

# Dishwasher, Washing Machine & Dryer

So fresh, so clean — Bonding solutions from Lohmann.





# Your reliable partner for smart and safe bonding solutions for the Home Appliance Industry

# We are at your side throughout the entire duration of your projects.

As a globally active company with regional locations we see ourselves as your partner. With our international team we are always close to you. Through individual suitability tests in our Bonding Arena<sup>®</sup>, our application engineers will find the right product for your requirements. In dialogue with you, we jointly create the design of adhesive solutions. These are then produced by our specialists at our own locations – whether as die-cut parts, rolls or sheets. Your manufacturing process is the focus of attention. We would be happy to provide you with additional support in integrating our bonding solution into your process —from simple applicators to complex concepts for your production line.

Good project and quality management are a matter of course for us.

We offer the entire value chain of double-sided adhesive tape production - from a single source.



R & D of adhesive



Coating

Converting



N.





ing

Die-cutting

Testing

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# Home Appliances

# Overview Dishwasher.



# Home Appliances

# Overview Washing machine & dryer.



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# Applications in detail

# Dishwasher – front panel

### Control panels

Our foam adhesive tapes are particularly suitable as individual die-cut parts for attaching integrated control- and front panels with cutouts for buttons or displays. They fulfill several tasks at the same time: They seal against liquids, reduce vibrations and compensate for different thermal expansion of various materials.

### Properties

- Good compressibility
- Stable compression set over the long term
- Available in many thicknesses and densities
- Good compensation properties for thermal linear expansion
- Suitable for manual and automatic processing

### Printed electronics

With our thin, highly transparent transfer adhesive tapes, carrier films of the printed electronics can be laminated as well as directly bonded to the front panel over the entire surface. This ensures trouble-free functioning of the printed sensors.

#### Properties

- Highly transparent
- Acid-free
- Suitable for polycarbonate and PMMA
- Suitable for die-cutting
- Flexible

#### Display – Air Gap Bonding

Displays are cleanly and securely attached to the inside of the device with our closed-cell foam tapes. Die-cut parts ensure an efficient processing procedure and protect the display from moisture. We take your design and requirements of your production process into account.

#### Properties

- Good compressibility
- Stable compression set over the long term
- Available in many thicknesses and densities
- High dimensional stability
- Suitable for manual and automatic processing

### Display – OCA bonding

Displays with or without touch sensors are bonded securely directly to the full surface of the front panel using our highly transparent transfer adhesive tapes. This enables unrestricted functionality of all display units as well as the touch sensors. Air bubbles can be removed subsequently with the help of an autoclave.

- Highly transparent
- Acid-free
- Suitable for polycarbonate and PMMA
- Suitable for die-cutting









# Dishwasher – front panel

#### Light diffuser

Light diffusers are used to scatter the light from LEDs. They ensure uniform illumination of the operating elements and give the device a high-quality look. With our thin, highly transparent adhesive transfer tapes, we can equip light diffusers with double-sided adhesive. As a die-cut, they absorb the desired light scattering effect in your device.

#### Properties

- Suitable for die-cutting
- High light tranmission
- Available in many thicknesses and densities
- · High chemical resistance against household chemicals

# Dishwasher - housing

#### Noise, vibration, harshness - NVH insulation

In today's world, good noise and vibration insulation plays an important role in dishwashers. With our modified acrylic or rubber adhesive tapes, insulation mats can be laminated. The high initial adhesion of these adhesive tapes ensures that they can be applied quickly and safely in your production process.

#### Properties

- No curing time, as opposed to liquid adhesives
- · Good adhesion on nonwovens and powder coating
- Fast processing
- Available on rolls in individual dimensions

# Dish washer – additional applications

#### Steam protection

To protect the worktop against moisture and steam coming out of the dishwasher, a steam protection film can be attached between the device and the worktop. Our thin, highly transparent single-sided adhesive films are available in various designs. With fingerlifts our steam protections are easy to apply.

- Resistant to steam
- High final adhesive strength on stone, wood, plastic
- Can be repositioned short-term
- Resistant against detergents, rinse agents and grease

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# Washing machine & dryer - front panel

#### Control planel

Control panels are more than just switches and buttons these days. They make a decisive contribution to the design and ease of use of the device. Almost all shapes and material combinations can be realized. The strengths of our polyethylene foam adhesive tapes come into play in regards to curved control panels. They fulfill several tasks at the same time: They seal against liquids, reduce vibrations and compensate for different thermal expansion of different materials.

#### Properties

- Good compressibility
- Stable compression set over the long term
- Available in many thicknesses and densities
- Good compensation properties for thermal linear expansion
- Suitable for manual and automatic processing

#### Printed electronics

With our thin, highly transparent transfer adhesive tapes, carrier films of the printed electronics can be laminated as well as directly bonded to the front panel over the entire surface. This ensures trouble-free functioning of the printed sensors.

