

3M™ Red Dot™ Electrodes

Commonly Asked Questions

Question:

Why are there so many different types of backings that are available in the 3M™ Red Dot™ product line?

Answer:

3M offers different backings to meet the needs of various clinical settings and patient skin types. Some are best in long-term wear situations, others in short-term situations and still others are for varying adhesion conditions. The backings are:

- 3M™ Micropore™ tape
- Small-cell foam
- Clear Plastic tape
- Soft Cloth
- Printed film

Question:

What is the difference between a short-term and long-term electrode?

Answer:

In general, short-term electrodes:

- Are worn for a few minutes to a few hours
- Are less porous/more occlusive
- Have good initial tack
- Are used for demanding applications (e.g. stress testing)

In general, long-term electrodes are:

- Worn for 1-5 days
- More porous/breathable
- Clinically tested to be safe and effective for long-term use (up to 5 days)

NOTE: there have been cases where long-term electrodes have worked well in place of short-term electrodes. The preference to use long-term or short-term electrodes depends on customer preference and their clinical knowledge and experience.

Question:

What are the differences between the following gel compositions: solid, wet, sticky, and conductive?

Answer:

Although the gel composition and structure differs, the function of various gels in 3M™ Red Dot™ electrodes remains the same: uncompromised pick-up of the ionic signal from the skin and transmission of this signal to the Silver/Silver Chloride sensing element where the ionic signal is converted to an electrical signal.

Solid gels:

- No gel squeezes out, therefore no interference with the adhesion
- Minimal residue left after removal
- Allows good skin contact
- Low chloride content to minimize skin irritation from gel

Wet gel:

- Provides rapid pick-up of the trace
- Gel may squeeze out interfering with adhesion
- May leave residue on patient-increased clean up time

Sticky gel:

- No gel squeezes out
- Gel helps with adhesion
- Minimal residue left after removal
- Allows for excellent skin contact
- Low chloride content to minimize skin irritation from gel

Conductive adhesive gel:

- Excellent trace quality
- No gel squeezes out
- Minimal residue left after removal
- Allows for excellent skin contact
- Low chloride content to minimize skin irritation from gel

The chart below also compares some performance characteristics of gels.

Gel Attributes	Sticky Gel	Conductive Adhesive	Biphasic*	Solid	Wet Gel
Skin contact for quality trace	Very Good	Excellent	Excellent	Good	Excellent
Allows rapid pick-up of ECG signal	X	X	X	X	X
Skin abrasion not required			X		
Does not interfere with adhesion	X	X	X	X	
Enhances adhesion		X	X		
Low chloride content to minimize skin irritation from gel	X	X	X	X	
Provides the ability to reposition an electrode, reducing waste		X	X		
Reduces impedance			X		
Diaphoretic patient compatibility	X			X	X
Leaves minimal residue to clean up after removal	X	X	X	X	

*Biphasic gel is a variant of conductive adhesive

Question:

Why is skin abrading recommended prior to attaching electrodes?

Answer:

Gentle skin abrasion reduces skin impedance and exposes the inner conductive layer of the epidermis, thus improving trace quality and reducing artifact if it is skin impedance related.

Question:

What is the preferred method of skin abrasion?

Answer:

There are many techniques used to remove the dead skin cell layer. Common methods are the use of alcohol, gauze, an abrasive pad or 3M™ Red Dot™ Trace Prep.

Contrary to common opinion, alcohol actually increases skin impedance. However, it is useful to remove oily residue from the skin. If alcohol is used, it is important that it be allowed to dry thoroughly. Trace quality will be improved if skin abrasion is also used.

3M recommends the use Trace Prep because it is a “gentle” abrasion method. The grain of the abrasion material was selected to remove the dead skin layer with gentle pressure. It was designed for use on skin and, when used correctly, does not damage the stratum corneum.

Virtually all electrodes face trace quality and skin impedance issues. Skin abrading is not only meant for 3M™ Red Dot™ electrodes. It is a BEST practice to enhance trace quality.

Question:

How do the 3M™ Red Dot™ Electrodes 2560/2570 differ from each-other and other 3M electrodes?

Answer:

These electrodes have a foam backing and combine sticky gel and a pressure sensitive adhesive. 2570 differs from 2560 by having an abrader strip on the liner and comes with a radiolucent stud. The 2560/2570 electrodes have been developed to be versatile and meet most ECG monitoring needs in healthcare facilities. The 2560 and 2570 have been tested for the longest wear time (5 days) of all 3M™ Red Dot™ electrodes. Both are the primary recommendations for facility wide electrode standardization.

Question:

Why is skin abrading not recommended prior to attaching electrodes to infants or neonates?

Answer:

Infant and neonate skin is naturally low in impedance. The skin of a newborn does not develop full barrier properties until 2 months of age and is susceptible to increased absorption of chemistry that will cross the immature skin barrier. For this reason alcohol is not recommended for routine use on infants and neonates.

Question:

How do I remove the electrodes so I minimize skin stripping?

Answer:

To remove, loosen one side of the electrode. Grasp the full width of the electrode. Slowly and gently pull it back over itself (as close to a 180° angle as possible). Electrodes should be removed in the direction of hair growth whenever possible. Keep the electrode close to the skin surface as you pull it back, and support the skin immediately adjacent to the adhesive being removed. Low and slow provides the greatest patient comfort.

Question:

I have bad trace quality with electrodes, why?

Answer:

Although trace quality is highly dependent on the skin preparation before applying the electrodes, there could be other potential reasons for poor trace quality. Electrode placement over muscle mass or the use of unshielded leadwires may increase artifact. Use of alcohol to prepare the skin should be avoided. If the electrode area has long curling or coarse hair, good skin contact may not be achieved. Clipping of the hair, not shaving, is recommended by the CDC and other organizations. Please contact your local sales rep or call 1-800-228-3957 for guidance.

