

MGS Repairset 633

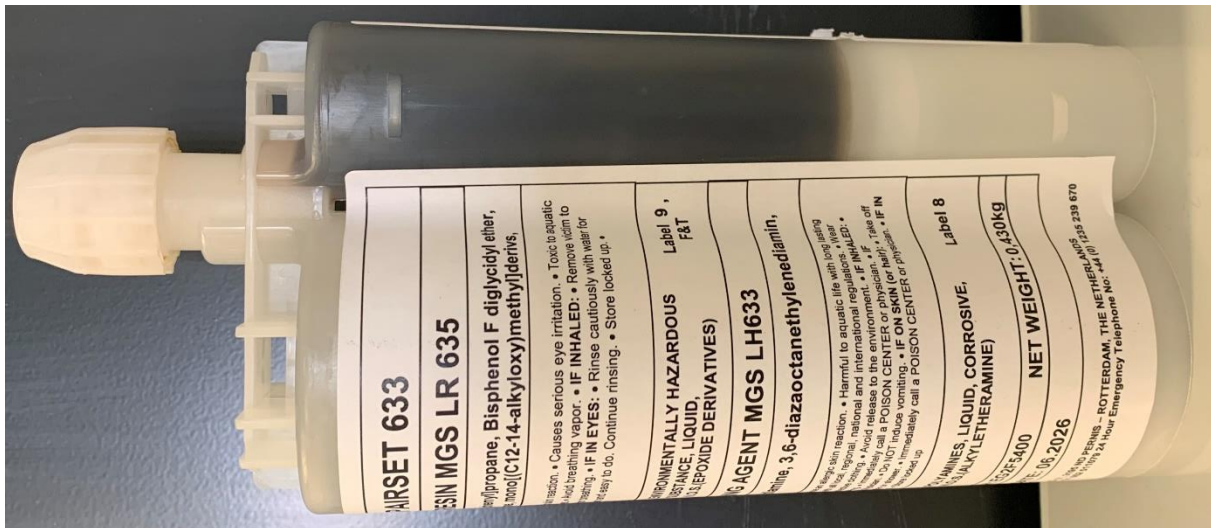
CHARACTERISTICS

Approval	DNV
Application	Repair lamination of composite structures
Operational temperature	-40 °C up to +70 °C after appropriate cure
Processing	At temperatures between 15 °C and 30 °C
Features	Short pot life and fast curing Easy-to-use cartridge solution
Storage	Shelf life of 48 months

APPLICATION AND USAGE

MGS Repairset 633 is an epoxy-based laminating resin system with the constituents EPIKOTE™ Resin MGS LR635 and EPIKURE™ Curing Agent MGS LH633. It contains no solvents or fillers and intended main application is hand lamination process in repairs of composite structures.

The pot life is approx. 15 min at room temperature. Different temperatures will have an influence on the pot life. As a rule of thumb, the pot life will be doubled / reduced to half by a decrease / increase of 10°C. After initial curing at room temperature, the manufactured components are workable and demoldable. The final properties, however, will only be reached after a postcure at temperatures of more than 40°C.



The curing agent is strongly colored in order to make identification of homogenous mixing possible, especially at the very beginning of the application process. The color is only a visual aid and is therefore not exactly specified. Therefore, variations from batch to batch are possible. Furthermore, the color is not stable and can change over time. This can be especially observed for high reactive curing agents like LH633 as used in this repairset and in addition due to UV radiation (like exposure to direct sunlight). Accordingly, the color can generally change during shelf life, but this has no known effect on the overall performance and does not constitute a quality complaint.

Repairset633 is only to be used with the supplied static mixers which provide good mixing and low loss of pressure. The tip of the mixing nozzle can be cut for an adaption of the flow rate.

We recommend processing as follows:

- Remove cap nut and plug.
- Attach mixer and secure with cap nut.
- Reject the first 5-15 grams until color is homogenous.

The recommended temperature for application is between 15 and 30°C. Pot life depends on temperature and a temperature change of 10°C will double/halve the pot life. At low temperatures viscosity increases which especially will be noticed when working with a manual cartridge press.

Only fully transparent products should be used. A milky / cloudy appearance of the mixed resin can be an indication for crystallization which is a physical phenomenon and immanently possible when product is stored at lower temperatures. Prior mixing, crystallization can be reversed by slow heating of the product to approx. 40°C and there is no restriction to quality after removal of crystallization. **It needs to be noted that product should not be used immediately after heating because the reactivity will be significantly increased. Allow to cool down prior usage.**

No problems are expected concerning compatibility (e. g. blistering, tearing or changes in color) when Repairset633 is processed with gelcoats. However, comprehensive tests are indispensable.

