This invention relates to a spreader assembly for an adhesive container having an elongated dispenser neck comprising a holder containing a porous spreader adapted to adjustably, axially engage the elongated dispenser neck whereby the position of the holder containing said spreader can be adjusted relative to the dispenser neck.

6 Claims, 3 Drawing Figures
ADHESIVE SPREADER ASSEMBLY

THE PRIOR ART

Closure members or caps for adhesive containers are known which generally incorporate a sponge-like distributing member firmly connected to the neck of the container. The product to be applied is in this case first squeezed out of the tube into the distributing member, where it is soaked up, and is finally given up again on coming in contact with the surface of the object to be coated. In practice the use of these known closures for the application of adhesive, especially adhesive solutions, is not entirely satisfactory. This is owing to the fact that every adhesive naturally tends to form a crust and after a short time the distributing member, completely soaked with it, loses its flexibility and consequently its suitability as a spreader. In order to use up the contents of the tube completely, the user is, therefore, compelled to remove the spongy distributing member and to complete the application of the adhesive with another instrument. In the case of adhesive solutions, distributing members consisting of rubber, felt or the like could also become unusable in a short time by the action of the solvent. Rubber, as is known, may be destroyed by the effect of the solvent, while felt tends to soak up the adhesive, which leads to the encrustation of the spreader. Apart from this, with closure constructions of this type it is not possible to apply the adhesive when necessary in points or lines without complicated manipulations.

OBJECTS OF THE INVENTION

An object of the present invention is the development of a spreader assembly for an adhesive container which overcomes the deficiencies of the prior art and is adjustable for different types of adhesive application.

Another object of the present invention is the development of a spreader assembly for an adhesive container having an elongated dispenser neck comprising a holder containing a porous spreader adapted to adjustably axially engage the elongated dispenser neck whereby the position of the holder containing said spreader can be adjusted relative to the dispenser neck.

A further object of the present invention is the development of an adhesive dispenser comprising an adhesive container having an elongated dispenser neck and a holder containing a porous spreader, axially mounted on said elongated dispenser neck whereby said holder containing said spreader in its fully extended position on said dispenser neck extends beyond the tip of said dispenser neck and in its fully retracted position on said dispenser neck is below the tip of said dispenser neck. Optionally the elongated dispenser neck is adapted to receive a cap which also encloses said holder containing a porous spreader.

These and other objects of the invention will become more apparent as the description thereof proceeds.

THE DRAWINGS

FIG. 1 is a longitudinal cross-section of the spreader assembly of the invention mounted on the elongate dispenser neck of an adhesive container together with a cap for the adhesive container.

FIG. 2 shows the spreader assembly in its fully extended position.

FIG. 3 shows the spreader assembly in its fully retracted position.

DESCRIPTION OF THE INVENTION

According to the invention a closure for adhesive containers, especially tubes for solvent adhesive, consists of the container neck with an opening for removal of adhesive, a closure cap and a spreader consisting of porous material. The closure according to the invention is characterized in that the container neck is surrounded by an axially displaceable spreader, which in the pushed-out position rises above the mouth of the container neck.

The closure of the invention is an improvement over known container closures with sponge-like distributing members in that a choice of both a surface application or a point or line application is possible for the application of adhesive, especially solvent adhesive. Also, it lessens the possibility of the sponge-like distributing member becoming unusable by encrustation.

Through the axially displaceability of the spreader of the invention along the neck of the container it is possible to provide both a flat surface and a point or line application of adhesive as desired. In the first case the spreader merely needs to be moved out so far that it rises above the mouth of the container neck. The adhesive pressed out of the mouth of the neck then goes through the aperture in the spreader, the size of which corresponds to the outside periphery of the container neck, which is suitably constructed like a canula, on to the object to be spread with adhesive, where it can then be distributed over the surface by means of the spreader. If, on the other hand, a point or line application of adhesive is desired, the spreader must be moved back until the mouth of the container neck is exposed. The application is then effected without using the spreader.

It is further advantageous for the spreader to be made of non-absorbive, expanded plastic, preferably expanded plastics material having closed cells particularly polyethylene-foamed sponge. Neoprene-foamed sponge is also suitable provided it is prepared to be stable to solvents.

As is known, expanded plastics material may have optionally a closed or an open cell structure, depending upon the conditions of the foaming process during its production. It need not be mentioned that in practice an open cell structure means a structure in which the number of open cells outweighs that of the closed cells, and, visa versa, in a closed cell structure the closed cells outweigh the open cells.

It has now been found surprisingly that the closed cell structure of the expanded plastics material which is preferred in the practice of the invention is specially suitable for the spreader, since it does not tend to absorb adhesive. The decisive difference between the known forms of the spreader consisting of sponge plastic and that consisting of closed cell expanded plastic is that, in the case of the former, the whole of the spreader is permeated with adhesive before an application to the object is possible, whereas in the case of the latter, the adhesive comes out through the aperture present in the spreader on to the object and then is simply distributed with the top face of the spreader without penetrating to any appreciable extent into the expanded plastic. Small amounts of residual adhesive occasionally appearing on the top face of the spreader can be removed by simply cutting off a thin layer of foamed material without its function being thereby impaired.
This form permits a trouble-free operation until the contents of the container are completely used. The use of polyethylene- or neoprene-foamed sponge with the above reservation is particularly advised when solvent-containing types of adhesive are to be used.

It is further expedient for the closure cap, constructed in one piece, to surround the spreader on all sides jointly with the shoulder on the container, to have the shape of a screw cap and corresponding to the opposite screw thread formed on the container neck or on the container shoulder, and to have a coaxial plug, which fills the mouth of the container neck when the cap is screwed on.

