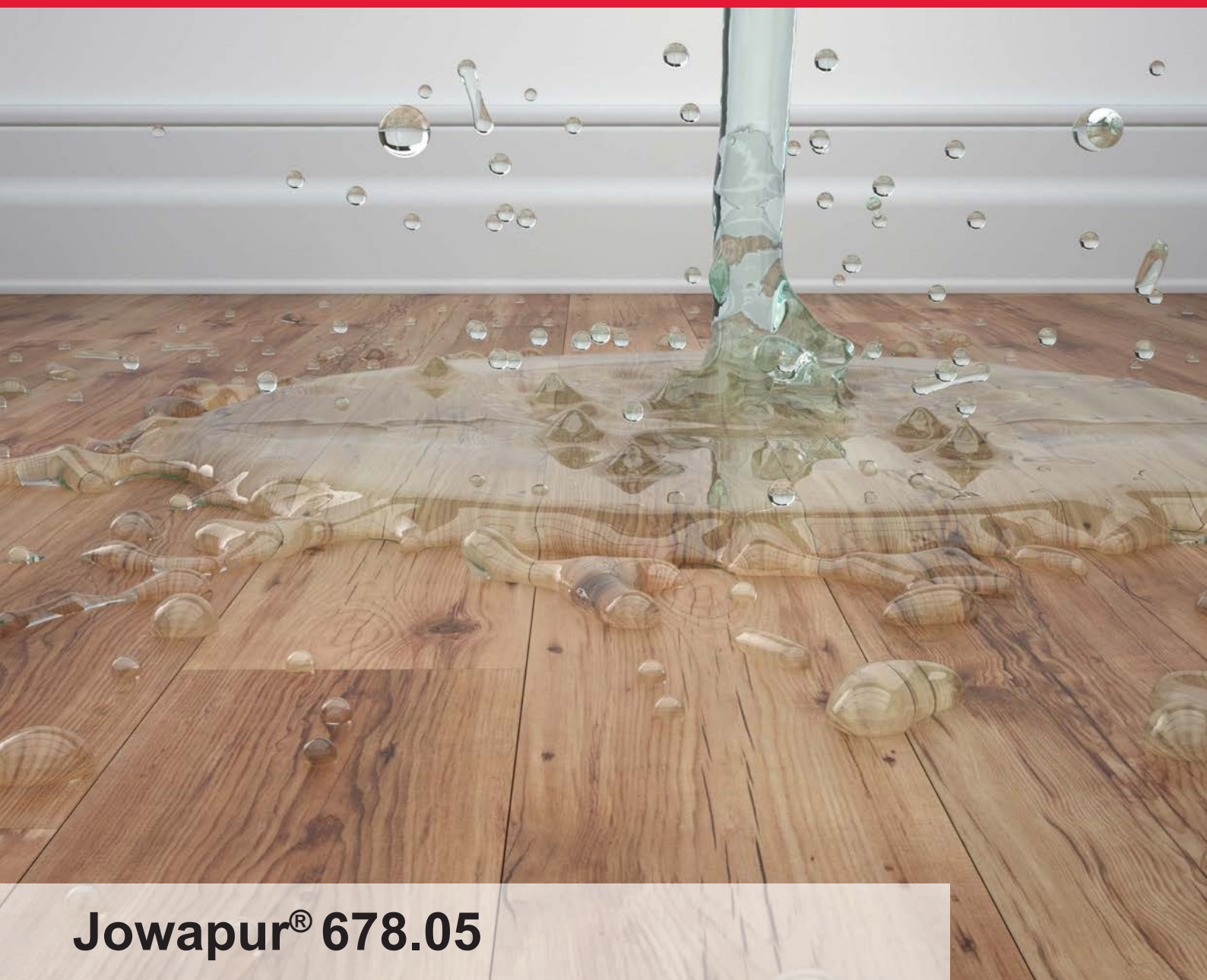


# Appretur

- Modification of hydrophilic materials
- Reduced swelling
- Improved physical material properties



**Jowapur® 678.05**

# Jowapur® Appretur Upgrade - First Class



**Definition:** Finishes are applied to fabrics, textiles, yarns, and fibres to impart the required functional properties. For instance, they can be used to improve the surface structure, rigidity, strength, gloss, density of the substrate, but can also function as a hydrophobic, antistatic, flame-retardant, or antimicrobial agent.