The materials have a shelf life of minimum 4 years, when stored in their originally sealed kits.

The relevant industrial safety regulations for the handling of epoxy resins and hardeners are to be observed.

TYPICAL PROPERTIES

Property	Unit	Resin LR635	Curing agent LH633
Density ¹⁾	g/cm ³	1,15	1,03
Viscosity ¹⁾	mPa·s	3200	170
Pot life ²⁾	min	~ 9	
Ultimate T _G	°C	~ 87	

These are typical values and should not be construed as specifications.

Measuring conditions:

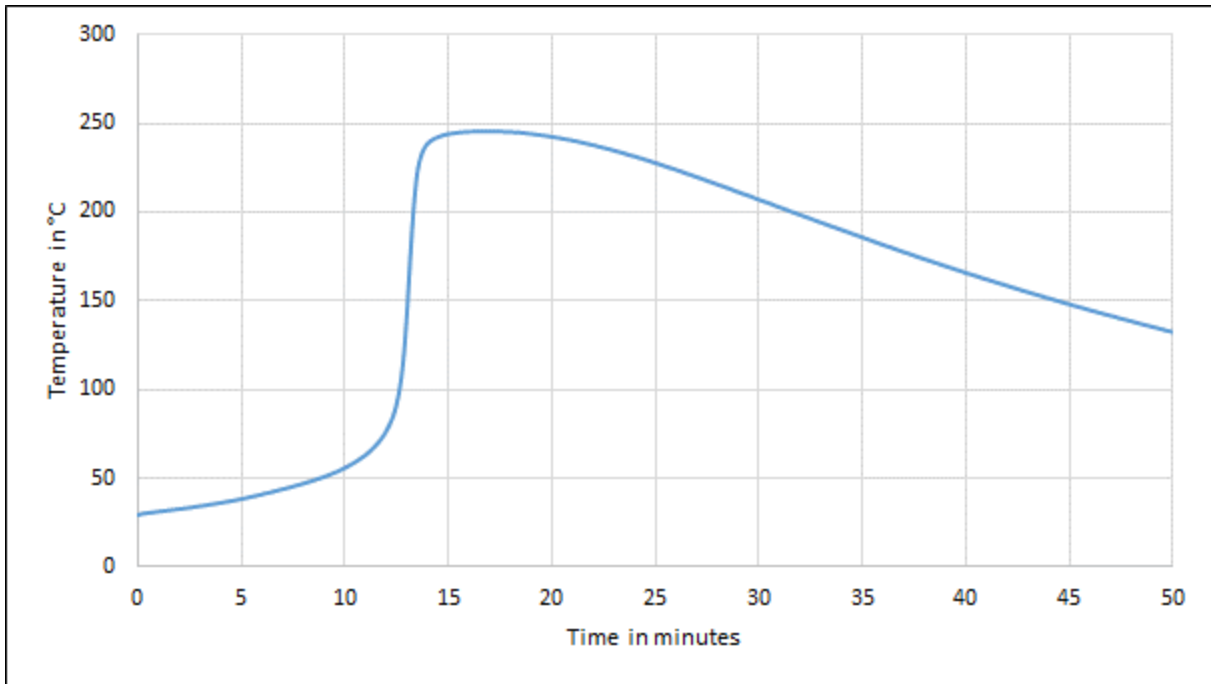
- 1) measured at 25°C
- 2) 100g mixture in water bath at 30°C
Pot life is a standardized lab test under fixed conditions which does not necessarily reflect real process conditions. The usage or working time varies depending on real processing conditions (environmental temperature, lay-up thickness)
- 3) DSC after full cure, 20K/min, midpoint

