

The invention relates to a sales and storage package for air/zinc cells, having a carrier on which the cells are made to adhere by means of their base, which is provided with air entry openings.

The wide-spread use of zinc/air cells in the form of round cells for the purposes of entertainment electronics, for pocket calculators or in particular for hearing aids necessarily also makes the packaging of this mass-produced article an important factor. On the one hand it must be economical, but on the other hand it must also have an attractive appearance to promote consumer interest.

Since nowadays there is typically virtually no personal advice for the customer in markets and in department stores, the packaging also represents a genuine sales aid as a result of its design appearance and in some cases provision with conspicuous instructions for use.

Making use of the tablet packaging of the pharmaceutical industry, originally similar packaging was introduced for gas-tight round cells of the rechargeable Ni/Cd system or the primary systems $\text{Ag}_2\text{O}/\text{Zn}$ and HgO/Zn , this packaging comprising for example two plastic dishes laid one inside the other, of which the one dish was divided into circularly arranged compartments for receiving the cells and could be rotated with respect to the other dish in such a way that the receiving compartments were successively brought into congruence with an ejection opening in the other dish and the respective cell could be removed.

However, in the case of zinc/air cells there was the particular problem that the air entry openings thereof, in the cathode cup, had to be protected from air ingress and moisture until the moment of use, that is to say the cells had also to be capable of storage in the packaging.

A corresponding packaging element is for example the press-through pack described in DE-A-36 30 926. In this packaging

element the cells are entirely protected from the surrounding air between a tear-resistant, air-tight and transparent synthetic material film having cup-shaped outward recesses and an aluminium foil sealed onto this film.

US-A-4 015 708 discloses, as a packaging element for air/zinc cells, a folding wallet. The latter contains a carrier of cardboard having circular cutouts for receiving the round cells, which are made to adhere by means of their base to an underside film cover of the carrier.

The desire to reduce the expense for material and manufacture of known packaging has frequently led to restricting it to a label which is made to adhere to the battery base and which has to be removed by hand before the battery can for example be inserted into a hearing aid.

However, removing the label using a small gripping tab can present considerable difficulties to elderly and frail persons. With ill-informed persons, it also occurs that the label is not removed at all and the unactivated cell is then rejected as unsuitable.

The object of the invention is to specify a packaging element for air/zinc cells in which the disadvantages mentioned in conjunction with activating the cell are eliminated, which enables a long period of storage and which presents the round cells in an attractive manner.

In accordance with the invention, the object is achieved by a sales package as defined in Claim 1.

In accordance with this, the invention is substantially a blister card of the press-through type with an integrated adhesive closure. The advantage of this novel packaging resides in the fact that when the round cell is pressed out of the blister an adhesive film is detached from the cell and remains behind on the

multiple package, so that improper removal of the battery is impossible.

The subject of the invention is explained in more detail with reference to three figures:

Figure 1 shows the multiple package according to the invention in an oblique view;

Figure 2 shows the package in longitudinal section (diagrammatically);

Figure 3 shows the package from the underside, in a plan view.

According to Figure 1, the basis of the sales package 1 is a cardboard carrier 2 which is laminated with cellulose and has a suspension eyelet 3 and on which a transparent synthetic material film 4 having cup-like outward recesses 5 (blisters) for receiving round cells 6 is sealed. The free surface of the carrier can be used for writing or for decorative purposes (company marks).

The air entry openings 7 in the cell bases (cf. Fig. 2) are closed to be air-tight by means of a second film 8 which underlays the cells and onto which the cells are made to adhere. This film thus represents a removal and closure film which is common to all cells. For this purpose, it is coated on the upper side with an adhesive to which the cells adhere.

Starting from the centre of the circular cell arrangement, the removal film 8 accordingly extends below the bases of the cells and thus peripherally into the regions of the carrier 2 through which the cells 6 can be pressed. The contour of the removal film is thus similar to a rosette having a number of petals corresponding to the number of cells, the round cells 6 being seated on these petals.

During manufacture, the blister 4, 5 is turned with the cup openings upwards and the removal film is made to adhere to the cell bases and to the blister. Then, the cardboard is sealed on. During this, as a result of the sealing lacquer applied to the cardboard, leaving the removal regions for the cells free, a firm connection between the cardboard and the removal film is also produced.

The structure of the finished sales package is shown more clearly from the longitudinal sectional illustration according to Figure 2. Where already mentioned, the reference numerals correspond to those of Figure 1.

9 designates the adhesive coating of the removal film 8.

The underside of the removal film 8 is also included in sealing the cardboard 2 onto the blister 4, 5, during which, however the fixed adhesive connection of the film to the cardboard is restricted to the central region between the cup-shaped outward recesses 5. In contrast, the film 8 lies freely on the carrier in those regions of the cardboard carrier 2 which are covered by the cup-shaped outward recesses 5 of the synthetic material film 4 and which have to be pressed through for removal of the cells. These are their petal-shaped portions adhering to the cell bases. The cardboard carrier 2 is provided, in these regions, with perforations 10, 11 (cf. Fig. 3) which are matched to the shape of the cells.

The perforations are completed by cutouts 12 in the cardboard carrier. These facilitate breaking away of the cardboard using the fracture line 11 in the perforation region, when the cell is pressed through. Here, as can be seen from the right-hand part of Figure 2, the cell initially remains adhering to the film 8. It can then easily be removed from the film, while the latter remains behind on the carrier as an integral part of the packaging.

Figure 3, which shows the underside of the sales package in a plan view, shows the perforations as lines 10. The cutouts 12 in the cardboard carrier which have been mentioned form narrow windows having a lens-shaped outline. The marginal portions of the cells or of the petal portions of the label film 8 adhering to their bases are visible through these openings. These petal portions are, as can be seen from Figure 2, kept free of the adhesive layer on their underside. The possibility of soiling by fingers during release of the cell 6 from the film 8 is thus eliminated.

The novel sales package enables removal of the batteries which is uncomplicated and always correct, without the application of force. It ensures that the batteries remain fresh even over a long period of storage and is moreover environmentally friendly.



Claims

1. Sales and storage package for zinc/air cells, having a carrier on which the cells are seated by means of their base, which is provided with air entry openings, where a cover (4) which is made of transparent synthetic material and has cup-shaped recesses (5) matched substantially to the shape of the cells is secured to the carrier (2), and where the cells (6) can be pressed through the carrier for use, characterized in that there is secured to the carrier a further film (8) which extends into the regions of the carrier through which the cells can be pressed and which is provided at least there with an adhesive layer (9) to which the cells adhere by means of their base and which remains on the carrier after the cells have been pressed through and removed.

2. Sales and storage package according to Claim 1, characterized in that the carrier is provided, in the regions covering the recesses, with perforation lines (10) matched to the shape of the cells.

3. Sales and storage package according to Claim 2, characterized in that cutouts (12) are provided in the carrier.