**Function:** The treatment of wood-based materials with a hydrophobing agent makes them either water-repellent or at least reduces the water absorption. The ingredients of the **Jowapur®** Appretur cover the wood fibres, pores and capillary surfaces, therefore preventing moisture ingress. Since the pores and the capillaries are not closed in this procedure, the diffusion capacity (breathability) of the material remains virtually unaffected by the hydrophobing treatment.

**Objective:** The effect of the Appretur has to be permanent and without any negative side effects. The characteristics of the substrate have to be maintained and may even be improved significantly depending on the application. In particular, the Appretur treatment is not allowed to have a detrimental effect on the downline bonding processes with different adhesive systems.

**Effect:** In general, the deeper the Appretur penetrates into the material, the better the effect will be. The ideal degree of penetration has to be determined for every application individually depending on the price-performance ratio, the desired improvement as well as on the downline processing steps and the time between them. In general, the achievable penetration depth depends on:

- the absorbing capacity of the substrate
- the density profile of the substrate
- the type and formulation of the Appretur
- the application technology and application amount
- the contact time

**Substrates:** The **Jowapur®** Appretur is suitable for instance for the following substrates: MDF/HDF, particleboard, plywood, solid wood, plaster and cement fibreboard, paper, cardboard

## Application methods

- Roller applicators
- Curtain coating + vacuum deep-drawing
- Vacuum – spray application
- Brush or roller (manual application)
- Pressurised containers

# HDF/MDF finishing with Appretur

The physical characteristics of wood-based materials such as MDF and HDF can be improved significantly with the **Jowapur®** Appretur. This provides the opportunity to tap into new markets and fulfil the increasing requirements for the latest applications, and to achieve higher resistances.

Especially the tensile strength, shear strength, bending strength, E modulus and transverse tensile strength can be increased by up to 100 %.

The application amount and therefore also the achievable improvement are depending directly on the material thickness, density and penetration depth.

The Appretur is applied in a curtain coating process and drawn into the board through vacuum. The penetration depth can be adapted by changing the application amount, the vacuum and the duration of the process. Depending on the purpose, only the surface with a few millimetres of penetration into the material or a complete treatment may be necessary.

Materials treated with an Appretur can be bonded easily with different adhesive systems. Superior bonding strengths are achieved with dispersion adhesives directly after the treatment (wet in wet).

