LOXEAL®
ENGINEERING ADHESIVES
Registered Quality and Environment Management System Company
UNI EN ISO 9001 - UNI EN ISO 14001

Technical Data Sheet

LOXEAL 83-03

Description

Fast curing high strength anaerobic adhesive for locking and sealing threads and retaining of cylindrical components.
Highly resistant to heat, corrosion, vibrations, water, gases, oils, hydrocarbons, and many chemicals.
Approved for Gas (Gaz de France).

Typical physical properties

Composition:	anaerobic methacrylate
Colour:	green
Viscosity (+25°C - mPa s):	1000
Specific weight (+25°C - g/ml):	1,1
Fluorescence:	under blue light
Max diameter of thread/ gap filling:	M 20 / ¾" / 0,20 mm
Shelf life @+25°C:	1 year in unopened packaging*

*For packaging up to 500ml.

Typical curing performance

The rate of cure depends on the substrate used, on the gap and on the temperature.
Time curing properties are measured on our standard samples at 25°C:

Bolts M10 x 20 Zn - quality 8.8 - nut h = 0,8 d:

Handling time:	3 minutes
Functional cure time:	2 hours
Full cure time:	5 hours

Standard 1/2" threaded connections.
Handling time:

- Steel:	2 minutes
- Brass (OT 58):	< 1 minutes
- Nickel plated brass:	5 minutes

Typical Curing properties after 24h at +25°C

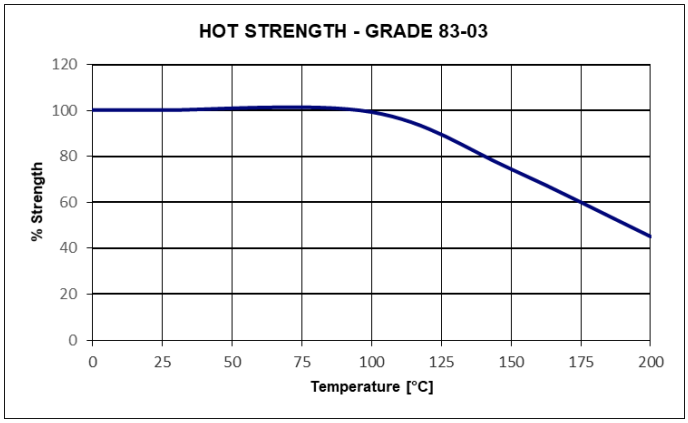
Bolts M10 x 20 Zn - quality 8.8 - nut h = 0,8 d at 25°C:

Breakaway locking torque (ISO 10964):	40 Nm
Prevailing locking torque (ISO 10964):	60 Nm
Shear strength (ISO 10123) N/mm²:	30
Impact strength (ASTM D 950) kJ/m²:	10
Temperature range:	-55°C/+200°C

Environmental resistance

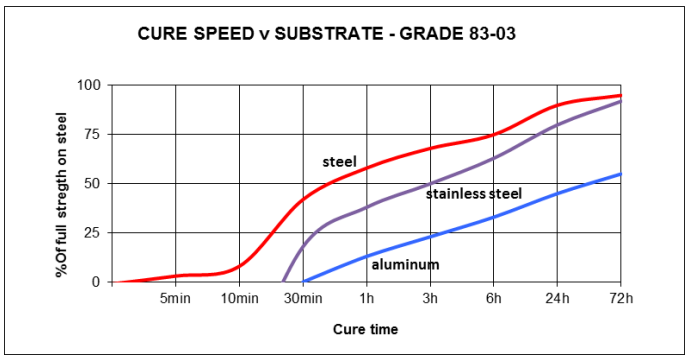
Hot strength

The graph below shows the mechanical strength vs. temperature.
Specimens – steel pin/collars tested in accordance with ISO 10123.



Cure speed vs substrate

The graph hereunder shows the breakaway strength development of the product (with time) on steel pin/collars tested in accordance with ISO 10123 at +25°C.



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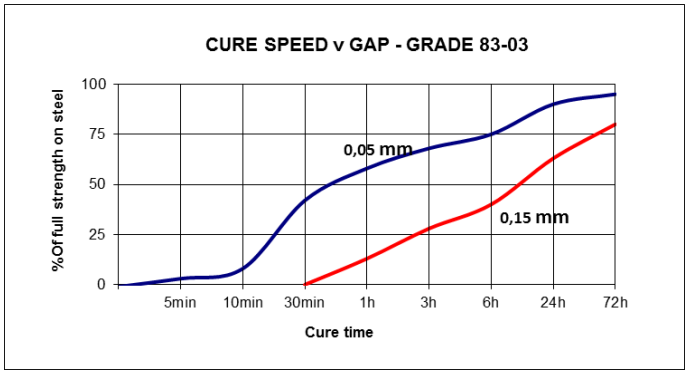
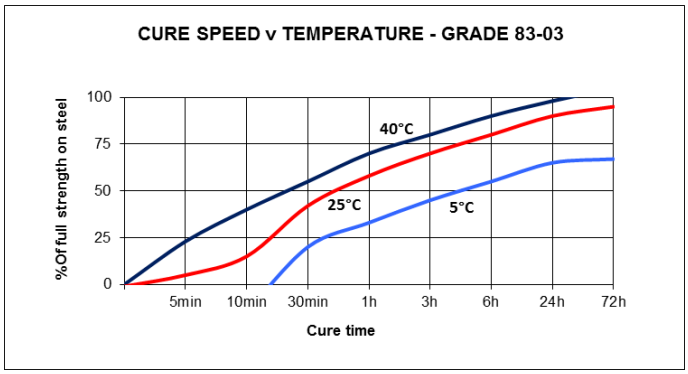
Cure speed vs gap

The graph below shows the product shear strength (as %) at different increasing controlled gaps.
Specimens - Steel pins/collars, tested in accordance with ISO 10123 at + 25°C.



