Bylamet 3G_EL

Description

Bylamet 3G_EL is part of a family of 3rd generation cyanoacrylate adhesives. The main features briefly in keywords:

- New manufacturing process
- Low blooming
- Extremely low odor
- No solvents
- Resistant to most types of environmental conditions, moderate heat, aging, various chemicals
- Greatest possible flexibility
- Excellent sealing properties
- High strength and fatigue resistance
- Fast curing by humidity
- Especially suitable for mounting a large number of plastics, metals and rubbers
- One component

Base	2-Methoxyethyl-2-Cyanoacrylat (Hybrid)
Appearance:	Transparent, colourless to slightly yellowish
Specific Gravity [g/ml]:	1,1
Viscosity [mPas]:	30 ~ 70
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 / mm² has been reached.

Subtrate	**Time [sec]**
Steel	< 5
Aluminium	< 5
ABS	< 5
PVC	5 ~ 10
PC	10 ~ 15
Oak Wood	10 ~ 20
Pine Wood	10 ~ 20
Beech Wood	20 ~ 30
NBR	10 ~ 15
Paper	< 5

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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

Subtrate	Strength [N/mm²]
Steel	25,2
Aluminium	6,3
ABS	8,4 †
PVC	8,1 †
PC	8,9 †
NBR	0,7 †

† substrate failure

Block Tensile Strength

Cured for 72 hours at 25°C

Subtrate	Strength [N/mm²]
Stainless Steel	31,3

Side Impact Strength

Cured for 72 hours at 25°C

Subtrate	Strength [kJ/m²]
Stainless Steel	3 ~ 5
Aluminium	3 ~ 5

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Physical Properties

Cured for 24 hours at 25°C

Coefficient of Thermal Expansion	90 x 10^{-6}	mm/mm/K
Coefficient of Thermal Conductivity	0,1	W/mK
Glass Trasition Temperature	150	°C
Hardness	55	Shore D

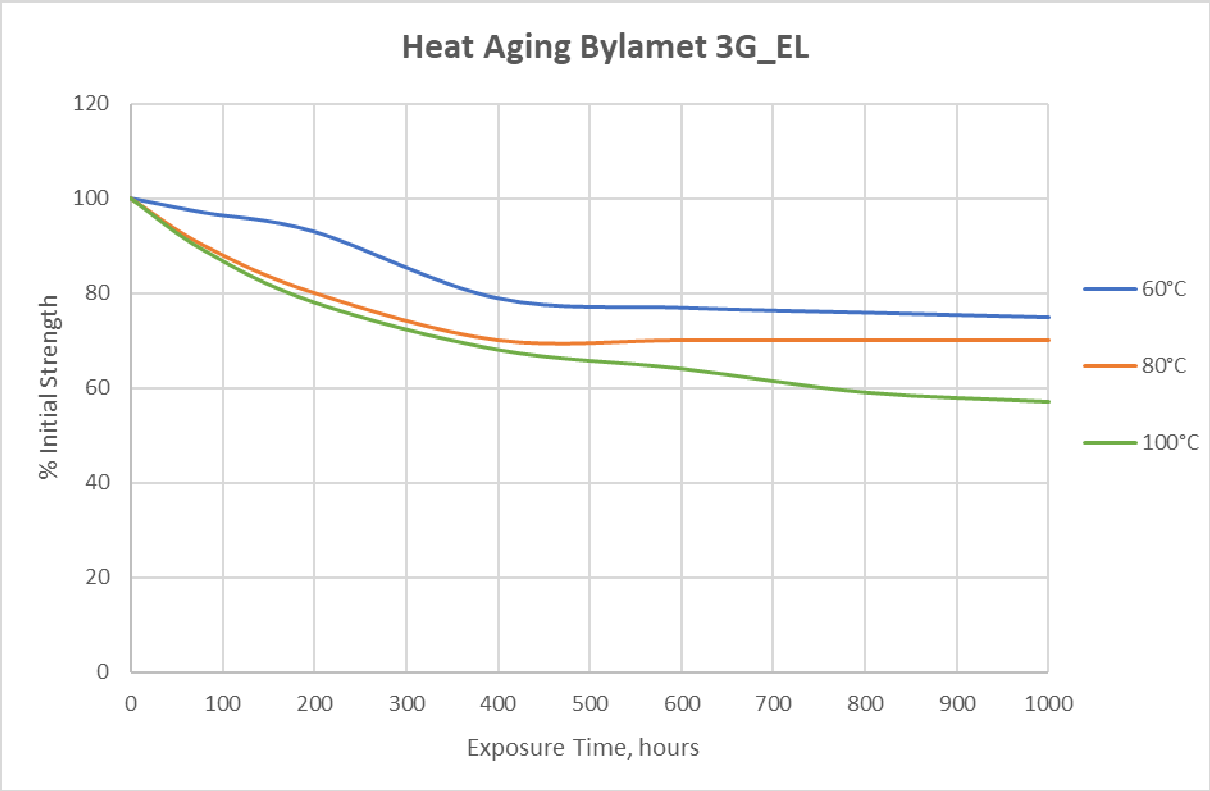
Elektrical Properties

Cured for 24 hours at 25°C

Dielectric Constant	2,5	@10 kHz
Dielectric Breakdown Strength	25	kV/mm
Suface Resistivity	5 ~ 9 x 10^{15}	Ω
Volume Resistivity	5 ~ 9 x 10^{15}	Ωcm
Dielectric Dissipation Factor	< 0,025	@ 10 kHz

Heat Resistance

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



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Chemical/Solvent Resistance

Lap Shear Strength, Steel/Steel

		% of initial strength		
Environment	**Temperature [°C]**	**100 [h]**	**500 [h]**	**1000 [h]**
Water	25	85	83	73
Ethanol	25	80	65	40
Isopropanol	25	85	80	75
Water/Glycol	25	107	97	98
Unleaded Gasoline	25	96	97	95
Motor Oil	25	98	81	75
98 % rel. Humidity	40	89	79	70

Lap Shear Strength, PC/PC

		% of initial strength		
Environment	**Temperature [°C]**	**100 [h]**	**500 [h]**	**1000 [h]**
Air	25	95 †	96 †	99 †
98 % rel. Humidity	40	96 †	91 †	85

† 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*.

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- 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.

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