Claims:

1. A method for producing contact lenses, comprising:

a) providing a mold including a male mold half having a first molding surface and a female mold half having a second molding surface, wherein the male and female mold halves are configured to receive each other such that a mold cavity is formed between the first and second molding surfaces when the mold is closed;

b) dispensing an amount of a silicone hydrogel lens-forming material into the female mold halves;

c) mating the male and female mold halves to close the mold;

d) curing the silicone hydrogel lens-forming material located in the mold cavity, thereby forming a molded silicone hydrogel contact lens;

e) separating the mold into the male and female mold halves, with the silicone hydrogel contact lens adhered on the male half;

f) bring a ultrasonic horn in direct contact with at least one area of a non-optical surface of the male mold half having the molded silicone hydrogel contact lens attached thereon, after step e) to separate the molded silicone hydrogel contact lens from the male mold half by applying an ultrasonic vibrational energy, wherein the ultrasonic horn has a convex surface to contact the at least one area of the non-optical back surface of the male mold and is sized to be approximately a diameter of the outer concave surface of the male mold half, wherein the ultrasonic horn is seated on an edge of the outer concave surface of the male mold, wherein a central area of the convex surface of the ultrasonic horn does not contact the non-optical back surface of the male mold.

2. The method of claim 1, wherein applying an ultrasonic vibrational energy is operated with a Generator Frequency between 15 kHz to 50 kHz.

3. The method of above any claims, wherein applying an ultrasonic vibrational energy is triggered by a force between 0.1 N to 150N.

4. The method of above any claims, wherein the female mold half or the male mold half having the molded silicone hydrogel contact lens attached thereon is not immersed in aqueous media.