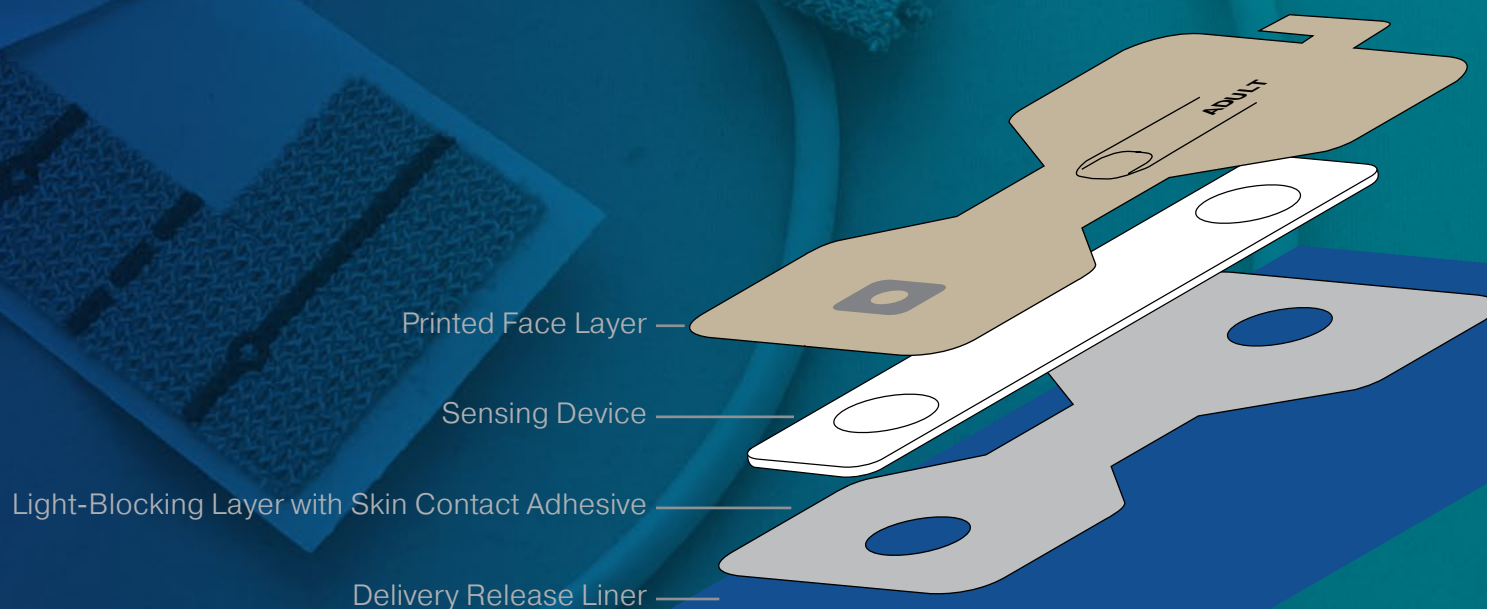


GUIDE: ADHESIVE TAPE SELECTION



FOR DISPOSABLE PULSE OXIMETRY APPLICATIONS





Chances are that you are reading this eBook because you either:

- a.** Have a burning desire to learn more about medical adhesive applications, or
- b.** Are working on a pulse oximetry or other wearable device product design that requires the use of adhesive tapes.

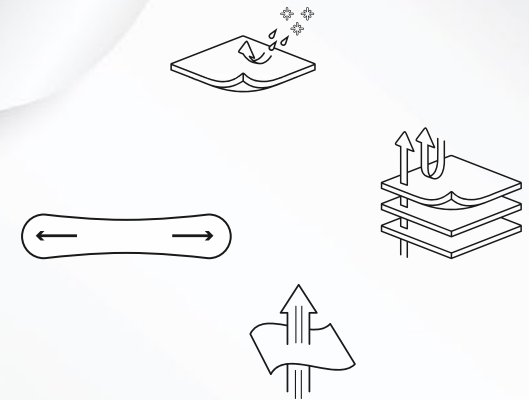
The truth is, no single pressure sensitive adhesive tape exists that performs as needed across all applications, medical or otherwise—and adhesive selection can be tricky, particularly when its desired function is to adhere something to the human skin. That’s why it is so important to use a multi-step evaluation process as you work to narrow down the available options.

The good news is that we’ve compiled a lot of solid information here to help steer you towards a product or type of product that will suit your needs. The even better news is that the experts at JBC Technologies are here to help you through the entire process.

INTENDED USE

The first, most important thing to consider when selecting a medical tape is its intended use. The more detailed that you can be with this statement, the better we can help you find a solution that fits your application, design requirements, and budget.

