

## Chapter 80

### Tin and articles thereof

#### Subheading Note.

1.- In this Chapter the following expressions have the meanings hereby assigned to them :

(a) **Tin, not alloyed**

Metal containing by weight at least 99 % of tin, provided that the content by weight of any bismuth or copper is less than the limit specified in the following table :

TABLE - Other elements

Element		Limiting content % by weight
Bi	Bismuth	0.1
Cu	Copper	0.4

(b) **Tin alloys**

Metallic substances in which tin predominates by weight over each of the other elements, provided that :

- (i) the total content by weight of such other elements exceeds 1 %; or
- (ii) the content by weight of either bismuth or copper is equal to or greater than the limit
- (iii) specified in the foregoing table.

#### GENERAL

This Chapter covers tin and its alloys, and certain articles thereof.

Commercially, tin is extracted from the oxide ore cassiterite (or tin-stone) classified in heading 26.09; this ore may occur either in veins or in alluvial deposits.

The principal stages in the extraction are as follows :

- (I) Concentration of the ore by washing, or by crushing and flotation.
- (II) Treatment of the oxide by roasting, magnetic separation, or with acids or other solvents, to remove impurities such as sulphur, arsenic, copper, lead, iron and tungsten.

(III) Reduction of the purified oxide with coke to produce a crude tin.

(IV) Refining of the crude tin by various processes which can produce the metal in an almost completely pure condition.

Tin is also recovered from scrap tinplate by chlorination or electrolytic treatment, or by re-melting tin waste and scrap. These recovery processes can also produce very pure tin.

\*

\* \*

Pure tin is silvery-white and very shiny. It is not very ductile, but is malleable, easily melted and soft (although harder than lead). It can readily be cast, hammered, rolled or extruded.

Tin is very resistant to atmospheric corrosion but is attacked by concentrated acids.

\*

\* \*

Tin is chiefly used for tinning other base metals especially iron or steel (e.g., manufacture of tin-plate, especially for the canning industry), and in the preparation of alloys (bronze, etc.). In the pure state or alloyed, it is also used in the manufacture of apparatus, tubing and piping for the food industries; still heads; refrigerating apparatus; industrial reservoirs, tanks, etc.; solder in sticks, wire, etc.; ornamental articles and tableware (e.g., in pewter); toys; organ pipes; etc. It is also used in the form of foil or collapsible tubes.

\*

\* \*

The **principal alloys of tin** which may be classified in this Chapter under the provisions of Note 5 to Section XV (see the General Explanatory Note to that Section) include :

- (1) Tin-lead alloys used, for example, as tin base soft solders; in pewter-ware; in toy manufacture; for certain capacity measures.
- (2) Tin-antimony alloys, usually with copper (e.g., Britannia metal) used for tableware, manufacture of bearings, etc.
- (3) Tin-lead-antimony alloys, sometimes with copper (e.g., tin based anti-friction metals), used to make castings (especially bearings) and as packing.
- (4) Tin-cadmium alloys, sometimes also including zinc, used as anti-friction metals.

\*

\* \*

This Chapter covers :

- (A) Unwrought tin and tin waste and scrap (headings 80.01 and 80.02).
- (B) Products obtained generally by rolling or extruding the unwrought tin of heading 80.01 (heading 80.03 and 80.07); tin powders and flakes (heading 80.07).
- (C) Tubes, pipes and fittings and the other articles of the residual heading 80.07 which covers all other tin articles **other than** those covered by Note 1 to Section XV or included in **Chapter 82** or **83** or those more specifically covered elsewhere in the Nomenclature.

\*

\*   \*

Products and articles of tin may be subjected to various treatments to improve the properties or appearance of the metal, etc. These treatments are generally those referred to at the end of the General Explanatory Note to Chapter 72, and do not affect the classification of the goods.

\*

\*   \*

The classification of **composite articles** is explained in the General Explanatory Note to Section XV.