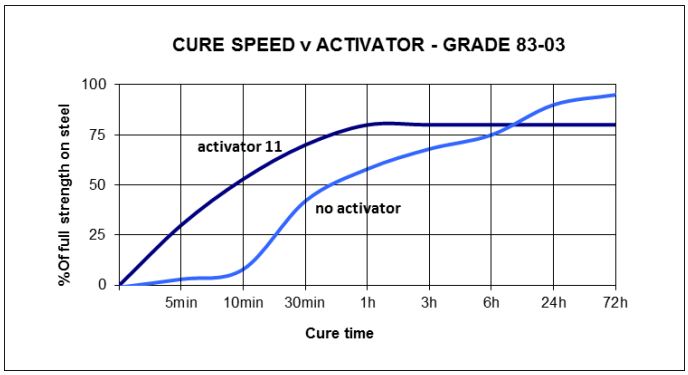
Cure Speed vs Temperature

The following graph shows the breakaway strength of the product (as %) at different temperatures.
Specimens – steel pin/collars tested in accordance with ISO 10123.



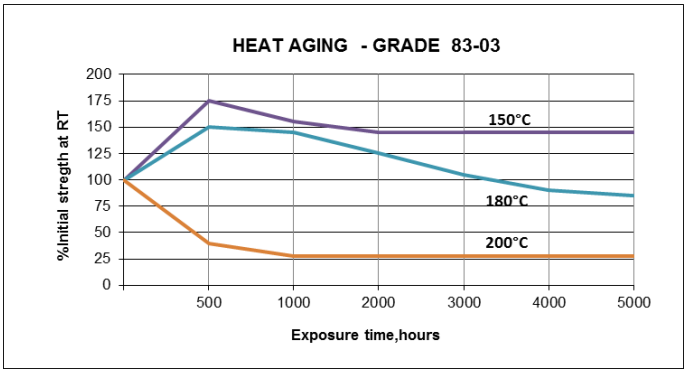
Cure Speed vs Activator

Polymerization could be slowed down by substrate nature, large gaps; cure speed can be improved by applying appropriate activator to the substrate(s).
The following graph shows the breakaway strength of the product (as %) and the cure speed developments using our activator 11, compared to the ones with no activator.
Specimens – steel pin/collars tested in accordance with ISO 10123.



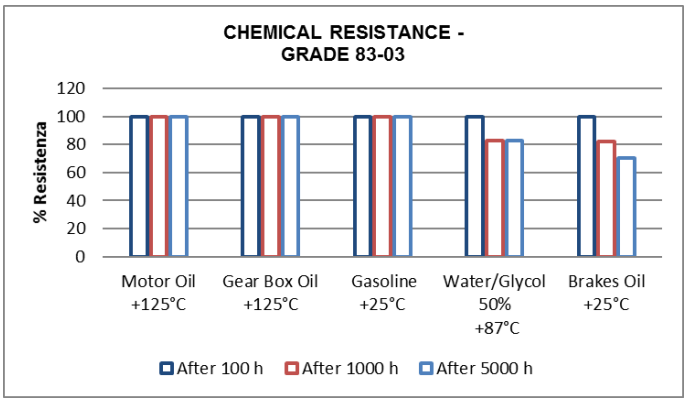
Heat ageing

The graph below shows the strength resistance behavior as a function of temperature/time.
Specimens – steel pin/collars tested in accordance with ISO 10123.



Chemical resistance

Aged under conditions below after 24 hours from polymerisation at indicated temperature.



* For information on resistance with other chemicals, contact Loxeal Technical Service

Warnings

This adhesive is not approved for usage with neither pure nor with gaseous oxygen.
It is not suitable for applications on plastics.
The liquid product may damage paints and elastomers. If the product gets in contact, even accidentally, with some thermoplastics, stress cracking of the plastics could happen.

Safety, handling and disposal

Consult Material Safety Data Sheet before use.

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Directions for use

- **Surface preparation**

For best results, we recommend cleaning the surfaces with the spray Loxeal Cleaner 10 and letting dry.

- **Application and assembly**

In order to speed up the polymerization use Loxeal Activator 11 or 18. They are suggested in case of inactive or passive materials/coatings and low temperature.
In case of shrink fit:
• Heat the female component and apply the adhesive on the male component.
• Cold the male component and apply the adhesive on the female component.
In case of forced press fit: dose the adhesive on both the male and the female components.
In case of slip fits: dose the adhesive on the female surface and on the first part of the male, assembly the parts turning them slightly to spread homogeneously the adhesive on the whole surface.
When used as a sealant: apply a bead of product along the entire circumference of the male, between the first and the second thread and seal the joints with the usual tightening torque.
Remove the excess of the uncured adhesives. The curing rate depends on the gap, the material and the temperature. Do not move the parts until the product is cured. The full strength is achieved after minimum 24 hours of polymerization.

- **Disassembly and cleaning**

For disassembly, heat pieces at +150°C/+250°C and disassemble while hot. Remove any residue of cured product mechanically and clean parts with Acetone.

Storage

Keep product in a cool and dry room at no more than +25°C. To avoid contaminations do not refill containers with used product. For further information on applications, storage and handling contact Loxeal Technical Service

Note

The data contained herein, obtained in Loxeal laboratories, are given for information only; if specifics are required, please contact Loxeal Technical Department.
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