# TIN

(Data in metric tons of contained tin, unless otherwise noted)

<u>Domestic Production and Use</u>: In 1996, there was no domestic tin mine production. Production of tin at the only U.S. tin smelter, at Texas City, TX, stopped in 1989. Twenty-five firms consumed about 85% of the primary tin. The major uses were as follows: cans and containers, 30%; electrical, 20%; construction, 10%; transportation, 10%; and other, 30%. The estimated value of primary metal consumption in 1996, based on the New York composite price, was \$356 million.

| Salient Statistics—United States:                | <u> 1992</u>     | <u> 1993</u> | <u> 1994</u> | <u> 1995</u> | 1996 <sup>e</sup> |
|--|------------------|--------------|--------------|--------------|-------------------|
| Production: Mine                                 | ( <sup>1</sup> ) | (¹)          | (¹)          |              | _                 |
| Secondary (old scrap)                            | 8,900            | 6,900        | 7,400        | 7,600        | 8,000             |
| Secondary (new scrap)                            | 4,800            | 5,100        | 4,300        | 3,500        | 4,000             |
| Imports for consumption: Refined tin             | 27,300           | 33,700       | 32,400       | 33,200       | 33,000            |
| Exports: Refined tin                             | 1,890            | 2,600        | 2,560        | 2,790        | 3,600             |
| Shipments from Government stockpile              |                  |              |              |              |                   |
| excesses   | 6,310            | 6,020        | 5,620        | 5,000        | 11,000            |
| Consumption reported: Primary                    | 35,000           | 34,600       | 33,700       | 35,100       | 36,000            |
| Secondary  | 10,100           | 11,900       | 8,530        | 10,700       | 10,000            |
| Consumption, apparent                            | 43,600           | 44,200       | 43,300       | 47,000       | 48,400            |
| Price, average, cents per pound:                 |                  |              |              |              |                   |
| New York market                                  | 283              | 239          | 255          | 295          | 291               |
| New York composite                               | 402              | 350          | 369          | 416          | 449               |
| London   | 277              | 233          | 248          | 282          | 281               |
| Kuala Lumpur                                     | 272              | 232          | 245          | 278          | 277               |
| Stocks, consumer and dealer, yearend             | 10,700           | 10,800       | 10,400       | 11,400       | 10,000            |
| Employment, mine and primary smelter, enumber    | 5                | 5            |              |              |                   |
| Net import reliance <sup>2</sup> as a percent of |                  |              |              |              |                   |
| apparent consumption                             | 80               | 84           | 83           | 84           | 83                |

**Recycling:** About 12,000 tons of tin from old and new scrap was recycled in 1996. Of this, about 7,600 tons was recovered from old scrap at 7 detinning plants and 110 secondary nonferrous metal processing plants.

Import Sources (1992-95): Brazil, 30%; Bolivia, 21%; Indonesia, 18%; China, 15%; and other, 16%.

**Tariff:** Most major imports of tin, including unwrought metal, waste and scrap, and unwrought tin alloys, enter duty free.

**Depletion Allowance:** 22% (Domestic), 14% (Foreign).

#### **Government Stockpile:**

### Stockpile Status—9-30-96

|          | Uncommitted | Committed | Authorized   | Disposals   |
|----------|-------------|-----------|--------------|-------------|
| Material | inventory   | inventory | for disposal | JanSept. 96 |
| Pia tin  | 115.879     | _         | 115.879      | 11.355      |

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**Events, Trends, and Issues:** The Steel Recycling Institute (SRI), Pittsburgh, PA, announced that the domestic steel can recycling rate reached 56% in 1995, compared with a 53% rate in 1994. SRI observed that 1995's figures represented 18 billion steel cans weighing 1.5 million tons. SRI continued to emphasize the importance of aerosol can recycling and noted that 90 million Americans had access to aerosol can recycling programs being conducted in 3,600 communities.