#### Properties

- Highly transparent
- Acid-free
- Suitable for polycarbonate and PMMA
- Suitable for die-cutting
- Flexible

#### Display – Air Gap Bonding

Displays are cleanly and securely attached to the inside of the device with our closed-cell foam tapes. Die-cut parts ensure an efficient processing procedure and protect the display from moisture. We take your design and requirements of your production process into account.

#### Properties

- Good compressibility
- Stable compression set over the long term
- Available in many thicknesses and densities
- High dimensional stability
- Suitable for manual and automatic processing

#### Display – OCA bonding

Displays with or without touch sensors are bonded securely directly to the full surface of the front panel using our highly transparent transfer adhesive tapes. This enables unrestricted functionality of all display units as well as the touch sensors. Air bubbles can be removed subsequently with the help of an autoclave.

- Highly transparent
- Acid-free
- Suitable for polycarbonate and PMMA
- Suitable for die-cutting









# Washing machine & dryer - control panel

#### Gaskets for electronical components

Lohmann offers single- or double-sided adhesive die-cut parts. These are made from closed cell foams and are available in different thicknesses. The die-cuts perfectly match your individual production process geometries. They also protect the electrical parts against moisture and dirt, thus making a significant contribution to noise- and vibration damping.

#### Properties

- Good compressibility
- Stable compression set over the long term
- Available in many thicknesses and densities
- Suitable for manual and automatic processing

## Washing machine & dryer – decorative parts

#### Trims

The use of our foam adhesive tapes offers advantages for attaching decorative elements to the unit: They enable fast, clean and secure mounting, without slipping and curing times on the housing. Further mechanical fixings are not required.

#### Properties

- High resistance to temperature and chemicals
- High aging resistance
- Excellent compensation of thermal expansion
- High adhesion to glass and aluminum
- Available in black an white

#### **Emblems**

With our thin film and foam adhesive tapes, the most filigree emblems or letterings can be easily attached even to low-energy surfaces. We match the design of the die-cut parts to your individual assembly process – whether manual or automatic.

- High adhesion to a wide variety of surfaces
- Clean and precise application without slipping
- High chemical resistance to cleaning agents





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# Washing machine & dryer - housing

#### Thermal management

Textile insulating felts are commonly used to isolate dryer drums. Why not equip these felts with one of our dispersion acrylates with a particularly strong initial tack? This offers you many advantages over spray and liquid adhesives. The tape can be pre-applied, the process is cleaner and there are no drying and curing times.

#### Properties

- High initial and final adhesion
- Easy to laminate and finishing felt with adhesive
- Tear- and cutable
- Paper cover, easy to recycle

#### Noise, vibration, harshness - NVH insulation

In today's world, good noise and vibration insulation plays an important role. With our modified acrylic or rubber adhesive tapes, insulation mats can be laminated. The high initial adhesion of these adhesive tapes ensures that they can be applied quickly and safely in your production process.

- Good compressibility
- Stable compression set over the long term
- Available in many thicknesses and densities
- Available as a roll, spool or die-cut





# The way to your bonding solution

# Understanding customer demands – developing bonding solutions – die-cutting individual design – committing to the service concept

#### Product development can be very exciting:

Join in when our Bonding Engineers develop a high-tech adhesive tape: So how does that actually work? It is a long way from the idea to the final product and many questions need to be answered and tests to be passed. Especially in the home appliances industry, manufacturers face major design and function challenges — this also goes for the development of a new high-tech adhesive tape. To find out where our bonding solutions could be applied, we thoroughly tear down a dishwasher, for example.

In our first episode, you will see how the idea for a high-tech adhesive tape is created and how practical our experts proceed.



Watch now



In our second episode, you will see how the high-tech adhesive tape is born and which requirements it has to fulfill.



Watch now



The third part is all about product finishing: According to the customers' demands, the adhesive tape is refined into a customized die-cut allowing for an easy application



Watch now



# Clean solutions

### Lohmann's high-end adhesive solutions for electronics in home appliances.

Hardly any other industry is developing so rapidly and confronting manufacturers with such complex and diverse requirements as the consumer goods and electronics industry. In addition to size, shape and performance, design plays an increasingly important role. Moreover, appliances are becoming increasingly "intelligent"; large LCD and TFT screens can also be found in ovens, refrigerators and other household appliances. This is where Lohmann comes into play. Our innovative adhesive bonds are the solution for individual and innovative design ideas of our customers. Our products are true multitalents that combine a wide range of functions.

For example, our high-end adhesive tapes enable transparent and ultrathin bonds, efficient seals and insulation possibilities. We also have the right products for thermally and electrically conductive applications.

### But we're not just fresh:

The Bonding Engineers are also well equipped to meet other requirements in the household appliance industry. Learn more about our bonding solutions in the areas of "Cooling" and "Cook" and visit our microsite: <u>https://www.electronics-tapes.com/en</u>



#### The search is over:

In the Product-Navigator on our homepage you can inform yourself about our portfolio of established and permanently available standard products. Simply filter our "Lohmann classics" by adhesive, liner and desired function and find the perfect product for your application. https://www.lohmann-tapes.com/product-navigator







