

85.43 - Electrical machines and apparatus, having individual functions, not specified or included elsewhere in this Chapter.

8543.10 - Particle accelerators

8543.20 - Signal generators

8543.30 - Machines and apparatus for electroplating, electrolysis or electrophoresis

8543.40 - Electronic cigarettes and similar personal electric vaporising devices

8543.70 - Other machines and apparatus

8543.90 - Parts

This heading covers all electrical appliances and apparatus, **not falling** in any other heading of this Chapter, **nor covered more specifically** by a heading of any other Chapter of the Nomenclature, nor excluded by the operation of a Legal Note to Section XVI or to this Chapter. The principal electrical goods covered more specifically by other Chapters are electrical machinery of **Chapter 84** and certain instruments and apparatus of **Chapter 90**.

The electrical appliances and apparatus of this heading must have individual functions. The introductory provisions of Explanatory Note to heading 84.79 concerning machines and mechanical appliances having individual functions apply, *mutatis mutandis*, to the appliances and apparatus of this heading.

Most of the appliances of this heading consist of an assembly of electrical goods or parts (valves, transformers, capacitors, chokes, resistors, etc.) operating wholly electrically. However, the heading also includes electrical goods incorporating mechanical features **provided** that such features are subsidiary to the electrical function of the machine or appliance.

The heading includes, *inter alia* :

- (1) **Particle accelerators.** These are devices for imparting high kinetic energy to charged particles (electrons, protons, etc.).

Particle accelerators are used mainly in nuclear research, but they also serve in the production of radioactive materials, in medical or industrial radiography, for the sterilisation of certain products, etc.

Particle accelerators usually consist of large installations (which may weigh several thousands of tons). They comprise a particle source, an acceleration chamber, and devices for producing high frequency voltage, variations of the flux or radio-frequencies which are used to accelerate the particles. They may contain one or more targets.

Acceleration, focalisation and deflection of the particles are achieved by electrostatic or electro-magnetic devices which are fed by high voltage or high frequency generators. Accelerator and generators are often enclosed in an anti-radiation screen.

The particle accelerators covered by this heading include, Van de Graaff accelerators, Cockcroft and Walton accelerators, linear accelerators, cyclotrons, betatrons, synchrocyclotrons, synchrotrons, etc.

Betatrons and other particle accelerators specially adapted for the production of X-rays, including those capable of producing either beta-rays or gamma-rays as required, fall in **heading 90.22**.