

## Provisional Data Sheet

### Laminating Resin

**RenLam<sup>®</sup> LY 5210 / Ren<sup>®</sup> HY 5210 Slow or  
HY 5211 Medium or HY 5212 Fast**

**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, medium and slow hardeners allow full 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 5210	Ren HY 5211	Ren HY 5212
Appearance Colour	visual	Liquid Pale beige	Liquid Clear, pale yellow	Liquid Clear, pale yellow	Liquid Clear, pale yellow
Viscosity at 25°C	mPa s	3000	120	450	160
Density	g/cm <sup>3</sup>	1.2	1.01	1.1	1.01

#### Processing

Mix ratio	Parts by weight		
RenLam LY 5210	100	100	100
Ren HY 5210	40		
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.

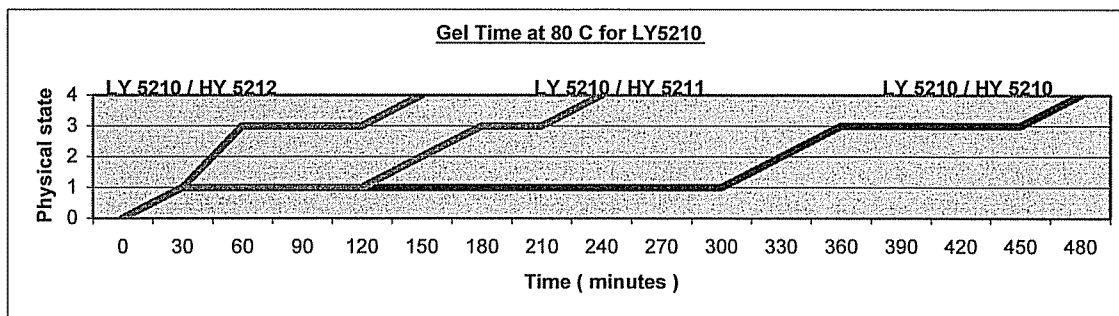
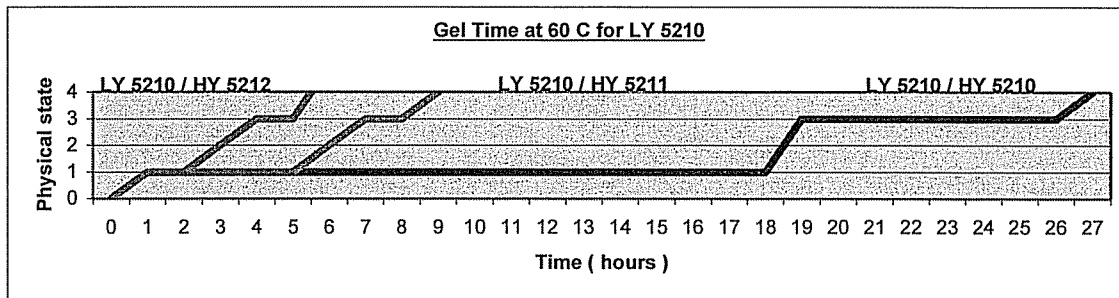
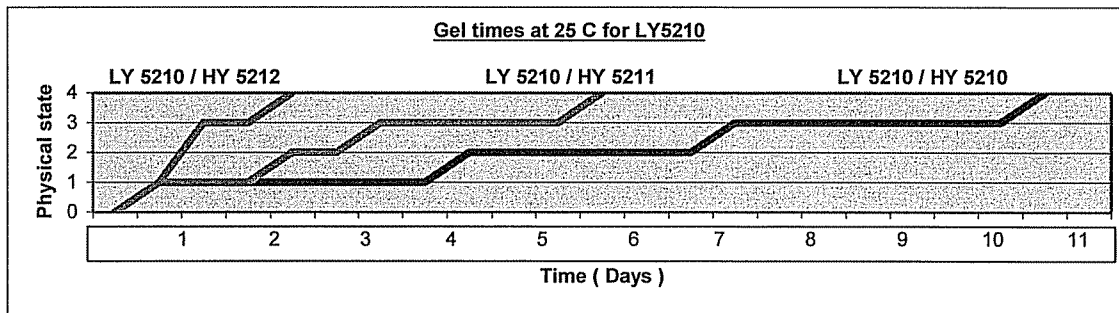
**Properties**

Resin/Hardener mix:	Volume	Unit	LY 5210 HY 5210 Slow	LY 5210 HY 5211 Medium	LY 5210 HY 5212 Fast
Appearance			Amber	Amber	Amber
Viscosity at 25°C		mPa s	1300	2400	2000
Pot life at 25°C	500 ml	hours	48	24	12
Gel time thin layer			4 days	2 days	18 hours
Time to tack thin layer			7 days	3 days	20 hours
Length of tack time			3 days	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 <sup>3</sup>	1.1	1.2	1.1
Hardness	ISO 868	Shore	85 D	85 D	85 D
Flexural strength	ISO 178	MPa	46	110	88
Flexural modulus	ISO 178	MPa	3500	3300	3500
Compressive strength	ISO 604	MPa	133	130	153
Deflection temperature	ISO 75	°C	210	190	223
T.g.	DSC	°C	215	200	238
Impact strength	Charpy	KJ / m <sup>2</sup>	1	2.5	3



**Key to physical state :-**

- 0 = Mixing  
 1 = Liquid  
 2 = Gelled ( point at which material has gelled in thin layer )  
 3 = Tack ( system has tacked, perfect for another application of laminate )  
 4 = Cured hard ( material has now completely hard but not cured )

**Storage**

The resin described in this instruction sheet has the shelf life shown provided it is stored at +2 - 8°C in a dry place and in sealed containers, preferably those in which they are supplied.  
 The hardeners described in this instruction sheet have the shelf lives shown provided they are stored at +6 - 28 °C in a dry place and in sealed containers, preferably those in which they are supplied.

**Working conditions**

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

**Packaging**

System	LY 5210	HY 5210	HY 5211	HY 5212
Quantity and Weight	25 kg	20 kg	20 kg	20 kg
Quantity and Weight	4x5 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.

**Huntsman Advanced Materials (UK) Limited**

All recommendations for the use of our products, whether given by us in writing, verbally, or to be implied from the results of tests carried out by us, are based on the current state of our knowledge. Notwithstanding any such recommendations the Buyer shall remain responsible for satisfying himself that the products as supplied by us are suitable for his intended process or purpose. Since we cannot control the application, use or processing of the products, we cannot accept responsibility therefore. The Buyer shall ensure that the intended use of the products will not infringe any third party's intellectual property rights. We warrant that our products are free from defects in accordance with and subject to our general conditions of supply.

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