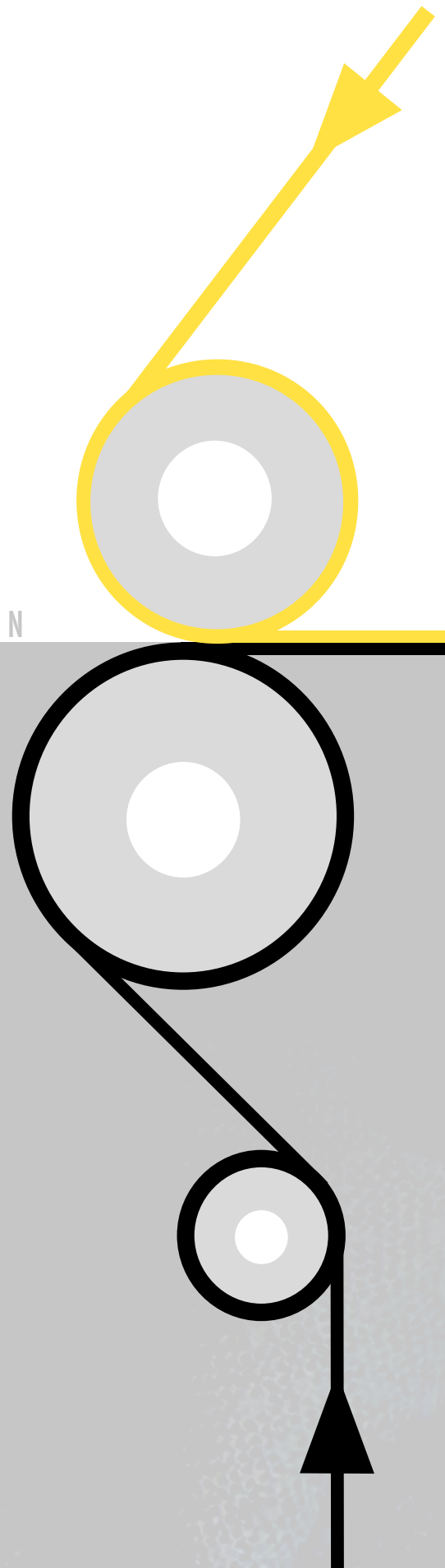


Innovative Adhesives Systems for the  
**Textile Industry**



Individual Adhesive Solutions • Technical Competence • Solution-oriented Service

T E X T I L E   L A M I N A T I O N



Over the last few years the textile industry has been subject to remarkable developments. More and more textiles are now bonded into duplex or triplex laminates. This combining of materials adds value to the end product. The term “technical textiles” has been rightly established in the market.

**KLEIBERIT** PUR hotmelt adhesives assist to produce modern high performance materials from your textile substrates.

The variety of technical textiles is almost unlimited. Amongst others non-wovens, textiles, PVC layers, membranes, foils, foam and papers are bonded together. New material combinations are being developed on a daily basis, which continually show new opportunities for new applications.



## F I E L D S   O F   A P P L I C A T I O N

### AUTOMOTIVE INDUSTRY



- Decorative fabrics for headliners, door panels, seating, hat rests
- Abrasion resistant and breathable multi-layered textile complexes for car seats

### LEISURE/ SPORTSWEAR



- Breathable wind and waterproof materials
- Lightweight and durable material combinations

### HYGIENE AND MEDICAL



- Surgical gowns/surgical drapes
- Protective mattress covers
- Incontinent articles
- Anti-allergy systems

## OCCUPATIONAL PROTECTION/SAFETY



- Protective suits for fire departments, road workers and welders
- Police and army clothing

## HOME TEXTILES



- Textile laminates for upholstery
- Black-out curtains
- Awnings

## LINGERIE AND SWIMWEAR



- Bra
- Underwear
- Bikini



## OUR QUALITY, ENVIRONMENTAL AND ENERGY STANDARD

KLEIBERIT places high value on production quality, customer service and sustainability. We have these requirements confirmed on an annual basis by an external and independent audit team according to ISO 9001, ISO 50001 and ISO 14001.



Our certified PUR hotmelt adhesives as the basis for your ECO PASSPORT by OEKO-TEX® product certification.

