

CONTAINER FOR COSMETICS, IN PARTICULAR MASCARA UNIT

FIELD OF THE INVENTION

The invention relates to a container for cosmetics, in particular a mascara unit, comprising a base element of plastic with a front shoulder extending approximately parallel to the container bottom and a threaded neck axially extending away from it, on which a screw closure cap can be threaded. For the purpose of obtaining a defined final position for the screw closure cap, at least one return stop in the shape of a catch projection is disposed at a distance from the stop shoulder, over a defined angular area along the container shoulder. The return stop is located on the bottom area of the threaded neck at the container shoulder. A catch recess, for a catch and stop projection, which protrudes beyond the lower edge of the screw closure cap is provided between this stop shoulder and the return stop. The catch recess in the locked stages is engaged between the stop shoulder and the return stop. The thread pitch, the start of the thread of the threaded neck and the screw closure cap are of such dimensions or are placed such that the stop and catch projection, of the screw closure cap, in the final catch position, comes to rest with its lower end at the lower end of the stop shoulder of the container shoulder.

BACKGROUND OF THE INVENTION

Some containers for cosmetics of the type described above have a rectangular or oval shape, not symmetrically circular in cross sections. It is important in creating an aesthetically appropriate appearance from the outside that the closure cap and the container be in exact alignment with each other or have a defined orientation towards each other. The same is true for containers and closure caps with circular cross sections, where printing extends over both parts such that exact positioning of the closure cap is required for the printing or the design to have their full impact. This is normally achieved using at least one stop shoulder, which definitely limits the end position and a return stop. As a rule, the return stop consists of a catch projection and a catch recess and assures that the closure cap cannot move back from its resting position against the stop shoulder. Such an arrangement exists in a variety of embodiments. For example, a container of this type is described in the German Utility Patent DE-GM 87 12 015.

This closure technology works well with containers of relatively hard plastics. However, problems arise if containers of softer plastic are used. However, use of such softer plastics is required or desirable with liquids containing a large amount of water, because of the favorable barrier effects of these plastics. It has been shown that with soft plastics the return stop as well as the stop shoulder are subject to wear. The soft plastic wears off and is deformed at the return stop or the stop shoulder after several closings, and the stops can no longer function to assure the intended defined closure position.

SUMMARY OF THE INVENTION

It is an object of the invention to provide a container of the type mentioned above, such that its useful properties remain unchanged, even with the use of soft plastics and after multiple or frequent operation of the closure

system. This object is attained, in accordance with the invention, by choosing the extent of the angle at circumference of the return stop, in relation to the position of the start of the thread and the thread pitch, and the position of the stop shoulder at the container shoulder, such that in the course of closing the catch projection on the screw closure cap contacts the top of the return stop and from there descends to the stop position in an essentially downward movement. By means of this arrangement, wear on the return stop by the closure cap is prevented.

Extensive research into the cause of wear to the prior closure systems has revealed that a planing effect occurs in the course of screwing on the closure cap in conventional closure systems. As the stop shoulder on the closure cap comes closer to the container shoulder, it first reaches the area of the top of the container shoulder and then in the course of continued rotating movement is lifted to overcome the return stop which is in the form of a catch projection. This lifting occurs partially by elastic deformation of the container shoulder and partially by utilizing the thread tolerance. In the course of this lifting, the stop shoulder on the closure cap causes the return stop to be "planed off" and the exterior shape of the stop shoulder on the closure cap is also subject to heavy wear.

In contrast, the present this invention relates to the recognition that it is possible to obtain a considerably improved wear pattern if the stop shoulder of the closure cap contacts the top of the return stop and does not need to be lifted. The catch effect thus achieved is the same as with the conventional closure system, but without the excessive wear.

The present invention provides that the return stop is so placed and is of such a size that A is greater than $H/\tan \alpha$, where A is the distance between the base of the stop shoulder to the back end of the return stop, H is the height of the return stop, measured starting at the container shoulder, and α is the thread pitch. As a rule, the top of the return stop will be made essentially flat and extend parallel to the container shoulder. To the extent that the top is rounded, the height H is defined by the height in the contact area between the stop and the catch projection of the closure cap.

To accommodate the thread tolerances required for easy movement and possible tolerances during manufacture, it can be provided that the return stop be placed and be of such a size that $A > H/\tan(\alpha + \Delta)$, where Δ is the thread tolerance. To obtain a particularly defined stop and to prevent rounding of the container shoulder even with frequent use, it can be furthermore provided that the stop shoulder at the container shoulder is obliquely inclined with respect to the longitudinal axis of the container while forming an undercut.

Accordingly, the stop and catch projection of a screw closure cap is provided so as to be obliquely inclined with respect to the longitudinal axis corresponding to the stop shoulder on the container shoulder in such a way that it lies flat against it in the closed end position.

To achieve a defined positioning in the end position and in the axial direction, the stop and catch projection on the screw closure cap are provided to have, looking in the peripheral direction, two sections offset with respect to each other. In the locked end position, one of the sections rests on the container shoulder in the area