



## Epoxy System LR630

### Laminating/Vacuum Bagging

#### DESCRIPTION

##### COLD CURING EPOXY SYSTEMS

LR 630 is a low-viscosity epoxy system for laminating system

LH 630 is a mixture of polyamines

Production of composite structures by wet lay-up method, infusion, vacuum bag.

Good behavior on Glass fiber and Carbon fiber impregnation and bonding.

#### PROPERTIES

- \* Low viscosity, easy impregnation of reinforcement materials.
- \* High temperature resistance (glass transition temperature) after ambient cure: 100 °C, after post-cure at 100-120 °C.
- \* Excellent mechanical and dynamic properties after ambient cure with potential for even higher properties after post-cure at elevated temperatures.
- \* Also laminates show outstanding mechanical and dynamic properties.
- \* Adequate skin protection is indispensable.

#### Application Areas/Suggested Uses

- \* fiberglass and Carbon fiber Parts
- \* Aerospace and industrial composites
- \* Boats and aircraft
- \* Tooling, aircraft repair.

#### PROCESSING

- \* Wet lay-up
- \* Resin Transfer Moulding (RTM)
- \* Vacuum Bagging.
- \* Filament Winding



## Physical Properties:

<b>Resin</b>		R73.	
<b>Hardeners</b>			H73.
Appearance		Transparent Liquid	slightly yellow
Viscosity at 20 °C (ISO 12.08-1) Cps	at 20°C	10..	2.
Density at 20 °C (ISO 1670) [g/cm³]	at 20°C	1,10	1,0
Mix ration(phr)	by weight	1..	2.
Flash point (ISO 2719) °C		14.	11.

## Mixed Properties:

<b>Epoxy System</b>		LR73.
Pot life (min)	at 20°C on 0.g	7.
Viscosity at 20 °C (ISO 12.08-1) Cps.	at 17°C at 20°C at 25 °C	120--140.. 70--7.. 20--20.
Density at 20 °C (ISO 1670)	at 20°C	1,1
Gelation (hr)	at 20°C on 3mm Thickness	2
Demolding time (hr)	at 20°C on 3mm Thickness	8

\*The components must be weighed accurately and mixed thoroughly to obtain optimal properties. The sides and bottom of mixing vessels must be included in the mixing process. Large mix quantities will show considerable exotherm, leading to short pot lives. Preferably mix smaller quantities or divide large mixes into smaller containers.

## PROCESSING CONDITIONS

The values shown are for small amounts of pure resin/hardener mix. In practice, fiber content and laminate thickness may modify the gel time to a very significant extent. In composite structures the gel time can differ significantly from the given values depending on the fiber content and the laminate thickness.

To obtain the desired temperature resistance and the optimal mechanical properties it is necessary to make a post Curing of LR73. system.

Post cure: 12 to 36 h RT + 12 h at 70 °C or to 24 h RT + 4 h at 100 °C

The optimum cure cycle has to be determined case by case, depending on the processing and the economic requirements.



## MECHANICAL AND THERMAL PROPERTIES at 25°C

Flexural strength	ISO 178	Ksi	Vday@RT εhr@1..°C	12-13 17-17
Flexural modulus	ISO 178	Ksi	Vday@RT εhr@1..°C	44..-47. 39..-43.
Tensile strength	ISO 527	Ksi	Vday@RT εhr@1..°C	7-1. 11,0-12,0
Tensile modulus	ISO 527	Ksi	Vday@RT εhr@1..°C	480-51. 43..-47.
Elongation at break	ISO 527	%	Vday@RT εhr@1..°C	1,0-2,0 0-0,0
Hardness	ISO 868	Shore D10	@25°C	88
Glass transition temperature	ISO 11309	°C	1day@RT+ 1·hr 0..°C εhr@1..°C+ 1·hr 0..°C	8..-9. 10..-118

(1): Average values obtained on standard specimens of pure resin / Hardening 24 hr at 25°C + 4 hr at 100°C.

## HANDLING PRECAUTIONS

Normal health and safety precautions should be observed when handling these products:

\*ensure good ventilation

\*wear gloves, safety glasses and waterproof clothes.

\*Adequate skin protection is indispensable.

## STORAGE CONDITIONS

R630 Resin and H630 Hardener should be stored in a dry place, in the sealed original container, away from heat and humidity, at temperatures between +15°C and 32°C. Under these storage conditions, the shelf life is 2 years.

\*The product should not be exposed to direct sunlight.

\*Best storage condition @22-30°C & humidity<50%