**ECO PASSPORT by OEKO-TEX®**  
**for our textile adhesives**



**TESTEX®**

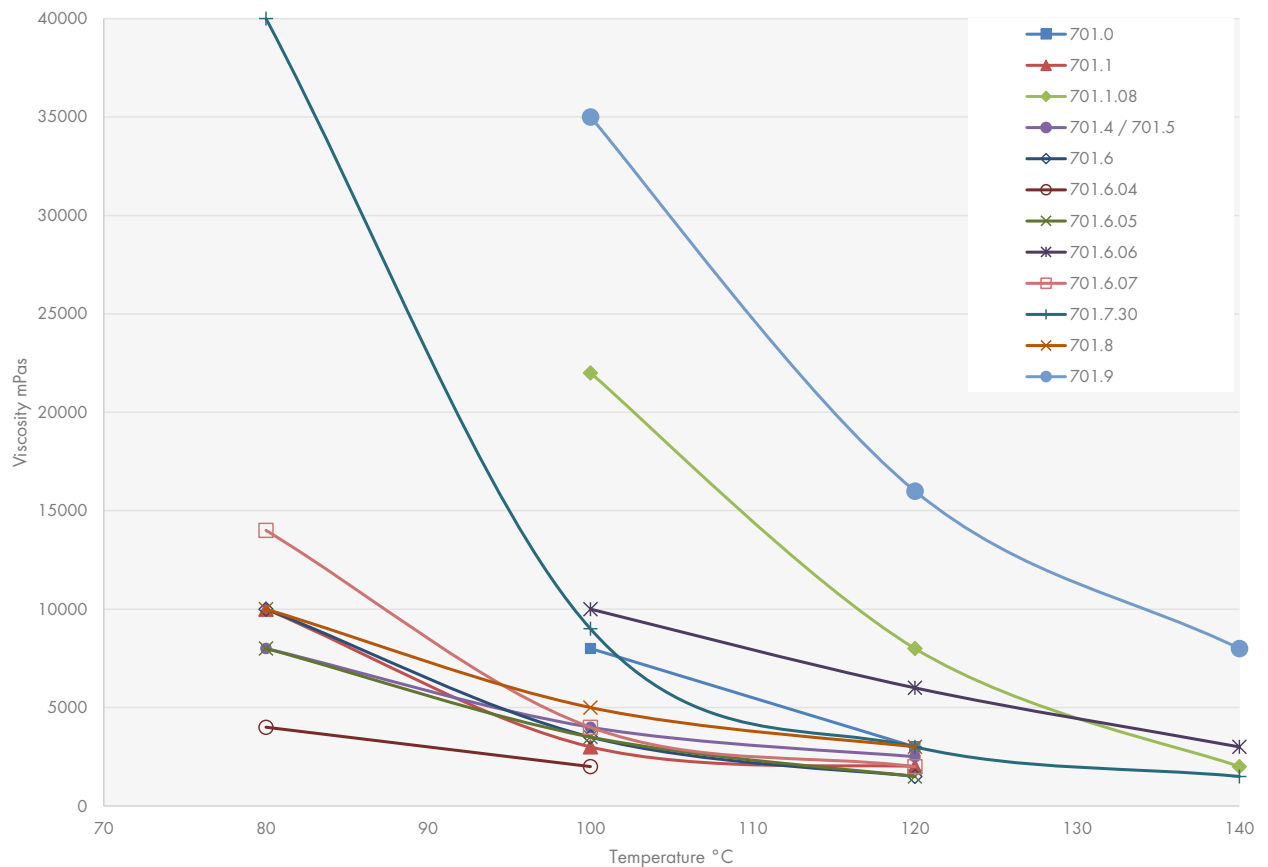
proven since 1846



# A D H E S I V E   S Y S T E M S

## The requirement determines the adhesive selection

Depending on the area of use, technical textiles are subjected to a variety of types of stress and requirements. Specific adhesive systems are used and processed accordingly. For example, thermoplastic systems based on polyolefine (PO), EVA, polyamide (PA) or polyester (PES). These are usually ground from the melt to a powder and applied to textile using a scatter process. After subsequent thermal activation, the substrates are pressed together using pressure rollers and thus bonded together. Adhesive films and webs which are commonly found in the market are also processed in this manner. These bonds only have limited resistance against external influences such as cold, heat, water or chemicals. Therefore KLEIBERIT offers high quality hotmelt adhesives based on polyurethane (PUR) for the technical textiles industry. Decades of experience in the use of reactive adhesives in many fields of industry and intensive research and development enables top results in the production and quality of the end product.





