



P-DERM® Medical Wearable Devices

The term medical device defines a large group of products which may or may not require adhesion directly to the skin. It might be a wearable medical device which offers anchorage for a device providing autonomous, non-invasive diagnostics such as monitoring over a prolonged period of time. It might be a skin adhesive which offers support to a joint, covering for a blister, protection of a primary dressing, the securement of instruments or hoses to the skin or an enclosure. It might be an adhesive which is used as part of the construction to bond layers of a molded device or supply anchorage to layers such as hook and loop products for device or accessory fixation.

Polymer Science offers a variety of adhesive chemistries which can perform the function of a skin contact adhesive or a device's construction adhesive. Adhesive chemistries such as silicone gel adhesives, acrylic and hot melt pressure sensitive adhesives and hydrogels offer solutions as transfer adhesives, single face and double adhesive faced products, as well as trilaminate constructions to meet the challenging demands found in modern medical device applications.

Silicone Gel Adhesives

- Biocompatibility with the Skin
- Atraumatic Removal from the Skin
- Extended Wear Time Options Available
- Repositionable / Multi-Use Properties
- Waterproof (Hydrophobic)
- Resistance to Bacteria Growth
- Low and High Adhesion Options Available
- Multi-Layer and Trilaminate Coating Constructions Available
- Excellent Converting Properties

Acrylics & PSAs

- Strong Initial Tack
- Bonds Well to Porous and Non-Porous Materials
- Does Not Leave Residue on the Skin After Removal
- Biocompatibility with the Skin
- Resistant to Heat and Humidity
- Excellent Converting Properties

Hydrogel Adhesives

- Biocompatibility with the Skin
- High Absorbing Properties
- Designed for Long Term Wear - Up to 7 Days
- Atraumatic Removal without Residue
- Maintains Adhesion to Skin when Exposed to Perspiration
- Highly Flexible and Conformable
- Hypoallergenic

The Polymer Science Advantage

Whether your medical device is worn on the skin or requires a construction adhesive, Polymer Science will assist in choosing an adhesive that will offer comfort and function while working within other designs and use requirements for the device. Our fully customizable solutions offer the flexibility to ensure an atraumatic skin contact adhesive can be laminated with a stronger adhesive to adhere to the device. Working with a supplier that understands your needs and the materials will save you a lot of time in the research and development phase of your application. Our team of account managers and product development engineers work together to suggest the right product with the correct mix of properties to ensure your project is a success.

Property	Silicone Gel	Acrylic	Hydrogel
Tack	Low to High	Med. to High	Med. to High
Peel Adhesion	Low to High	Med. to High	Med. to High
Cohesive Strength	High	High	High
Adhesion Stability Upon Aging	Excellent	Poor	Poor
Oxidation Resistance	Excellent	Good	Good
Solvent Resistance	Excellent	Good	Good
Permeability to Air	Excellent	Good	Poor
MVTR	Good	Excellent	Good
Repositionability on Skin	Excellent	Poor	Good
Low Skin Sensitivity	Excellent	Good	Good
Low Skin Trauma	Excellent	Poor to Good	Good
Cost	High	Medium	Medium

Why work with Polymer Science?

- Lower minimum order quantity
- Customization of width to minimize waste
- Short lead times
- Excellent in-house and field technical support
- Eco-friendly facility

