

## SL 110A/210B Solvent-Free Laminating Adhesive

SL 110A/210B is a high performance two component solvent-free polyurethane based lamination adhesive. Lamtec has been formulated to provide a strong adhesion in a wide array of flexible packaging films such as OPP, CPP, PE, PET, metalized, etc. This particular grade of Lamtec offers a longer pot life compared to other available products. In addition, it is compatible with high line speeds with rapid bond development. Lower coating weight, shorter curing time, and excellent optical property are other strengths of Lamtec SL 110A/210B compared to standard grades.

### Technical properties:

|  | SL110A (Resin, NCO)     | SL210B (Hardener, OH)   |
|--|-------------------------|-------------------------|
| <b>Appearance</b>                              | Yellowish / Transparent | Yellowish / Transparent |
| <b>Odor</b>                                    | Slight / None           | Slight / None           |
| <b>Solid%</b>                                  | 100                     | 100                     |
| <b>Density</b><br>(g/cm <sup>3</sup> @20°C )   | 1.13                    | 0.96                    |
| <b>Viscosity</b><br>(Brookfield @25 °C)(mPa.s) | 1500±500                | 850±250                 |

### Mixture properties:

|   | SL110A (Resin, NCO) | SL210B (Hardener, OH) |
|---|---------------------|-----------------------|
| <b>Mix ratio</b>                                      | 100                 | 75                    |
| <b>Viscosity of mixture</b><br>(100:75), mPa.s @30 °C | Time 0 min          | 600                   |
|   | Time 16 min         | 1200                  |
|   | Time 30 min         | 16000                 |
|   | Time 60 min         | Unmeasurable          |
| <b>Pot life</b>                                       | 35-45 minutes       |                       |

## SL 110A/210B Solvent-Free Laminating Adhesive

### Application guide

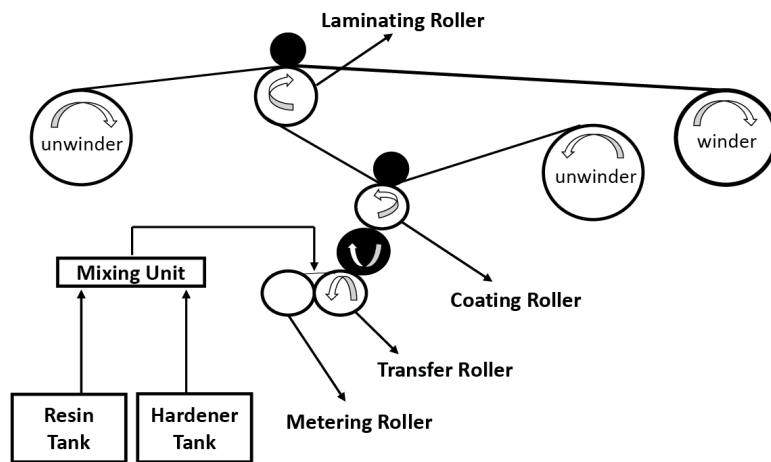
▪ **Lamination Machinery**

SL 110A/210B must be used on machines which are designed specifically for solvent-free laminating adhesives, delivering the target viscous adhesive with a controlled coating weight.

This adhesive can be used in high speed laminations (500 meter/min) machines due to its low initial viscosity.

▪ **Lamination temperature**

|                          |          |
|--------------------------|----------|
| Resin tank (NCO)         | 25-35 °C |
| Hardener tank (OH)       | 25-30 °C |
| Metering/Transfer Roller | 30-40 °C |
| Coating Roller           | 35-40 °C |
| Laminating               | 50-70 °C |



▪ **Recommended amount of adhesive**

Depending on types of films, printing inks, and performance requirements, the typical coating weights may range from 1.2 to 3.5 g/m<sup>2</sup>.

Metalized films and aluminized structures typically consume higher amount of adhesive compared to the transparent ones.

### Curing

The laminated films can be sent to the slitting unit after curing at temperatures ranging 30-40 °C for 8-24 hours.

The full and ideal bond development will be usually achieved in 24-72 hours for most types of laminated structures.

An ultimate curing will be obtained after 7 days of storage at the room temperature.

### Cleaning

Recommended cleaning solvents are methyl ethyl ketone, Ethyl acetate, Acetone.

It is recommended to perform the required cleaning steps as soon as possible after applying the adhesive, since it will be more difficult to clean up the feeding system or rollers after long and frequent machine stops.

Appropriate safety precautions along with a proper ventilation must be considered while working with the cleaning solvents.

Special attention needs to be paid in order to avoid damaging the rubber rollers while performing the cleaning via the organic solvents.

## SL 110A/210B Solvent-Free Laminating Adhesive

### Storage and shelf life

---

Lamtec is supplied in sealed 200 kg steel barrels which are packed and shipped as a group of four on a wooden pallet.

The Resin and Hardener products have a shelf life of 9 and 12 months, respectively in the original airtight unopened containers.

It should be stored indoors, in a well-ventilated area, out of direct sunlight, and at ambient temperature ranging from 15-30°C.

The product must be kept away from heat, sparks, or open flames.

The containers must be reclosed immediately after every opening, and it should be used within 24 hours of the container opening.

Purging the content of the containers with dry nitrogen is strongly recommended if it is being kept in the ambient air for long hours.

### Safety remarks

---

Even though the present products are relatively harmless to handle, the general chemical safety precautions must be taken while working with these products.

These materials must not come in contact with foods, drinks, food utensils, skin and eyes.

Appropriate protective gloves (e.g. rubber or plastic) and reliable facemasks should be worn while working with these materials and safety goggles are also recommended for eye protection.

In case of skin contamination, the affected area must be washed thoroughly using warm water and soap, followed by drying using disposable paper towel.

It is extremely crucial to have an adequate ventilation and exhaust flow in the working area to get rid of released particulates in the air.

### Regulations

---

Lamtec adhesive ranges are in compliance with the following internationally accepted legislations for the production of plastics and articles intended to come into contact with food stuff:

EU: Commission Regulation (EU) No 10/2011.

USA: CFR, Title 21, § 175.105 of the FDA, Washington D.C.

Please contact our technical service department for detailed information.

Persiachasb does not guarantee the typical values. Any data included herein is based upon analysis of representative samples and not the actual product shipped. This information relates only to specific material designated and may not be valid for such material used in combination with any other materials or in any process.