As an example, this guide is specifically directed at tapes that will be used in disposable pulse oximetry devices. That's the high-level application, but we'll need to get more specific than that.



BE SURE TO CONSIDER:

User Demographic

What is the age range and average activity level of the intended user?

Device Layer

Does the adhesive need to bond to the skin? Or is it connecting layers of the device?

Adhesive Strength

Can the adhesive support the device and maintain adhesion and accurate readings?

Printability

Does the tape support a clear, readable print?

Interaction with the Sensor

Will the tape construction enhance or detract from the sensor performance?

Skin Compatibility

Does the adhesive pass biocompatibility testing and minimize skin irritation and discomfort?

Placement

On what part of the body will the device be worn?

Required Wear Time

What is the optimal wear time of the device?

Flexibility & Conformability

Does the tape stick to curved body parts like fingers and toes?

Repositionability

Will the tape need to be repositioned or removed?

Ease of Removal

Can you remove the bandage without any medical adhesive related skin injuries (MARSIs)?

Breathability

Does the tape prevent moisture build up and skin maceration?

Moisture Resistance

Will tape maintain adhesion when exposed to sweat and other body fluids?

ADHESIVE TYPES

Latex-Free Synthetic Rubber

Adhesives for applications that need a more aggressive bond

PROS

- Reaches the desired adhesion level quickly.
- Reliable adhesion for securing the device to the patient's body.
- Heavier coats can form a strong bond with woven fabrics.
- Tend to be less expensive than acrylic and silicone options.

CONS

- Don't have the same degree of repositionability.
- Less suited for holding "heavy" sensors.

Acrylic Adhesives

For applications that need higher shear strength

PROS

- Offer strong adhesion to the skin for multiple days at a time.
- Less likely to split under stress and therefore more suitable for holding "heavy" sensors.
- Can be more suitable than rubber adhesives for skin-sensitivity or high-temperature resistance.

CONS

- Achieve full bond strength slower than other adhesive types.

Silicone Adhesives

For applications where repositionability is key

PROS

- Breathability and repositionability
- Can be applied to the body several times and still maintain the same bond strength.
- Ideal when there is a need for multiple readings in a short period of time.

CONS

- Not ideal for pulse oximetry applications where the patient moves a lot (such as infants).
- Higher price tag than rubber and acrylic options.

Example: Skin-Contact Tapes with Synthetic Rubber Adhesives

- Berry Global Polyken 3395A
- DermaMed Coatings DM-2065
- Solventum 1510

Example: Skin-Contact Tapes with Acrylic Adhesives

- Avery Dennison MED 1827A
- DermaMed Coatings DM-8018
- Flexcon NWP 2 40 H-466

Example: Skin-Contact Tapes with Silicone Adhesives

- Solventum 2477P

Please see chart on the following two pages for a more comprehensive listing.

TOP SKIN-CONTACT ADHESIVE TAPES FOR PULSE OXIMETRY APPLICATIONS

Here are some recommendations from a few key supplier partners for tapes that can be used in various disposable pulse oximetry bandage applications. Please keep in mind that this list is not all-encompassing, it is a starting point. Reach out to your JBC representative for samples, prototypes, and alternatives.

All wear times listed are application dependent as reported by each individual manufacturer.

	Application	Product	Coats	Carrier	Adhesive Type	Adhesive Thickness	Meets ISO 10993 Biocompatibility Standard	Wear Time	Conformable	Repositionable	Moisture Resistant	Breathable	Light Blocking	Printable
Adhesive Applications	Skin Contact	AMF 32	Double	Closed Cell XLPE Foam	Acrylic	1.8 mil	Yes	Up to 48 hours	No	No	Yes	No	Yes	Yes
	Skin Contact	AMF 16	Double	Closed Cell XLPE Foam	Acrylic	1.8 mil	Yes	Up to 48 hours	Yes	No	Yes	No	Yes	Yes
	Skin Contact	AMF 32-1	Single	Closed Cell XLPE Foam	Acrylic	1.8 mil	Yes	Up to 48 hours	Yes	No	Yes	No	Yes	Yes
Avery Dennison	Skin Contact	MED 5719P	Single	Polyester Nonwoven	Acrylic	2.0 mil	Yes	Up to 7 days	Yes	No	Yes	No	No	Yes
	Skin Contact	MED 1827A	Single	Polyurethane Film	Acrylic	2.6 mil	Yes	Up to 7 days	Yes	No	Yes	Yes	No	Yes
	Skin Contact	MED 5051	Single	Polyethylene Film	Acrylic	2.0 mil	Yes	Up to 5 days	Yes	No	No	Yes	No	Yes
	Skin Contact	MED 5511 NON-PERF	Single	Clear Vinyl Film	Acrylic	1.2 mil	Yes	Up to 7 days	Yes	No	Yes	No	No	Yes
	Skin Contact	MED 5511 PERF	Single	Clear Vinyl Film	Acrylic	1.2 mil	Yes	Up to 7 days	Yes	No	No	Yes	No	Yes
	Construction Layer	MED 3044	Double	Polyethylene Film	Acrylic	2.0 mil	Yes	N/A	Yes	No	No	Yes	No	Yes
	Skin Contact	DM-2065	Single	Beige Elastic Woven Fabric	Rubber	4.5 mil	Yes	Up to 5 days	Yes	No	Yes	No	No	Yes
DermaMed	Skin Contact	DM-8018	Double	Polyethylene Film	Acrylic	1.8 mil	Yes	Up to 5 days	Yes	No	No	Yes	No	No
	Construction Layer	DM-7201	Single	Metalized/Pearlized Film	Rubber	1.1 mil	Yes	N/A	Yes	No	No	Yes	Yes	Yes
	Construction Layer	DM-7212	Single	White Pearlized Polypropylene Film	Rubber	1.0 mil	Yes	N/A	Yes	No	N/A	Yes	Yes	Yes
	Construction Layer	DM-8010	Single	Polyethylene Film	Acrylic	1.7 mil	Yes	N/A	No	Yes	No	Yes	No	Yes
	Construction Layer													

