

Advanced Materials**RenLam[®] LY 5210
Ren[®] HY 5211 Slow or HY 5212 Fast**LAMINATING RESIN
EPOXY HIGH TEMPERATURE, SPEED CONTROLLED, LAMINATING SYSTEM**KEY PROPERTIES**

- Exceptionally high temperature resistance.
- Variable speed of cure control.
- Excellent fiber wet-out properties due to low viscosities.
- Partial cure at room temperature completed with indicated post cure.
- Excellent inter layer adhesion.

APPLICATIONS

- Extremely large tools can be produced due to very long pot life.
- Tools requiring heat resistance up to 200° C.
- Fast and medium hardeners allow better control over reaction.
- For heat resistant tools used with glass or carbon fibers.
- Pre-preg lay-up tools.

PRODUCT DATA

Property	Unit	RenLam [®] LY 5210	Ren [®] HY 5211	Ren [®] HY 5212
Appearance Colour	visual	Liquid Pale beige	Liquid Clear, pale yellow	Liquid Clear, pale yellow
Viscosity at 25°C	mPa s	2300 - 3300**	580 - 720**	250 - 500**
Density	g/cm ³	1.2	1.01	1.01

** Specified data are on a regular basis analysed. Data which is described in this document as 'typical' is not analysed on a regular basis and is given for information purpose only. Data values are not guaranteed or warranted unless if specifically mentioned.

TYPICAL SYSTEM DATA**PROCESSING**

Mix ratio	Parts by weight	
RenLam [®] LY 5210	100	100
Ren [®] HY 5211	40	
Ren [®] HY 5212		40

Mix the two components thoroughly in the ratio indicated, then impregnate each layer of cloth as it is laid up to construct the laminate.
Post-curing is essential to benefit the final properties.

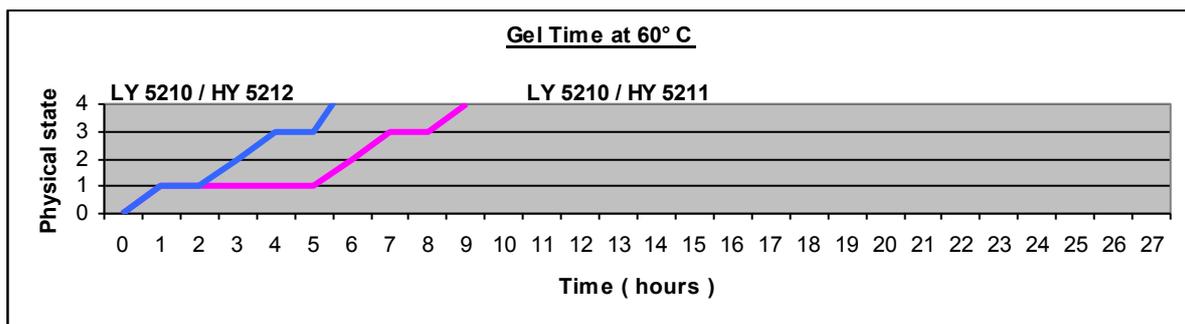
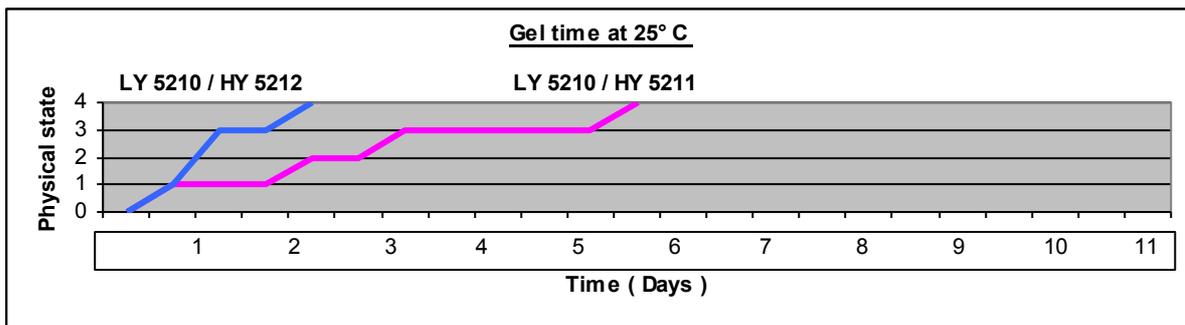
PROPERTIES

