



HI-THANE™

Innovative polyurethane  
laminating adhesives for  
flexible packaging

SONGWON is a leading specialist in laminating adhesive technology for the plastic film packaging industry.

Our extended portfolio of HI-THANE™ polyurethanes enables us to design customized formulations for our customers.

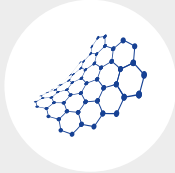
Thanks to their excellent physical and technical properties, HI-THANE™ high performance laminating adhesives are widely used by film converters to improve operational efficiency and profitability.

It's all about **the chemistry™**



# SONGWON – Extensive experience in flexible packaging

## Wide range of solvent-based laminating systems



Suitable for all flexible packaging applications  
Cutting-edge quality  
FDA compliant

## Comprehensive technical expertise



Dedicated laminating adhesives testing laboratory in South Korea  
Customized formulations

## Proven reliability



More than 35 years manufacturing experience in South Korea  
Backward integration into polyester polyol production  
Global sales organization channels in Asia, Europe and North America

## Strong commitment



Continuous innovation to meet new industry standards

HI-THANE™ laminating adhesives generate significant value for film converters through increased productivity and profitability...

## Higher productivity



Fast curing enables high bond strength to be obtained within a few hours, allowing slitting within 12-24 hours and quicker laminate turnover  
Long pot life facilitates processing

## Increased profitability



High solid content systems reduce solvent disposal costs  
Very good wetting properties help to reduce coating weights and film lamination costs  
Exceptional film transparency enhances appearance, adding value throughout the chain  
Very high resistance to boiling water and retorting prevents de-lamination of film layers and reduces potential waste disposal costs

## Technology & compliance



Solvent-based aromatic polyurethanes  
Suitable for all flexible packaging applications  
FDA compliant

# HI-THANE™ laminating adhesives recommended for flexible packaging

	<b>HI-THANE™ A-3165S</b>	<b>HI-THANE™ A-3065</b>	<b>HI-THANE™ A-3070</b>	<b>HI-THANE™ A-4650R</b>	<b>HI-THANE™ A-2050LM</b>	<b>HI-THANE™ A-720M</b>	<b>HI-THANE™ A-7332</b>
A-side chemistry	Polyester based PU	Polyester based PU	Polyester based PU	Polyester based PU	Polyether based PU	Polyether based PU	Isocyanate NCO
Applications	Plastic films Aluminum foil	Plastic films Aluminum foil	Plastic films Aluminum foil	Plastic films Aluminum foil	Plastic films Aluminum foil	Plastic films Aluminum foil	Plastic films Aluminum foil
Type	Solvent-based	Solvent-based	Solvent-based	Solvent-based	Solvent-based	Solvent-based	Non solvent-based
Appearance	Yellowish	Yellowish	Yellowish	Yellowish	Yellowish	Yellowish	Yellowish
Total solid content (% , w/w)	65	65	70	65	70	75	100
Viscosity (Brookfield cps at 25°C )	2000 ~ 4000	2000 ~ 4000	8000 ~ 12000	2000 ~ 5000	2000 ~ 5000	4000 ~ 8000	500 ~ 900
Solvent	Ethyl acetate	Ethyl acetate	Ethyl acetate	Ethyl acetate	Alcohol	Ethyl acetate	Not applicable
Recommended hardeners	HI-THANE™ CA-75	HI-THANE™ CA-75	HI-THANE™ CA-75	HI-THANE™ CA-75	HI-THANE™ CA-100EP	HI-THANE™ CA-295H	HI-THANE™ CA-6200
B-side chemistry	Isocyanate NCO	Isocyanate NCO	Isocyanate NCO	Isocyanate NCO	EPOXY	Isocyanate NCO	Polyester based PU

## HI-THANE™ adhesives key properties

	<b>HI-THANE™ A-3165S</b>	<b>HI-THANE™ A-3065</b>	<b>HI-THANE™ A-3070</b>	<b>HI-THANE™ A-4650R</b>	<b>HI-THANE™ A-2050LM</b>	<b>HI-THANE™ A-720M</b>	<b>HI-THANE™ A-7332</b>
Grade	General, medium and high performance	General, medium and high performance	General, medium and high performance	Medium and high performance	General performance	General performance	General performance
Film transparency	Good	Good	Good	Good	Good	Very good	Good
Bonding strength	Very good	Good	Good	Very good	Average	Good	Good
Fast cure properties	Good	Good	Good	Good	Good	Very good	Good
Reduced metalized layer transfer	Not applicable	Not applicable	Not applicable	Not applicable	Very good	Not applicable	Very good
Resistance to boiling water and retorting	Good	Good	Good	Very good	Average	Average	Average
Wetting properties	Very good	Very good	Very good	Very good	Very good	Very good	Very good

### Storage conditions



HI-THANE™ laminating adhesives should be stored indoors, in closed containers, in a dry place at temperatures between 5 and 40°C.

Exposure to direct sunlight should be avoided.

### Shelf life



HI-THANE™ laminating adhesives are stable for 12 months, provided they are stored under the above conditions.





For further information, please go to:

**[www.songwon.com](http://www.songwon.com)**

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