

BAYMEDIX® Dispersions for non-woven binding processes New benefits for the production of medical products

Baymedix® polyurethane dispersions (binder) consist of fully reacted polyurethane polymers dispersed in water with low VOC content and no external emulsifiers used. They can be designed with high solid content and can be cross-linked for enhanced chemical stability.

Binding technology applying polyurethane binders for new non-woven shows excellent performance in:

- Bonding and fibre compatibility
- Webforming processing
- Binding strength
- Mechanical properties
- Functionalization

This set of features contributes to an enhanced performance in a variety of medical applications.

Baymedix®



Properties of Baymedix® PUD dispersions

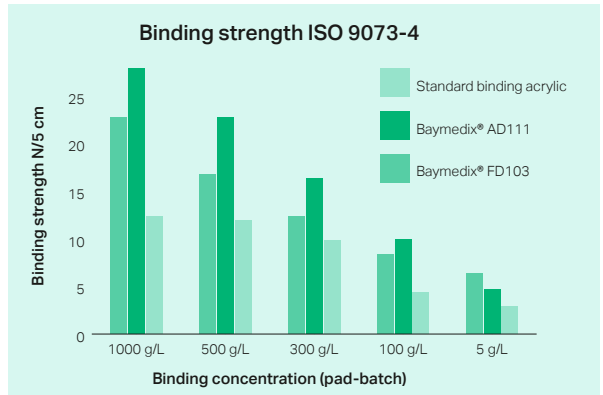
Property	Baymedix® CD102	Baymedix® FD103	Baymedix® AD111
Solid content [%] (DIN EN ISO 3251)	39 - 41	39 - 41	48 - 52
Viscosity at 23°C [mPas] (DIN ISO 3219/A.3)	*	< 2,000	50 - 1,000
pH (DIN ISO 976)	6 - 8	5.5 - 7.5	6 - 9

* Efflux time at 23°C, 4 mm cup [s] (AFAM 2008/10503): < 70

Baymedix® binders are advantageous in a wide range of applications

Baymedix® binders offer novel advantages and possibilities for chemical bonding of non-wovens.

The excellent properties of Baymedix® binders display so far unmet characteristics in achieving a robust stabilization combined with brilliant elasticity, compression and softness. This enables a high level of comfort for the patient.



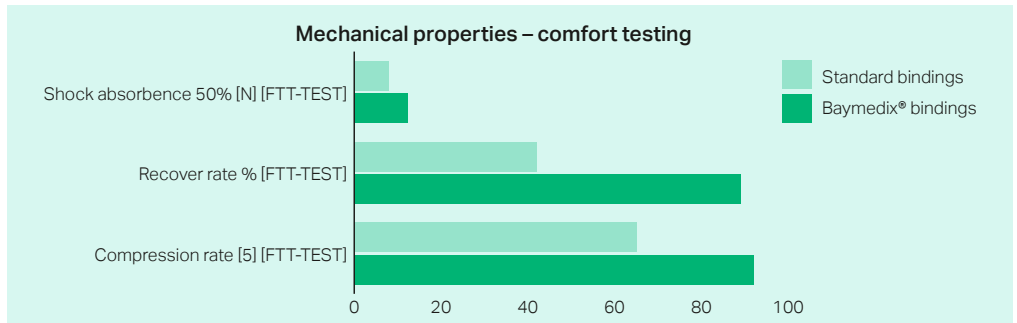
The elevated and unprecedented high binding strength that can be achieved with Baymedix® dispersions leads to robust and flexible materials that are safe to use for medical applications.

Baymedix® binders enable diverse functionalities in non-wovens

Baymedix® dispersions can be used to achieve many functional requirements for innovative medical non-wovens. They range from highly absorbent non-woven materials for absorbing body fluids to microbiological barrier layers. The appropriate selection of the production process and the corresponding Baymedix® types and recipes are an important material design step.

Elasticity, compression, shock absorbance and recovery – Baymedix® is an excellent choice

Polyurethanes are known for their outstanding elasticity properties. The very soft, but stable non-wovens bonded with **Baymedix®** dispersions are, therefore, ideally suited for medical and hygiene applications, opening new perspectives in wound therapy, orthopaedics and applications requiring a high degree of compression and cushioning to ensure a fast healing.



Recommended binding technologies:

Suitable bonding techniques	Fiber compatibility	Suitable webforming process
Foam coating Pad-batch Pad-roll Spray coating	Cellulosics Man-made-fibers Biodegradables Advanced fibers	Carded non-wovens Hydrotanglement Airlay Thermofusion

Key properties of non-woven made with PU binders:

- Liquid and fluid management
- Active ingredient application
- Special mechanical requirements
e.g. robust and highly elastic applications
- Linting reduction (high-performance level for clean room requirements)
- New surface technologies
(e.g. influencing sliding friction, adhesion)

Baymedix® dispersions are suitable for major functional non-woven layers in medical applications

Possible applications:

Wound care
Rehabilitation
Disinfection/wound irrigation (hydro-therapy)
Personal protective equipment
Filtration
Medical devices equipment and machinery



Baymedix® bonded non-wovens help to ensure compliance with important standards, requirements and specifications:

Required Function	Standard
Microbial barrier	ISO 16603, ISO 16604, EN ISO 22610, EN ISO 22612, EN 13726, ASTM F1671, ASTM F1608, ASTM F2638, ASTM F1819-19, ASTM D5908-06, AATCC 100
Biocompatibility, bioburden and linting/cleanliness	ISO 10993, EN ISO 11737, EN ISO 9073-10, ASTM F3352-19, ASTM F2407-06, EN 1644-1
Liquid management	EN ISO 811, EN, ISO 9073-8, EN ISO 9073-12, EN ISO 9073-13, EN ISO 9073-16, EN ISO 9073-17, ASTM D3816, EN 13726 AATCC 127
Wound closure strength of adhesives and sealants for tissues	ASTM F2458
Strength and abrasion	EN ISO 9073-4, EN ISO 9073-10, ASTM D5034, ASTM D5733, ASTM D4966
Comfort/breathability/sweat evaporation	EN ISO 11092, EN 13726, ASTM D 6701, ASTM F1868-17, FTT-Test (Skin Contact)*

* Baymedix® binders: highest/best skin contact performance (grade 5) achieved.

Technology consulting for Baymedix® bonding technologies of non-wovens



Application Lab Weber & Leucht GmbH
 Am Röhlingsberg 20 | 36043 Fulda, Germany
 Phone: +49 66138056-72
 Mail: lab@weber-leucht.com
 www.weber-leucht.com

Covestro Deutschland AG
 Business Unit Coatings,
 Adhesives and Specialties
 Medical
 D-51365 Leverkusen
 Germany

baymedix.com
 medical@covestro.com

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Edition: 2020 · Order-No.: COV00090192 · Printed in Germany