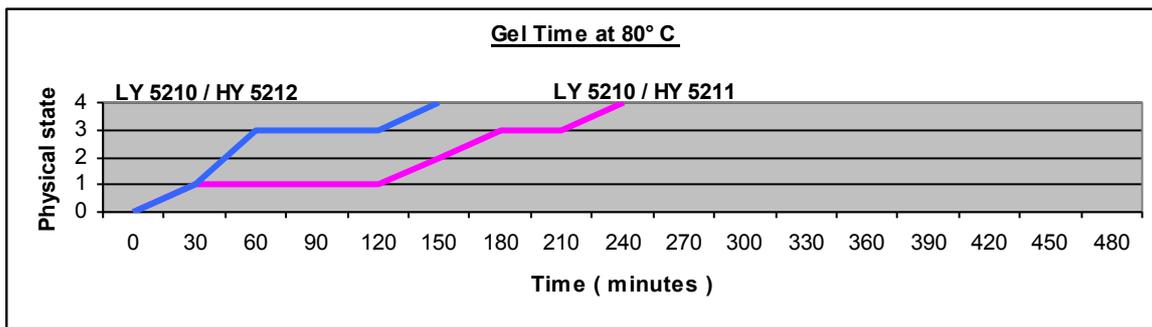
Resin/Hardener mix:	Volume	Unit	LY 5210 HY 5211 Slow	LY 5210 HY 5212 Fast
Appearance			Amber	Amber
Viscosity at 25°C		mPa s	2400	2000
Pot life at 25°C	500 ml	hours	24	12
Gel time thin layer			2 days	18 hours
Time to tack thin layer			3 days	20 hours
Length of tack time			2 days	18 hours

AFTER CURE

24 hours RT+ 12hours @40 °C + 2hours @80 °C + 2hours @100 °C + 2hours @120 °C + 2hours @140 °C + 2hours @160 °C+ 2hours @180 °C + 12hours @ 200 °C and slowly cooled down to RT

Density	ISO 1183	g/cm ³	1.1	1.1
Hardness	ISO 868	Shore	85 D	85 D
Flexural strength	ISO 178	MPa	110	88
Flexural modulus	ISO 178	MPa	3300	3500
Compressive strength	ISO 604	MPa	130	153
Deflection temperature	ISO 75	°C	190	223
T.g.	DSC	°C	200	238
Impact strength	Charpy	KJ / m ²	2.5	3



**STORAGE**

Provided that RenGel[®] SW 5210, Ren[®] HY 5211 and Ren[®] HY 5212 are stored in a dry place in their original, properly closed containers at the storage temperatures mentioned in the MSDS they will have the shelf lives indicated on the labels. Partly emptied containers should be closed immediately after use.

WORKING CONDITIONS

The product should be used when in the temperature range 18-25°C.

PACKAGING

System	RenLam [®] LY 5210	Ren [®] HY 5211	Ren [®] HY 5212
Quantity and Weight	25 kg	20 kg	20 kg
Quantity and Weight	1000 kg		165 kg

HANDLING PRECAUTIONS**Caution**

Our products are generally quite harmless to handle provided that certain precautions normally taken when handling chemicals are observed. The uncured materials must not, for instance, be allowed to come into contact with foodstuffs or food utensils, and measures should be taken to prevent the uncured materials from coming in contact with the skin, since people with particularly sensitive skin may be affected. The wearing of impervious rubber or plastic gloves will normally be necessary; likewise the use of eye protection. The skin should be thoroughly cleansed at the end of each working period by washing with soap and warm water. The use of solvents is to be avoided. Disposable paper - not cloth towels - should be used to dry the skin. Adequate ventilation of the working area is recommended. These precautions are described in greater detail in the Material Safety Data sheets for the individual products and should be referred to for fuller information.

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