CLAIMS

What is claimed is:

1. A beverage nucleator system for a supercooled beverage container having a neck and a closure, comprising:

an ultrasonic device with an ultrasonic transmitter, wherein the ultrasonic device is configured to generate an ultrasonic signal; and

a frame with the ultrasonic device positioned therein;

the frame comprising a beverage container aperture therein,

wherein the beverage container aperture is sized to allow for direct contact between the ultrasonic transmitter and the container such that the ultrasonic signal generated by the ultrasonic device is transmitted by the ultrasonic transmitter directly to the container unaltered to cause ice crystal nucleation within the beverage within the container,

wherein the beverage container aperture is sized for receiving the closure such that the beverage container aperture positions and supports the neck of the beverage container when the beverage container is received within the beverage container aperture, and

wherein the direct contact on the container is on the closure.

~~2. The beverage nucleator system of claim 1, wherein the container comprises a bottle with a closure and wherein the beverage container aperture is sized for receiving the closure.~~

~~3. The beverage nucleator system of claim 2, wherein the direct contact on the container is on the closure.~~

42. The beverage nucleator system of ~~any of claims 1-3~~claim 1, wherein the ultrasonic device comprises a contact switch.

~~5~~3. The beverage nucleator system of claim 42, wherein the contact switch is positioned adjacent to the beverage container aperture.

~~6~~4. The beverage nucleator system of any of claims 1-~~5~~3, wherein the frame comprises an upper ledge and wherein the upper ledge comprises the beverage container aperture.

~~7~~5. The beverage nucleator system of any of claims 1-~~6~~4, wherein the ultrasonic device comprises a portable ultrasonic device.

~~8~~6. The beverage nucleator system of any of claims 1-~~7~~5, wherein the frame comprises a thermoplastic or a stainless steel.

~~9~~7. The beverage nucleator system of any of claims 1-~~8~~6, further comprising:

a button positioned on the frame and configured to activate the ultrasonic device.

~~10~~8. The beverage nucleator system of any of claims 1-~~9~~7, further comprising:

a pressure sensor configured to activate the ultrasonic device upon sensing a threshold pressure.

~~11~~9. The beverage nucleator system of any of claims 1-~~10~~8, wherein the frame and the beverage container aperture are configured to receive a beverage container in an inverted position.

~~12~~10. The beverage nucleator system of any of claims 1-~~11~~9, wherein the ultrasonic device is configured to provide an ultrasound signal with a frequency between 5-60 kHz, with a power of 3-100 W, for an amount of time between 100 ms – 30 s.

~~13~~11. The beverage nucleator system of claim ~~12~~10, wherein the ultrasonic device is configured to provide an ultrasound signal with a frequency between 20-30 kHz, with a power of 5-10 W, for an amount of time between 1 -5 s.

~~14~~12. A method of providing an iced beverage product, comprising:

receiving a supercooled beverage in a bottle with a neck and a closure such that the closure of the bottle is in direct contact with an ultrasonic transmitter of an ultrasonic device, wherein the ultrasonic device is configured to generate an ultrasonic signal, wherein the bottle is in an inverted position, wherein receiving the bottle comprises positioning the closure in a beverage container aperture of a frame that has the ultrasonic transmitter positioned therein, wherein the beverage container aperture is sized to allow for direct contact between the ultrasonic transmitter and the container such that the ultrasonic signal generated by the ultrasonic device is transmitted by the ultrasonic transmitter directly to the container unaltered, wherein the beverage container aperture is sized for receiving the closure such that the beverage container aperture positions and supports the neck of the bottle when the beverage container is received within the beverage container aperture; and

transmitting ultrasonic energy from the ultrasonic transmitter into the beverage directly through the closure to cause ice crystal nucleation within the beverage.

~~15. The method of claim 14, wherein receiving the bottle comprises positioning the closure in a beverage container aperture of a frame that has the ultrasonic transmitter positioned therein.~~

~~16~~13. The method of ~~any of claims 14-15~~claim 12, further comprising:

activating an ultrasonic device to transmit the ultrasonic energy from the ultrasonic transmitter in response to a contact switch closing, a button being pressed, and/or a pressure sensor sensing a threshold pressure.

~~17~~14. The method of ~~any of claims 14-16~~claim 12 or 13, wherein the ultrasonic energy comprises a frequency between 5-60 kHz, with a power of 3-100 W, for an amount of time between 100 ms – 30 s.

~~18~~15. The method of claim ~~17~~14, wherein the ultrasonic energy comprises a frequency between 20-30 kHz, with a power of 5-10 W, for an amount of time between 1 -5 s.