Owing to this, clogging of adhesive in the mouth of the container neck is prevented when the closure is in the closed state, so that after every opening, adhesive can immediately come out without being prevented by an encrusted stopper.

Finally, in order to provide clean handling, the screw cap is shaped so that, jointly with the container shoulder, it surrounds the spreader on all sides.

In addition, it is advantageous for the spreader to be attached to a holder preferably consisting of a plastic material, which has a screw thread which corresponds to the thread on the container neck. Owing to this, the difficulty of handling the naturally flexible, expanded plastic material which may occur when it is pushed on the container neck, is avoided. The axial displacement of the spreader is, therefore, effected by corresponding rotation of the holder relative to the container neck. At the same time this prevents a possible encrustation of the aperture of the spreader.

The advantages of the closure according to the invention lie on the one hand, as explained, in the possibility of applying adhesive, especially solvent-containing adhesive, without dirtying the hands, optionally either on a surface or in points or lines, while in the former case the troublesome, so-called filament spinning of the adhesive is also greatly reduced, so that in practice this tiresome condition no longer gives trouble. However, the fact that in addition applicators, such as combs and the like, can be omitted, which are easily lost, may be a more important advantage especially for repair purposes. Apart from this, the invention is useful for applying adhesive to objects consisting of tissue paper or similar material which would be easily damaged by use of hard spreader.

The invention will be described further, by way of example, with reference to the accompanying drawings, in which:

FIG. 1 is a longitudinal section through a spreader screwed on a tube and showing the cap;
FIG. 2 is the spreader in the pushed-up position for surface application of adhesive;
FIG. 3 is the spreader in the moved-back position for point or line application of adhesive.

Referring to the drawings, a tube or other adhesive container 1 (see FIG. 1) having an elongated neck 2 with a screw thread 3 on the outside thereof is adapted to receive a holder 4 carrying a spreader 5 screwed thereon. The holder 4 itself has a screw thread corresponding with the thread 3, so that it is possible to turn the holder 4 and with it the spreader 5 in and out of engagement with the tube 1. Instead of a screw thread arrangement, the holder 4 can be frictionally engaged with the neck 2 and can be moved by sliding along neck 2. The spreader 5 consists of non-absorptive expanded plastics material, preferably polyethylene- or neoprene-foamed sponge.

A screw cap 6, constructed in one part, with an elongated cylindrical extension, together with a shoulder 7 on the tube, surrounds the spreader 5 on all sides. The cap 6 carries a coaxial flange 8, positioned on its inner side, having a screw thread which corresponds with the thread 3 of the neck 2 of the tube. The screw cap 6 could also be constructed with threads on the inner side of the elongated cylindrical extension adapted to engage external threads on the shoulder of the tube 1. After unscrewing the screw cap 6, the holder 4 together with the spreader 5 can then be turned out of engagement until the spreader 5 rises above (see FIG. 2) the tube neck 2, which is in the form of a canula. The adhesive comes out through an aperture 9 and can be distributed by the top surface 10 of the spreader 5 on to the object to be provided with adhesive.

If, on the other hand, the adhesive is merely to be applied in points and lines, the holder 4 (see FIG. 3) is turned back towards the shoulder 7 of the tube until the mouth 11 of the neck 2 of the tube is open. The application then takes place without the spreader 5.

Finally, the screw cap 6 (see FIG. 1) also carries a co-axial plug 12 which, when the cap 6 is screwed on, fills the mouth 11 of the tube neck 2 and prevents leakage of the adhesive and encrustation thereof. The screw thread mounting of the cap 6 may be dispensed with and the same may be secured to the mouth 11 of neck 2 by frictional engagement with plug 12.

The preceding specific embodiments is illustrative of the practice of the invention. It is to be understood, however, that other expedients known to those skilled in the art or disclosed herein, may be employed without departing from the spirit of the invention or the scope of the appended claims.

We claim:
1. An adhesive dispenser comprising an adhesive container having an elongated dispenser neck, a holder containing a porous spreader adapted axially mounted on said elongated dispenser neck the length of said holder containing said porous spreader being less than the length of said neck, means for adjusting the position of said holder containing said spreader, with reference to said elongated neck such that in its fully extended position on said dispenser neck said holder extends beyond the tip of said dispenser neck and in its fully retracted position on said dispenser neck said holder is below the tip of said dispenser neck, said adjusting means comprising cooperating screw threads on the inner wall of said holder and the outer wall of said elongated dispenser neck.
2. The spreader assembly of claim 1 wherein said porous spreader is a non-absorbent foamed plastics material.
3. The spreader assembly of claim 2 wherein said non-absorbent foamed plastics material is selected from the group consisting of polyethylene-foamed sponge and solvent-resistant, neoprene-foamed sponge.
4. An adhesive dispenser comprising an adhesive container having an elongated dispenser neck, a holder containing a porous spreader axially mounted on said elongated dispenser neck, the length of said holder containing said porous spreader being less than the length of said neck, means for adjusting the position of said holder containing said spreader, with reference to said elongated neck such that in its
fully extended position on said dispenser neck said holder extends beyond the tip of said dispenser neck and in its fully retracted position on said dispenser neck said holder is below the tip of said dispenser neck, said adjusting means on said elongated dispenser neck comprising means for receiving a cap and said adhesive dispenser also comprising a cap fully enclosing said holder containing a porous spreader and means to plug the opening in said elongated dispenser neck.

5. The adhesive dispenser of claim 4 wherein said elongated dispenser neck has external screw threads, said holder has screw threads in its inner wall cooperating with the screw threads on said dispenser neck and said cap has an axial cylindrical inset with screw threads in its inner wall cooperating with the screw threads on said dispenser neck.

6. The adhesive dispenser of claim 4 wherein said cap has a coaxial plug for engaging and sealing the mouth of said elongated dispenser neck.

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