Claims

1. A process for manufacturing an ophthalmic lens, comprising the steps of
- providing a mold assembly (100) comprising a first mold half (101) having a first molding surface (105) and a second mold half (102) having a second molding surface (106) in an open position;
- dosing a lens forming material (202) into the first mold half (101);
- closing the first and second mold halves to form a mold cavity (201) defining the shape of the ophthalmic lens;
- curing the lens forming material (202) in the mold cavity (201);
- opening the first and a second mold halves (101, 102);
- removing the lens (200) from the first or second mold half (101, 102); wherein
(i) the step of closing the first and second mold halves comprises moving the first and second mold halves to an intermediate closed position, wherein the first and second molding surfaces (105, 106) of the first and second mold halves (101, 102) are arranged at a distance increase (d1) relative to a final distance (d0) in a final closed position; and
(ii) during curing of the lens forming material moving the mold halves (101, 102) to the final closed position.

2. Process according to claim 1, wherein the step of closing the first and second mold half comprises (a) moving the first and second mold halves to the final closed position, where the intermediate distance increase (d1) is 0;
(b) re-opening the mold halves to the intermediate closed position.

3. Process according to claim 2, wherein the step of re-opening comprises the following steps:
- locking the first mold half (101) in the final closed position;
- positioning a means for re-opening (300, 400) at the back surface of the second mold half (102), at a reference surface (114) of the second mold half (102), or between two reference surfaces (113, 114) of the first and second mold halves (101, 102);
- locking the means for re-opening (300, 400) in a re-opening position;
- actuating the means for re-opening to move the second mold half (102) to a position such that the first and second mold halves are in the intermediate closed position.

4. Process according to any one of the preceding claims, wherein during curing of the lens forming material the mold halves (101, 102) are actively moved to the final closed position by actuating a closing means.

5. Process according to claim 4, wherein the first mold half and/or the second mold half is continuously moved to a position such that the first and second mold halves are in the final closed position during the curing period of the lens forming material at a speed of from 0.1 µm/s to 5 µm/s.

6. Process according to any one of the preceding claims, further comprising the step of measuring the distance increase (d1) during curing of the lens forming material with an interferometric measuring device, and by using the measured distance for controlling the relative movement of the first and second mold halves (101, 102) in accordance with the characteristics of the curing process for the said lens forming material.

7. Process according to any one of the preceding claims wherein the first and second mold halves are aligned and centered by means for aligning and/or centering the two mold halves in relation to each other.

8. An apparatus for forming an ophthalmic lens comprising
- a mold assembly (100) comprising a first mold half (101) having a first molding surface (105) and a second mold half (102) having a second molding surface (106), , between which in a final closed position of the mold assembly a mold cavity (201) is formed that defines the shape of an ophthalmic lens (200);
- means for arranging the first and second mold half (101, 102) at an intermediate closed position; wherein in the intermediate closed position, the first and second molding surfaces (105, 106) of the first and second mold halves (101, 102) are spaced apart at a distance increase (d1) relative to a final distance (d0) in a final closed position of the first and second mold halves; and
- means for moving the first and second mold halves (101, 102) from the intermediate closed position to the final closed position.

9. Apparatus according to claim 8, wherein in the intermediate closed position the first and second molding surfaces (105, 106) of the first and second mold halves (101, 102) are spaced apart from each other at a distance increase (d1) of 1 µm to 100 µm with reference to a final distance (d0) in a final closed position.

10. Apparatus according to any one of claims 8 or 9, wherein the means for arranging the first and second mold halves in the intermediate closed position are selected from friction type means or spacer type means.

11. Apparatus according to any one of claims 8 to 10, wherein the mold assembly further comprises means for actively moving the first and second mold halves from the intermediate closed position to the final closed position and/or means for re-opening the first and second mold halves from the final closed position to the intermediate closed position.

12. Apparatus according to any one of claims 8 to 11, wherein the means for arranging the first and second mold halves (501, 502) at a distance increase (d1) comprise a compressible sleeve (510).

13. Apparatus according to any one of claims 8 to 12, further comprising means for aligning and/or centering the two mold halves with respect to each other.

14. Apparatus according to any one of claims 8 to 13 further comprising an interferometric measuring device (600) which is arranged such, that during curing of the lens forming material (202) the distance increase (d1) can be measured, and which is connected to the means for moving the mold halves to control the relative movement of the first and second mold halves (101, 102) in accordance with the measured distance increase (d1) and the characteristics of the curing process for the lens forming material.

15. Use of a process according to any one of claims 1 to 7 and/or an apparatus according to any one of claims 8 to 14, for manufacturing a silicone hydrogel contact lens.

The invention claimed is:

1. A process for manufacturing an ophthalmic lens, comprising the steps of

providing a mold assembly comprising a first mold half having a first molding surface and a second mold half having a second molding surface in an open position;

dosing a lens forming material into the first mold half;

closing the first and second mold halves to form a mold cavity defining the shape of the ophthalmic lens;

curing the lens forming material in the mold cavity;

opening the first and a second mold halves;

removing the lens from the first or second mold half;

and wherein (i) the step of closing the first and second mold halves comprises moving the first and second mold halves to an intermediate closed position, wherein the first and second molding surfaces of the first and second mold halves are arranged at an intermediate distance increase (d1) relative to a final distance (d0) in a final closed position; and

(ii) during curing of the lens forming material moving the mold halves to the final closed position, wherein the intermediate distance increase (d1) is 0; and then re-opening the mold halves to the intermediate closed position wherein the first and second molding surfaces of the first and second mold halves are arranged at a distance increase (d1) relative to the final distance (d0) in the final closed position.

2. The process according to claim 1, wherein the step of re-opening comprises the following steps:

locking the first mold half in the final closed position;

positioning a means for re-opening at the back surface of the second mold half, at a reference surface of the second mold half, or between two reference surfaces of the first and second mold halves;

locking the means for re-opening in a re-opening position;

actuating the means for re-opening to move the second mold half to a position such that the first and second mold halves are in the intermediate closed position.

3. The process according to claim **1**, wherein during curing of the lens forming material the mold halves are actively moved to the final closed position by actuating a closing means.

4. The process according to claim **3**, wherein the first mold half and/or the second mold half is continuously moved to a position such that the first and second mold halves are in the final closed position during the curing period of the lens forming material at a speed of from 0.1 μm/s to 5 μm/s.

5. The process according to claim **1**, further comprising the step of measuring the distance increase (d1) during curing of the lens forming material with an interferometric measuring device, and by using the measured distance for controlling the relative movement of the first and second mold halves in accordance with the characteristics of the curing process for the said lens forming material.

6. The process according to claim **1**, wherein the first and second mold halves are aligned and centered by means for aligning and/or centering the two mold halves in relation to each other.