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(54) Title: PRECISION COMPOSITE ARTICLE

(57) Abstract: The invention is directed to a method for making composite articles, including optical lenses, which includes the steps of obtaining a substrate; placing a semi-solid-like polymerizable composition in contact with at least one of the front or back surface of the substrate; compressing or heating the resulting semi-solid/substrate sandwich between two mold halves, where the mold contacting the semi-solid polymerizable material has a desired surface geometry; and exposing the semi-solid/substrate sandwich to a source of polymerizing energy. The resulting composite article has the desirable characteristics of the substrate but is also easily fabricated as a result of the semi-solid molding process. Also included within the present invention is a composite article comprising a substrate portion and at least one layer of a cured resin bonded to the substrate portion, the cured resin comprising an interpenetrating crosslinked polymer network of reactive plasticizer within a dead polymer. In one embodiment, the reactive plasticizer polymer network is further crosslinked to the dead polymer. The composite article exhibits dimensional stability and high-fidelity replication of an internal mold cavity.

WO 01/61382 A1

