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

Technical Data Sheet

LOXEAL 53-14

Description

Medium strength anaerobic adhesive for sealing hydraulic and pneumatic threads connectors up to ¾" and small pipes.
To replace P.T.F.E. tapes in the sealing of gases, water, LPG, hydrocarbons, oils and other chemicals.
Approved for Gas according to European norm EN 751-1 (DIN-DVGW NG-5146AU0038).
Highly resistant to heat, corrosion, shocks and vibrations.

Physical properties

Composition:	anaerobic methacrylate
Colour:	brown
Viscosity (+25°C - mPa s):	430 - 630
Specific weight (+25°C - g/ml):	1,05
Fluorescence:	under blue light
Flash point:	> +100°C
Shelf life +25°C:	1 year in l unopened packaging
Gap filling:	M20 ¾" - 0,15 mm

Curing performance

Curing rate depends on the assembly clearance, material surfaces and temperature. Functional strength is usually reached in 1 - 3 hours and full curing takes 24 - 36 hours. In case of passive surfaces and/or low temperature a fast cure can be obtained using Loxeal Activator 11.

Curing properties (typical)

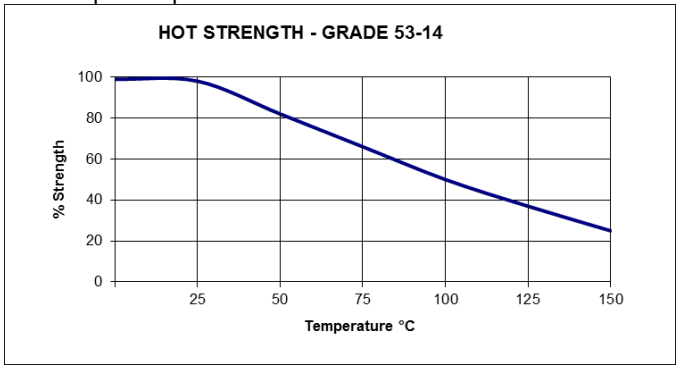
Bolt M10 x 20 Zn - quality 8.8 - nut h = 0,8 d at +25°C

Handling cure time:	10 - 20 minutes
Functional cure time:	1 - 3 hours
Full cure time:	3 - 6 hours
Shear strength (ISO 10123):	8 - 12 N/mm²
Locking torque (ISO 10964)	
- breakaway:	12 - 18 N m
- prevailing:	10 - 20 N m
Temperature range:	-55°C/+150°C

Environmental resistance

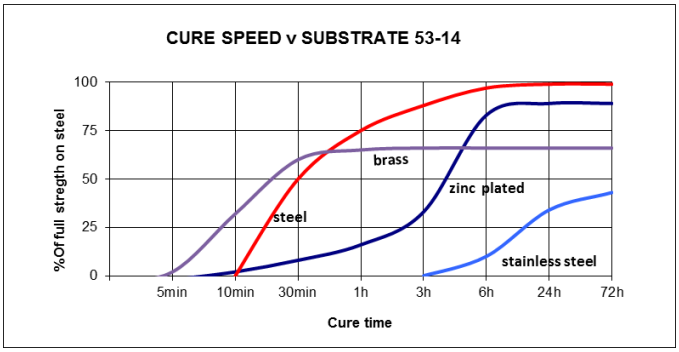
Hot strength

The graph below shows the mechanical strength vs. temperature.
ISO 10964 - Bolt M10 x 20 Zn - quality 8.8 - nut h = 0,8 d at +25°C - pre-torque 5 N m



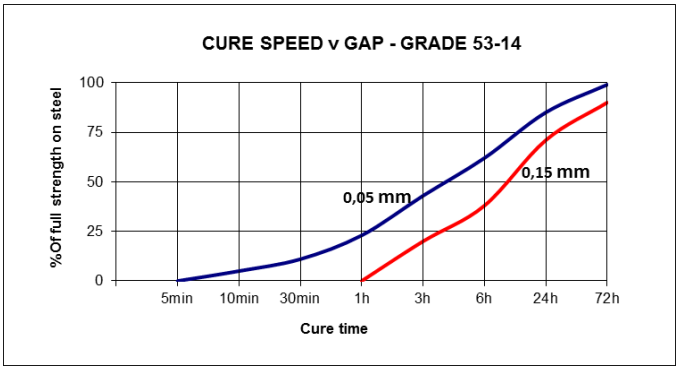
Cure speed v substrate

The graph hereunder shows the breakaway strength development of the product (with time) on steel nuts/bolts M10 x 20 in comparison with several substrates.
Tested in accordance with ISO 10964 at + 25°C.



