

## Basic Information of Absorptive Lenses

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### Introduction

The Another name of the absorptive lens is tinted lens. The absorptive lens can be classified as

1. Tint of the lens itself
2. Lens transmission

The absorption which is made by the absorptive lens is graded as: from high to low: a, b, c & d or according to the number: 1,2,3 & 4 and it also indicate about the deepness of the tint gradually. Tint is more comfortable in plastic as compared to the glass because here tint is varied from area to area. In case of high minus lens tint is more in peripheral compared to central and vice versa with high plus lens. The main advantage of the absorptive lens is it can protect eye from ultraviolet rays. Some drugs are also responsible to stimulate to absorb ultra violet rays i.e.: sulphonamides, tetracycline, contraceptive pills etc. Frame selection is a very considerable factor for protection from UV lens. 'Large lens area' with wraparound frame style must be considered. In another way eye should be protected from uv rays that is by the use of 'cap or hat' or with large visor also.

Normally between (15 to 30) % transmission is present in all sunglass lenses. Because more than 30% transmission is not effective. But if transmission is less than 15% then it may create glare. By the application of anti reflection coating (arc) this types of problem can be eliminated. Transmission should be 15% or >15 and darkness of the sunglass should not be more than 8%. For spectacle lens ARC is a very important material for

sharpness of the vision and glare cut. For the spectacle lens there are different types of the tint or colour is used i.e.: pink, yellow, brown, green and gray. Gray colour is more acceptable to others due to its equal spreading quality. To tint the plastic lens, firstly plastic lens must be 'dip' into the colour. How much the lens will be tint that must be depending on the 'dipping time'? If the dipping time is high the lens is more dip compare to low dipping time of the lens [1-3].

### Features of the Absorptive Nature of the Lens and its Quality

**Anti Reflecting Coating (ARC):** It is a thin and clean layer and it is applied on the surface of the lens. The main purpose of this layer is to reduce reflection from the spectacle lens. But main concern is brittleness and scratch is enhanced with arc plastic spectacle lens compare to without arc plastic lens. It mainly occurs due to arc material is too hard comparing to spectacle lens material. This coating is made up of magnesium fluoride and after using this arc material lens impact resistance is being reduced. During high refractive index of the lens always arc material must be used.

**Anti Fog Coating:** This type of coating is prescribed on the spectacle lens in some specific profession where wearer has to move in different temperature with spectacle. With this coating wearer didn't get problem like fog on the spectacle lens. Anti fog coating is made up of 'resin film'.

**Mirror Coating:** This coating is applied on the anterior surface of the spectacle lens by the vacuum process. By the use of the mirror coating on the spectacle lens observer will not be able to see the wearer's eyes like sunglasses. But there is a big difference between mirror coating and sunglasses, i.e. by using the mirror coating the amount of the encroachment of the light is not reduced to the wearer's eyes unlike sunglasses. The mirror coating is made up of metalized and dielectric coating.

**Edge Coating:** It can reduce the concentric rings which are visible by the observer. Here colour is applied at the bevel area of the lens and most of the times it makes things funny.

**Photo Chromic Lens:** In 1964, this photo chromic lens was discovered. It changes the transmission of the light when light is exposed to the eye. In case of glass lens 'silver halide crystal' is used. In case of plastic lens various brands and colours are used. In case of plastic lens to become photo chromic organic dyes are used. Usually the

transmission of the photo gray extra lens is between 85% to 22%.

**Polarizing Lens:** Usually most of the time it is being used in sunglasses. Mainly polarized lens is used to cut the glare and block the ultra violet rays. During driving in the strong sunlight this polarized lens is used to reduce fatigue. To check the polarized lens one lens is placed vertically and another lens is placed horizontally and on that time polarized effect will be neutral.

### References

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