## Advantages of Appretur treatment

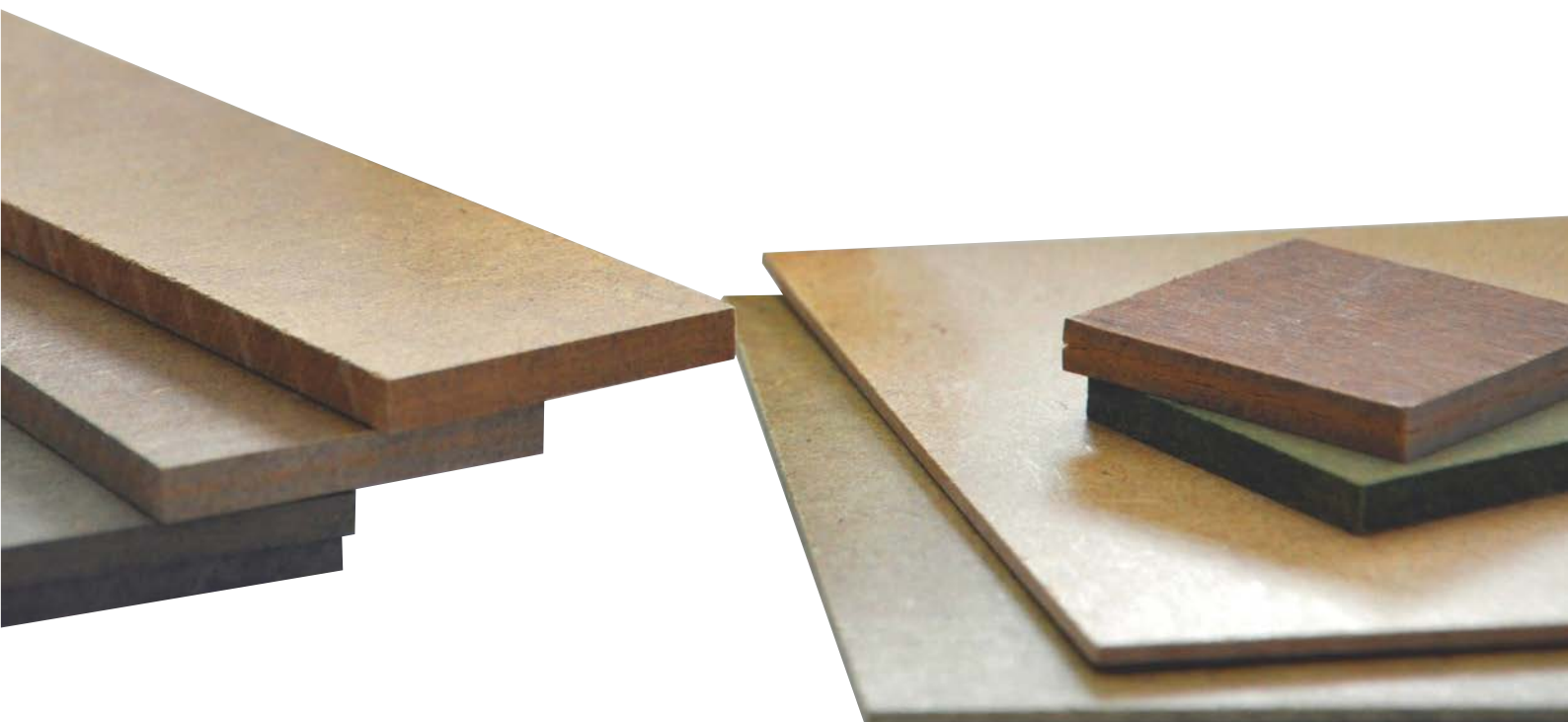
- Shear strength up to +100 %
- Tensile strength up to +100 %
- Bending strength up to + 50 %
- Elasticity E modulus up to + 50 %
- Reduced swelling in thickness according to DIN EN 317 by up to 70 % (after 24 h storage in water + drying)
- Reduced erected fibres after exposure to moisture, e.g. during varnishing or bonding

## Application methods

- Curtain coating + vacuum deep-drawing
- Easy and precise application amount dosing
- Variable penetration depth; up to the entire cross section (up to 8 mm thickness)
- Homogeneous application pattern

## Applications

- Floor elements for rooms with high humidity
- Cladding panels
- Doors
- Building products e.g. wood fibre insulation boards
- Lightweight building panels





# INFO: PUR Appretur

The one-component Jowapur® Appretur based on isocyanate hardens due to a chemical reaction with moisture. During this crosslinking reaction a small amount of CO<sub>2</sub> gas is formed. The released amount of gas is depending largely on the moisture content of the substrate and the ambient air. Therefore, the available moisture has to be controlled depending on the intended process if necessary. Jowapur® Appretur have to be protected from humidity during production and storage to prevent a premature reaction. The material temperature is not allowed to drop below 5 °C. The PUR Appretur is classified as hazardous material and certain safety instructions apply. The information in the Safety Data Sheets as well as legal and official regulations must be observed. Jowat SE recommends and provides training regarding the safe handling of isocyanates. After complete chemical crosslinking, the Jowapur® Appretur is no longer hazardous.



