

Mineral Industry Surveys

For information, contact:

David E. Guberman, Lead Commodity Specialist
U.S. Geological Survey
989 National Center
Reston, VA 20192
Telephone: (703) 648-4977, Fax: (703) 648-7757
E-mail: dguberman@usgs.gov

Elsie D. Isaac (Data)
Telephone: (703) 648-7950
Fax: (703) 648-7975
E-mail: eisaac@usgs.gov

Internet: <http://minerals.usgs.gov/minerals>

LEAD IN JULY 2009

Domestic mine production (recoverable) of lead in July was 30,600 metric tons (t), according to the U.S. Geological Survey. Average daily mine production in July was 988 t, down 12% from that in June 2009. Secondary refinery production of lead increased 3% from that of the previous month. Secondary refinery production through July 2009 was 5% lower than that in the corresponding period of 2008.

Total imports of lead for consumption through June 2009 were about 19% lower than those in the same period of 2008. Canada (78%) and Mexico (19%) were the principal sources of imported refined lead through June 2009. Total exports of lead, exclusive of scrap, in June 2009 were 62% lower than those in the previous month owing to a decrease in shipments of lead ore and concentrates. Through the first half of the year, monthly exports of lead ore and concentrate have fluctuated significantly. China and Canada have been the leading destinations for exported ore and concentrate through June 2009. Exports of lead scrap in June 2009 decreased by 9% from those in the previous month.

According to Platts Metals Week, the average North American producer price for lead in July 2009 was \$0.87 per pound, up 6% from that of the previous month and 20% lower than that in July 2008. The London Metal Exchange (LME) cash price in July 2009 averaged \$1,678 per metric ton, up slightly from that of the previous month and 14% lower than that in July 2008. Global LME lead stocks at the end of July 2009 were 107,300 t, 17% higher than those at the end of June 2009 and 20% greater than those at month-end July 2008.

A new research collaboration announced in mid-July had the potential to advance current lead-acid battery technology for future use. Exide Technologies (Milton, GA) announced that it had entered into a cooperative research and development agreement with the U.S. Department of Energy's Savannah River National Laboratory (SRNL) and the University of Idaho to develop and commercialize improvements in lead-acid battery technology. The project was one component of a larger

SRNL-sponsored research and development program supporting the Nation's energy security. SNRL expected that the collaborative efforts of the two research institutions and Exide would lead to the development of improved battery materials such as cathode plates, enhance lead-acid battery performance, and lower material costs and weight. Advancements in lead-acid battery chemistry could be used in product development and to broaden lead-acid battery opportunities in new markets for hybrid electric vehicles and renewable energy storage. Researchers involved with the project foresee lead-acid batteries becoming increasingly viable for supporting the Nation's electric grid as well as providing stand-alone backup power to alternative energy systems such as solar and wind (Exide Technologies, 2009).

According to a recent report, Chinese production of electric bicycles in 2008 had increased to 22 million units from less than 200,000 units in 2001. Current industry estimates indicated that there were about 65 million electric bicycles on the road in China compared with about 24 million private cars in operation. The Chinese Government has encouraged the continued growth of the electric bicycle market through the construction of dedicated bicycle lanes in major cities. The Shanghai Bicycle Association, an industry group, estimated that although several battery chemistry options are available for powering electric bikes, 98% of the electric bikes in China are equipped with lead-acid batteries. A typical electric bicycle can use up to five lead-acid batteries in a lifetime and each battery contains about 10 kilograms of lead (Kurtenback, 2009).

References Cited

- Exide Technologies, 2009, Exide Technologies announces new collaborations to advance lead-acid battery chemistry: Milton, GA, Exide Technologies news release, July 13, 2 p.
- Kurtenback, Elaine, 2009, E-China—The bicycle kingdom is going electric: The Associated Press, July 25. (Accessed October 8 at http://www.denverpost.com/nationworld/ci_12914468.)

TABLE 1
SALIENT LEAD STATISTICS IN THE UNITED STATES¹

(Metric tons, lead content, unless otherwise specified)