TOP SKIN-CONTACT ADHESIVE TAPES FOR PULSE OXIMETRY APPLICATIONS

continued

All wear times listed are application dependent as reported by each individual manufacturer.

	Application	Product	Coats	Carrier	Adhesive Type	Adhesive Thickness	Meets ISO 10993 Biocompatibility Standard	Wear Time	Conformable	Repositionable	Moisture Resistant	Breathable	Light Blocking	Printable
Flexcon	Skin Contact	NWP 240 H-566	Single	Nonwoven Polyester	Acrylic	2.0 mil	Yes	Long-Term Wear	Yes	Medium	No	No	Yes	N/A
	Skin Contact	NWP 240 H-778	Single	Nonwoven Polyester	Acrylic	2.0 mil	Yes	Long-Term Wear	Yes	Medium	No	No	Yes	N/A
	Skin Contact	NNRU 100 CLEAR H-566	Single	Nylon Reinforced Urethane	Acrylic	2.0 mil	Yes	Long-Term Wear	Yes	Medium	Yes	Yes	No	N/A
	Skin Contact	TT 200 H-566	Transfer Tape	N/A	Acrylic	2.0 mil	Yes	Long-Term Wear	N/A	Medium	N/A	Yes	No	N/A
	Skin Contact	TT 200 H-506	Transfer Tape	N/A	Acrylic	2.0 mil	Yes	Gentle Release	N/A	Medium	N/A	Yes	No	N/A
	Skin Contact	TT H-778	Transfer Tape	N/A	Acrylic	2.0 mil	Yes	Long-Term Wear	N/A	Medium	N/A	Yes	No	N/A
Polyken	Skin Contact	3570A	Single	White Spunlace, Non-Woven	Acrylic	3.5 mil	Yes	5-14 days	Yes	Medium	Yes	Yes	No	Yes
	Construction Layer	3395A	Single	1 mil BOPP Film	Rubber	1.8 mil	Yes	1 day	Yes	No	Yes	No	Yes	Yes
	Construction Layer	3426B	Single	Polyethylene Film	Rubber	1.8 mil	Yes	1 day	Yes	No	Yes	No	No	Yes
	Construction Layer	3426A	Transfer Tape	N/A	Rubber	1.8 mil	Yes	1 day	Yes	N/A	Yes	N/A	No	N/A
Solventum	Skin Contact	1522	Double	Polyethylene	Acrylic	1.65 mil	Yes	Short-Term Wear	Medium	Limited	Yes	No	N/A	No
	Skin Contact	2477P	Differential Double	Translucent Thermoplastic Elastomer	Silicone/Acrylic	4 mil/1.7 mil	Yes	Short-Term Wear	Yes	High	Yes	Yes	No	No
	Construction Layer	1510	Double	Polyethylene	Rubber	1.4 mil	Yes	N/A	Yes	No	Yes	Yes	No	No





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- Digital Cutting
- Corona and Plasma Treating
- Laminating, Slitting, Sheeting, Perforating, Scoring
- Ultrasonic Welding
- Inline Digital Printing
- Inline Vision Systems
- Multi-layer Laminates
- Island Placements

***Material
Selection
Assistance***

***Design for
Manufacturability
Recommendations***

Prototyping

***High Speed
Precision
Die-Cutting***

***Kitting,
Packaging
& Delivery***

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