# Laminate floors – Permanently high-quality joints

Depending on the quality of the laminate, the appearance of the joints may become unattractive after some time. Firstly due to the ingress of moisture causing a swelling of the MDF substrate and secondly due to a movement of the individual rows of planks in the longitudinal direction.

The Appretur is especially suitable for the laminate flooring industry in combination with a vacuum spraying application to ensure a homogeneous and complete coating of the tongue and groove of the laminate and to facilitate a permanent superior appearance of the joints.

Using the vacuum spray technology, **Jowapur®**-Appretur can be applied easily and extremely accurately even on the profiled edges of wood-based substrates.

The standard feed speeds of up to 300 m/min in the flooring industry are no problem for the Appretur.

The positive effect and a substantial reduction of edge swelling has been confirmed in tests with low surface tension water. Edge swelling can be prevented almost completely, facilitating a leap forward in quality and permanent customer satisfaction.

## Advantages

- Reduced edge swelling according to DIN EN 13329 by up to 90 % to < 1 % after re-drying
- Efficient and permanent protection
- Improved water resistance
- Increased profile tensile strength

## Applications

- Floors, e.g. laminates
- Furniture parts
- Solid wood elements
- Skirting
- Doors

## Application

- Vacuum spray application in a profiled mould
- Retrieve and reuse of excess material
- Edge coating e.g. of tongue + groove
- No waste or overspray
- Profile-independent coating
- Homogeneous application
- Precise application amount dosing
- Spray application within limits





# Quantum leap in lightweight panels with paper honeycomb

Whether with or without frame, the lightweight panels with a paper honeycomb core play an increasingly important role in the manufacture of furniture. The objective of using these materials is to reduce weight and to save resources. The water-repellent properties of the honeycombs and the skins can be improved through an Appretur treatment. One major demand from the industry are boards with an increased carrying capacity. The loading capacity of lightweight panels can be increased significantly with a finishing of the paper core and optionally of the skins.

The **Jowapur®** Appretur can be applied by roller on the ridges of the honeycombs. This reduces the material consumption to a minimum.

For superior results, the substrates may be bonded directly after treatment with a PVAc dispersion adhesive (wet in wet). If the substrates are bonded with hot melt adhesives, the Appretur should dry before bonding. Depending on the requirements, the Appretur may be applied only on the surface or penetrate into the entire cross-section.

The Appretur improves the performance of lightweight elements, especially with regard to the tensile

