

Mineral Industry Surveys

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ZINC IN SEPTEMBER 2016

Domestic mine production (recoverable) of zinc in September 2016 was 67,000 metric tons (t) (table 2). Average daily mine production in August was 2,230 t, 3% more than that in August and 15% more than that in September 2015 (fig. 1). Mine production for the first 9 months of 2016 decreased slightly and smelter production decreased by 30% compared with production in the same period of 2015, the latter owing to closure of Horsehead Holding Corp.'s (Pittsburgh, PA) zinc recycling facility in Mooresboro, NC. (See Zinc in July 2016.)

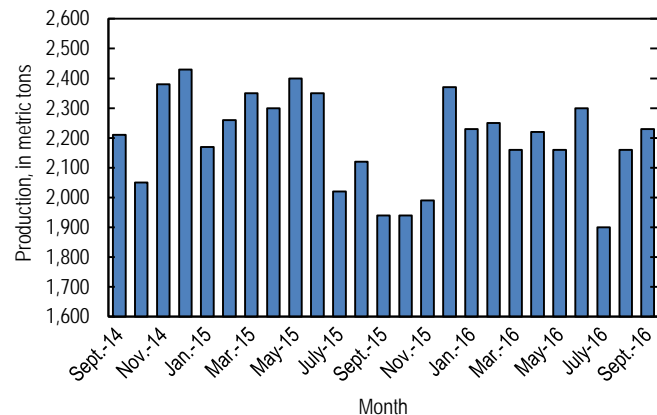


Figure 1. Average daily domestic zinc mine production (recoverable) from September 2014 through September 2016. Source: U.S. Geological Survey.

Global London Metal Exchange Ltd. (LME) stocks of Special High Grade (SHG) zinc decreased by 12,425 t to 438,675 t in September, slightly less than stocks at the end of August 2016 and 26% less than stocks at the end of September 2016 (fig. 2, table 7).

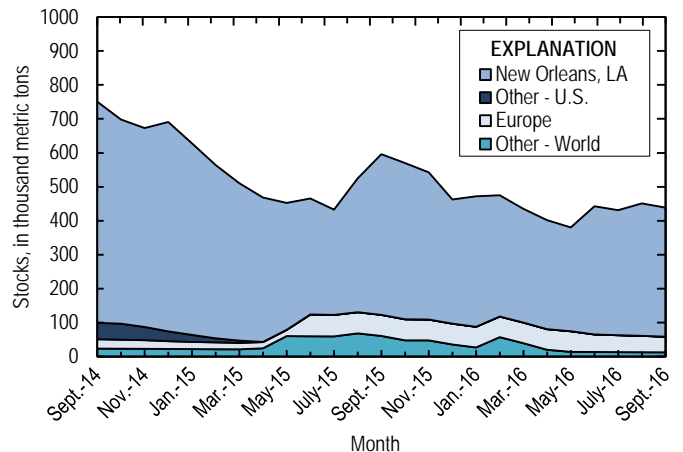


Figure 2. Global LME stocks of Special High Grade zinc, monthend, from September 2014 through September 2016. Source: London Metal Exchange Ltd.

The average Platts Metals Week North American SHG zinc price in September 2016 was \$1.10 per pound, essentially unchanged from that in August 2016 and 29% more than that in September 2015. The September average LME cash price for SHG zinc was \$2,292.44 per metric ton, essentially unchanged from that in the previous month and 33% more than that in September 2015. The North American premium to the LME cash price in September averaged about 6.5 cents per pound, 3% less than that in August, and despite the increase in prices, 15% below that in September 2015 (fig. 4, table 6). Monthly average SHG zinc prices have increased significantly since the beginning of the year, with the September average North American SHG and LME cash prices increasing by about 50% from those in January. Among the LME-traded base metals, zinc has experienced the largest percentage increase in price, coincident with increased investment interest and a growing refined zinc production-to-

consumption deficit, the latter supported by several significant mine closures and production cutbacks. The International Lead and Zinc Study Group forecast that global zinc metal consumption would exceed production by about 350,000 t in 2016 and that the production-to-consumption deficit would continue in 2017 (International Lead and Zinc Study Group, 2016; Onstad, 2016).

