

# Bylamet 3G\_RB

## Description

Bylamet 3G\_RB is part of a family of 3rd generation cyanoacrylate adhesives produced by a new manufacturing process. With Bylamet 3G\_RB the most different plastics, metals and rubber types can be bond. It is reinforced with rubber which increases flexibility, peel strength and impact resistance. An extremely rapid polymerization takes place by the presence of atmospheric moisture.

|                          |                                               |
|--------------------------|-----------------------------------------------|
| Base                     | 2-Methoxyethyl-2-Cyanoacrylat                 |
| Appearance:              | Transparent, colourless to slightly yellowish |
| Specific Gravity [g/ml]: | 1,1                                           |
| Viscosity [mPas]:        | 250 ~ 500                                     |
| Temperature range [°C]:  | -54 ~ +100                                    |
| Full Cure [h]:           | 24                                            |
| Shelf Life:              | 6 months                                      |

## Cure Speed

The cure rate depends on the materials used. Acid surfaces such as paper and leather need longer times than most plastics and rubbers. Some plastics such as PE, PP, PTFE or silicone rubber require the use of primers.

The table below shows the initial strengths of various materials at 25 ° C and 50% RH. It is defined as the time after which 0.12 N / mm<sup>2</sup> has been reached.

| Substrate  | Time [sec] |
|------------|------------|
| Steel      | < 5        |
| Aluminium  | < 5        |
| ABS        | < 5        |
| PVC        | 10 ~ 20    |
| PC         | 10 ~ 15    |
| Oak Wood   | 10 ~ 20    |
| Pine Wood  | 15 ~ 30    |
| Beech Wood | 15 ~ 45    |
| NBR        | 10 ~ 15    |
| Paper      | < 5        |

# Bylamet 3G\_IRIB

## Cure Speed vs. Bond Gap

The curing rate depends on the distance of the substrates to be bonded. The thinner the adhesive film, the faster the polymerization and strength. Larger gaps ensure a longer curing time and lower strength. The activator *Bylaspeed* can be used to shorten the cure time, but be careful: The strength may suffer.

## Cure Speed vs. Activator

The activator can be used in conjunction with Bylamet to increase the rate of cure. Curing rates of less than two seconds have been observed. The use of an activator can reduce the final strength. For critical strengths, this effect should be checked by measurements. Apply activator on one side, adhesive on the other.

## Lap Shear Strength

Cured for 72 hours at 25°C

| Substrate | Strength [N/mm <sup>2</sup> ] |
|-----------|-------------------------------|
| Steel     | 25,0                          |
| Aluminium | 6,7                           |
| ABS       | 8,5 †                         |
| PVC       | 8,4 †                         |
| PC        | 8,9 †                         |
| NBR       | 0,7 †                         |

† substrate failure

## Block Tensile Strength

Cured for 72 hours at 25°C

| Substrate       | Strength [N/mm <sup>2</sup> ] |
|-----------------|-------------------------------|
| Stainless Steel | 38,5                          |

## Side Impact Strength

Cured for 72 hours at 25°C

| Substrate       | Strength [kJ/m <sup>2</sup> ] |
|-----------------|-------------------------------|
| Stainless Steel | 9,5 ~ 14,3                    |
| Aluminium       | 7,6 ~ 11,4                    |

# Bylamet 3G\_RB

## Physical Properties

Cured for 24 hours at 25°C

|                                     |                     |         |
|-------------------------------------|---------------------|---------|
| Coefficient of Thermal Expansion    | $90 \times 10^{-6}$ | mm/mm/K |
| Coefficient of Thermal Conductivity | 0,1                 | W/mK    |
| Glass Transition Temperature        | 150                 | °C      |
| Hardness                            | 75                  | Shore D |