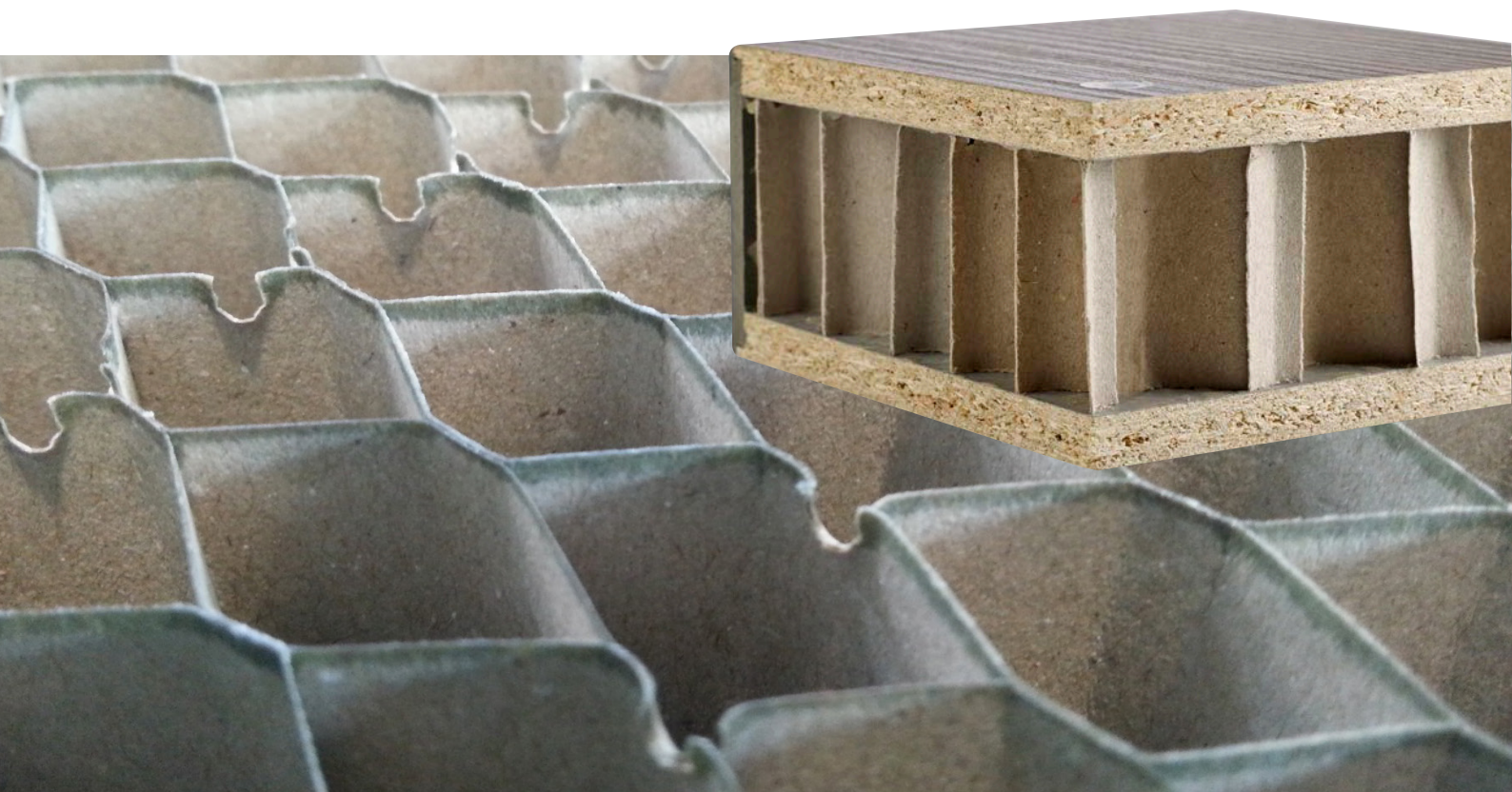
strength, bending strength and the transverse tensile strength. Compared to an untreated element, the achieved strength values are much more evenly distributed. This optimisation can lead to a quantum leap in the manufacture of lightweight furniture and opens up new opportunities regarding application and structure, especially since material consumption can be reduced further.

## Advantages compared to a raw panel

- Tensile strength up to 50 % higher
- Increased bending strength by up to 50 %
- Increased transverse tensile strength by up to 100 %
- Substantial reduction of the standard deviation
- Lower dispersion of the strength values
- Significant improvement of the torsional stiffness