Question:

Occasionally I have a hard time getting the respiratory reading - especially when the patient is obese. What do you suggest?

Answer:

While the 3M ECG electrodes are not indicated for respiratory readings, we understand that these are often picked up from the V1 lead when taking a 12 lead trace or the brown lead when taking a 5 lead trace. If the respiratory trace is not being picked up, the culprits are most likely the right arm/left limb electrodes. It will be necessary to reposition these until the signal is found. Obese patients are more likely to have an interference in communication between these two leads resulting in the V1 or brown lead not being able to pick up the respiration. It may be helpful to use a repositionable electrode in those positions on obese patients to minimize waste.

Question:

Which 3M™ Red Dot™ electrodes are indicated for use in MRI?

Answer:

3M has not tested any of the radiolucent electrodes to support a claim of MRI compatibility. To ensure that our customers are informed of any potential risk, 3M has added the following warning statement to its 3M™ Red Dot™ electrodes package insert:

Warning: This device has not been tested for use during Magnetic Resonance Imaging (MRI) procedures. The use of conductive patient-connected devices and patient lead wires/electrodes in MRI procedures may result in serious patient burns. If a physician orders this device to be used during MRI procedures, the user should not allow loops in the patient wires or allow the lead wires to come into contact with the patient's skin.

Question:

What is the open bag shelf-life of the 3M™ Red Dot™ electrodes?

Answer:

3M bulk pack ECG monitoring electrodes (30 or greater/bag) have a 30 day open bag guarantee with the exception of the 2560 and 2570 which have a 45 day guarantee. The 2360 has a 7 day out-of-bag claim. The following electrodes do not have any out-of-bag claim: 2258, 2269T, 2280, 2282, 2283, 2284, 2330, 2352, 2660, and 2670.

Question:

What is your best diaphoretic electrode?

Answer:

3M labels 4 electrodes as diaphoretic: 3M™ Red Dot™ Diaphoretic Foam Monitoring Electrode 2230 and 2270 have a foam backing which provides fluid resistance. 3M™ Red Dot™ Diaphoretic Soft Cloth Monitoring Electrodes 2231 and 2271 have a soft cloth backing for situations when fluid resistance is not a factor. All four electrodes labeled for diaphoretic use have the same adhesive, so any difference seen would be due to patient skin variation and/or transpiration through the soft cloth backing.

Question:

Are 3M™ Red Dot™ electrodes latex free?

Answer:

Yes. All 3M™ Red Dot™ electrodes are latex free.

Question:

Are 3M™ Red Dot™ electrodes hypoallergenic?

Answer:

Because the term "hypoallergenic" is not clearly defined and may have different meanings in different situations, the Food and Drug Administration, which regulates the medical device industry, has recently raised concerns about using this term to describe hypersensitivity reactions. Therefore, 3M is moving away from using the term "hypoallergenic" in our product claims. Instead, we will provide a brief description of available sensitivity testing results specific to the product. 3M takes pride in developing cardiac monitoring electrode products that meet stringent clinical requirements for adhesion while balancing that with adhesives that are as gentle to skin as possible.

Question:

What is the backing on the neonatal electrodes?

Answer:

3M uses two different backings on the neonatal pre-wired electrodes. The 2269T backing is a clear plastic. This allows the clinician to continually monitor skin condition. The 2280 series of neonatal pre-wired electrodes have a soft cloth backing.

Question:

Are 3M™ Red Dot™ electrodes compatible with our lead wires?

Answer:

3M™ Red Dot™ electrodes are compatible with most leadwire sets. Electrodes with stainless steel or carbon-coated plastic studs are compatible with snap, pinch and mini-pinch connections as well as the universal style adaptors for stud and tab electrodes. The 3M™ Red Dot™ Resting EKG Electrodes are compatible with the universal style adaptors as well as alligator clips.

Question:

What is the wear time for 3M™ Red Dot™ electrodes?

Answer:

The wear time for 3M™ Red Dot™ electrodes varies by type. The 3M™ Red Dot™ Repositionable Monitoring Electrodes, 2660/2670, can be worn for up to 3 days. The 3M™ Red Dot™ Monitoring Electrodes with Foam Tape and Sticky Gel, 2560/2570, can be worn for up to 5 days. All other 3M™ Red Dot™ ECG Monitoring Electrodes can be worn for up to 3 days. 2352 is for short term use (wear time is not specified). The following electrodes have no wear time claim: 2248, 2258, 2269T, 2280, 2282, 2283, 2284, 2330, and 2360.

If adhesion is compromised, trace quality is poor, or the patient has a reaction that is believed related to the electrode, the electrodes should be replaced even if the stated wear time has not been reached.

Question:

Are the 3M™ Red Dot™ electrodes repositionable?

Answer:

The 3M™ Red Dot™ Repositionable Monitoring Electrodes, 2660/2670 can be repositioned one time immediately after application. The 3M™ Red Dot™ Resting EKG Electrodes may also be repositioned one time after application. It is important to note that when an electrode is repositioned, it does lose some of its adhesive strength.

Question:

Are your neonatal electrodes repositionable?

Answer:

We do not recommend that 3M™ Red Dot™ neonatal electrodes be repositioned.



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For More Information

Contact your 3M Health Care Sales Representative, or call the 3M Health Care Customer Helpline at **1-800-228-3957**. These products can be ordered from your local distributor. Outside the United States, contact the local 3M subsidiary.

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