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(54) **CONTAINER OR CAPSULE FOR SEGREGATED STORING OF TWO-COMPONENT MISCIBLE SUBSTANCES**

BEHÄLTER ZUR GETRENNTEN AUFBEWAHRUNG VON ZWEI MISCHFÄHIGEN KOMPONENTEN  
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**US-A- 3 856 138**

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## Description

**[0001]** The present invention relates to a container or a capsule for the storage of two-component miscible substances, such as medicaments where the one component is the medically active component in liquid, powdery or tablet form while the other component is a liquid such as water for dissolving or diluting the medically active component, the two components to be mixed at a desired or required point of time, wherein the bottom end of the bottom member of the container is closed and is integral with the rest of the bottom member and the mouth of the inner chamber, when the two members of the container are tightly interconnected, is sealingly closed against the bottom of the first member by means of a sealing member.

**[0002]** For both patients and healthy persons there is a need for a small and simply operated container which contains two component medicaments to be stored separately and mixed only at the time of need.

**[0003]** In the prior art such containers or capsules are described both for use with pain killers, in the art of dental techniques and in the art of cosmetics. One such container is described in the Norwegian patent no. 156123, based on PCT/EP82/00032. This is a container comprised of two concentric containers, screwed together such that the open end of the inner container, defining an inner compartment, is pressed towards a sealing rim constituting an elevation on the closed bottom of the outer container, defining the outer compartment. This container lacks, however, a sealing member in the open end of the inner chamber which also functions as a plug, closing this chamber.

**[0004]** US-A-3 856 138 discloses a compartmentalized container for storing, mixing, and dispensing a plurality of incompatible liquids which must be segregated prior to use, which container includes bottom member 1, top member 2, concentric chambers within and around the top member 2, bottom end of bottom member 1 is closed by means of bottom plug 5, mouth 15 sealingly closed to the first member 1 by means of a sealing member 17. The bottom member 1 is closed by a different piece 5.

**[0005]** Thus it is known in the art compartmentalized containers with two concentric chambers, however, with both chambers open ended, in the same place and closed by a common plug.

**[0006]** Neither the above described container nor the other containers known in the prior art are suitable for rapid access to a mixed ready-to-use medicament, composed of separately stored components, for use by healthy persons or patients, such as for example cardiac patients.

**[0007]** This aspect is obtained by the present invention characterized by the enclosed claims.

**[0008]** For cardiac patients it may be necessary to have an easily accessible emergency supply of cardiac medicament for the case that the patient suffers an

acute situation, and for such circumstances the container or capsule according to this invention is provided. The container or capsule comprises a bottom member and a top member, and two concentric chambers, the outer chamber extending from the bottom of the bottom member and opening towards the top member whereas the inner chamber extends from the top member and having its mouth facing the bottom of the bottom member. The container or the capsule according to the invention is characterized in that the mouth of the inner chamber, when the bottom and top members are tightly interconnected, is sealingly closed to the bottom member by means of a sealing member. Further features of the invention will appear from the following description and from the patent claims.

**[0009]** The invention shall now be described with reference to the accompanying drawing showing an axial section through an embodiment of a capsule according to the invention.

**[0010]** The drawing shows an axial section through a capsule comprising a bottom member 1 and a top member 2 which together define an outer chamber 11 and, concentrically therewith, an inner chamber 12. The outer chamber 11 extends from the bottom of the bottom member 1 and opens towards the top member 2. The inner chamber 11 extends from the top member 2 towards the bottom of the bottom member 1. The bottom member 1 and the top member 2 are interconnectable through threads 3, the threading being further sealed by means of an O-ring 4. The inner chamber 12 has such a length that its mouth will seal against the bottom of the bottom member 1, a sealing member 13 being provided which does also act as a plug for closing the inner chamber 12.

**[0011]** In operation, the outer chamber 11 is provided for receiving a predetermined quantity of a substance in liquid, powdery or tablet form which up to a given point of time should be kept separate from a predetermined quantity of liquid received in the inner chamber 12 and which at a such given time should be mixed with the liquid from the inner chamber. The mixing is achieved by removing the top member 2 from the bottom member 1 the mouth of the inner chamber 12 thereby being uncovered so that the liquid in the inner chamber 12 mixes with the contents of the outer chamber 11.

**[0012]** A specific example of purpose of the invention is that a cardiac medicine in the form of a powder or an easily dissolvable tablet is kept in the outer chamber 11 while water is kept in the inner chamber 12, the water and the cardiac medicine being mixed only at the time when the user of the capsule suffers an acute cardiac emergency.

## 55 Claims

1. Container or capsule for the storage of two-component miscible substances, comprising a bottom

member (1) and a top member (2), and two concentric chambers (11, 12), the outer chamber (11) extending from the bottom of one of said members, e. g. the bottom member (1), and is open towards the other member whereas the inner chamber (12) being integral with the said other member has its mouth facing the bottom of the said first member, the bottom end of the bottom member (1) being closed **characterized in that** the bottom end of the bottom member (1) is integral with the rest of the bottom member (1), and the mouth of the inner chamber (12), when the two members (1, 2) of the container or capsule are tightly interconnected, is sealingly closed against the bottom of the said first member by means of a sealing member (13).

2. Container or capsule as claimed in claim 1, **characterized in that** the sealing member (13) constitutes a plug.

### Patentansprüche

1. Behälter oder Kapsel zur Aufbewahrung von zweikomponentigen mischfähigen Substanzen, aufweisend ein Bodenelement (1) und ein oberes Element (2) und zwei konzentrische Kammern (11, 12), wobei sich die äußere Kammer (11) von dem Boden des einen der Elemente, z.B. dem Bodenelement (1), erstreckt, und zu dem anderen Element offen ist, während die innere Kammer (12), welche integral mit dem anderen Element ist, ihre Mündung zu dem Boden des ersten Elements zeigend aufweist, wobei das Bodenende des Bodenelementes (1) geschlossen ist, **dadurch gekennzeichnet, dass** das Bodenende des Bodenelementes (1) integral mit dem Rest des Bodenelementes (1) ist, und die Mündung der inneren Kammer (12), wenn die zwei Elemente (1, 2) des Behälter oder der Kapsel fest miteinander verbunden sind, dichtend gegen den Boden des ersten Elements abgeschlossen ist mittels eines Dichtelements (13).

2. Behälter oder Kapsel wie in Anspruch 1 beansprucht, **dadurch gekennzeichnet, dass** das Dichtelement (13) einen Stopfen bildet.

### Revendications

1. Récipient ou capsule pour le stockage de substances miscibles à deux composants, comprenant un élément inférieur (1) et un élément supérieur (2), ainsi que deux chambres concentriques (11, 12), la chambre extérieure (11) se prolongeant depuis la partie inférieure de l'un desdits éléments, par exemple l'élément inférieur (1), et s'ouvrant vers l'autre élément tandis que la chambre intérieure (12) étant

intégrée dans ledit autre élément présente une ouverture faisant face à la partie inférieure dudit premier élément, **caractérisé par le fait que** l'extrémité inférieure de l'élément inférieur (1) étant fermée, l'extrémité inférieure de l'élément inférieur (1) est intégrée dans le restant de l'élément inférieur (1), et l'ouverture de la chambre intérieure (12), lorsque les deux éléments (1, 2) du récipient ou de la capsule sont étroitement reliés, est hermétiquement fermée contre la partie inférieure dudit premier élément au moyen d'un joint (13).

2. Récipient ou capsule, conforme à la revendication 1, **caractérisé par le fait que** le joint (13) constitue un bouchon.