Update

On November 14, the U.S. Department of Commerce (DOC) initiated an anti-circumvention inquiry on imports of cold-rolled and corrosion-resistant steel from Vietnam in response to requests from U.S.-based steel producers, AK Steel Corp., ArcelorMittal USA LLC, California Steel Industries, Nucor Corp., Steel Dynamics Inc., and United States Steel Corp. The U.S. producers asserted that steel mills in Vietnam toll-processed hot-rolled steel from China into cold-rolled and corrosion-resistant steel for export to the United States in order to avoid the antidumping and countervailing duties imposed on imports of these steel products from China. The U.S. companies claimed that since Vietnam does not have the capacity to produce hot-rolled steel, the cost of manufacturing value-added steel (cold-rolled and corrosion-resistant) products in Vietnam is small compared to the total export value. U.S. imports for consumption of zinc-coated (hot-dipped and electrogalvanized) steel from Vietnam increased notably beginning in December 2015 after the DOC announced in November 2015 that it had preliminarily determined that countervailable subsidies were provided to producers and exporters of corrosion-resistant steel in China (fig. 3) (Cowden, 2016; Schier, 2016; U.S. Department of Commerce, International Trade Administration, 2016).

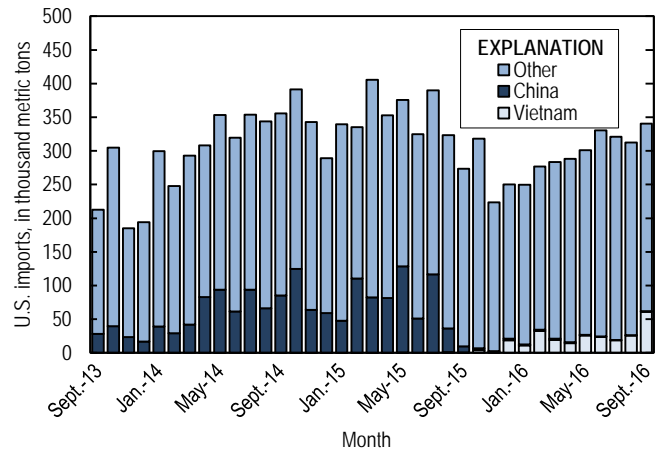


Figure 3. U.S. imports for consumption of hot-dipped and electrogalvanized steel from September 2013 to September 2016. Source: U.S. Census Bureau.

ArcelorMittal S.A. (Luxembourg) introduced a new set of advanced high-strength steels (AHSS) that it claimed would further reduce automotive weight without compromising performance and safety. The company was investing in its Calvert, AL, plant to produce galvanized AHSS to be available for original equipment manufacturing qualifications by mid-2017 (ArcelorMittal S.A., 2016).

