

MERCURY

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Domestic tables were prepared by Nick Muniz, statistical assistant, and the world production table was prepared by Linder Roberts, international data coordinator.

As has been the case for a decade, nearly all domestic mercury production in 1999 was derived from recycled mercury-containing devices. No domestic mine produced mercury as its primary product. Several companies were engaged in mercury refining, the three largest being in the Eastern and Central United States. Chlorine-caustic soda production was again the largest end use for mercury.

Legislation and Government Programs

On September 24, the U.S. Environmental Protection Agency (EPA) proposed regulations to reduce discharges of various bio-accumulative chemicals, including mercury, in the Great Lakes Basin. Under the EPA proposal, discharges into “mixing zones” would be phased out over a 10-year period, while new discharges would be banned (U.S. Environmental Protection Agency, 1999a). Mixing zones are areas of the Great Lakes where toxic chemical discharges are permitted to mix with receiving waters and are diluted. EPA accepted public comment on the proposal through December 30 (U.S. Environmental Protection Agency, 1999b).

Production

Since 1990, no domestic mine has produced mercury as its primary product. Owing in part to regulations controlling mercury discharges to the environment, however, some domestic mines and plants recovered small amounts of mercury. These mines and plants were located in areas that historically produced large amounts of mercury, such as California, Nevada, and Utah.

Nearly all the mercury produced in the United States was derived from secondary sources, including spent batteries, mercury vapor and fluorescent lamps, switches, dental amalgams, measuring devices, control instruments, and laboratory and electrolytic refining wastes. The secondary processors typically use high-temperature retorting to recover mercury from compounds and distillation to purify the contaminated liquid mercury metal. Among the largest producers of refined mercury from scrap material were the following companies: Bethlehem Apparatus Co. Inc., Hellertown, PA; D.F. Goldsmith Chemical and Metal Corp., Evanston, IL; and Mercury Waste Solutions, Inc., Minneapolis, MN.

On March 31, Superior Special Services Inc. acquired all stockholder interest in Recyclights Inc. Recyclights, with facilities in Florida, Georgia, Minnesota, and Ohio, processed mercury vapor and fluorescent lamps to reclaim the contained

mercury. Superior Special Services provided solid waste collection, transfer, recycling, disposal, and other services to approximately 400,000 customers in 10 States (Recyclights Inc., 1999).

Consumption

The U.S. Geological Survey estimated that domestic mercury consumption continued to decline in 1999. It was estimated that the largest use of mercury remained the electrolytic production of chlorine and caustic soda, accounting for approximately 50% of domestic consumption. Despite increased use of mercury-free products or products with a reduced mercury content, electrical applications probably accounted for an additional 25% of domestic consumption. Only in dental applications, where it is the most cost-effective and longest lasting dental cavity-filler, has the quantity of mercury consumed remained steady.

World Review

During the past 10 years, annual world mercury production has averaged about 2,500 metric tons, nearly all of which was produced at mines where mercury is the primary product. Most countries do not report their mercury production, and world production values have a high degree of uncertainty. In 1999, about 10 countries produced mercury, with Kyrgyzstan and Spain the dominant producing nations. In some countries, a few base-metal operations recover small quantities of mercury to meet environmental standards and avoid environmental releases of the metal.

Outlook

Ever stricter environmental regulations and the development of new technology are expected to be the primary factors affecting the supply of and demand for mercury in the near future. Environmental standards and technological advances likely will work in tandem to reduce the demand for mercury in commercial products. Even as the per-unit mercury product content declines, regulations on the disposal of mercury will prompt more recycling of mercury-bearing material to recover the contained mercury. Consequently, secondary mercury is expected to remain the principal component of domestic supply. Other potential sources of domestic supply could include mercury in the National Defense Stockpile and the mercury recovered from the dismantling of mercury cells in some chloralkali operations.

References Cited

- U.S. Environmental Protection Agency, 1999a, EPA announces significant actions to reduce toxic chemicals in Great Lakes Basin: Washington, DC, U.S. Environmental Protection Agency press release, September 24, 3 p.
- 1999b, Public comment sought on toxic chemical in Great Lakes: Washington, DC, U.S. Environmental Protection Agency press release, November 4, 1 p.
- Recyclights Inc., 1999, Recyclights Inc. announces new ownership: Minneapolis, MN, Recyclights Inc. press release, April 6, 2 p.