### ADVANTAGES OF PUR HOTMELTS

Over the past several years there has been an increasing use of reactive PUR HM for the lamination of technical textiles. In comparison to thermoplastic adhesive systems, PUR hotmelts do not reach their final bonding strength after cooling down, but benefit from additional chemical cross-linking.

This provides laminates produced with PUR hotmelts with superior heat, chemical and wash resistance.

### PROCESSING

PUR hotmelts are melted in pre-melting equipment at comparatively low melting temperatures from 90°C to 140°C and pumped into the application unit via heated hoses. The new market trend and temperature sensitive materials have strongly influenced the requirements on processing temperatures. After the adhesive has been applied, the substrates are brought together and then pressed by means of a lamination roller. Compared with a thermoplastic adhesive system, heat-reactivation is usually not needed. This spares temperature sensitive substrates. In principle various application methods are available.



**KLEIBERIT** has developed a range of products which account for the challenges of producing technical textiles. Individual adhesive types were formulated for customer requirements. For example, a long open time and high initial strength allow for a wide and reliable processing window – even with the lowest coat weight. The products are formulated with fluorescent so that uniform application can be controlled via UV light.

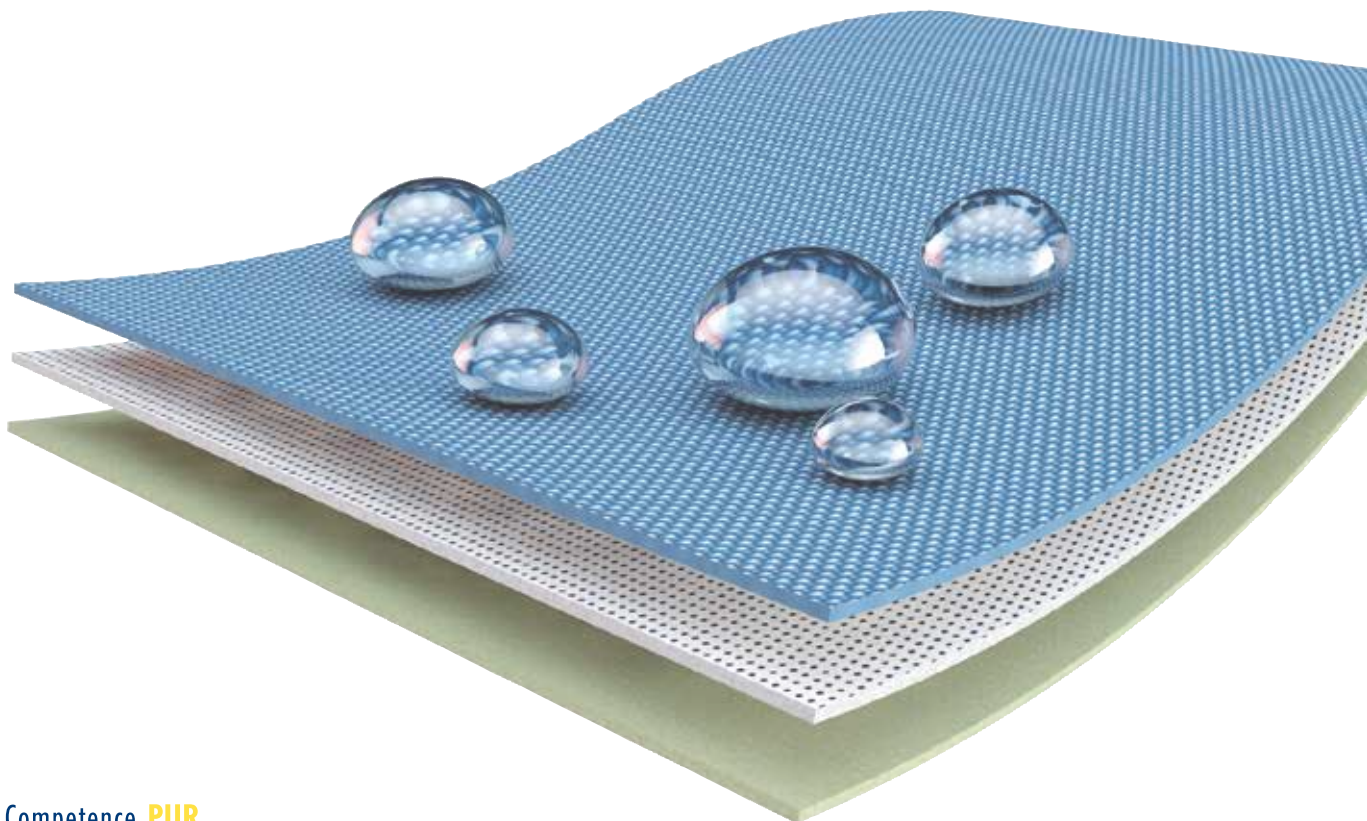
For particular applications, such as the military industry, PUR hotmelts can also be supplied without fluorescents.