| | 2008 | | 2009 | | |
|--|-----------|------------------|---------|---------|----------------------|
| | Year | January- July | June | July | January- July |
| Production: | | | | | |
| Mine (recoverable) | 414,000 | 247,000 | 33,700 | 30,600 | 231,000 |
| Secondary refinery: | | | | | |
| Reported by smelters/refineries | 1,170,000 | 689,000 | 91,700 | 94,800 | 654,000 |
| Estimated | 13,700 | 6,890 | 917 | 948 | 6,540 |
| Recovered from copper-base scrap ^c | 15,000 | 8,750 | 1,250 | 1,250 | 8,750 |
| Total secondary | 1,200,000 | 704,000 | 93,800 | 97,000 | 669,000 |
| Consumption: | | | | | |
| Reported | 1,560,000 | 924,000 | 114,000 | 113,000 | 807,000 |
| Undistributed ^c | 46,700 | 27,600 | 3,420 | 3,380 | 24,200 |
| Total | 1,600,000 | 952,000 | 117,000 | 116,000 | 832,000 |
| Stocks, end of period, consumers and secondary smelters | 69,900 | 77,400 | 65,600 | 66,600 | 66,600 |
| Imports for consumption: | | | | | |
| Base bullion | 2,740 | 1,920 | 222 | NA | 605 ² |
| Refined metal | 309,000 | 187,000 | 25,700 | NA | 130,000 ² |
| Exports: | | | | | |
| Ore and concentrate | 277,000 | 111,000 | 3,850 | NA | 110,000 ² |
| Bullion | 614 | 505 | -- | NA | 25 ² |
| Wrought and unwrought lead | 74,200 | 39,300 | 7,150 | NA | 47,700 ² |
| TEL/TML preparations, based on lead compounds | 2,330 | 1,520 | 28 | NA | 1,640 ² |
| Scrap (gross weight) | 175,000 | 108,000 | 12,800 | NA | 72,500 ² |
| Platts Metals Week North American producer price (cents per pound) | 120.33 | 136.77 | 81.92 | 86.91 | 72.46 |

^cEstimated. NA Not available. -- Zero.

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

²Includes data for January-June only; July 2009 data were not available at time of publication.

TABLE 2
MONTHLY AVERAGE LEAD PRICES

| | North American producer price cents/lb | London Metal Exchange cash | | Sterling exchange rate dollars/£ |
|--------------|--|-------------------------------|--------------|--|
| | | \$/metric ton | £/metric ton | |
| 2008: | | | | |
| July | 109.02 | 1,944.16 | 977.54 | 1.988827 |
| December | 81.51 | 961.89 | 647.56 | 1.485405 |
| Year | 120.33 | 2,089.71 | 1,128.19 | 1.852265 |
| 2009: | | | | |
| January | 66.79 | 1,131.58 | 782.46 | 1.446210 |
| February | 66.01 | 1,099.61 | 758.55 | 1.444962 |
| March | 66.53 | 1,238.25 | 876.74 | 1.412341 |
| April | 67.24 | 1,382.08 | 940.30 | 1.469815 |
| May | 71.79 | 1,439.58 | 934.07 | 1.541189 |
| June | 81.92 | 1,673.65 | 1,012.14 | 1.635659 |
| July | 86.91 | 1,678.05 | 1,024.84 | 1.637377 |

Source: Platts Metals Week.

TABLE 3
CONSUMPTION OF PURCHASED LEAD-BASE SCRAP¹

(Metric tons, gross weight)

| Item | Stocks | Net | Consumption | Stocks |
|-------------------------------------|------------------|----------|-------------|------------------|
| | June 30, 2009 | receipts | | July 31, 2009 |
| Battery-lead | 14,500 | 94,700 | 94,000 | 15,200 |
| Soft lead | W | W | W | W |
| Drosses and residues | W | W | W | W |
| Other ² | 1,140 | 7,110 | 7,270 | 984 |
| Total | 15,600 | 102,000 | 101,000 | 16,200 |
| Percent change from preceding month | XX | +5.4 | +0.7 | +3.4 |

W Withheld to avoid disclosing company proprietary data; included with "Other." XX Not applicable.

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

²Includes solder, common babbitt, antimonial lead, cable covering, type metals, and other lead-base scrap.

TABLE 4
LEAD, TIN, AND ANTIMONY RECOVERED FROM
LEAD-BASE SCRAP IN JULY¹

(Metric tons)

| Product recovered | Secondary metal content | | |
|-----------------------|-------------------------|-----|----------|
| | Lead | Tin | Antimony |
| Soft and calcium lead | 55,200 | -- | -- |
| Remelt lead | W | -- | -- |
| Antimonial lead | 10,200 | (2) | (2) |
| Other ³ | 29,300 | (2) | (2) |
| Total lead-base | 94,800 | 129 | 193 |

W Withheld to avoid disclosing company proprietary data; included in "Other."
-- Zero.

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

²Withheld to avoid disclosing company proprietary data; included in "Total."

³Includes cable lead, lead-base babbitt, solder, type metals, and other products.

