Claims

1.

A product that includes:

a container (12; 112; 212; 312; 412) to hold an original product (P); and

a dissolvable dispense indicator (14; 114; 214; 314; 414) carried by the container.

2.

The product set forth in claim 1 wherein the dissolvable dispense indicator is in an intact state but, during dispensing of the original product, the indicator at least partially dissolves to provide an irreversible visual indication that is visible externally of the container to indicate that the original product has been at least partially dispensed from the container.

3.

The product set forth in claim 1 wherein the indicator includes a thread segment (28) carried inside the container.

4.

The product set forth in claim 1 wherein the container includes a neck (20; 120; 220; 320; 420) having an inside surface (26; 126; 226; 326; 426) and the indicator is carried by the neck inside surface.

5.

The product set forth in claim 4 wherein the indicator is an annular band (130).

6.

The product set forth in claim 4 wherein the indicator is a helix (230).

7.

The product set forth in claim 4 wherein the indicator is also decorative.

8.

The product set forth in claim 1 wherein the container includes a neck (20; 120; 220; 320; 420) having an internal thread segment (28), and the indicator includes a thread segment (30) carried in the internal thread segment of the container.

9.

A package that includes:

the product set forth in claim 1;

an original flowable product (P) dispensably disposed within the container; and

a closure (13; 113; 213) coupled to the container.

10.

The package set forth in claim 9 wherein the container includes a neck (20; 120; 220; 320; 420) having an internal surface (26; 126; 226; 326; 426), and the indicator is carried by the internal surface of the container.

11.

The package of claim 9 wherein the container includes a neck (20; 120; 220; 320; 420) having an internal thread segment (28), and the indicator includes an indicator thread segment (30) carried in the internal thread segment of the container, wherein the closure includes a closure thread segment (38) threaded to the indicator thread segment to couple the closure to the container.

12.

The package set forth in claim 11 wherein the at least one internal thread segment is for removable threaded engagement with the closure thread segment to capture the liquid within the container, and wherein the indicator thread segment is constructed of a material that dissolves upon contact with the flowable product so that, upon removal of the closure and dispensing of the liquid through the finish, the internal thread segment is dissolved and the closure cannot be re-threaded to the container.

13.

A method of producing a product that includes:

(a) applying a dissolvable dispense indicator (14; 114; 214; 314; 414) to an internal surface (26; 126; 226; 326; 426) of a neck (20; 120; 220; 320; 420) of a container (12; 112; 212; 312; 412);

(b) filling the container with an original flowable product (P); and

(c) closing the container with a closure (13; 113; 213).

14.

A product produced by the method of claim 13.

15.

A method of using the product of claim 14, including removing the closure from the container and dispensing at least some of the original product, wherein the indicator at least partially dissolves to provide an irreversible visual indication that is visible externally of the container to indicate that at least some of the original flowable product has been dispensed from the container.

Claims

1.

A product that includes:

a container (12; 112; 212; 312; 412) to hold an original product (P); and

characterized in that

a dissolvable dispense indicator (14; 114; 214; 314; 414) is carried by the container and being dissolvable so as to irreversibly change a visual characteristic.

2.

The product set forth in claim 1 wherein the dissolvable dispense indicator is in an intact state but, during dispensing of the original product, the indicator at least partially dissolves to provide an irreversible visual indication that is visible externally of the container to indicate that the original product has been at least partially dispensed from the container.

3.

The product set forth in claim 1 wherein the indicator includes a thread segment (28) carried inside the container.

4.

The product set forth in claim 1 wherein the container includes a neck (20; 120; 220; 320; 420) having an inside surface (26; 126; 226; 326; 426) and the indicator is carried by the neck inside surface.

5.

The product set forth in claim 4 wherein the indicator is an annular band (130).

6.

The product set forth in claim 4 wherein the indicator is a helix (230).

7.

The product set forth in claim 4 wherein the indicator is also decorative.

8.

The product set forth in claim 1 wherein the container includes a neck (20; 120; 220; 320; 420) having an internal thread segment (28), and the indicator includes a thread segment (30) carried in the internal thread segment of the container.

9.

A package that includes:

the product set forth in claim 1;

an original flowable product (P) dispensably disposed within the container; and

a closure (13; 113; 213) coupled to the container.

10.

The package set forth in claim 9 wherein the container includes a neck (20; 120; 220; 320; 420) having an internal surface (26; 126; 226; 326; 426), and the indicator is carried by the internal surface of the container.

11.

The package of claim 9 wherein the container includes a neck (20; 120; 220; 320; 420) having an internal thread segment (28), and the indicator includes an indicator thread segment (30) carried in the internal thread segment of the container, wherein the closure includes a closure thread segment (38) threaded to the indicator thread segment to couple the closure to the container.

12.