## C H A R A C T E R I S T I C S

**Directly after application of the adhesive and joining of the substrates by pressure rollers, the warm PUR hotmelt wets out the different materials.**

The application characteristics of a hotmelt can be altered by adjusting the machine parameters (e.g. application temperature, application geometry and coating weight). The cross-linking process is started by the presence of humidity in the air and moisture in the materials.

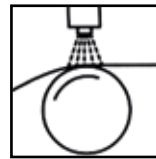
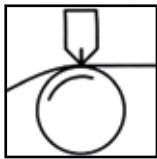
In comparison to purely thermoplastic systems, the bond achieves its superior properties through this chemical cross-linking process. With low application temperatures, even bonding of very temperature sensitive materials is possible. The temperature resistance reaches values beyond 140°C and is therefore clearly above the application temperature of the PUR hotmelt. After curing, **KLEIBERIT** PUR hotmelts are resistant to chemicals and hydrolysis and are very low emission.



Product	Viscosity				Application				Initial Strength	Cleaning Resistance		Substrate			Description
	80° C	100° C	120° C	140° C	gravure roller	slot nozzle	spray application	rotary screen		wash resistant	sterilization	textile	membrane/film	foam	
701.0	45,000	8,000	3,000	1,500	■	■			high	■		■	■	■	• excellent universal product with wide range of adhesion
701.1	10,000	3,000	2,000	1,000	■	■			high	■		■	■	■	• fluorocarbon treated textiles • high hydrolysis resistance
701.1.08		22,000	8,000		■	■			very high	■		■		■	• silicone treated textiles • very high initial strength • heavy-duty textiles
701.4	8,000	4,000	2,500	1,000	■	■	■	■	standard	■*)	■	■	■	■	• PTFE membranes • very high hydrolysis and sterilization resistance (medical items) *) wash resistance > 90°C
701.5	8,000	4,000	2,500	1,000	■	■		■	standard	■	■	■	■	■	• flame retardant • very high hydrolysis and sterilization resistance (medical items)
701.6	10,000	3,500	1,500	800	■	■			high	■		■	■	■	• ePTFE membranes • very good universal product
701.6.04	4,000	2,000	800		■	■			high	■		■	■		• low processing temperature • low viscosity
701.6.05	8,000	3,500	1,500	800	■	■		■	standard	■		■	■	■	• optimized for fast rotary screen lines (> 50 m/min)
701.6.06	40,000	10,000	6,000	3,000	■	■			very high	■		■	■	■	• short open time • high viscosity • also suitable for heavy textiles
701.6.07	14,000	4,000	2,000	1,500	■	■			high	■		■	■	■	• fast cross linking • very good for membrane lamination
701.7.30	40,000	9,000	3,000	1,500	■	■	■		very high	■		■			• very high initial strength • excellent universal product with wide range of adhesion
701.8	10,000	5,000	3,000	1,500	■	■	■	■	standard	■		■	■		• UV resistant • HClO resistant (no discoloration) • very high hydrolysis and chemical resistant
701.9		35,000	16,000	8,000	■	■	■		very high	■		■		■	• high initial strength • heavy textiles • very good wash resistance

Application temperatures should be adjusted according to specific substrates. Chemical cross linking depends on temperature and moisture.

## A P P L I C A T I O N   M E T H O D S



### **SLOT NOZZLE**

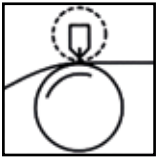
With this application method, the PUR hotmelt can be applied on the entire surface or in a breathable layer. This closed system is beneficial for processing PUR HM, as it prohibits contact with humidity until application. In the case of variable application widths the heating zones in the slot nozzles can be switched off individually.



