



Bonding solutions for Wearables applications

Skin-friendly materials and adhesives tailored to your requirements.



Cleanroom manufacturing at our site in Remscheid, Germany.

Adhesion to skin: Bonding solutions for challenging surfaces

There is probably no area in the adhesive industry that is more demanding than adhesion to skin. As a living organ, the skin is subject to constant change and fluctuating external influences, e.g. low surface energy, rough texture or sweat. With our "Smart Bonding Approach", we customize our solutions to your individual application and requirements.

Our biocompatible high-performance products cater to the needs of sensitive and stressed skin (elderly people, children or athletes), offering high breathability, water resistance as well as a residue-free and painless removability.

Your reliable partner for smart and safe bonding solutions for the medical industry



Lohmann develops, produces, coats and die-cuts adhesive solutions that have been used for clinical and precise diagnostic products for more than 20 years. Here, Lohmann has firmly established itself in the market as a reliable partner. Regardless of whether a customer-specific design or standard products, we deliver innovative products that are precise, stable, biocompatible and ideal for short- or long-term use. Providing in-house state-of-the-art capabilities, which include adhesive formulation, polymerization, coating, casting and extrusion as well as clean-room conversion and die-cutting, we are well-placed to support the needs of the market, both today and into the future.

We offer our customers a solution-orientated "Smart Bonding Approach". With our fully integrated value chain, a project management methodology that promotes and utilises tools such as FMEA (Failure Mode and Effects Analysis), risk assessment, design of experiments and IQ (Installation Qualification), OQ (Operational Qualification), PQ (Performance Qualification) validation, and a quality management system that operates in accordance with EN ISO 13485, Lohmann is your first choice partner for the design, development and commercialization of products for the Medical market.

We offer the entire value chain of production and processing of double-sided adhesive tapes.



R & D of adhesive

We tailor the properties of our adhesives to the requirements of the respective application. For example, we can adjust the adhesive strength by adding additives or meet requirements such as flame retardancy, light protection or plasticizer resistance.



Die-cutting

With computerized die-cutting machines that are used to create high-quality, dimensionally accurate products, we respond to the increasing demands of the market.



Coating

Acrylics and rubber-based adhesives are coated onto web materials on solvent, dispersion and hotmelt systems. Reactively crosslinking adhesive systems additionally offer our customers increased mechanical or physical strength in their application.



Testing

With elaborate inspection and testing procedures in our laboratories, we ensure that our products meet the quality requirements.



Converting

We convert coated materials into rolls, spools and sheets in many dimensions according to customer requirements.



Assembly support

Application technology specialists support our customers in integrating our adhesive systems into the production process.

Wearables

Overview Wearables.

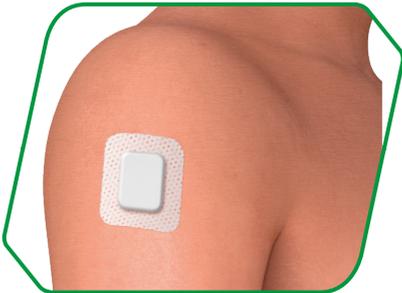
Mobile Cardiac Telemetry (MCT)



Large Volume Injector



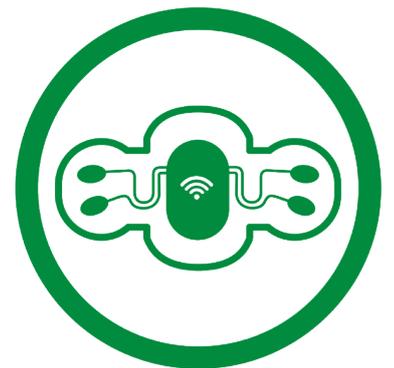
Continuous Glucose Measurement (CGM)



Continuous Temperature Measurement



Insulin Patch Pumps



Application in detail

Mobile Cardiac Telemetry (MCT)

For mobile monitoring, Lohmann can provide Medical Tape solutions for removal and re-application to your device and the skin surface, thus offering of extended wear time solution.