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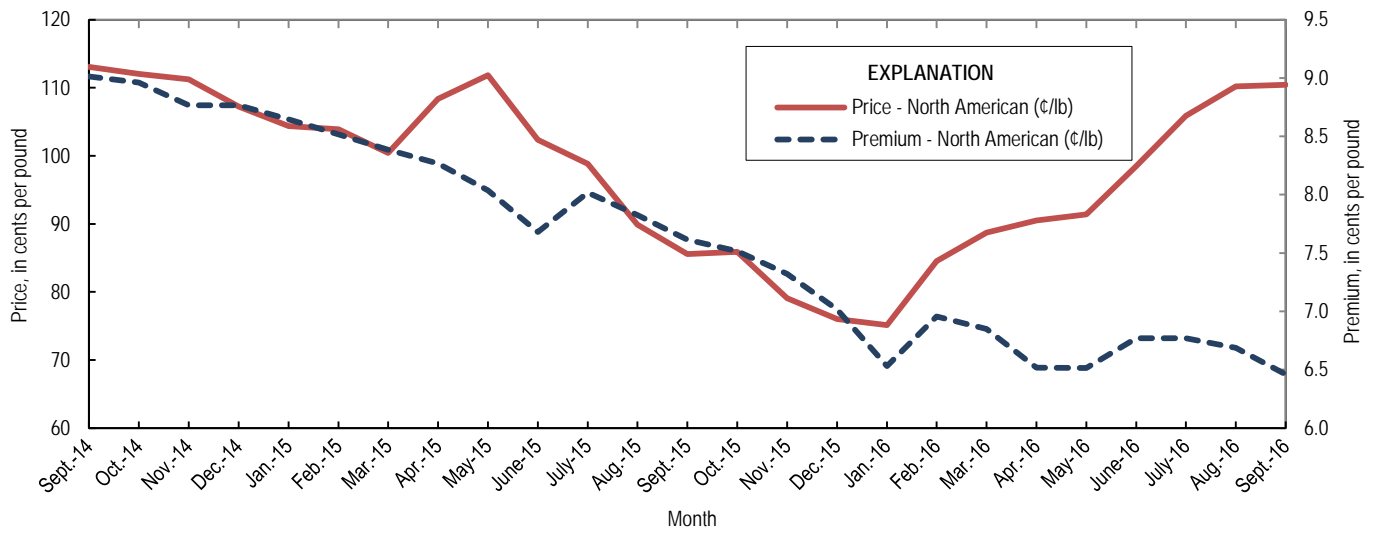


Figure 4. Average monthly North American price and premium for Special High Grade zinc from September 2014 through September 2016. Source: Platts Metals Week.

TABLE 1
SALIENT ZINC STATISTICS¹

(Metric tons, unless otherwise specified)

	2015	2016		
	January– December ^p	August	September	January– September ²
Production:				
Mine, zinc content of concentrate ³	825,000	69,300 ^r	69,300	620,000
Mine, recoverable zinc ³	797,000	67,100	67,000	597,000
Smelter, refined zinc ^c	172,000	9,580 ^r	9,580	92,300
Consumption of refined zinc, apparent ⁴	931,000	67,400 ^r	72,700	580,000
Imports for consumption:				
Ore and concentrate (zinc content)	22	10	--	60
Refined zinc	771,000	58,800	64,200	536,000
Exports:				
Ore and concentrate (zinc content)	709,000	208,000	187,000	482,000
Refined zinc	12,700	976	1,060	47,900
Price:⁵				
London Metal Exchange cash, average, dollars per metric ton	1,932.14	2,282.40	2,292.44	1,947.83
Platts Metals Week North American, average, cents per pound	95.54	110.22	110.44	95.03

⁶Estimated. ^pPreliminary. ^rRevised. -- Zero.

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

²May include revisions to previously published data.

³Reported zinc content in both zinc and lead concentrates.

⁴Smelter production plus imports for consumption minus domestic exports.

⁵Special High Grade Zinc.

TABLE 2
MINE AND SMELTER PRODUCTION OF ZINC
IN THE UNITED STATES¹

(Metric tons)

Period	Mine ²		Smelter ^e
	Zinc content	Recoverable	
2015:			
September	60,400	58,300	13,500
October	62,400	60,300	13,400
November	61,800	59,800	14,400
December	76,100	73,600	13,500
January–December	825,000	797,000	172,000
2016:			
January	74,100	69,100	10,600
February	67,300	65,200	10,600
March	69,300	67,000	10,600
April	68,800	66,600	10,600
May	69,400	67,100	10,600
June	71,300	68,900	10,600
July	61,000	59,000	9,580 ^r
August	69,300 ^r	67,100	9,580 ^r
September	69,300	67,000	9,580
January–September	620,000	597,000	92,300

^eEstimated. ^rRevised.

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

²Includes the zinc content in both lead and zinc concentrates.

