

## SunLam™ NS-2100A/HA-450B

From the SunLam™ family of general to medium performance lamination adhesives

### 1. Description

NS-2100A/HA-450B is a 2 components solvent free lamination adhesive which can be processed at 40 °C.

SunLam NS-2100A/HA-450B is designed for the lamination of plastic films to other plastic film, ALU-Vacuum metallized film and ALU foil. Product is characterized by good thermal and chemical resistance.

### 2. Product Suitability

#### 2.1 Applications

SunLam NS-2100A/HA-450B lamination adhesives is intended for use in the following areas:

- Dry foodstuffs
- Liquids
- Boil-in-bag food
- Wet wipes

The suitability of these laminates should be evaluated before commercial production.

#### 2.2 Substrate

SunLam Lamination Adhesives NS-2100A/HA-450B is suitable for the following substrates and laminate structures:

- OPP/OPP metallized and not
- OPP/OPP metallized and not
- OPP/metallized PET
- PET/metallized OPP
- PET/LLDPE
- PET/AL/LDPE

For any other structures, please refer to your local Sun Chemical representative for specific details and advice.

#### 2.3 Inks

SunLam adhesives can be used to laminate a wide range of solvent-based inks, including all of those from the SunStrato range (Duratort, Duraply, Duralam, Duraline and Duraflex). The actual bond strengths achieved will depend greatly on the choice of substrate, ink technology and applied film weights of both inks and adhesive. It is recommended that rigorous tests be carried out before commencing any commercial trials. Sun Chemical can provide assistance to confirm suitability however it is recommended that all ink / adhesive / substrate specifications are tested against appropriate regulatory standards and test methods.

\*Specific application performance data, where available can be provided by your Sun Chemical representative.

### 3. General Handling

#### 3.1 Storage

SunLam NS-2100A can be stored for at least 9 months at room temperature when stored in the original unopened containers.

SunLam HA-450B can be stored for at least 12 months at room temperature when stored in the original unopened containers.

#### 3.2 Waste disposal

Care should be exercised in the disposal of mixed lamination adhesive waste. Disposal of the reactive components should be carried out in accordance with good industrial practice, observing all the appropriate regulations and guidelines for more specific handling advice refer to the safety data sheets (SDS).

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## 4. Adhesive Application Conditions

### 4.1 Mixing

	<b>NS-2100A</b>	<b>HA-450B</b>
Solids	Polyurethane polyisocyanate 100%	polyester polyol 100%
Viscosity	5000-7800 mPa.s [25 °C]	700-1300 mPa.s [40 °C]
Specific gravity	1.13 g/cm <sup>3</sup> [40°C]	1.13 g/cm <sup>3</sup> [40°C]
Mixing Ratio (weight)	100	40

### Processing

NS-2100A/HA-450B can be processed on all common solvent free laminating machines, equipped with a suitable adhesive application group and provided with a suitable tension control system for adhesive with low green tack.

For trials run purpose, we suggest to prepare a quantity of adhesive which could be used within 15-30 minutes.

For regular production an automatic mixing device is necessary to guarantee homogeneous mixing and to keep the chosen mixing ratio under control.

In case of prolonged machine stops (more than 30 minutes), the application rollers and mixing head should be cleaned with organic solvents such us Ethyl Acetate, MEK.

NS-2100A/HA-450B contains more than 1% monomeric MDI as reported on the packaging labels of the product. During its processing, specific precaution for the use of isocyanates has to be taken according as reported on related safety data sheet.

Under a correct ventilation and efficient exhaust system of the machine the OEL-value should not be exceeded.

### 4.2 Application weight

1.0 to 2.5g/m<sup>2</sup>, depending on substrate and application.

### 4.3 Nip Temperature

Nip roller should be warmed up to 40-60 °C depending on substrate and application. However with high temperatures please be careful about curling, telescoping and tunnelling of the laminate.

### 4.4 Curing

This adhesive is characterized by its high reactivity which allows slitting of the rolls after 24 hours.

Chemical curing process is normally completed in 4-7 days at ambient temperature (25 °C) but could be influenced by the type of film used and the ambient / storing conditions.

### 4.5 Viscosity (mPa.s) of individual components

	25 °C	30 °C	35 °C	40 °C	45 °C
SUNLAM NS-2100A	6280	4110	2760	1650	1100
HA-450B		2160		980	

### 4.6 Viscosity of mixed adhesive at 50 °C

Elapsed time	0 min	5 min	10 min	15 min	20 min	25 min	30 min
Viscosity (mPa.s)	900	1130	1490	1930	2470	3110	3870



## 5. Regulatory Compliance

Adhesive SunLam NS-2100A/HA-450B is in compliance with FDA 175.105.

Due to the evolving nature of European Legislation, we suggest you contact your local sales or technical representative, in order to get the most update information available.

Acceptable technical performance of SunLam Lamination Adhesives is dependent on:

- Control of product application weight (inks coatings and adhesives)
- Appropriate packaging design and structure
- Control of any migratable substances within the finished packaging structure
- Appropriate inks selected in accordance with supplier recommendations

The choice and control of substrate, design (including coverage and coat weight), process conditions and any materials from other suppliers are printer or converter technical requirements. Your local Sun Chemical technical team can provide assistance in the form of suggestions or direct support for our products.

To fulfil its responsibility within the food contact materials supply chain, and following the signing of a legally binding mutual non-disclosure agreement, Sun Chemical will provide relevant information to the customer regarding migratable components present in its products through the preparation and communication of a 'Statement of Composition'. The SunLam Lamination Adhesives are formulated with specific additives with the potential to migrate; details of these are available through statement of composition disclosure.

## 6. Disclaimers

The SunLam Lamination Adhesives are only suitable for use on the non-food-contact side of food packaging provided that they are applied under the relevant Good Manufacturing Practices (GMP) and according to the recommendations of this Technical Data Sheet.

The printer, converter and the packer or filler entity have the legal responsibility to ensure that the finished article is fit for the intended purpose (s) and that the adhesive, ink and coating components do not migrate into the food at levels that exceed legal and industry requirements as outlined in the EU Framework Regulation (EC) No 1935/2004 and the GMP Regulation (EC)No 2023/2006 and for film applications the Plastics Directive 2002/72/EC .We recommend that the finished packaging is tested under appropriate representative conditions of use if there are any doubts regarding compliance.

## 7. Technical Assistance / Contacts

For further information, please contact your local Sun Chemical team or visit our website on [www.sunchemical.com](http://www.sunchemical.com)

Our Products are intended for sale to professional users. The information herein is general information designed to assist customers in determining the suitability of our products for their applications. All recommendations are made without guarantee, since the application and conditions of use are beyond our control. We recommend that customers satisfy themselves that each product meets their requirements in all respects before commencing a lamination run. There is no implied warranty of merchantability or fitness for purpose of the product or products described herein. In no event shall Sun Chemical be liable for damages of any nature arising out of the use or reliance upon this information. Modifications of the product for reasons of improvements might be made without further notice.

Address: Sun Chemical, Wexham Springs, Framewood Road, Slough, SL3 6PJ, UK. Tel: +44 203 139 0000, [www.sunchemical.com](http://www.sunchemical.com)