## Applications

- Lightweight furniture
- Doors
- Tables
- Worktops
- Shelves
- Shape elements



# Technical Information

## Jowapur® 678.05 Moisture-curing 1-component PUR Appretur

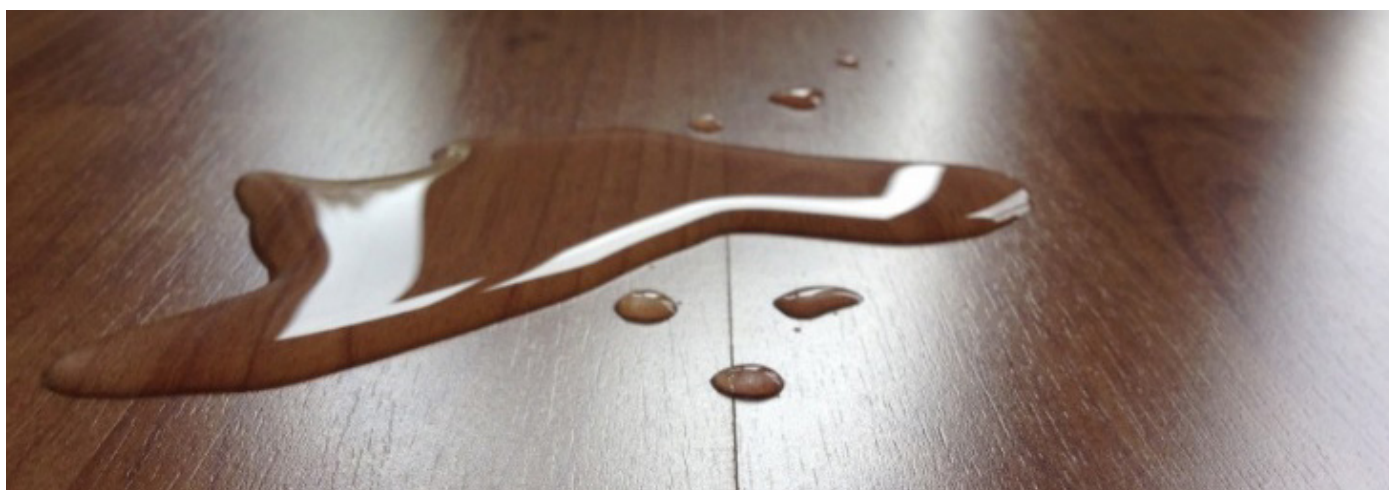
Classic hydrophobing agents prevent the ingress of moisture by reducing the surface tension i.e. the wetting property of the material surface. However, this also has a detrimental effect on downline processes such as bonding. This is not the case with **Jowapur® 678.05**. In addition to a very good adhesion of most standard adhesives to the fully crosslinked system, dispersion adhesives may be applied wet in wet without previous drying and provide excellent bonding strengths.

More hydrophobing products from the **Jowapur®**-Appretur series are available for many different applications, application methods and substrates. In general, the Appretur can be adapted individually to the specific requirements. Products which have been optimised for curtain coating applications are available. The Appretur may be coloured to a limited extent.

### Jowapur® 678.05

Moisture-curing 1-component PUR Appretur

Polymer basis	PUR
Processing temperature	15 - 25 °C
Viscosity Brookfield at 20 °C	approx. 70 mPas
Density	approx. 1.2 g/cm <sup>3</sup>
NCO content	approx. 28 %
Appearance	light brown, translucent

