Don’t Compromise Compliance, Choose Clarity: The Science Behind Palmero’s Ultra Anti-Fog Technology

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At Palmero Healthcare, we care about the safety of clinicians, patients, and the practice by focusing on quality infection prevention products. Not only is it important for us to provide products that support safety practices, but it’s also our mission to bring education and awareness to the dental and medical community about how our products foster continual compliance and protection. In this article, we take a deep dive into the science behind our safety eyewear with features that deliver optimal protection and clarity of vision. Palmero’s ProVision® Clarity™ safety eyewear provide ultimate protection for the practice while delivering a clear field of vision thanks to our Ultra Anti-Fog Coating Technology.

A problem we see often is obstructed vision during dental procedures. Practitioners must wear proper protection, such as face masks, face shields, and safety eyewear. While this gear equips clinicians for safe practices, it can also create problems with comfort and visibility.

So how can providers get the protection they need alongside visual acuity? We talked with Rachel Trautvetter, Senior Product Manager at Palmero, to learn how anti-fog technology meets these needs.

Q: What causes glasses to fog and obstruct visibility?

When warm water vapor encounters the surface of a colder glass lens, the vapor transforms into a layer of water droplets. These droplets won’t easily roll off the lens by themselves; instead, they form a film of fog that distorts vision. Condensation formation is accentuated (and accelerated) when wearing a face mask — moisture-laden breath escapes the top of the mask and is directed toward the lenses, which tend to quickly fog.

Q: What can combat this visibility issue?

To reduce the fogging phenomenon, it’s important to wear a properly fitting mask during dental procedures. Some masks are fitted with fog-free strips within the inner layer to reduce fogging. Normally these strips are made from either foam or a non-woven material. The non-woven material is more comfortable and conforms more easily to the contour of the face than the foam. Additionally, the non-woven tends to be less irritable to the skin and would be the preferred choice for comfort and performance. Equally important when selecting a face mask that will reduce/eliminate fogging is the type of strip/nosepiece. The ideal nosepiece is 5” in length, 1/8” wide and is made from malleable aluminum. While more costly, the 1/8” malleable aluminum when properly formed by you, the wearer, will conform to the shape of your face, remain in place and thus reduce/eliminate air leakage which is the cause of fogging. Please note many face masks use what we refer to as “bread ties” which are similar to the strips used in the closure of bread and other items enclosed in a plastic bag. These strips will not securely conform to the shape of your face and tend to be shorter in length, thus leakage will occur causing fogging. While face masks tend to all appear the same in shape and design, the differences are in the construction of the mask itself, and not necessarily visible to the wearer.

Make sure you know and understand the complete construction of your face mask of choice in order to maximize your comfort and performance.

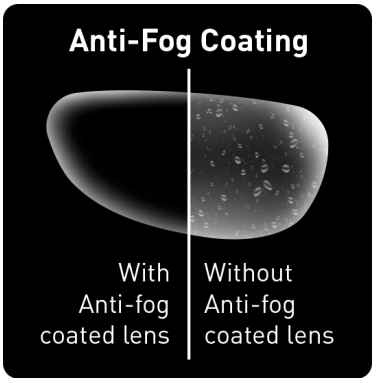
Another effective, long-term solution to enhancing visibility during dental procedures is wearing eyewear featuring anti-fog coated lenses, like Palmero's ProVision® Clarity™ safety eyewear.

Q: How does the anti-fog coating work?

Certain safety eyewear styles offer lenses treated with chemical agent solutions to prevent moisture buildup by minimizing surface tension on the lenses. The optical technology works in two ways: either by repelling or attracting the water on the surface of the lens, depending on whether the application is hydrophobic or hydrophilic.

Q: What is the difference between hydrophobic and hydrophilic?

Hydrophilic and hydrophobic materials are different in how they interact with water and change water droplets' geometry on surfaces.[1] To distinguish between the two, you must consider how the water stays on the surface and the shape droplets take when they contact the coated surface. This shape is determined by the contact angle formed by the edge of the droplet and the surface it meets. The greater the angle, the more hydrophobic the material is, and the more the water beads into tiny droplets.



Hydrophilic materials have an affinity for water. These lenses are water-loving and absorb moisture. When water is applied to a lens surface coated with a hydrophilic material, the material maximizes contact with the water and lets the accumulated water stay on the lens surface in a flattened, thin film before running off the lens. The coating holds a high amount of moisture and naturally releases it at the edge of the lens. This coating is engineered with proprietary chemistry that creates a polymer bond, *permanently* adhering the coating to the polycarbonate lens.

Hydrophobic materials, on the other hand, are water-averse. These materials let the water droplets stay on the surface in a spherical shape, so they can easily roll off the surface when enough accumulates. Hydrophobic coatings repel and spread the fog moisture as soon as it meets the lens. This coating is effective for only short periods, washing off over time.

At Palmero, we understand the importance of protecting your dental practice, practitioners, and patients. That's why we offer a full line of safety eyewear treated with our Anti-Fog Technologies. The permanent hydrophilic coating ensures visual acuity, and our eyewear also provides infection control, eliminates blue light exposure, and protects against projectiles. This uniquely engineered line delivers the protection practitioners need and the optimal performance they expect.

For more information, visit palmerohealth.com, call 800-344-6424 or email customerservice@palmerohealth.com.

References

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