CLAIMS

The invention is claimed as follows:

1. An apparatus for evaluating the integrity of a container seal comprising:

a holder so constructed and arranged to receive a container having a seal and containing an electrolyte product;

a probe actuating device having a first probe removably attached to a lower portion thereof, the first probe having a tip portion that is so constructed and arranged to puncture the container when the probe actuating device is actuated;

a pressure source;

a fluid supply fluidly connected to the first removable probe;

an electrolyte bath having a second probe at least partially immersed therein; ~~and~~

a pressure gauge attached to the first probe; and

a conductivity meter connected to each of the first removable probe and the second probe.

2. The apparatus of Claim 1, wherein the first probe is attached by attachment means selected from the group consisting of magnetic, adhesive, and combinations thereof.

3. The apparatus of Claim 1, wherein the first probe further comprises a hollow cylindrical shape that is so constructed and arranged to deliver a fluid from the fluid supply to an interior of the container.

4. The apparatus of Claim 1, wherein the first probe and the second probe are electrodes.

5. The apparatus of Claim 1, wherein the container and the container seal are made of non-conductive materials selected from the group consisting of plastic, glass, foil, and combinations thereof.

6. The apparatus of Claim 1, wherein the seal is a screw-on plastic cap.

~~14. A method for evaluating the integrity of a container seal, the method comprising the steps of:~~

~~inserting a first removable probe into a container having a seal and containing an electrolyte product such that the first removable probe is at least partially immersed in the electrolyte product;~~

~~separating the removable probe from a probe actuating device;~~

~~placing the container having the first removable probe therein into an electrolyte bath such that at least the seal of the container is immersed in the electrolyte bath, the electrolyte bath having a second probe at least partially immersed therein;~~

~~connecting each of the first and second probes to a conductivity meter; and~~

~~measuring an electrical conductivity from one probe to another using the conductivity meter, wherein the seal is not leaking if there is no measured flow of electrons from one probe to the other, and the seal is leaking if there is a flow of electrons from one probe to the other.~~

~~15. The method of Claim 14 further comprising puncturing the container with the removable probe.~~

~~16. The method of Claim 14, wherein the removable probe is hollow and is attached to a fluid supply by a fluid supply tube.~~

~~17. The method of Claim 16 further comprising supplying a pressurized fluid from the fluid supply to an interior of the container through the fluid supply tube and hollow removable probe.~~

~~18. The method of Claim 17 further comprising measuring an internal pressure in the container using a pressure gauge at a time when the conductivity meter begins to measure an electrical conductivity from one probe to the other.~~

~~19.~~14. A method for evaluating the integrity of a container seal, the method comprising the steps of:

actuating a probe actuating device having a first probe thereon in a direction that is toward a container having a seal and containing an electrolyte product, the first probe having a hollow cylindrical shape and being fluidly connected to a fluid supply by a fluid supply tube;

inserting the first probe into the container such that a portion of the first probe is at least partially immersed in the electrolyte product;

placing the container having the first probe therein into an electrolyte bath such that at least the seal of the container is immersed in the electrolyte bath, the electrolyte bath having a second probe at least partially immersed therein;

connecting the first and second probes to a conductivity meter;

detecting an electrical conductivity from one probe to another using the conductivity meter, wherein the seal is not leaking if there is no measured flow of electrons from one probe to the other, and the seal is leaking if there is a flow of electrons from one probe to the other;

supplying a pressurized fluid from the fluid supply to an interior of the container through the fluid supply tube and the first probe if no measured flow of electrons from one probe to the other is detected; and

measuring an internal pressure in the container using a pressure gauge at a time when the conductivity meter begins to measure an electrical conductivity from one probe to the other.

~~20.~~15. The method of Claim ~~19~~ 14 further comprising puncturing the container with the first probe.

~~21.~~16. The method of Claim ~~19~~14, wherein the first probe is a removable probe that is removably attached to the probe actuating device.

~~22.~~17. The method of Claim ~~21~~ 16 further comprising separating removable probe from probe actuating device prior to placing the container having the first probe therein into the electrolyte bath.