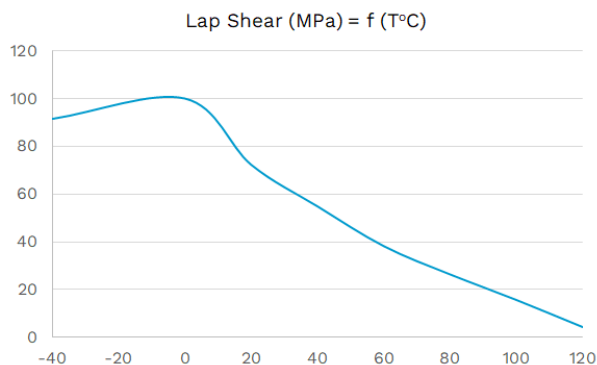
### @ 100 mm/min after 24h Curing at RT

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

\*Substrate failure

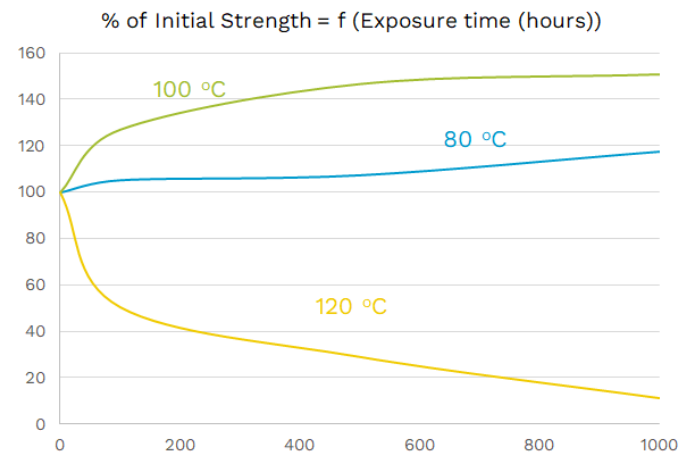
## HOT STRENGTH

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 GBMS

| Testing on GBMS |               | % 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     |

## **PRODUCT DISCLAIMER**

Bostik offers this Technical Data Sheet ("TDS") for descriptive and informational use only. It is not a warranty, a contract or a substitute for expert or professional advice. Please also see the local product Safety Data Sheet for health and safety considerations.

The statements, technical information, data, and recommendations contained in this TDS are provided 'AS IS' and are not warranted or guaranteed in any way. They represent typical results for the products and are based on Bostik's research only. Since the conditions and methods of use of the products are beyond our control, Bostik expressly disclaims any and all liability and damages of whatever kind or nature that may arise from any use of the products, the results therefrom, or reliance on the information contain herein.

This TDS is one of several tools that may be used to help you find the product best suited for your needs. It is used at your own risk, and by using it, you are knowingly accepting and assuming any and all risks associated with its use and recommendations. BUYERS AND USERS ASSUME ALL RESPONSIBILITY AND LIABILITY FOR ANY AND ALL LOSS OR DAMAGE OF WHATEVER KIND OR NATURE ARISING FROM OR RELATED TO THE HANDLING OR USE OF BOSTIK'S PRODUCTS. The performance of the product, its shelf life, and application characteristics will depend on many variables, including but not limited to the kind of materials to which the product will be applied, the environment in which the product is stored and/or applied,

and the equipment used for application, among other things. Any change in any of these variables can affect the product's performance. You are responsible to test the suitability of any product in advance for any intended use or application. Bostik does not guarantee the reliability, completeness, use, or function of the statements, technical information, data, and recommendations contained in this TDS. Nothing contained herein constitutes a license to practice under any patent, and it should not be construed as an inducement to infringe any patent. You are advised to take appropriate steps to be sure that any proposed use of the products will not result in patent infringement.

The information provided herein relates only to the specific products designated and may not be applicable when such products are used in combination with other materials or in any process. The product is sold pursuant to a supply agreement and/or Bostik's Terms and Conditions of Sale, which set forth the sole warranty, if any, that applies to the product. NO OTHER WARRANTY, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE OR WARRANTY OF MERCHANTABILITY, IS MADE CONCERNING THE PRODUCTS DESCRIBED OR THE INFORMATION PROVIDED HEREIN, AND TO THE MAXIMUM EXTENT ALLOWED BY LAW, SUCH WARRANTIES ARE HEREBY DISCLAIMED. BOSTIK DISCLAIMS ANY LIABILITY FOR DIRECT, INCIDENTAL, CONSEQUENTIAL, OR SPECIAL DAMAGES TO THE MAXIMUM EXTENT ALLOWED BY LAW.