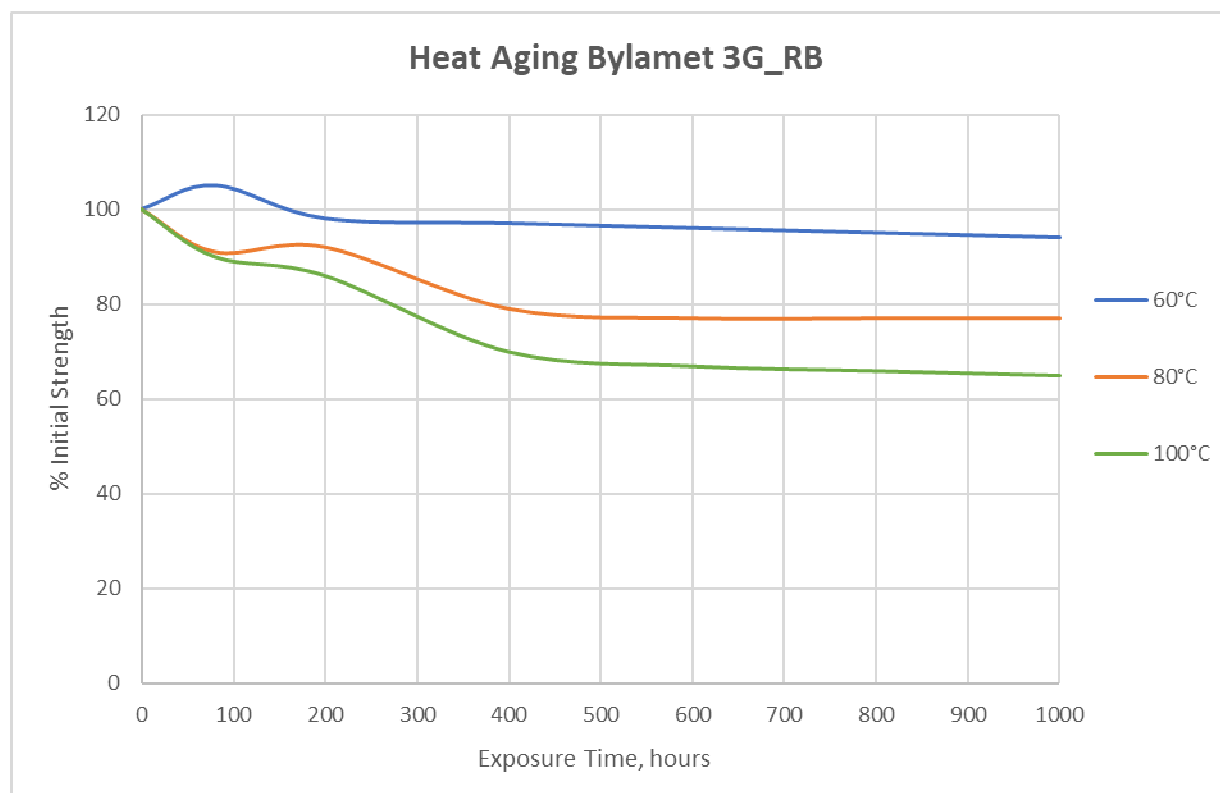
## Elektrical Properties

Cured for 24 hours at 25°C

|                               |                           |                   |
|-------------------------------|---------------------------|-------------------|
| Dielectric Constant           | 2,5                       | @10 kHz           |
| Dielectric Breakdown Strength | 25                        | kV/mm             |
| Surface Resistivity           | $5 \sim 9 \times 10^{15}$ | $\Omega$          |
| Volume Resistivity            | $5 \sim 9 \times 10^{15}$ | $\Omega\text{cm}$ |
| Dielectric Dissipation Factor | < 0,025                   | @ 10 kHz          |

## Heat Resistance

Cured for 1 week at 25°C, Lap Shear Strength, Steel/Steel



-4-

# Bylamet 3G\_IRIB

## Chemical/Solvent Resistance

Lap Shear Strength, Steel/Steel

| Environment        | Temperature [°C] | % of initial strength |         |          |
|--------------------|------------------|-----------------------|---------|----------|
|                    |                  | 100 [h]               | 500 [h] | 1000 [h] |
| Water              | 25               | 90                    | 85      | 75       |
| Ethanol            | 25               | 96                    | 90      | 89       |
| Isopropanol        | 25               | 102                   | 103     | 105      |
| Water/Glycol       | 25               | 101                   | 98      | 97       |
| Unleaded Gasoline  | 25               | 95                    | 96      | 98       |
| Motor Oil          | 25               | 102                   | 95      | 97       |
| 98 % rel. Humidity | 40               | 90                    | 76      | 70       |

Lap Shear Strength, PC/PC

| Environment        | Temperature [°C] | % of initial strength |         |          |
|--------------------|------------------|-----------------------|---------|----------|
|                    |                  | 100 [h]               | 500 [h] | 1000 [h] |
| Air                | 25               | 102 †                 | 97 †    | 98 †     |
| 98 % rel. Humidity | 40               | 97 †                  | 91 †    | 84       |

† substrate failure

## General Information

### Additional Information

This product is not recommended for use in continuous contact with strong oxidizing materials and polar solvents, although it resists solvent washing without any deterioration in adhesive strength. Users should be advised that all materials, whether harmless or not, should be treated according to the principles of good work hygiene. Complete information can be found in the safety data sheet (SDS).

### Directions for Use:

- Ensure that the surfaces to be bonded are clean, dry and free from grease before the adhesive is applied.
- Apply only one drop or drops to one surface.
- Bring the parts to be bonded together quickly and correctly.
- Apply sufficient pressure to ensure the adhesive spreads in a thin film.
- Do not disturb or re-align until sufficient strength is achieved, usually within a few seconds.
- Excess adhesive can be removed with solvents such as *Bylasolv*.

-5-

# Bylamet 3G\_IRIB

- Because Bylamet condenses through polymerization, blooming may occur on the surface of the container or the bonded materials. If this happens, wipe the surface well with *Bylasolv*.
- The product should have full strength before being exposed to stress (usually 24 to 72 hours after assembly, depending on bond gap, materials and environmental conditions).

## Storage:

Keep in a cool place away from direct sunlight. Cooling to 5 ° C ensures optimal storage stability. Allow the adhesive to warm slowly to room temperature before use when stored in the refrigerator. This prevents condensation in the bottle, which reduces the shelf life. Containers should be tightly closed when not in use. Product taken from containers may be contaminated during use, so do not throw product back into the original container. Improper use of the product invalidates all warranties. The shelf life is 6 months from the date of manufacture.

## Precautions:

- Use with good ventilation. Avoid contact with skin and eyes.
- If skin contact occurs, rinse with warm water or gradually dissolve with a solvent such as *Bylasolv*. Do not try to forcibly remove.
- If adhesive gets in eye, keep eye open and rinse thoroughly. Seek medical advice immediately.
- Keep out of the reach of children.
- Store the adhesive in a cool, dry place away from direct sunlight. For long-term storage, cooling of 5°C is recommended.
- Allow the adhesive to reach room temperature before opening the bottle after removed from a refrigerator to avoid condensation in the bottle, which shortens the shelf life of the bottle contents.

Above stated instructions are indicative only and no responsibility can be assumed. We recommend to check suitability of our products for your purpose by doing tests on your own.