TABLE 3
U.S. IMPORTS FOR CONSUMPTION OF ZINC¹

(Gross weight, unless otherwise specified)

Material	2015		2016			
	Quantity (metric tons)	Value (thousands)	September		January–September ²	
			Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Ore and concentrate (zinc content)	22	\$48	--	--	60	\$15
Unwrought:						
Refined zinc	771,000	1,620,000	64,200	\$149,000	536,000	1,060,000
Zinc alloys	8,070	17,000	783	1,800	5,640	11,000
Wrought:						
Bars, rods, profiles, wire	3,020	9,620	200	672	2,070	6,180
Plates, sheets, strip, foil	3,680	14,600	268	908	3,100	9,980
Ash and residues:						
Zinc dross and skimmings	4,570	7,370	311	529	2,960	4,350
Other (zinc content)	1,550	983	--	--	490	345
Other:						
Powders, flakes, dust	29,100	91,300	2,780	8,660	22,000	66,700
Waste and scrap	18,000	20,100	947	983	8,380	8,820
Chemicals:						
Lithopone	1,210	1,630	256	647	2,430	5,700
Zinc oxide	116,000	250,000	9,310	20,000	89,200	176,000
Zinc chloride	154	1,150	12	111	111	1,050
Zinc sulfate	89,000	68,100	8,310	6,230	58,600	43,900
Zinc sulfide	2,460	8,050	103	420	279	855

-- Zero.

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

²May include revisions to previously published data.

Source: U.S. Census Bureau.

TABLE 4
U.S. IMPORTS OF ZINC, BY TYPE OF MATERIAL AND COUNTRY¹

(Metric tons, gross weight, unless otherwise specified)

Material and country	General imports			Imports for consumption		
	2015	2016		2015	2016	
		September	January–September ²		September	January–September ²
Ore and concentrate (zinc content):						
Canada	19	--	--	19	--	--
Germany	3	--	--	3	--	--
Japan	--	--	10	--	--	10
Korea, Republic of	--	--	50	--	--	50
Total	22	--	60	22	--	60
Refined zinc:						
Australia	45,100	--	26,000	82,400	178	27,700
Belgium	1,250	--	--	19,600	750	1,500
Brazil	--	--	--	99	--	--
Canada	479,000	47,800	379,000	479,000	47,800	379,000
China	64	--	5	1,800	--	130
Germany	(3)	--	4	(3)	--	4
India	2,500	--	--	2,500	--	--
Japan	--	--	--	--	--	397
Korea, Republic of	1,500	--	6	20,900	530	8,100
Latvia	--	--	(3)	--	--	(3)
Mexico	99,000	9,130	61,300	99,000	9,130	61,300
Namibia	--	--	--	--	--	123
Netherlands	--	--	--	2,840	--	346
Peru	31,200	5,810	50,900	31,200	5,810	50,900
Spain	31	--	--	32,000	20	5,830
Sweden	(3)	--	(3)	(3)	--	(3)
Switzerland	--	--	--	28	--	--
Taiwan	32	2	31	32	2	31
United Kingdom	--	--	--	49	--	--
Total	659,000	62,700	518,000	771,000	64,200	536,000
Oxide:						
Australia	26	10	97	26	10	97
Belgium	155	4	4	155	4	4
Canada	71,200	5,680	54,500	71,200	5,680	54,500
China	585	25	394	580	25	393
France	--	1	25	--	1	25
Germany	2,380	322	1,930	2,380	322	1,930
India	202	--	69	202	--	69
Indonesia	1	--	6	1	--	6
Israel	--	--	34	--	--	34
Japan	485	15	272	485	15	272
Korea, Republic of	--	8	14	--	8	14
Mexico	32,500	2,750	26,600	32,500	2,750	26,600
Netherlands	5,790	472	4,630	5,790	472	4,630
Norway	5	--	--	5	--	--
Peru	1,510	--	337	1,510	--	337
Russia	--	--	11	--	--	11
Switzerland	21	4	8	21	4	8
Thailand	--	14	14	--	14	14
Turkey	417	--	--	417	--	--
United Kingdom	232	3	195	232	3	195
Other	(3)	--	(3)	(3)	--	(3)
Total	116,000	9,310	89,200	116,000	9,310	89,200

-- Zero.

