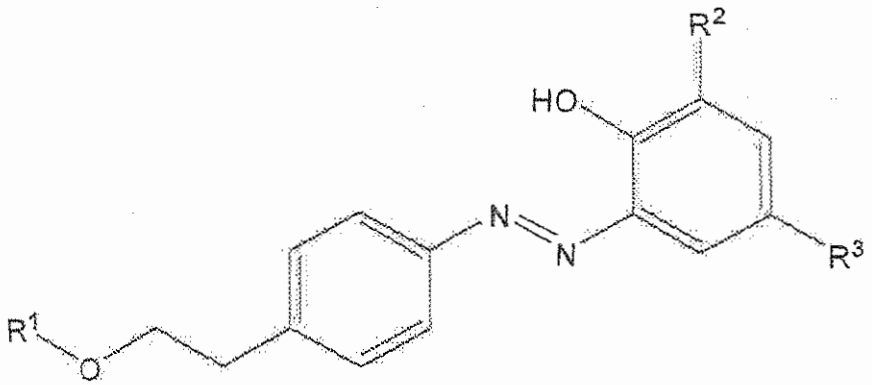
additional visible light absorbing compounds that are copolymerizable with other ingredients in implantable lens materials, relatively inexpensive to synthesize, and are efficient in absorbing light between approximately 380 – 495 nm.

Summary ~~of the Invention~~

The present disclosure~~invention~~ provides novel azo compounds that satisfy the above objectives. These azo compounds are especially suitable for use as monomers that absorb a portion of visible light (approximately 380 – 495 nm). These absorbers are suitable for use in ophthalmic lenses, including contact lenses. They are particularly useful in implantable lenses, such as intraocular lenses (IOLs).

The azo compounds of the present disclosure~~invention~~ contain reactive groups, which allow for covalent attachment of the absorbers to ocular lens materials. Additionally, the absorbers of the present disclosure~~invention~~ can be synthesized in approximately 2 - 3 steps from readily available, inexpensive starting materials without the need for column chromatography.

In a first aspect, there is provided an azo compound of the formula



wherein

R^1 = $C(O)CH=CH_2$, $C(O)C(CH_3)=CH_2$, $C(O)NHCH_2CH_2OC(O)C(CH_3)=CH_2$, or $C(O)NHC(CH_3)_2C_6H_4C(CH_3)=CH_2$;

R^2 = H, $C_1 – C_4$ alkyl, or $C_1 – C_4$ alkoxy;

R^3 = H, $C_1 – C_4$ alkyl, F, Cl, Br, CN, NO_2, $COOR^4$; $XOC(O)CH=CH_2$, $XOC(O)C(CH_3)=CH_2$, $XOC(O)NHCH_2CH_2OC(O)C(CH_3)=CH_2$, or $XOC(O)NHC(CH_3)_2C_6H_4C(CH_3)=CH_2$;

R^4 = H or $C_1 – C_4$ alkyl; and

X = $C_1 – C_4$ alkyl or $C_2 – C_4$ alkenyl.

In a second aspect, there is provided an ophthalmic device material comprising an azo compound as defined above and a device-forming monomer selected from the group consisting of acrylic monomers and silicone-containing monomers.

In a third aspect, there is provided an intraocular lens comprising an azo compound as defined above.

In a fourth aspect, there is provided an ophthalmic device comprising the ophthalmic device material as defined above.

The present disclosure~~invention~~ also relates to ophthalmic device materials containing such azo compounds

Brief Description of the Drawings

Figure 1 shows the UV/Vis spectra of Compound A at 0.01 – 0.5 % (w/v) in $CHCl_3$.

Figure 2 shows the UV/Vis spectra of Compound A at a concentration of 480 μM.

Figure 3 shows the UV/Vis spectra of Compound B at 150 - 2400 μM in $CHCl_3$.

13. An ophthalmic device material of Claim 5 wherein the ophthalmic device material comprises a reactive UV absorbing compound.

14. An intraocular lens comprising an azo compound of Claim 1.

15. An intraocular lens comprising an azo compound of Claim 2.

16. An intraocular lens comprising an azo compound of Claim 3.

17. An intraocular lens comprising an azo compound of Claim 4.

18~~17~~. An ophthalmic device comprising the ophthalmic device material of Claim 5.

19~~18~~. The ophthalmic device of Claim 17 wherein the ophthalmic device is selected from the group consisting of an intraocular lens; a contact lens; a keratoprosthesis; and a corneal inlay or ring.