GENERAL SOURCES OF INFORMATION

U.S. Geological Survey Publications

Mercury. Ch. in Mineral Commodity Summaries, annual.¹

¹Prior to January 1996, published by the U.S. Bureau of Mines.

Mercury. Ch. in United States Mineral Resources, Professional Paper 820, 1973.

Other

The Materials Flow of Mercury in the United States, U.S. Bureau of Mines Information Circular 9412, 1994.

TABLE 1
SALIENT MERCURY STATISTICS 1/

(Metric tons, unless otherwise specified)

	1995	1996	1997	1998	1999
United States:					
Secondary production, industrial	534	446	389	NA	NA
Imports for consumption	377	340	164	128	62
Exports	179	45	134	63	181
Industry stocks, yearend 2/	321	446	203	NA	NA
Industrial consumption	436	372	346	NA	NA
Price, average per flask 3/:					
D.F. Goldsmith	\$247.40	\$261.65	NA	NA	NA
Free market	NA	NA	\$159.52	\$139.84	\$140.00
World: Mine production	3,190 r/	2,560 r/	2,980 r/	1,970 r/	1,800 e/

e/ Estimated. r/ Revised. NA Not available.

1/ Data are rounded to no more than three significant digits, except prices; may not add to totals shown.

2/ Stocks at consumers and dealers only. Mine stocks withheld to avoid disclosing company proprietary data.

3/ Source: Platt's Metals Week.

TABLE 2
U.S. IMPORTS AND EXPORTS OF MERCURY, BY COUNTRY 1/

(Gross weight, unless otherwise specified)

Country	1998		1999	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Imports:				
Canada	8	\$8	2	\$6
Chile	--	--	16	28
Germany	--	--	4	114
Kazakhstan	52	215	--	--
Netherlands	--	--	(2/)	10
Peru	--	--	7	14
United Kingdom	68	325	32	129
Other	(2/)	11	--	--
Total	128	559	62	301
Exports:				
Brazil	2	15	1	10
Canada	6	39	4	32
China	--	--	1	4
France	--	--	5	70
Germany	1	17	1	13
Guatemala	1	12	1	12
Hong Kong	--	--	16	61
India	(2/)	8	85	228
Israel	5	41	1	12
Italy	1	15	3	44
Japan	(2/)	4	1	8
Korea, Republic of	1	10	4	33
Malaysia	1	7	1	10
Mexico	20	94	4	47
Netherlands	(2/)	4	9	251
Singapore	1	9	19	93
Spain	--	--	17	126
Thailand	--	--	2	22
United Kingdom	6	12	1	10
Other	18 r/	114 r/	5	30
Total	63	401	181	1,120

r/ Revised. -- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Less than 1/2 unit.

Source: Bureau of the Census.

TABLE 3
MERCURY: WORLD MINE PRODUCTION, BY COUNTRY 1/ 2/

(Metric tons)

Country	1995	1996	1997	1998	1999 e/
Algeria	292	368	447 r/	224 r/	200
China e/	780	510	830	230 r/	200
Finland	90	88	90 e/	80 e/	80
Kyrgyzstan	380	584	610 e/	620	620
Mexico e/	15	15	15	15	15
Russia e/	50	50	50	50	50
Slovakia	-- r/	-- r/	-- r/	20 e/	--
Slovenia	-- r/	5	5 e/	5 e/	--
Spain	1,497	862	863 r/	675 r/	600
Tajikistan e/	50	45	40	35	35
Ukraine e/	40	30	25	20	NA
United States 3/	W	W	W	NA	NA
Total	3,190 r/	2,560 r/	2,980 r/	1,970 r/	1,800

e/ Estimated. r/ Revised. NA Not available. W Withheld to avoid disclosing company proprietary data; not included in "Total." -- Zero.

1/ World totals and estimated data are rounded to no more than three significant digits; may not add to totals shown.

2/ Table includes data available through May 2, 2000.

3/ Mercury was produced only as a byproduct of gold mining.