MIXING RATIO

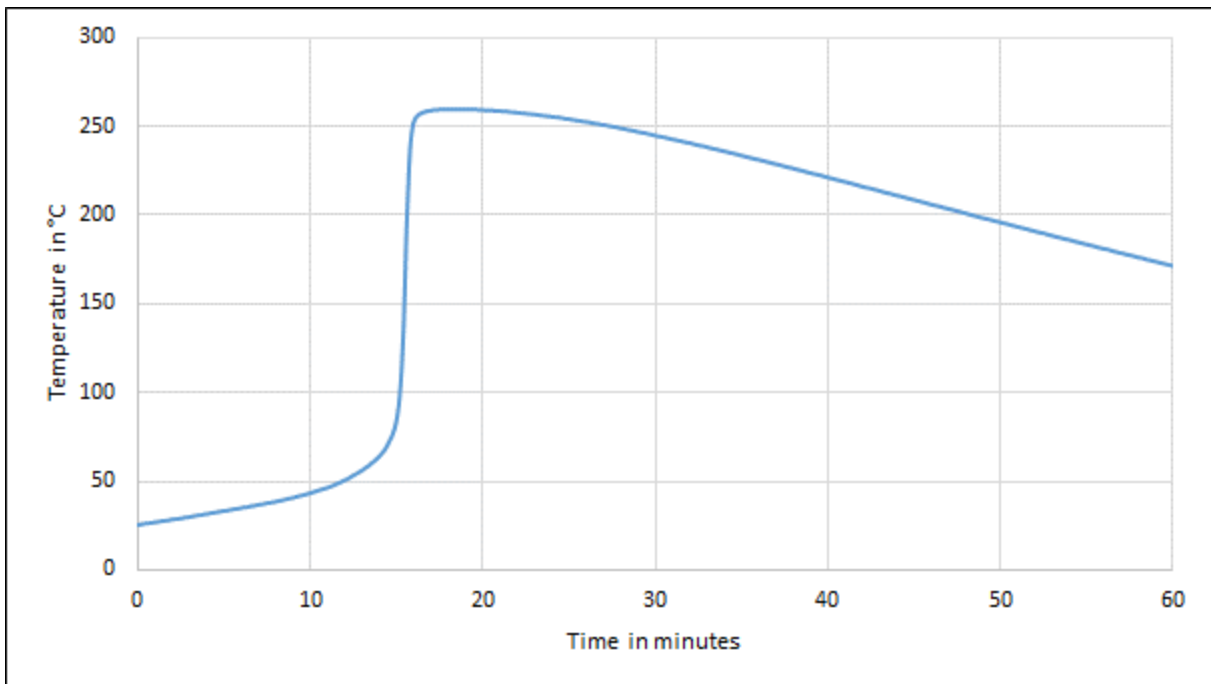
	Parts curing agent per 100 parts resin
Parts by weight	30 ± 2
Parts by volume	34 ± 2

The mixing ratio is included for information only, the kit of Repairset633 is prepared with the correct mixing ratio.