Cure speed v gap

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



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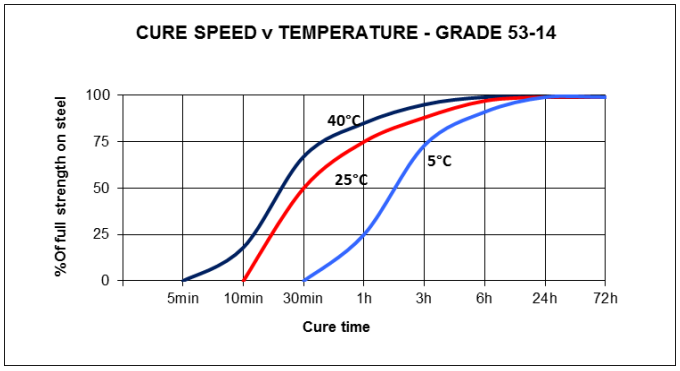
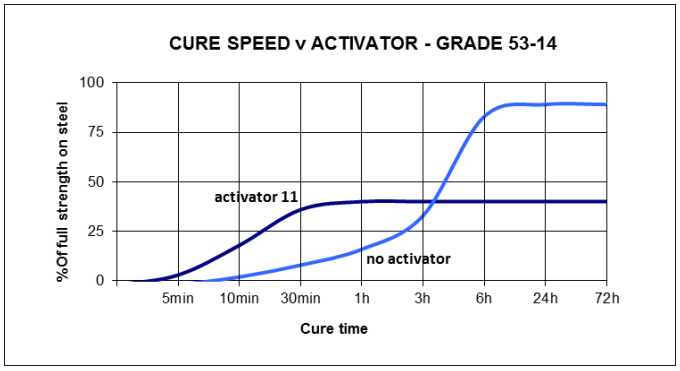
Cure speed v temperature

The following graph shows the breakaway strength of the product (as %) at different temperatures.
Steel nuts/bolts M10 x 20, tested according to ISO 10964



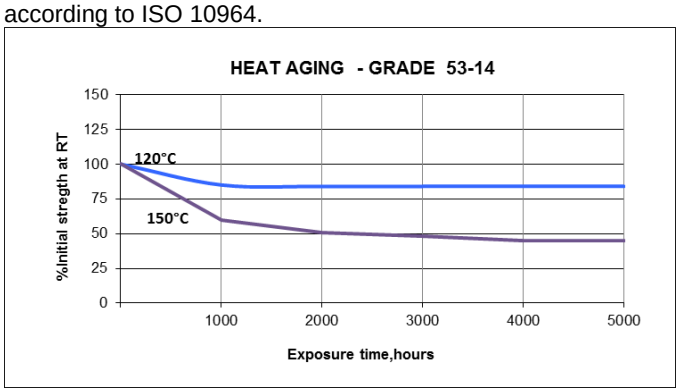
Cure speed v activator

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.
Zn nuts/bolts M10 x 20, tested according to ISO 10964 at a temperature of + 25°C.



Heat aging

The graph below shows the strength resistance behavior as a function of temperature/time.
Zn nuts/bolts M10 x 20 - (pre-torque of 5 N m, cured 7 days at +25°C) - aged at temperature indicated and tested at +25°C according to ISO 10964.



Chemical resistance

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

Substance	°C	Resistance after 100 h	Resistance after 500 h	Resistance after 1000 h
Motor oil	125	excellent	excellent	excellent
Gear box oil	125	excellent	excellent	excellent
Gasoline	25	excellent	excellent	excellent
Water/glycol 50%	87	excellent	excellent	excellent
Brakes oil	25	excellent	excellent	excellent

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

Directions for use

Loxeal Threadsealing are anaerobic resins that cure when confined between two metal surfaces in absence of air (ex. threaded joint).
Some recommendations for best results:
- Clean the threads with Loxeal Cleaner 10 and allow drying before assembling (water, oil or dirtiness prevent sealant's full adhesion on threaded parts).
- Apply a bead of product along the entire circumference between the first and the second thread of the male in sufficient quantity to fill the entire threaded surface.
For product with higher viscosity, apply a small amount on the female thread too, to ensure the correct filling of the threaded joint during assembly.
- Rotate occasionally back and forth during the manual screwing to adjust the distribution of the product on the threads.
- Once the screwing is complete, seal the joints with usual torque down by the product's specific handling cure time.
Handling cure time (mentioned above on page 1/3) depends on the type of substrate and relates to the following use conditions:
a) Steel, carbon or cast iron fittings
b) Environmental temperature at 25C°
c) Gap within specific tolerances
Shorter handling cure time relates to the following:
- Brass or bronze fittings
- Summer temperatures
- Small gaps
While longer handling cure time relates to the following:
- Inox or passivated (chrome, etc) fittings
- Winter temperatures (temperatures close to 0°C may prevent the curing)
- Large gaps
If the above conditions happen, we recommend the usage of Loxeal Activator 11.

Disassembly and cleaning

To disassemble the pieces, use conventional tools. When possible, disassembly is made easier by heating pieces at +150°C/+250°C and hot dissembling them.
Remove the cured product mechanically and finish cleaning with Acetone.

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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.

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

Safety and handling

Consult Material Safety Data Sheet before use.

Note

The data contained herein, obtained in Loxeal laboratories, are given for information only; if specifics are required, please contact Loxeal Technical Department. Loxeal ensures abiding quality of supplied products according to its own specifics. Loxeal cannot assume responsibility for the results obtained by others which methods are not under Loxeal control. It is user's responsibility to determine suitability for user's purpose of any product mentioned herein. Loxeal disclaims all warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose, arising from sale or use of Loxeal products. Loxeal specifically disclaims any liability for consequential or incidental damages of any kind, including lost profits**.**

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