

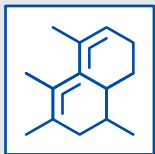


HITHANE™  
adhesives for  
flexible packaging

Leading technology for  
the plastic film packaging  
industry.

# 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

## Technology & compliance



Solvent-based aromatic polyurethanes

Suitable for all flexible packaging applications

FDA compliant

Very high resistance to boiling water and retorting prevents de-lamination of film layers and reduces potential waste disposal costs

## HI-THANE™ laminating adhesives recommended for flexible packaging

	<b>HI-THANE™ A-3165S</b>	<b>HI-THANE™ A-3165SL</b>	<b>HI-THANE™ A-3070</b>	<b>HI-THANE™ A-4650R</b>	<b>HI-THANE™ A-770M</b>	<b>HI-THANE™ A-7500L</b>	<b>HI-THANE™ A-7980</b>
A-side chemistry	Polyester based PU	Polyester based PU	Polyester based PU	Polyester based PU	Polyether based PU	Isocyanate NCO	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	Non solvent-based	Non solvent-based
Appearance	Yellowish	Yellowish	Yellowish	Yellowish	Yellowish	Yellowish	Yellowish
Total solid content (% w/w)	65	65	70	65	70	100	100
Viscosity (Brookfield cps at 25°C)	2000 ~ 4000	1200 ~ 2000	8000 ~ 12000	2000 ~ 5000	5000 ~ 15000	400 ~ 800 (at 40°C)	1000 ~ 3000 (at 40°C)
Solvent	Ethyl acetate	Ethyl acetate	Ethyl acetate	Ethyl acetate	Ethyl acetate	Not applicable	Not applicable
Recommended hardeners	HI-THANE™ CA-75	HI-THANE™ CA-75	HI-THANE™ CA-75	HI-THANE™ CA-75	HI-THANE™ CA-280H	HI-THANE™ A-6500A	HI-THANE™ A-6962C
B-side chemistry	Isocyanate NCO	Isocyanate NCO	Isocyanate NCO	Isocyanate NCO	Isocyanate NCO	- OH	- OH

## Key attributes of HI-THANE™ ink binders

	<b>HI-THANE™ A-3165S</b>	<b>HI-THANE™ A-3165SL</b>	<b>HI-THANE™ A-3070</b>	<b>HI-THANE™ A-4650R</b>	<b>HI-THANE™ A-770M</b>	<b>HI-THANE™ A-7500L</b>	<b>HI-THANE™ A-7980</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	Very good	Good	Very good
Bonding strength	Very good	Good	Good	Very good	Good	Average	Good
Fast cure properties	Good	Good	Good	Good	Very good	Good	Very good
Reduced metalized layer transfer	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Very good	Very good
Resistance to boiling water and retorting	Good	Good	Good	Very good	Average	Good	Good
Wetting properties	Very good	Very good	Very good	Very good	Very good	Very good	Very good

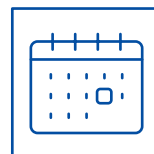
### Storage conditions



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 contact:

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SONGWON provides customers with warranties and representations as to the chemical or technical specifications, compositions and/or the suitability for use for any particular purpose exclusively in individual written agreements.

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It's all about **the chemistry**<sup>®</sup>

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