TEMPERATURE DEVELOPMENT

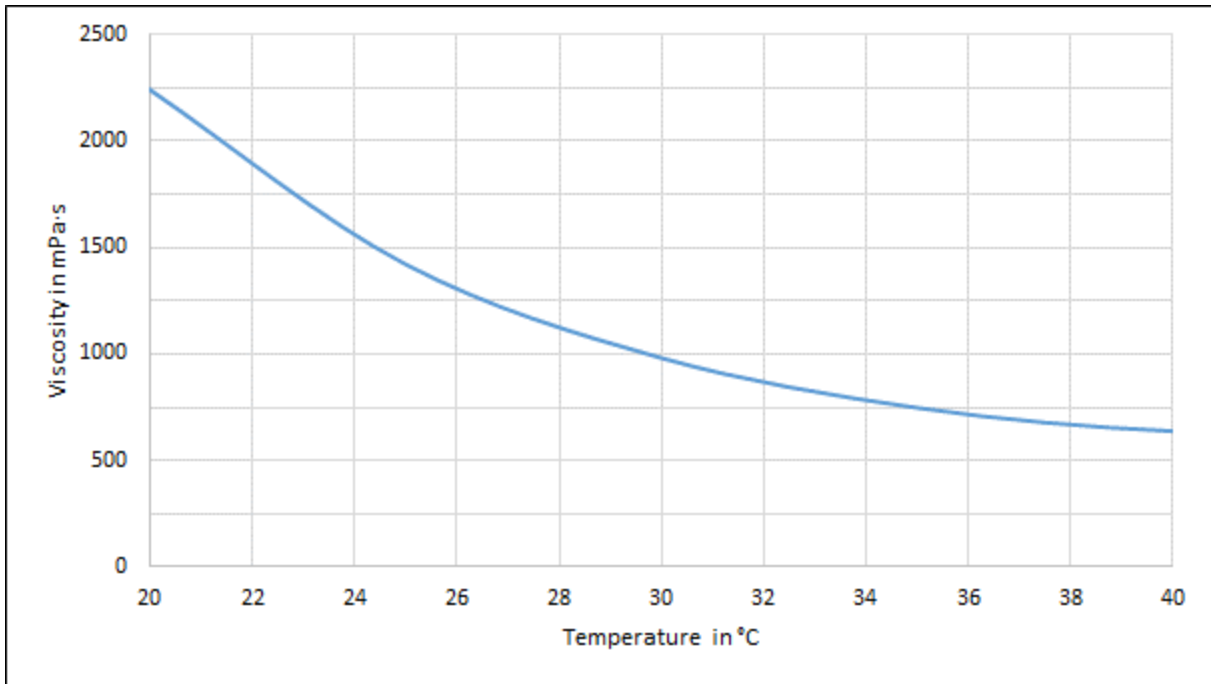


Measuring conditions: measured 100g in a paper cup isolated in a water bath at 30°C



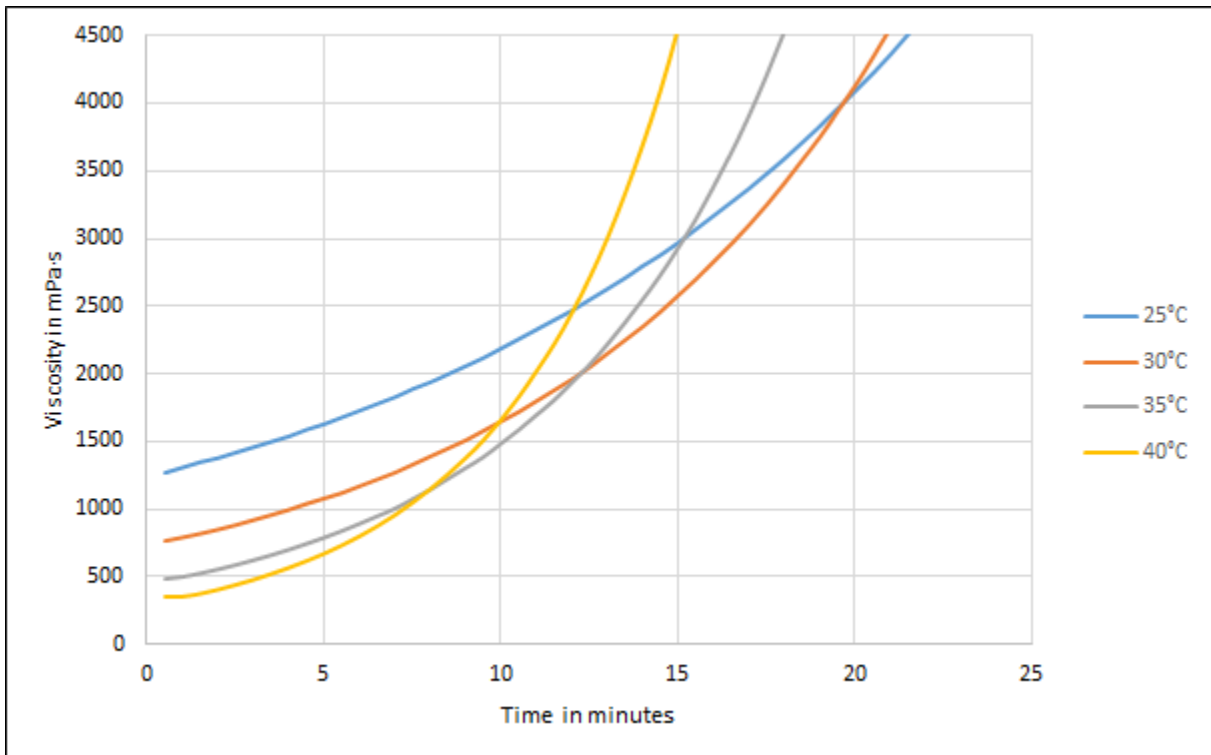
Measuring conditions: measured 300g in a tin can at 23°C