TABLE 5
CONSUMPTION OF LEAD IN THE UNITED STATES¹

(Metric tons, lead content)

| Use | 2008 | | 2009 | | |
|---|------------------|----------------|----------------|----------------|----------------|
| | January-December | January-July | June | July | January-July |
| Metal products: | | | | | |
| Ammunition, shot and bullets | 74,500 | 44,600 | 7,510 | 5,990 | 42,600 |
| Brass and bronze, billet and ingots | 2,260 | 2,290 | 319 | 319 | 2,320 |
| Cable covering, power and communication and calking lead, building construction | 7,340 | 4,950 | 299 | 154 | 3,730 |
| Casting metals | 31,700 | 18,500 | 1,670 | 1,670 | 11,700 |
| Sheet lead, pipes, traps and other extruded products | 27,800 | 16,400 | 2,140 | 2,240 | 15,800 |
| Solder | 7,040 | 4,110 | 629 | 629 | 4,240 |
| Storage batteries, including oxides | 1,360,000 | 810,000 | 98,500 | 98,400 | 704,000 |
| Terne metal, type metal, and other metal products ² | 26,600 | 10,300 | 1,390 | 1,390 | 9,720 |
| Total metal products | 1,540,000 | 911,000 | 112,000 | 111,000 | 794,000 |
| Other oxides and miscellaneous | 15,600 | 13,100 | 1,590 | 1,850 | 13,300 |
| Total reported | 1,560,000 | 924,000 | 114,000 | 113,000 | 807,000 |
| Undistributed ^c | 46,700 | 27,600 | 3,420 | 3,380 | 24,200 |
| Grand total | 1,600,000 | 952,000 | 117,000 | 116,000 | 832,000 |

^cEstimated.

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

²Includes lead consumed in foil, collapsible tubes, annealing, plating, galvanizing, and fishing weights.

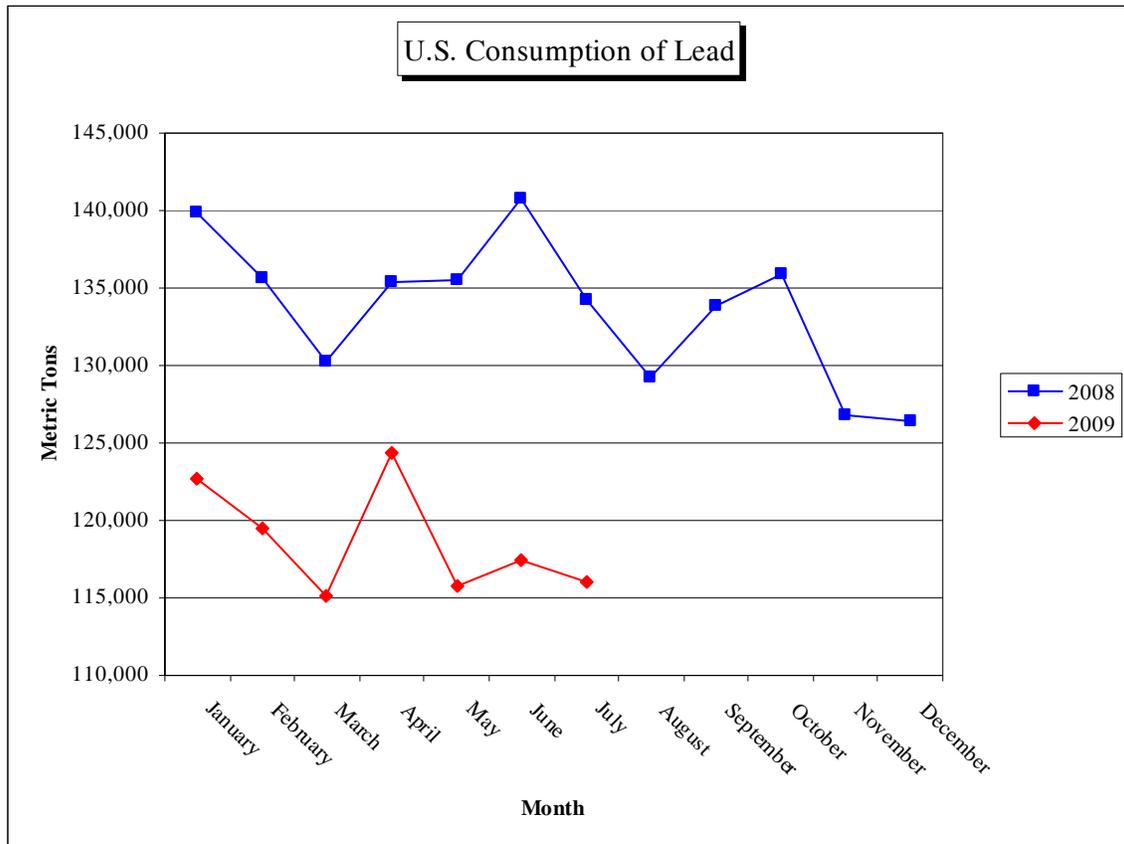


TABLE 6
CONSUMER AND SECONDARY SMELTER STOCKS, RECEIPTS, AND CONSUMPTION OF LEAD¹

(Metric tons, lead content)