The package set forth in claim 11 wherein the at least one internal thread segment is for removable threaded engagement with the closure thread segment to capture the liquid within the container, and wherein the indicator thread segment is constructed of a material that dissolves upon contact with the flowable product so that, upon removal of the closure and dispensing of the liquid through the finish, the internal thread segment is dissolved and the closure cannot be re-threaded to the container.

13.

A method of producing a product that includes:

(a) filling the container with an original flowable product (P);

(b) closing the container with a closure (13; 113; 213); and

characterized in that

before step (a), a dissolvable dispense indicator (14; 114; 214; 314; 414) is applied to an internal surface (26; 126; 226; 326; 426) of a neck (20; 120; 220; 320; 420) of a container (12; 112; 212; 312; 412).

14.

A product produced by the method of claim 13.

15.

A method of using the product of claim 14, including removing the closure from the container and dispensing at least some of the original product, wherein the indicator at least partially dissolves to provide an irreversible visual indication that is visible externally of the container to indicate that at least some of the original flowable product has been dispensed from the container.

The invention claimed is:

1. A package comprising:

a product that includes:

a container to hold an original product wherein the container is a bottle including a central longitudinal axis, a base, a body extending from the base, a shoulder extending from the body, and a neck extending from the shoulder and having an internal surface; and

a dissolvable dispense indicator carried by the internal surface of the neck of the container;

an original flowable product dispensably disposed within the container; and

a closure coupled to the container and including a plug having a free end extending axially beyond the indicator along a direction into the container.

2. The product set forth in claim 1 wherein the dissolvable dispense indicator is in an intact state but, during dispensing of the original product, the indicator at least partially dissolves to provide an irreversible visual indication that is visible externally of the container to indicate that the original product has been at least partially dispensed from the container.

3. The product set forth in claim 1 wherein the indicator is an annular band.

4. The product set forth in claim 1 wherein the indicator is a helix.

5. The product set forth in claim 1 wherein the indicator is also decorative.

6. The product set forth in claim 1 wherein the indicator is composed of at least one of sugar, coloring, flavoring, tasteless material, citric acid, salt, gelatin, polyhedric alcohol, corn syrup, starch, or natural gum.

7. The package of claim 1, wherein the closure plug has a sealing diameter sealed to a corresponding portion of the internal surface of the container neck and having a reduced diameter corresponding to the indicator.

8. The package of claim 1, wherein the indicator circumscribes a portion of the closure plug.

9. A product that includes:

a container to hold an original product; and

a dissolvable dispense indicator carried by the container, wherein the indicator includes a thread segment carried inside the container.

10. A product that includes:
a container to hold an original product; and
a dissolvable dispense indicator carried by the container,
wherein the container includes a neck having an internal thread segment, and the indicator includes a thread segment carried in the internal thread segment of the container.

11. A package comprising:
a product including:
a container to hold an original product; and
a dissolvable dispense indicator carried by the container,
an original flowable product dispensably disposed within the container; and
a closure coupled to the container,
wherein the container includes a neck having an internal thread segment, and the indicator includes an indicator thread segment carried in the internal thread segment of the container, wherein the closure includes a closure thread segment threaded to the indicator thread segment to couple the closure to the container.

12. The package set forth in claim 11 wherein the indicator includes at least one internal thread segment, for removable threaded engagement with the closure thread segment to capture the original flowable product within the container, and wherein the indicator thread segment is constructed of a material that dissolves upon contact with the flowable product so that, upon removal of the closure and dispensing of the original flowable product through the neck, the internal thread segment is dissolved and the closure cannot be re-threaded to the container.

13. A package for containing a flowable product, which includes:
a container having a finish with at least one internal thread segment, and a closure with at least one external thread segment for removable threaded insertion into said finish to capture said flowable product within said container,

characterized in that

said internal thread segment on said finish is constructed of a material that dissolves upon contact with said flowable product so that, upon removal of said closure and dispensing of the flowable product through the finish, said internal thread segment is dissolved and said closure cannot be re-secured to said container.

14. The product set forth in claim **13** wherein the internal thread segment is composed of at least one of sugar, coloring, flavoring, tasteless material, citric acid, salt, gelatin, polyhedric alcohol, corn syrup, starch, or natural gum.

15. A method of producing a product that includes:

(a) applying a dissolvable dispense indicator to an internal surface of a neck of a container;

(b) filling the container with an original flowable product; and

(c) closing the container with a closure so that a free end of a plug of the closure extends axially beyond the indicator along a direction into the container.

16. A product produced by the method of claim **15**.

17. A method of using the product of claim **16**, including removing the closure from the container and dispensing at least some of the original product, wherein the indicator at least partially dissolves to provide an irreversible visual indication that is visible externally of the container to indicate that at least some of the original flowable product has been dispensed from the container.

18. The method of claim **16**, wherein the closure plug has a sealing diameter sealed to a corresponding portion of the internal surface of the container neck and having a reduced diameter corresponding to the indicator.

19. The method of claim **16**, wherein the indicator circumscribes a portion of the closure plug.