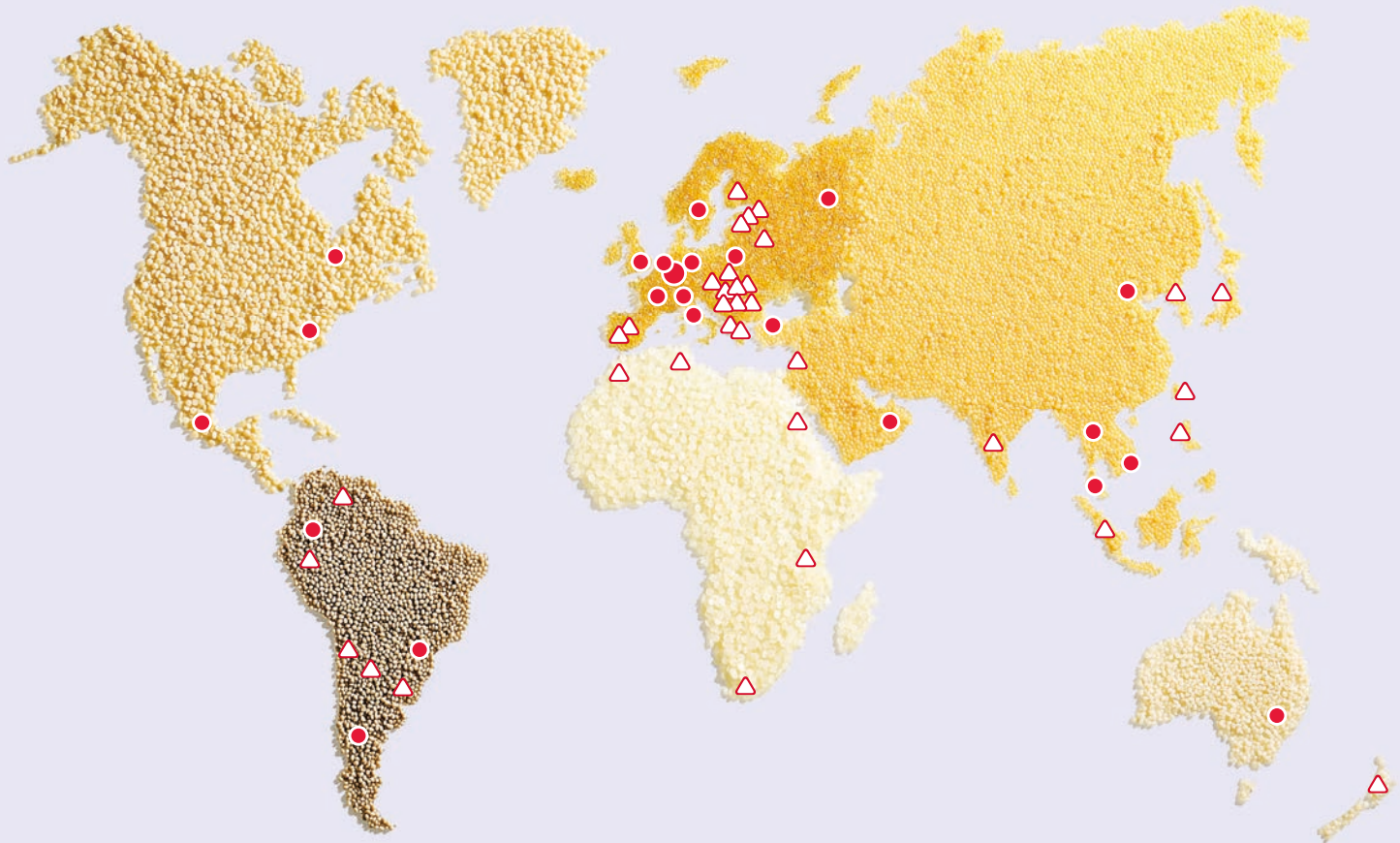


Note: The products listed only represent a limited selection of the available product portfolio. Our service and consultation team from Sales and Product Marketing will be pleased to provide specific information, to select the product suitable for your process.



# Jowat | Ihr Partner in Sachen Kleben

# Jowat | Your Partner in bonding



- Jowat Tochtergesellschaften / Jowat Subsidiaries
- △ Distributionspartner / Distribution Partners



The information given in this leaflet is based on test results from our laboratories as well as on experience gained in the field, and does in no way constitute any guarantee of properties. Due to the wide range of different applications, substrates, and processing methods beyond our control, no liability may be derived from these indications nor from the information provided by our free technical advisory service. Before processing, please request the corresponding data sheet and observe the information in it! Customer trials under everyday conditions, testing for suitability at normal processing conditions, and appropriate fit-for-purpose testing are absolutely necessary. For the specifications as well as further information, please refer to the latest technical data sheets.

## Jowat – Kleben erster Klasse

## Jowat – first class bonding

[www.jowat.com](http://www.jowat.com)



Australia Brasil Canada Chile 中国 Colombia Deutschland France Italia Malaysia Mexico Nederland Polska Россия  
Sverige Suisse ประเทศไทย Türkiye United Kingdom United States of America دوحتملا ءيبرعلا تارامالا Việt Nam