



The invention relates to a replaceable container for a soap solution, the replaceable container having an inner seal and an opening extending downwardly and being sealable by means of the inner seal.

Containers of the above type are known per se and are used for soap solution dispensers. In FR-A-2 184 086, a replaceable container for a soap solution having a soap solution dispenser is described and illustrated. The soap solution is contained in a bottle-like container, the inner seal of which is lifted when the container is inserted into the dispenser. The seal comprises star-like lateral recesses, which are defined by ribs but which only extend over part of the length of the seal, so that the remaining portion of the seal acts as a sufficient seal in the closed state. After the lifting of the seal, which does, however, lodge further in the discharge opening with the aid of the ribs, the soap solution flows into a chamber, whence it is pumped out by hand by means of a metering pump in small quantities. The container with the dispenser is provided with a cover, which has both an aesthetic and a protective function, the latter being particularly expedient in public wash-rooms. In order to be able to determine in good time that only a little soap solution remains in the dispenser and so that the empty container can therefore be replaced by a full container, a window is provided in the cover at the level of the chamber between the discharge opening from the container and the metering pump. Through this window it is possible to observe the chamber from the outside and thereby control the filling level. However, the chamber for the filling level indication can become coated with the soap solution so that it either has to be cleaned, which would require the dismantling of the device, or it is necessary to do without the timely indication of the filling level.

It is the object of the invention to dispense with the disadvantages of the prior art and to provide a replaceable container of the above type, which ensures a clear indication of the filling level and which allows the filling level indication to be replaced by simple means together with the replacement of the container.

According to the invention, this object is attained in that the inner



seal is designed as an indicator float, which is coloured so as to provide a contrast with the colour of the soap solution, in that at least the lower portion of the replaceable container comprises a transparent material and in that the replaceable container is provided with a neck, a wall of the neck extending in the direction of a vertical region of the wall of the replaceable container.

The advantage of the invention consists in that, when the replaceable container is inserted or screwed in place, the inner seal is pushed inside the container and then floats upwards because it is either made of a material with a lower specific gravity than that of the soap solution or because it is filled with air or another gas. As the quantity of soap solution in the container then sinks, the inner seal also sinks and passes into the lower portion of the container, where it becomes visible through a window-like opening in the soap solution dispenser. Said solution ensures that the inner seal designed as an indicator float is able to pass into the close proximity of the window-like opening. In order to render the inner seal sufficiently recognisable as an indicator float, the inner seal is formed from a non-transparent and/or coloured material. In practice, the most suitable colour was found to be signal red.

It is particularly expedient for a wall of the neck to form a rectilinear extension in a vertical direction of a vertical region of the wall of the replaceable container. This further development allows the inner seal to pass smoothly with the falling level of the soap solution into the lowermost portion of the container.

It is advantageous for the neck of the replaceable container to taper downwardly. This also allows the inner seal to slide smoothly downwards.

The container and the seal are expediently made of PVC.

The invention is described in detail in the following with the aid of schematic drawings, in which:

Fig. 1 is a side view of the replaceable container according to the

invention,

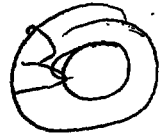


Fig. 2 is a front view of the container according to Fig. 1, the lower portion being shown in section, so that an inner seal is also visible,

Fig. 3 a section taken along line III-III of Fig. 1 and

Fig. 4 is an enlarged view of the inner seal, the left part being shown in section and the right part being shown as a view.

According to Fig. 1, a replaceable container 1 is provided with a neck 3, which tapers downwardly. The lowermost portion is provided with an outer thread 5, which is used for screwing into the soap solution dispenser. Within this portion with the outer thread 5, the opening 4 is disposed, in which the inner seal is arranged prior to the use of the container, which seal is not visible in this drawing. The left wall 6 of the replaceable container 1 extends rectilinearly with the left wall 6' of the neck 3.

Like parts are provided with like reference numbers in all the drawings.

Fig. 2 shows the flat formation of the replaceable container 1 and the narrowing of the neck 3. In the upper wall of the replaceable container 1, a depression 7 is provided. After the insertion of the container 1, it is possible to make a small perforation in said depression 7 of the wall 6, in order to allow for the penetration of ambient air into the container 1. Fig. 2 also shows a constriction 8, which on the one hand increases the strength of the neck 3 and on the other hand facilitates the sliding down of the inner seal 2 as the quantity of soap solution is reduced. In Fig. 2, the lower portion is shown in section so that the inner seal 2 is also visible in this case.

Fig. 3 is the section III-III of Fig. 1. It can be seen from Fig. 3 that the replaceable container 1 is formed in this example with flat, longer walls, the front wall shown on the left and the rear wall 6 shown on the right being rounded. For reasons relating to strength, the front wall 9 has a

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greater thickness than the other walls of the replaceable container 1.

Fig. 4 is an enlarged view of the inner seal 2. The walls 10 of the inner seal 2 are stepped so that an annular enlargement 11 is formed in the upper portion. The upper edges of said annular enlargement 11 are rounded, which facilitates the pressing in of the inner seal 2 into the opening 4 of the replaceable container 1. The inner seal 2 is open towards the top, i.e. in the direction of the inside of the container 1. The lower portion of the inner seal 2 is sealed with a base 12. During the mounting of the replaceable container 1, the inner seal 2 is pressed via said base 12 into the inside of the container 1 by means of a pin, not shown, which is a component part of the soap solution dispenser.

CLAIMS

1. A replaceable container (1) for a soap solution, the replaceable container having an inner seal (2) and an opening (4) extending downwardly and being sealable by means of the inner seal, characterised in that the inner seal (2) is designed as an indicator float coloured so as to provide a contrast with the colour of the soap solution, in that at least the lower portion of the replaceable container (1) comprises a transparent material and in that the replaceable container (1) is provided with a neck (3), a wall (6') of the neck (3) extending in the direction of a vertical region of the wall (6) of the replaceable container (1).
2. A replaceable container according to claim 1, characterised in that the wall (6') of the neck (3) forms a rectilinear extension in a vertical direction of a vertical region of the wall (6) of the replaceable container (1).
3. A replaceable container according to claim 1 or 2, characterised in that the neck (3) of the replaceable container (1) is tapered downwardly.