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

²May include revisions to previously published data.

³Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 5
U.S. EXPORTS OF ZINC¹

(Gross weight, unless otherwise specified)

Material	2015		2016			
	Quantity (metric tons)	Value (thousands)	September		January–September ²	
			Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Ore and concentrate (zinc content)	709,000	\$987,000	187,000	\$285,000	482,000	\$720,000
Unwrought:						
Refined zinc	12,700	28,700	1,060	2,330	47,900	92,100
Zinc alloys	19,700	50,700	1,410	3,880	12,400	30,200
Wrought:						
Bars, rods, profiles, wire	15,400	25,000	681	1,780	6,120	15,100
Plates, sheets, strip, foil	8,010	28,000	690	2,660	5,210	18,500
Ash and residues:						
Hard zinc spelter	9,580	13,600	1,080	1,970	9,060	12,900
Other (zinc content)	19,600	24,000	1,480	2,080	18,200	22,700
Other:						
Powders, flakes, dust	12,300	38,200	964	3,050	9,050	28,300
Waste and scrap	55,200	68,600	2,500	3,540	23,800	29,300
Chemicals:						
Lithopone	1,040	7,200	117	644	977	5,610
Zinc oxide	21,800	28,900	4,780	5,200	41,000	39,700
Zinc chloride	419	657	4	14	680	899
Zinc sulfate	726	751	8	25	333	613
Zinc sulfide	780	14,100	52	975	774	10,600

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

²May include revisions to previously published data.

Source: U.S. Census Bureau.

TABLE 6
AVERAGE PRICES FOR SPECIAL HIGH GRADE ZINC

Period	North	London Metal Exchange	
	American ¹ ¢/lb.	cash ² ¢/lb.	\$/t
2015:			
September	85.57	77.96	1,718.64
October	85.88	78.37	1,727.73
November	79.08	71.76	1,581.96
December	76.04	69.02	1,521.74
January–December	95.54	87.64	1,932.14
2016:			
January	75.11	68.58	1,511.88
February	84.54	77.59	1,710.46
March	88.69	81.84	1,804.32
April	90.48	83.97	1,851.12
May	91.38	84.86	1,870.86
June	98.51	91.74	2,022.59
July	105.85	99.08	2,184.43
August	110.22	103.53	2,282.40
September	110.44	103.98	2,292.44
January–September	95.03	88.35	1,947.83

¹Platts Metals Week North American price. Based on the London Metal Exchange cash price plus premium.

²Average of the cash buyer price and the cash seller and settlement price.

Source: Platts Metals Week.

TABLE 7
LONDON METAL EXCHANGE (LME) STOCKS OF SPECIAL HIGH GRADE ZINC, END OF PERIOD

(Metric tons)

Period	United States			Europe	Other	Total LME
	Detroit, MI	New Orleans, LA	Total			
2015:						
September	25	473,100	473,125	62,100	60,800	596,025
October	25	460,050	460,075	62,000	47,875	569,950
November	25	433,375	433,400	61,450	47,750	542,600
December	25	365,725	365,750	61,250	35,700	462,700
2016:						
January	25	384,250	384,275	60,850	26,925	472,050
February	25	357,075	357,100	60,725	57,275	475,100
March	25	334,825	334,850	60,700	39,475	435,025
April	--	321,000	321,000	60,700	20,100	401,800
May	--	305,775	305,775	60,700	13,975	380,450
June	--	377,450	377,450	51,700	13,550	442,700
July	--	368,150	368,150	49,850	13,200	431,200
August	--	390,000	390,000	48,250	12,850	451,100
September	--	380,025	380,025	46,050	12,600	438,675

-- Zero.

Source: London Metal Exchange, Ltd.