VISCOSITY OF MIXTURE



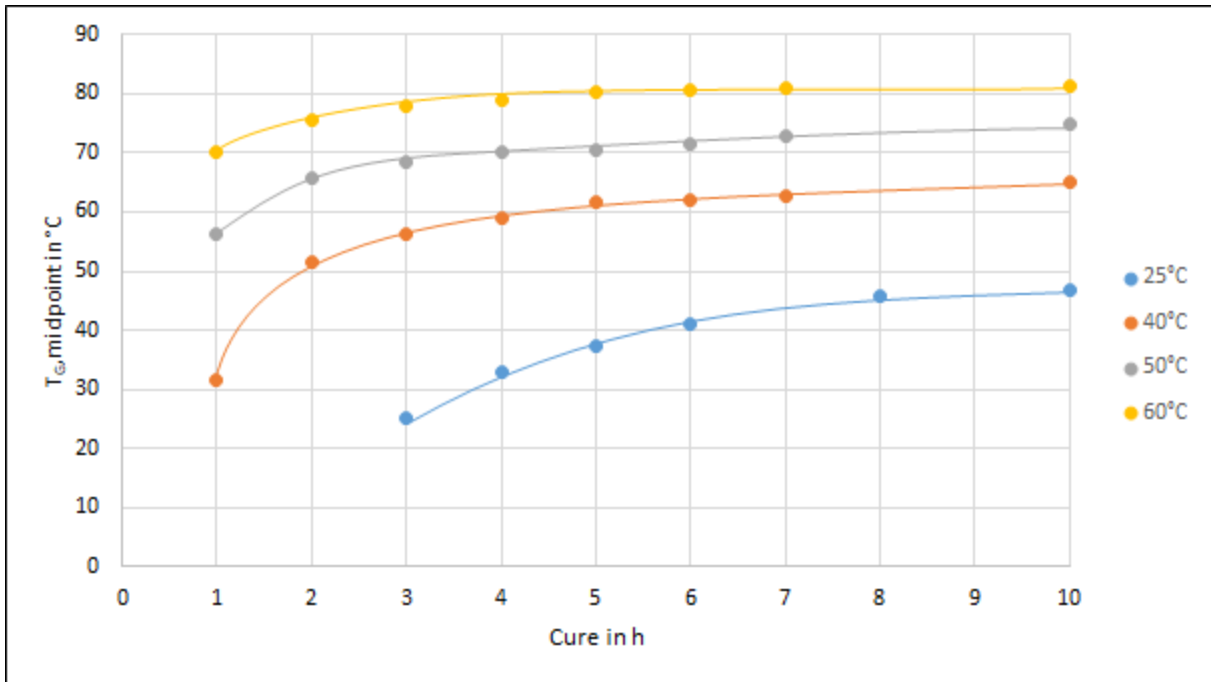
Measuring conditions: Viscometer, cone-plate configuration, diameter 50 mm, gap 0.1 mm

VISCOSITY DEVELOPMENT



Measuring conditions: Viscometer, cone-plate configuration, diameter 50 mm, gap 0.1 mm

T_G DEVELOPMENT



Measuring conditions: DSC-measuring heat rate: 20°C/min, sample mass 10-20 mg

PYHISICAL AND MECHANICAL DATA

Test	Property	Typical value
Cured density DIN EN ISO 1183-1	Density [g/cm³]	1,17
Tensile test DIN EN ISO 527-2	Tensile strength [MPa]	80
	Tensile modulus [GPa]	3,4
	Tensile strain at break¹⁾ [%]	7
Flexural test DIN EN ISO 178	Flexural strength [MPa]	130
	Flexural modulus [GPa]	3,3
Curing: 5h 70°C		

¹⁾ Tensile strain at break results strongly depends on specimen quality, especially void content
All tests accomplished at standard climate; specimens cured up to a T_G midpoint (DSC) of approx. 75°C

© 2022 Westlake Epoxy All rights reserved.
® and ™ denote trademarks owned or licensed by Westlake Epoxy

The information provided herein was believed by Westlake Epoxy ("Westlake Epoxy") to be accurate at the time of preparation or prepared from sources believed to be reliable, but it is the responsibility of the user to investigate and understand other pertinent sources of information, to comply with all laws and procedures applicable to the safe handling and use of the product and to determine the suitability of the product for its intended use. All products supplied by Westlake Epoxy are subject to Westlake Epoxy's terms and conditions of sale. WESTLAKE EPOXY MAKES NO WARRANTY, EXPRESS OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THEREOF FOR ANY PURPOSE OR CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY WESTLAKE EPOXY, except that the product shall conform to Westlake Epoxy's specifications. Nothing contained herein constitutes an offer for the sale of any product.