Your benefits:

- High tack of the adhesive to skin to ensure a strong bonding from the first touch
- Flexible material to improve the patient's comfort
- Double-sided tape with a thin PET carrier acts as a barrier film to protect the skin from the printed electronic

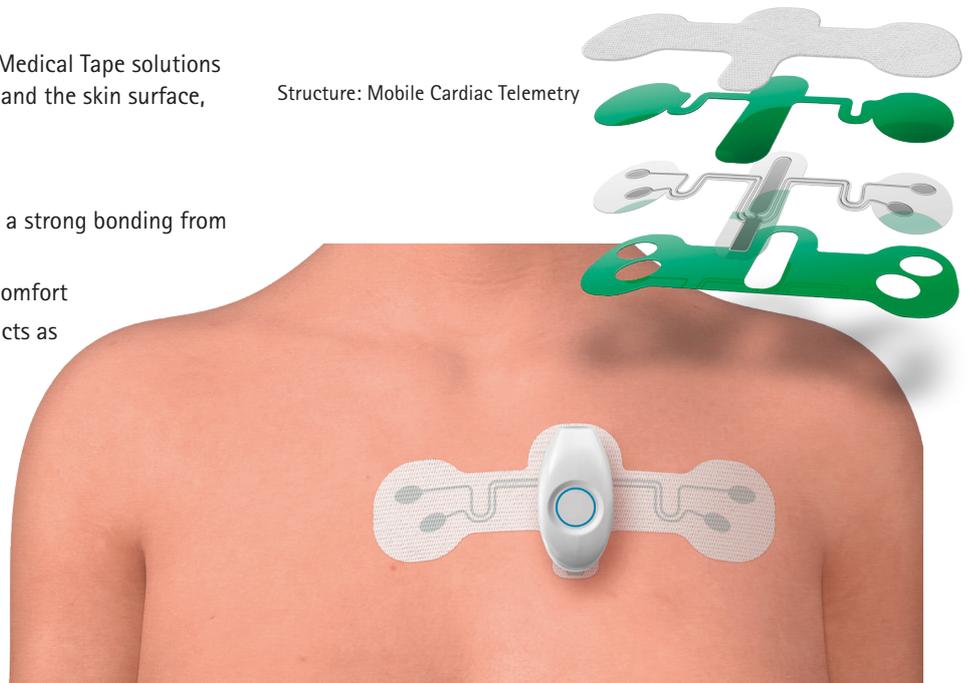
Products:

Skin patch:

- DuploMED® 45150
- DuploMED® 22791

Device tape:

- DuploMED® 8171
- DuploMED® 8411
- DuploMED® 22507



Mobile Cardiac Telemetry on the breast.

Continuous Glucose Measurement (CGM)

Connected to a smart device (e.g. smartphone), devices for continuous glucose measurement track the glucose level throughout the day and alert the patient if the level goes too high or low. Our skin-friendly bonding solutions ensure a comfortable wear time of up to 21 days and help improve the management of the illness.

Your benefits:

- High tack of the adhesive to skin to ensure a strong bonding from the first touch
- Strong bonding to ensure a long wear duration of over 14 days+
- Very flexible backing to allow the patch to go with the movement of the skin to reduce the skin irritation during the wear time
- Good breathability of the skin tape as well as the Device tape to allow water to escape

Products:

Skin patch:

- DuploMED® 22791

Device tape:

- DuploMED® 22507



Continuous Glucose Measurement on the upper arm

Insulin Patch Pumps

Insulin patch pumps deliver low doses of short-acting insulin continuously and can create a closed-loop system in combination with a CGM. Our breathable adhesive tape solutions ensure the maximum comfort for the patient, with a wear time of up to 72 hours.

Your benefits:

- Flexible material to improve the patient's comfort
- Double-coated Device tapes to create a strong bonding between device and skin tape
- Good breathability of the skin tape to allow water to escape and let the skin breath
- Good shear resistance of the adhesive to prevent movement of the patch during injection