### **SPRAY APPLICATION**

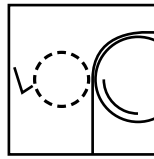
The adhesive is applied via spray nozzles with a very small diameter. The adhesive is sprayed on to the substrate by means of compressed air. A wide range of application weights can be achieved by changing the process parameters. Several nozzles are usually placed on a spraying bar so that wider coating widths are possible. By means of switching on- and off the spray nozzles, this installation configuration provides great flexibility for different application widths. Another advantage is the contactless application of adhesive whereby very sensitive substrates can be gently bonded together.





### **ROTARY SCREEN APPLICATION**

Here the adhesive is pumped in front of a so called doctor blade system that pushes the adhesive through the small holes in the rotary screen. The adhesive will appear on the substrate in a dot form.



### **GRAVURE ROLLERS**

This system applies the adhesive via an open roller system. The coat weight depends on the engraving of the roller and the pressure against the counter roller. Immediately after going through the melting tank with squeegee, the surface of the roller is completely „scraped“ off. The adhesive is applied in dots to the laminate.

## C L E A N I N G

After finishing production, the application rollers have to be cleaned completely with **KLEIBERIT Cleaner 761.8**. Remaining hotmelt in hoses and melting vessels can stay in the system until next use if protected from air and humidity.

Slot nozzle openings should be sealed airtight; therefore remaining hotmelt can be left inside the system. Any other remaining PUR hotmelt must be removed with a liquid cleaner.

Residual cross-linked PUR HM has to be removed mechanically.

**Always follow the instructions of the equipment manufacturer!**

#### Cleaner: Hotmelt systems

Cleaner	Color	Packaging	Viscosity	Cleaning properties
<b>761.2</b>	blue, meltable block	Metal Pail	5,000 mPas at 120° C	<ul style="list-style-type: none"> <li>• Cleaning of melting units, hoses and nozzles</li> <li>• Good mixing with PUR HM</li> <li>• Neutralises isocyanate reaction</li> </ul>
<b>761.7</b>	blue, meltable granules	Paper Bags, Metal Pail, Cartridges	11,000 mPas at 120° C	<ul style="list-style-type: none"> <li>• Cleaning of melting units, hoses and nozzles</li> <li>• Good mixing with PUR HM</li> <li>• Neutralises isocyanate reaction</li> </ul>
<b>761.8</b>	white, meltable powder	Plastic Pail, Fiber Drum	liquid at 80° C	<ul style="list-style-type: none"> <li>• Roller cleaning</li> <li>• good mixing with PUR HM</li> <li>• PUR HM could easily be wiped off rollers</li> </ul>

#### Cleaner: Liquid systems

Cleaner	Color	Packaging	Viscosity at 20 °C	Cleaning properties
<b>822.5</b>	clear	Metal Can	2 mPas	Removal of cured PUR HM at ambient temperature
<b>822.8</b>	clear	Metal Can	5 mPas	Removal of cured PUR HM at 70 °C
<b>826.0</b>	clear	Metal Can	130 mPas	Removal of cured PUR HM up to 180 °C





## **KLEIBERIT® Adhesives worldwide**

### **KLEIBERIT Adhesives (Head Office)**

KLEBCHÉMIE M. G. Becker GmbH & Co. KG  
Weingarten, Germany

### **KLEIBERIT Adhesives UK**

Coalville, Leicestershire, UK

### **KLEIBERIT Chimie S.à.r.l.**

Reichstett, France

### **KLEIBERIT Adhesives USA Inc.**

Waxhaw, North Carolina, USA

### **KLEIBERIT Adhesives of Canada Inc.**

Toronto, Ontario, Canada

### **KLEIBERIT AUSTRALIA Pty Ltd.**

Sydney, Australia

### **KLEIBERIT Russia**

Moscow, Russia

### **KLEIBERIT Adhesives Japan**

Osaka, Japan

### **KLEIBERIT Adhesives Beijing Co., Ltd.**

Beijing, China

### **KLEIBERIT Adhesives Asia Pte. Ltd.**

Singapore, Singapore

### **KLEIBERIT Adhesives India Private Ltd.**

Bangalore, India

### **KLEIBERIT Kimya San. ve Tic. A.Ş.**

Istanbul, Turkey

### **KLEIBERIT Bel**

Minsk, Belarus

### **KLEIBERIT-UKRAINE LLC.**

Kiev, Ukraine

### **KLEIBERIT do Brasil Comércio de Adesivos e Vernizes Ltda.**

Curitiba, Brasil

### **KLEIBERIT Adhesives México S.A. de C.V.**

Mexico City, Mexico

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**Competence PUR**

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