### Chapter Notes

1. This chapter does not cover:

1. electrically warmed blankets, bed pans, foot-muffs or the like; electrically warmed clothing, footwear or ear pads or other electrically warmed articles worn on or about the person;
2. articles of glass of heading 7011;
3. machines and apparatus of heading 8486;
4. vacuum apparatus of a kind used in medical, surgical, dental or veterinary science (heading 9018); or
5. electrically heated furniture of Chapter 94.

2. Headings 8501 to 8504 do not apply to goods described in heading 8511, 8512, 8540, 8541 or 8542.

However, metal tank mercury arc rectifiers remain classified in heading 8504.

3. For the purposes of heading 8507, the expression ‘electric accumulators’ includes those presented with ancillary components which contribute to the accumulator’s function of storing and supplying energy or protect it from damage, such as electrical connectors, temperature control devices (e.g., thermistors) and circuit protection devices. They may also include a portion of the protective housing of the goods in which they are to be used.

4. Heading 8509 covers only the following electromechanical machines of the kind commonly used for domestic purposes:

1. floor polishers, food grinders and mixers, and fruit or vegetable juice extractors, of any weight;
2. other machines provided the weight of such machines does not exceed 20kg. The heading does not, however, apply to fans or ventilating or recycling hoods incorporating a fan, whether or not fitted with filters (heading 8414), centrifugal clothes-dryers (heading 8421), dishwashing machines (heading 8422), household washing machines (heading 8450), roller or other ironing machines (heading 8420 or 8451), sewing machines (heading 8452), electric scissors (heading 8467) or to electro-thermic appliances (heading 8516).

5. For the purposes of heading 8523:

1. 'solid-state non-volatile storage devices' (for example, 'flash memory cards' or 'flash electronic storage cards') are storage devices with a connecting socket, comprising in the same housing one or more flash memories (for example, 'Flash E2PROM') in the form of integrated circuits mounted on a printed circuit board. They may include a controller in the form of an integrated circuit and discrete passive components, such as capacitors and resistors;
2. the term 'smart cards' means cards which have embedded in them one or more electronic integrated circuits (a microprocessor, random access memory (RAM) or read-only memory (ROM)) in the form of chips. These cards may contain contacts, a magnetic stripe or an embedded antenna but do not contain any other active or passive circuit elements.

6. For the purposes of heading 8534, 'printed circuits' are circuits obtained by forming on an insulating base, by any printing process (for example, embossing, plating-up, etching) or by the 'film circuit' technique, conductor elements, contacts or other printed components (for example, inductances, resistors, capacitors) alone or interconnected according to a pre-established pattern, other than elements which can produce, rectify, modulate or amplify an electrical signal (for example, semiconductor elements).

The expression 'printed circuits' does not cover circuits combined with elements other than those obtained during the printing process, nor does it cover individual, discrete resistors, capacitors or inductances. Printed circuits may, however, be fitted with non-printed connecting elements.

Thin- or thick-film circuits comprising passive and active elements obtained during the same technological process are to be classified in heading 8542.

7. For the purpose of heading 8536, 'connectors for optical fibres, optical fibre-bundles or cables' means connectors that simply mechanically align optical fibres end to end in a digital line system. They perform no other function, such as the amplification, regeneration or modification of a signal.

8. Heading 8537 does not include cordless infrared devices for the remote control of television receivers or other electrical equipment (heading 8543).