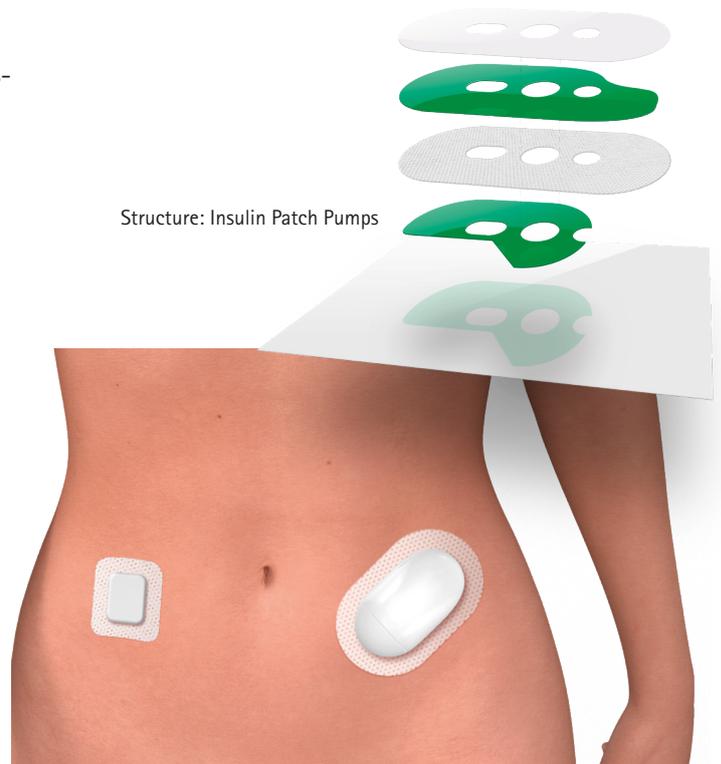
Products:

Skin patch:

- DuploMED® 22260
- DuploMED® 45150

Device tape:

- DuploMED® 8171
- DuploMED® 8411
- DuploMED® 22507



Insulin Patch Pumps on the abdominal wall

Large Volume Injector

Our single-use patch solutions for large volume injectors are equipped with repositionable tapes, ensuring a comfortable use for the self-injection of liquid drugs (e.g. for cancer treatment) at home. Depending on your application, our product offers wear durations from 10 minutes to 2 hours.

Your benefits:

- High tack of the adhesive to skin to ensure a strong bonding from the first touch
- Low peel strength for easy removal after use
- Repositionable tapes to ensure the best bonding
- Good shear resistance of the adhesive to prevent movement of the patch during injection

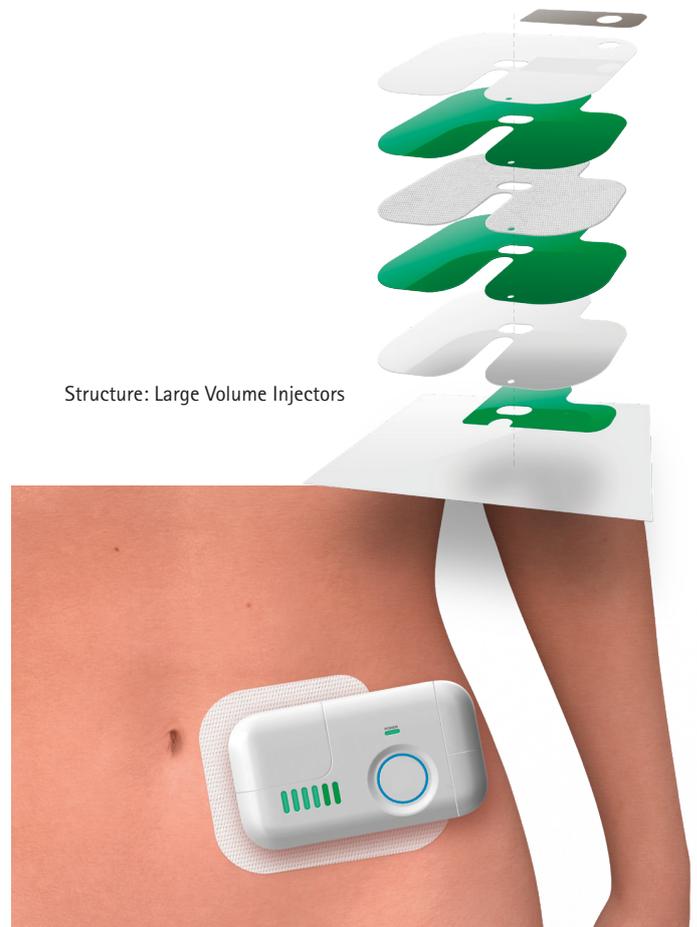
Products:

