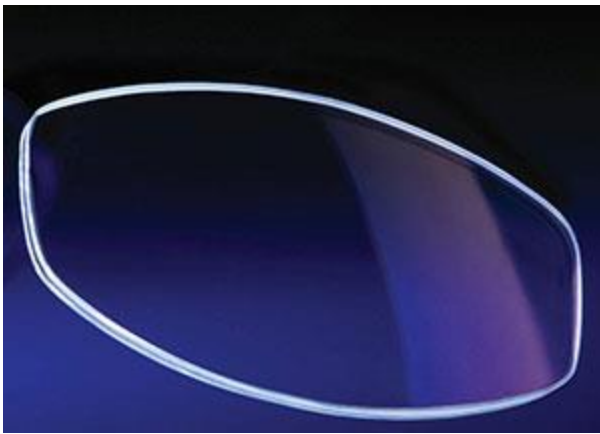


## Why would antireflective coating sometimes look wavy?



Antireflective coatings have their own index of refraction, more specifically, the hardcoat that adheres the AR to the lens has its own index. When this index does not match the index of refraction of the lens, the result can be an AR coating whose reflection looks like an oil slick. This is due to “birefringence”, seeing the reflection of light coming from two different index materials.

Most AR hardcoats today have an index that matches most closely to that of CR-39. Therefore, seeing this oily/wavy appearance of the AR on high index lenses is not uncommon, especially when the lens index is over 1.67. In years past, there were a much wider variety of AR hardcoat indexes that labs would use so that they could match the AR hardcoat index better with the lens index. Today, however, these choices are limited.

Although this birefringence should not interfere with the patient’s vision and is considered “normal”, it is good to be able to explain the phenomenon to the patient when they ask why their AR looks defective. If redoing the lens for patient satisfaction, redo it into the next lower index, for example chose 1.67 instead of 1.74.

High index should always be matched with AR for reasons we may get into in a later post, so do not let this deter you from AR, but do be aware of this phenomenon and that it is expected and does not require a remake.

Copyright 2014 Optician U