9. For the purpose of headings 8541 and 8542:

1. 'Diodes, transistors and similar semiconductor devices' are semiconductor devices the operation of which depends on variations in resistivity on the application of an electric field.
2. 'Electronic integrated circuits' are:

(1) monolithic integrated circuits in which the circuit elements (diodes, transistors, resistors, capacitors, inductances, etc.) are created in the mass (essentially) and on the surface of a semiconductor or compound semiconductor material (for example doped silicon, gallium arsenide, silicon germanium, lndium phosphide) and are inseparably associated;

(2) hybrid integrated circuits in which passive elements (resistors, capacitors, inductances, etc), obtained by thin-or thick-film technology, and active elements (diodes, transistors, monolithic integrated circuits, etc.), obtained by semiconductor technology, are combined to all intents and purposes indivisibly, by interconnections or inter connecting cables, on a single insulating substrate (glass, ceramic, etc.). These circuits may also include discrete components;

(3) multichip integrated circuits consisting of two or more interconnected monolithic integrated circuits combined to all intents and purposes indivisibly, whether or not on one or more insulating substrates, with or without leadframes, but with no other active or passive circuit elements.

(4) multi-component integrated circuits (MCOs): a combination of one or more monolithic, hybrid, or multi-chip integrated circuits with at least one of the following components: silicon-based sensors, actuators, oscillators, resonators or combinations thereof, or components performing the functions of articles classifiable under heading 8532, 8533, 8541, or inductors classifiable under heading 8504, formed to all intents and purposes indivisibly into a single body like an integrated circuit, as a component of a kind used for assembly onto a printed circuit board (PCB) or other carrier, through the connecting of pins, leads, balls, lands, bumps, or pads.

For the purpose of this definition:

(1) ‘Components’ may be discrete, manufactured independently then assembled onto the rest of the MCO, or integrated into other components.

(2) ‘Silicon based’ means built on a silicon substrate, or made of silicon materials, or manufactured onto integrated circuit die.

(3) (a) ‘Silicon based sensors’ consist of microelectronic or mechanical structures that are created in the mass or on the surface of a semiconductor and that have the function of detecting physical or chemical quantities and transducing these into electric signals, caused by resulting variations in electric properties or displacement of a mechanical structure. ‘Physical or chemical quantities’ relates to real world phenomena, such as pressure, acoustic waves, acceleration, vibration, movement, orientation, strain, magnetic field strength, electric field strength, light, radioactivity, humidity, flow, chemicals concentration, etc.

(b)'Silicon based actuators” consist of microelectronic and mechanical structures that are created in the mass or on the surface of a semiconductor and that have the function of converting electrical signals into physical movement.

For the classification of the articles defined in this note, headings 8541 and 8542 shall take precedence over any other heading in the classification, except in the case of heading 8523, which might cover them by reference to, in particular, their function.

(c) ‘Silicon based resonators’ are components that consist of microelectronic or mechanical structures that are created in the mass or on the surface of a semiconductor and have the function of generating a mechanical or electrical oscillation of a predefined frequency that depends on the physical geometry of these structures in response to an external input.

(d) ‘Silicon based oscillators’ are active components that consist of microelectronic or mechanical structures that are created in the mass or on the surface of a semiconductor and that have the function of generating a mechanical or electrical oscillation of a predefined frequency that depends on the physical geometry of these structures.

10. For the purposes of heading 8548, 'spent primary cells, spent primary batteries and spent electric accumulators' are those which are neither usable as such because of breakage, cutting-up, wear or other reasons, nor capable of being recharged.

### Subheading notes

1. Subheading 8527 12 covers only cassette-players with built-in amplifier, without built-in loudspeaker, capable of operating without an external source of electric power and the dimensions of which do not exceed 170 mm x 100 mm x 45 mm.

### Additional chapter notes

1. Subheadings 8519 20 10 and 8519 30 00 are to be taken not to apply to sound reproducing apparatus with laser reading system.

2. Subheading note 1 is applicable, mutatis mutandis, to subheading 8519 81 15.

3. For the purposes of subheadings 8528 71 15 and 8528 71 91 only, the term 'modem' covers devices or equipment that modulate and demodulate incoming and outgoing signals, such as V.90-modems or cable modems, and other devices that use like technologies for gaining access to the internet, such as VLAN, ISDN and ethernet. The extent of access to the internet may be limited by the service provider.

Apparatus of these subheadings must enable a two-way communication process or the two-way flow of information for the purposes of providing interactive information exchange.