CLAIMS

WHAT IS CLAIMED IS:

1. A moisture tight container, comprising:

a container body having a base and a sidewall extending therefrom, the body defining an interior configured for housing product, the body further having an opening leading to the interior;

a lid that is connected to the body by a hinge and that is pivotable about the hinge with respect to the container body to move the container between a closed position in which the lid covers the opening so as to create a moisture tight seal with the body and an open position in which the opening is exposed, the moisture tight seal comprising a plurality of engaged mating seals in series between the body and the lid when the lid is in the closed position, the plurality of engaged mating seals including at least a first seal and a second seal;

wherein the first seal is formed by mating a thermoplastic sealing surface of the body to a thermoplastic sealing surface of the lid, the second seal being formed by mating a thermoplastic sealing surface of the body with an elastomeric sealing surface of the lid, the elastomeric sealing surface comprising an elastomeric ring that is configured to be compressed by an upper surface of a rim surrounding the opening when the lid is in the closed position, wherein vertical compression of the elastomeric ring causes a portion of the ring to elastically expand radially into a void provided between the body and the lid.

2. The container of claim 1, wherein the first seal requires opening force to transition from the closed position to the opened position and the second seal in combination with the first seal does not require more than the opening force to transition from the closed position to the opened position.

3. The container of claim 2, wherein the opening force is from 3 to 7 lbf (pound-force), optionally from 4 to 6 lbf.

4. The container of any preceding claim, wherein the elastomeric ring is made from a thermoplastic elastomer (TPE).

5. The container of any preceding claim, wherein the elastomeric ring is injection molded with the container body and lid in a multi-shot injection molding process.

6. The container of any preceding claim, wherein the first seal includes an undercut of the body relative to a central axis of the body.

7. The container of claim 6, wherein the undercut is provided in a lip extending upwards from the sidewall and surrounding the opening.

8. The container of claim 6 or 7, wherein the lid includes a depending skirt, wherein the undercut has a surface that mates with a corresponding surface of the skirt, forming the first seal.

9. The container of any preceding claim, wherein the elastomeric ring has a Shore A hardness of from 20 to 50, optionally from 20 to 40, optionally from 20 to 35.

10. The container of any preceding claim, wherein the container, when the lid is in the closed position, has a moisture vapor transmission rate (MVTR) of less than 400 μg/day at 30°C and 80% RH.

11. The container of any preceding claim, wherein the first seal and the second seal combined provide the container when the lid is in the closed position a lower moisture vapor transmission rate (MVTR) than the first seal would provide without the second seal.

12. A moisture tight container comprising:

a. a body defining an interior configured for housing product, and an opening leading to the interior;

b. a lid that is connected to the body by a hinge, the lid being movable with respect to the body between a closed position in which the lid covers the opening and is mated to the body, and an opened position in which the lid is not mated to the body;

c. the body and the lid including a plurality of seals therebetween and in series when the lid is in the closed position;
d. the plurality of seals including at least a first seal requiring opening force to transition from the closed position to the opened position, and a second seal in combination with the first seal not requiring more than the opening force to transition from the closed position to the opened position;
e. the first seal being formed by mating incompressible thermoplastic-to-thermoplastic sealing surfaces, the first seal including an undercut of the body relative to a central axis of the body;
f. the second seal being formed by mating elastomer-to-thermoplastic sealing surfaces, wherein the elastomer-to-thermoplastic sealing surfaces include an elastomer, that is compressible and resilient, formed in the lid or on the body, with multi-shot injection molding.

13. A container according to claim 12, wherein the container when the lid is in the closed position has a moisture vapor transmission rate (MVTR) of less than 370 µg/day at 30°C and 80% RH.

14. The container of claim 12 or 13, wherein the first seal and the second seal combined provide the container when the lid is in the closed position a lower MVTR than the first seal would provide without the second seal.

15. The container of any of claims 12-14, wherein the opening force is from 3 to 7 lbf (pound-force), optionally from 4 to 6 lbf.

16. The container of any of claims 12-15, wherein the elastomer is made from a thermoplastic elastomer (TPE).

17. The container of any of claims 12-16, wherein the elastomer is injection molded with the container body and lid in a multi-shot injection molding process.

18. The container of any of claims 12-17, wherein at least one of the thermoplastic-to-thermoplastic sealing surfaces is on a radially-projecting rim along an outside of the body.

19. The container of any of claims 12-17, wherein at least one of the elastomer-to-thermoplastic sealing surfaces is on a radially-projecting a rim along an outside of the body.

20. The container of any of claims 12-19, wherein the elastomer has a Shore A hardness of from 20 to 50, optionally from 20 to 40, optionally from 20 to 35.

21. The container of any of claims 12-20, wherein the elastomer expands radially into an adjacent void when compressed by the thermoplastic sealing surface of the second seal.

22. A container according to any preceding claim, wherein the elastomer or elastomeric ring is from 0.25 mm to 1.25 mm thick.

23. Use of a container according to any preceding claim for storing diagnostic test strips.