

85.06

85.06 - Primary cells and primary batteries (+).

- 8506.10 - Manganese dioxide
- 8506.30 - Mercuric oxide
- 8506.40 - Silver oxide
- 8506.50 - Lithium
- 8506.60 - Air-zinc
- 8506.80 - Other primary cells and primary batteries
- 8506.90 - Parts

These generate electrical energy by means of chemical reactions.

A primary cell consists basically of a container holding an alkaline or a non-alkaline electrolyte (e.g., potassium or sodium hydroxide, ammonium chloride or a mixture of lithium chloride, ammonium chloride, zinc chloride and water) in which two electrodes are immersed. The anode is generally of zinc, magnesium or of lithium and the cathode (depolarising electrode) is, for example, of manganese dioxide (mixed with carbon powder), of mercuric oxide or of silver oxide. In lithium primary cells, the anode is of lithium and the cathode is, for example, of thionyl chloride, of sulphur dioxide, manganese dioxide or of iron sulphide. A nonaqueous electrolyte is used because of the solubility and reactivity of lithium in aqueous solutions. In air-zinc primary cells, an alkaline or neutral electrolyte is generally used. The zinc is used as the anode, oxygen diffuses into the cell and is used as the cathode. Each electrode is provided with a terminal or other arrangement for connection to an external circuit. The principal characteristic of a primary cell is that it is not readily or efficiently recharged.

Primary cells are used for supplying current for a number of purposes (for bells, telephones, hearing aids, cameras, watches, calculators, heart pacemakers, radios, toys, portable lamps, electric prods for cattle, etc.). Cells may be grouped together in batteries, either in series or in parallel or a combination of both. Cells and batteries remain classified here irrespective of the use for which they are intended (e.g., standard cells for laboratory work producing a constant known voltage fall in the heading).

The various types of cells include :

- (1) **Wet cells**, in which the electrolyte is a liquid, and is not restrained from flowing. Wet cells are therefore sensitive to orientation.
- (2) **Dry cells**, in which the electrolyte is immobilised in absorbent materials or gels (e.g., mixed with a thickener such as agar-agar or flour to form a paste). The electrolyte used may be liquid but it is restrained from flowing. Dry cells are used mainly for portable devices.
- (3) **Inert cells**, or reserve cells or batteries to which water or all or part of the electrolyte must be added before they can be used, or in which the electrolyte must be heated to become ionically conductive.
- (4) **Concentration cells**, the electrolyte being at a different degree of concentration at each electrode.

Primary cells and batteries may be manufactured to various shapes and sizes. Common types are those having a cylindrical or button shape.

Certain cells (e.g., wet cells and some inert cells) are usually presented without their electrolyte, but remain classified here.

This heading **does not cover** rechargeable cells and batteries, as these are classified in **heading 85.07** as electric accumulators.

PARTS

Subject to the general provisions regarding the classification of parts (see the General Explanatory Note to Section XVI), the heading covers parts of primary cells or batteries, including containers.

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The heading **does not cover** :

- (a) Terminals (**heading 85.36**).
- (b) Solar cells (**heading 85.41**).
- (c) Carbon electrodes (**heading 85.45**).
- (d) Spent primary cells and spent primary batteries and waste and scrap thereof (**heading 85.48**).
- (e) Thermocouples (e.g., **headings 85.03, 85.48, 90.33**).

Subheading Explanatory Notes.

Subheadings 8506.10, 8506.30 and 8506.40

Classification in these subheadings is determined by the composition of the cathode (depolarising electrode). **However**, primary cells with cathode of manganese dioxide and anode of lithium are classified in **subheading 8506.50** as lithium primary cells (see the Explanatory Note to that subheading below).

Subheading 8506.50

Classification in this subheading is determined by the composition of the anode.