Skin patch:

- DuploMED® 62201
- DuploMED® 22260
- DuploMED® 45150

Device tape:

- DuploMED® 8171
- DuploMED® 8411
- DuploMED® 22507



Large Volume Injector on the abdominal wall

Continuous Temperature Measurement

Connected via an app to the user's smartphone, devices for continuous temperature measurement help to detect ovulation and most fertile days. For that, our bonding solutions are not only skin-friendly but also protect the skin as a barrier film from the printed electronic. The wear time ranges from 5-7 days.

Your benefits:

- DuploMED® 8411: adhesive to the skin side, including a thin PET carrier, acts as a barrier film to protect the skin from the printed electronic
- DuploMED® ELE 77300 / DuploMED® 22260: barrier to protect the electronics from external factors such as temperature and water

Products

Skin patch:

- DuploMED® 45300
- DuploMED® 8411



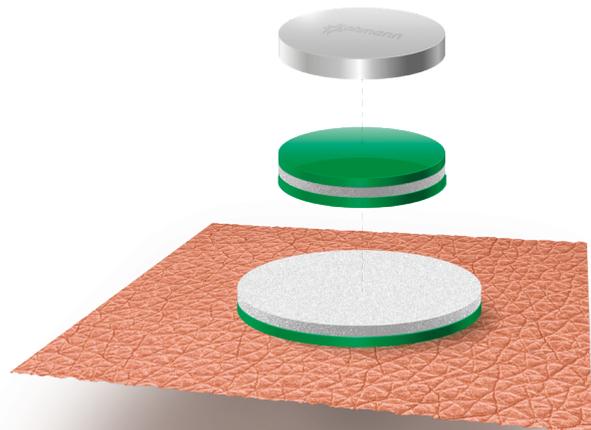
Continuous Temperature Measurement on the skin

Couldn't find your specific Wearables application?

We always have your individual requirements in mind for every adhesive bond. As a qualified development partner, we are at your side right from the start. For us, your inquiry is the beginning of customized and professional engineering. Our international project teams work closely with you across countries and locations.

Your benefits:

- High tack of the adhesive to skin to ensure a strong bonding from the first touch
- Low peel strength for easy removal after use
- Repositionable tapes to ensure the best bonding
- Good shear resistance of the adhesive to prevent movement of the patch during injection



Our Services – From Prototype to Full Scale Production

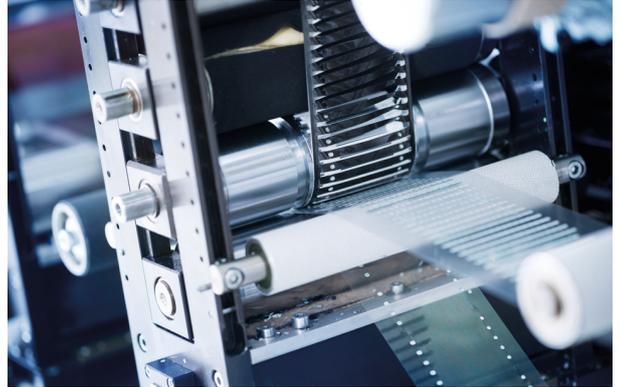
Lohmann's Bonding Engineers cover the entire value chain – from the first concept through material selection, product development, design and testing to the final product. Quality assurance is essential to guarantee an error-free and smooth function: Geometrically, with tolerances in a micrometer range, as well as functionally.

Various state-of-the-art facilities are available for the volume production of high-precision die-cuts.

Our die-cut manufacturing possibilities:

- Flatbed die-cutting (wide range of materials)
- Rotary die-cutting (low tolerances, multilayered geometries, inline measurements and printing)
- Full metal dies (very narrow tolerances)
- Laser cutting (precise die-cuts roll-to-roll)

Cleanroom manufacturing is possible in our Class 8 cleanrooms at locations in Europe and the USA.



Your Partner around the Globe

Lohmann manufactures, coats and converts a wide range of pressure-sensitive adhesives at its state-of-the-art facilities in Europe, USA and Asia.



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