

**Laminating resin**  
**LG 700**  
**Hardeners HG 700 F, HG 700 M, HG 700, HG 737, HG 700 S**

## 1. Description

**Laminating resin LG 700** is a resin featuring increased bonding strength and reactivity, outstanding flexibility while a very high strength and temperature resistance. The resin contains modificatory agent that extremely improves penetration of the laminating mixture into the fabric.

**Hardener HG 700 F** is a low-viscosity cyclo-alifatic hardener containing post-curing agent that enables lamination also at room temperature without consequent curing by heat. Gel-time (100g) at 23°C is 20 minutes.

**Hardener HG 700 M** is a low-viscosity cyclo-alifatic hardener containing post-curing additives that enables lamination also without consequent curing by heat. Gel-time (100g) at 23°C is 50 minutes.

**Hardener HG 700** is a basic variation of low-viscosity cyclo-alifatic hardener for epoxy resin LG 700. At room temperature it gets cured within 2 – 7 days. At faster cycle the products are recommended to be cured at temperature of minimum 35°C. Gel-time (100g) at 23°C is 90 minutes.

**Hardener HG 737** is a low-viscosity hardener based on cyclo-alifatic and alifatic long-string amine. It features very long pot life of approx. 3 hours, outstanding flexible laminates also at room temperature. It has been designed for production of large parts, such as yachts, catamarans and gliders.

**Hardener HG 700 S** is a very slow hardener. Gel-time (100g) at 23°C is about 4-6 hours.

## 2. Use

Laminating resin LG 700 is used for lamination at room, but also increased temperature to produce composite parts of higher temperature resistance and excellent mechanical properties. It has been designed for production of high-pressure composite parts, such as gliders, models and boats.

The system can be used for all common reinforcements, such as, for example, glass, carbon or aramid fibres, core materials etc.

The system is compatible with all common polyester gelcoats and paints. Though, we still recommend to try out the individual combinations ahead.

### 2.1 Working instructions

We recommend to use the system at the temperature range between 18 – 30°C and use the common processing procedures for the composite production.

This system has been designed so that it will get cured efficiently also at room temperature of 18 – 30°C, therefore it can be processed at room temperature and used without the consequent heat curing. The processing time depends on the used hardener.

By curing at room temperature (approx. 25°C) for the period of 24 hours a heat resistance of 55°C – 65°C can be achieved.

By heat curing a heat resistance of up to 110°C can be achieved (see the table of heat resistance – page 2).

## Laminating resin LG 700 + Hardeners HG 700 F, HG 700 M, HG 700, HG 737, HG 700S

**Gel time:** (building-up a layer of 1 mm at different temperatures)

LG 700	HG 700 F	HG 700 M	HG 700	HG 737	HG 700 S
at 25°C	1 – 2 hours	2 – 3 hours	3 – 5 hours	8 – 12 hours	12 – 14 hours
at 50°C	25 min.	50 min.	1.5 hour	2 – 3 hours	4 - 6 hours

**Heat resistance:**

LG 700	HG 700 F	HG 700 M	HG 700	HG 737	HG 700 S
at 23°C (2-7 days)	55°C	60°C	60°C	55°C	45°C
at 50°C (3 hours)	65°C	70°C	70°C	65°C	55°C
at 60°C (> 3 hours)	75°C	80°C	80°C	75°C	60°C
at 90°C (> 2 hours)	95°C	100°C	100°C	95°C	85°C
at 120°C (2 hours)	105°C	110°C	110°C	105°C	95°C

**Mixing ratio, resin + hardener:**

Parts by weight	<b>100 : 30</b>
Parts by volume	<b>100 : 38</b>

## 2.2 Technical parameters

**Properties:**

		LG 700
Density	g/cm <sup>3</sup> (25°C)	1.18 – 1.23
Viscosity	mPa.s (25°C)	500 – 700
Epoxy equivalent	mol/kg	156 – 165
Epoxy index	-	0.60 – 0.64
Colour	Gardner	max 3

		HG 700 F	HG 700 M	HG 700	HG 737	HG 700 S
Density	g/cm <sup>3</sup> (25°C)	0.98	0.96	0.94	0.98	0.96
Viscosity	mPa.s (25°C)	30 - 40	35 - 50	15 - 20	10 - 15	10-15
Hydrogene equivalent	-	48	48	48	48	48
Colour	Gardner	max 3*	max 3*	max 3*	max 3*	max 3*
Mixing viscosity	mPa.s (23°C)	320 - 328	450 - 457	245 - 249	277 - 285	277-285

\* related to a non-coloured hardener

**Details for processing:**

	LG 700	HG 700 F	HG 700 M	HG 700	HG 737	HG 700 S
Average epoxy value	0.62	-	-	-	-	-
Average amine equivalent	-	48	48	48	48	48
Storage	24 months (epoxy resin), 24 months (hardeners) in the original package					

**Laminating resin LG 700 + Hardeners G 700 F, HG 700 M, HG 700, HG 737, HG 700 S****Mechanical parameters of the cured unreinforced resin:**

Flexural strength	MPa	110 - 120
E-modulus bend	MPa	2700 - 3300
Tensile strength	MPa	65 - 75
Compressive strength	MPa	120 - 140
Elongation	%	6 - 8
Fatigue strength	KJ/m <sup>2</sup>	38 - 48
Shore hardness D	-	85

**3. Storage and package**

Resins can be stored for a period of at least 24 months, hardeners 24 months in carefully sealed containers. At temperatures below +15°C resins and hardeners may crystallize. Crystallization is visible as a misty liquid or change of the liquid state into a solid one. Crystallization has to be removed by warming the contents before its processing. Slowly heat up to approximately 50 – 60°C in a water basin or oven and by mixing or shaking turn the contents of the container to its former state without any effect to its quality. Process only the products that are of totally unique colour. Before heating up slightly open the container so that the inside pressure is stabilized. Be careful during the heating up. Do not heat up above an open fire!!!! Use safety equipment during mixing (gloves, goggles, breathing equipment).

**4. Contact details**

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**Note**

This technical data sheet has been created based on our latest knowledge and according to the best consciousness and conscience. As we are unable to check if our products are used in correct way we cannot even guarantee results. In spite of this we will be glad to give advice.