Public Law 104-201 provided for continued tin disposals from the National Defense Stockpile. Daily spot sales were the major method of disposal, with one long-term contract sale for 5,000 tons made in September. The Defense Logistics Agency (DLA), announced that it would drastically alter its sales procedures for fiscal year 1997 by conducting two long-term negotiated bid sales for 5,000 tons each (in February and July) and by conducting monthly spot sales (held the first Wednesday of each month) for 200 tons each until 2,000 tons were sold. This approach represented a major shift by DLA toward long-term contract sales and away from spot sales. DLA announced that its Annual Materials Program for fiscal year 1997 called for sales of up to 12,000 tons of stockpile tin. Stockpile tin is warehoused at 10 depots, with the largest holdings at Hammond, IN, and Anniston, IL.

A major domestic tinplate producer proceeded with construction of a new joint-venture tinplate mill in Belmont County, OH. Completion was anticipated for late 1996, and the cost was estimated at \$80 million. It would be the first domestic tinplating facility built since the early 1960's and would replace that producer's current 50-year-old tin mill.

The world tin industry's major research and development laboratory, based in the United Kingdom, was in its second full year under its new structure. It is now privatized, with funding supplied by numerous major tin producing firms rather than by the Association of Tin Producing Countries. The organization reported progress in several areas of research to develop new tin uses; among these was a tinfoil capsule to replace lead foil capsules on wine bottles, and a new noncyanide-based electrolyte called "Stanzec" that produces a coating of tin and zinc that could replace cadmium as an environmentally acceptable anticorrosion coating on steel.

# **World Mine Production, Reserves, and Reserve Base:**

|                              | Mine production |         | Reserves <sup>3</sup><br>1995 | Reserve base <sup>3</sup> 1996 <sup>e</sup> |
|------------------------------|-----------------|---------|-------------------------------|---|
| United States                | _               | _       | 20,000                        | 40,000                                      |
| Australia                    | 8,180           | 8,000   | 210,000                       | 600,000                                     |
| Bolivia                      | 14,400          | 16,000  | 450,000                       | 900,000                                     |
| Brazil                       | 16,800          | 18,000  | 1,200,000                     | 2,500,000                                   |
| China                        | 52,000          | 50,000  | 1,600,000                     | 1,600,000                                   |
| Indonesia                    | 38,400          | 38,000  | 750,000                       | 820,000                                     |
| Malaysia                     | 6,400           | 5,000   | 1,200,000                     | 1,200,000                                   |
| Peru                         | 22,300          | 22,000  | 20,000                        | 40,000                                      |
| Portugal                     | 8,000           | 8,000   | 70,000                        | 70,000                                      |
| Russia                       | 9,000           | 9,000   | 300,000                       | 300,000                                     |
| Thailand                     | 3,000           | 3,000   | 940,000                       | 940,000                                     |
| Zaire                        | 1,000           | 1,000   | 510,000                       | 510,000                                     |
| Other countries              | 10,000          | 13,000  | 180,000                       | 620,000                                     |
| World total (may be rounded) | 189,000         | 190,000 | 7,000,000                     | 10,000,000                                  |

<u>World Resources</u>: U.S. resources of tin, primarily in Alaska, were insignificant compared with those of the rest of the world. Sufficient world resources, principally in western Africa, southeastern Asia, Australia, Bolivia, Brazil, China, and Russia were available to sustain current production rates well into the next century.

<u>Substitutes</u>: Aluminum, glass, paper, plastic, or tin-free steel substitute for tin in cans and containers. Other materials that substitute for tin are epoxy resins for solder; aluminum alloys, copper-base alloys, and plastics for bronze; plastics for bearing metals that contain tin; and compounds of lead and sodium for some tin chemicals.

<sup>&</sup>lt;sup>e</sup>Estimated.

<sup>&</sup>lt;sup>1</sup>Negligible.

<sup>&</sup>lt;sup>2</sup>Defined as imports - exports + adjustments for Government and industry stock changes.

<sup>&</sup>lt;sup>3</sup>See Appendix C for definitions.