| Type of material | Stocks June 30, 2009 | Net receipts | Consumption | Stocks July 31, 2009 |
|-------------------|----------------------------|-----------------|-------------|----------------------------|
| Soft lead | 25,300 | 77,500 | 73,900 | 28,800 |
| Antimonial lead | 18,100 | 21,600 | 24,100 | 15,600 |
| Lead alloys | W | W | W | W |
| Copper-base scrap | W | W | W | W |
| Total | 65,600 | 114,000 | 113,000 | 66,600 |

W Withheld to avoid disclosing company proprietary data; included in "Total."

¹Data are rounded to no more than three significant digits.

TABLE 7
U.S. EXPORTS OF LEAD, BY CLASS¹

(Metric tons)

| | 2008 | | 2009 | | January- June |
|--|--------|---------|--------|--------|------------------|
| | June | Year | May | June | |
| Lead content: | | | | | |
| Ore and concentrates | 13,400 | 277,000 | 20,800 | 3,850 | 110,000 |
| Bullion | 68 | 614 | -- | -- | 25 |
| Materials excluding scrap | 4,160 | 74,200 | 8,130 | 7,150 | 47,700 |
| TEL/TML preparations, based on lead compounds | 258 | 2,330 | 189 | 28 | 1,640 |
| Total | 17,800 | 354,000 | 29,200 | 11,000 | 159,000 |
| Gross weight, scrap | 10,400 | 175,000 | 14,100 | 12,800 | 72,500 |

-- Zero.

¹Data are rounded to more than three significant digits; may not add to totals shown.

Source: U.S. Census Bureau.

TABLE 8
U.S. IMPORTS OF LEAD BY TYPE OF MATERIALS AND BY COUNTRY OF ORIGIN¹

(Metric tons, lead content)

| Country of origin | General imports | | | | | Imports for consumption | | | | |
|--------------------------|-----------------|------------------|---------------|---------------|------------------|-------------------------|------------------|---------------|---------------|------------------|
| | 2008 | | 2009 | | | 2008 | | 2009 | | |
| | Year | January- June | May | June | January- June | Year | January- June | May | June | January- June |
| Ore, matte, etc.: | | | | | | | | | | |
| Canada | 41 | 41 | 136 | 341 | 1,090 | 41 | 41 | 136 | 341 | 1,090 |
| Mexico | 451 | 215 | -- | -- | -- | 451 | 215 | -- | -- | -- |
| Total | 492 | 256 | 136 | 341 | 1,090 | 492 | 256 | 136 | 341 | 1,090 |
| Base bullion: | | | | | | | | | | |
| Colombia | 92 | 464 | -- | -- | -- | 92 | 464 | -- | -- | -- |
| Mexico | 2,040 | 1,250 | 39 | 187 | 571 | 2,040 | 1,250 | 39 | 187 | 571 |
| Other | 602 | 60 | -- | 34 | 34 | 602 | 60 | -- | 34 | 34 |
| Total | 2,740 | 1,770 | 39 | 222 | 605 | 2,740 | 1,770 | 39 | 222 | 605 |
| Pigs and bars: | | | | | | | | | | |
| Canada | 219,000 | 117,000 | 20,400 | 17,900 | 101,000 | 219,000 | 117,000 | 20,400 | 17,900 | 101,000 |
| Mexico | 58,100 | 29,300 | 4,660 | 6,820 | 24,300 | 58,100 | 29,300 | 4,660 | 6,820 | 24,300 |
| Peru | 10,600 | 5,610 | -- | -- | 991 | 10,600 | 5,610 | -- | -- | 991 |
| Other | 22,300 | 8,390 | 9 | 999 | 3,540 | 22,300 | 8,390 | 9 | 999 | 3,540 |
| Total | 309,000 | 160,000 | 25,000 | 25,700 | 130,000 | 309,000 | 160,000 | 25,000 | 25,700 | 130,000 |
| Grand total | 313,000 | 162,000 | 25,200 | 26,300 | 132,000 | 313,000 | 162,000 | 25,200 | 26,300 | 132,000 |

-- Zero.

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

Source: U.S. Census Bureau.