Clinically Noticeable Chromatism

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NOTE: This calculator in eye*tools* is used to evaluate the aberration effects of a spectacle *Lens Material*, particularly in higher powers.

The *Abbe Value* (constringence) of the lens material affects off-axis vision by possibly causing colour fringes along contrasting borders. Results are worse for lower *Abbe Values* and higher *Lens Powers*.

This calculation is the distance from the optical centre of a spectacle lens, that will produce clinically noticeable chromatic aberrations (based upon a standard 0.25 prism effect).

1. Click on [C] to clear all data.
2. Enter the *Lens Power* as a sphere equivalent and select the *Lens Material*.
3. The calculator will display the *Abbe Value* of this material.
4. Click on [=] to make the calculation.
5. The result is displayed as the *Distance from Optical Centre to Produce Clinically Noticeable Chromatism*.
6. To print a copy of the results: Click on [P]
7. To copy the result to the clipboard (so that it can be pasted into a different program): Click on [M+] (The clipboard can be cleared with [MC]).

✔ **Tip:**

- This calculation can be used when it is desired to have the advantages of a low Abbe Value material (eg thin and light), but there are concerns about a high prescription possibly causing colour fringes. Individual differences will also occur with patients who move their eyes rather than their head when looking to the side.

EXAMPLE: A patient's prescription is -10.00 and wants to have an impact resistant lens made of polycarbonate. If the patient moves their eyes more than 7.8mm from the optical centre of the lens, they are likely to notice chromatic aberrations.

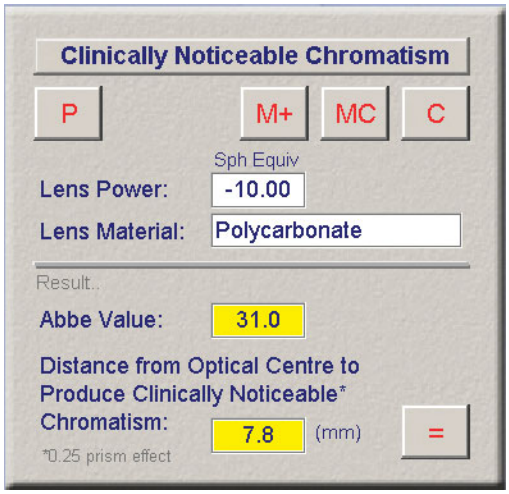

Figure: The calculator for Clinically Noticeable Chromatism