P-DERM® Continuous Glucose Monitoring

A Continuous Glucose Monitoring System (CGM) will monitor blood sugar (glucose) levels continuously in real-time throughout the day and night. A tiny electrode called a glucose sensor is inserted under the skin to measure the glucose levels in the tissue fluid. It is connected to a transmitter that can send the information wirelessly to a monitoring device. This makes it easy to determine whether or not the glucose levels are too high or too low.

Attributes

Polymer Science worked with the leading CGM makers and developed silicone gels for CGM device fixation. Working with development engineers and combining newest silicone formulations with our coating expertise on fabric backings, we developed skin contact silicone adhesives with the following characteristics:

- Wear time above 14 days with constant adhesion profile
- Hypoallergenic
- Waterproof for the more active users
- Atraumatic removal
- Resistant to bacterial growth

Polymer Science Advantages

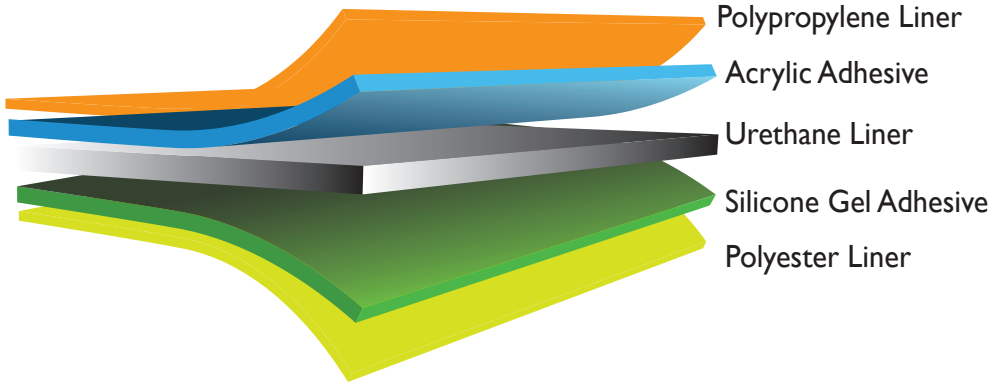
- Lower minimum order quantity
- Customization of width to minimize waste
- Standard and customized construction available
- Short lead times
- Excellent in-house and field technical support
- Eco-friendly facility

POLYMER SCIENCE, INC.

Custom Solutions...

Our design team works quickly to provide the solutions you need, allowing your project to expeditiously move from conception to production. Our diverse team of engineers and technical staff, along with our state-of-the-art equipment provide the capabilities to develop a quality product consistent with your application requirements.

A challenge as the popularity of this new technology grows, is that more and more people will be wearing CGM devices on their skin 24 hours a day, 7 days a week. This increases the risk that people will develop allergies to the commonly used acrylic adhesives. Polymer Science, Inc. has developed a solution to negate that problem from occurring by utilizing our multi-layer construction with a skin contact silicone gel adhesive layer (as shown in the technical illustration below). Our skin contact adhesives exhibit outstanding characteristics for skin contact wear. The table below shows the differing performance characteristics that acrylic adhesives and silicone gel adhesives demonstrate.



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

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Document Revision: 101917