An article by Divel Italia.

What coatings do you need for your eyewear?

One of the main concerns for anyone who wears glasses every day is that your corrective lenses will get scratched and ruined, which can be a significant expense if you have to pay to replace those lenses.

Just a few decades ago, the risk of dropping and breaking your lenses into a thousand pieces was much greater, given that lenses used to be made mainly of glass, which made for beautiful lenses, but they were also very fragile.
Glass has since given way to plastic (a.k.a. organic) lenses, which are more durable, but they are more susceptible to scratches.

As a result, coatings have been developed for organic lenses to help increase the durability of eyewear. Some of these coatings are applied to plastic lenses by default, such as hardening and anti-reflection coatings, while others can be added upon request of the optician.

Let's take a look at some of the characteristics that lens coatings can provide:

- **HARDENING:** Hard coating is applied to the surface of organic lenses to **improve their resistance to scratches and to increase their durability over time.** It is applied by dipping the lens in a vat of special hardening enamels of different refractive indexes. Alternatively, these enamels may be applied by way of a process known as spinning.

- **ANTI-GLARE: As the name implies, an anti-glare coating (also known as anti-reflective,** or "AR", coating) serves to block reflection from sources of natural, outdoor light (sunlight) or artificial light (car headlights, TV and computer screens). When driving, for example, headlight glare is a major issue that can cause unwanted reflection on the inner side of the lens, which can interfere with our vision by way of a phenomenon known as "ghosting". **This glare can be eliminated by applying an anti-reflective coating, which eliminates reflection on the surface of the lens and allows much more light to pass through the lens.** In this way, we see more clearly and the lens is more transparent, which also makes it more aesthetically pleasing. In production, the anti-glare process involves placing a batch of lenses in a high-vacuum chamber and then into a special machine in which the various crystals of the coating to be applied are vaporized.

- **ANTI-STATIC:** As the name implies, this coating **eliminates static electricity so that the lens doesn't attract dust particles. An anti-static coating is typically included as a standard treatment.**

- **WATER AND OIL REPELLENT: Dirt and grime are the worst enemies of our lenses.** There's nothing worse than having those annoying smudges on our glasses. A water-repellent coating enables both sides of a lens to repel water and oily substances. An oil-repellent coating ensures that the surfaces of the lens are more repellent to liquids and oily substances. These coatings are particularly recommended for situations when you are likely to come into contact with oily substances, such as in the kitchen, in an operating room, or at a construction site.

- **UV PROTECTION: UV rays are a popular topic, particularly when it comes to damage to our skin, but it is equally important to protect our eyes from UV light.**

Most sunglasses (but not all, so take note when buying a pair) include UV filters that block all or a part of the ultraviolet (UV) radiation contained in sunlight. **It is also often necessary to add additional coatings to provide full protection for wavelengths up to 400 nanometers.** It's important to keep in mind that UV protection is not a function of the darkness of the lens, but rather of the filter power of the lenses (which ranges from Category 0 to Category 4 – click for more), to which additional coatings may be added to totally block all wavelengths up to 400 nm. In other words, even a totally transparent lens can provide protection up to 400 nanometers if the right type of coating is applied.

- **BLUE BLOCK:** In recent years, demand for blue-light blocking lenses has grown exponentially with the increasing use of electronic devices. But what is blue light exactly? **It is the portion of high-energy visible (HEV) light in the range of 400 to 420 nanometers, which can, if not properly filtered, cause permanent damage to the cornea and to the retina.** There are lens materials on the market that provide blue-light protection on their own (such as our Blue Natural lenses), or this protection can be added as a coating (such as our Chroma coating). It goes without saying that the first solution is preferable in order to avoid the risk of a protective coating being worn away over time.

Ordinarily, a blue-block coating is applied to colorless lenses, but it is also known that the sun emits 20 times more HEV blue light, so sunglass lenses with UV and HEV protection, such as our NoHEV Light and Dark, are becoming increasingly popular.

- POLARIZED: This is an extremely popular coating for sunglasses, especially among people who drive a lot or play sports. And why is that? If you had a choice between your normal vision and **crystal-clear vision with perfect contrast and no glare,** which would you choose? Polarized lenses are perfect for minimizing glare.

- SALTWATER: Used in particular on **sport lenses,** a saltwater coating protects the lenses when worn at sea and prolongs the life of the lenses.

- ANTI-FOG: Who hasn't wanted this over these last two years? **Wearing glasses with a face mask has been torture for many of us, so anti-fog sprays — or actual anti-fog lens coatings — have been selling like crazy.** But anti-fog coatings have been used for years in sports — especially in skiing and other mountain sports —because they keep lenses from fogging up.
You should always ask your preferred optician to help you pick out the coatings that best meet your needs.