

2017–2018 Minerals Yearbook

PARAGUAY AND URUGUAY

THE MINERAL INDUSTRIES OF PARAGUAY AND URUGUAY

By Yadira Soto-Viruet

PARAGUAY

In 2017 and 2018, the production of mineral commodities—notably cement, lime, pig iron, and raw steel—represented only a minor part of the economy of Paraguay (World Steel Association, 2019; 2020, p. 7). The legislative framework for the mineral sector in Paraguay is provided by the Mining Law (law No. 3.180/2007), which was modified by law No. 4.269/2011 and law No. 4.935/2013 and regulated by Decree No. 8699/2018 of March 14. Data on mineral production are in table 1. Table 2 is a list of major mineral industry facilities. More-extensive coverage of the mineral industry of Paraguay can be found in previous editions of the U.S. Geological Survey Minerals Yearbook, volume III, Area Reports—International— Latin America and Canada, which are available at https://www.usgs.gov/centers/nmic/south-america.

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URUGUAY

In 2017 and 2018, the production of mineral commodities—notably cement, clay and shale, gemstones, gold, iron ore, raw steel, stone, (such as dolomite, granite, and limestone),

talc, and petroleum refinery products—represented only a minor part of the economy of Uruguay (Instituto Nacional de Estadística, 2018, p. 231; Cámara de Industrias del Uruguay, 2019, p. 4; World Steel Association, 2019). The legislative framework for the mineral sector in Uruguay is provided by the Mining Code (law No. 15.242 of January 8, 1982), which was updated in February 28, 2014. Data on mineral production are in table 1. Table 2 is a list of major mineral industry facilities. More-extensive coverage of the mineral industry of Uruguay can be found in previous editions of the U.S. Geological Survey Minerals Yearbook, volume III, Area Reports—International—Latin America and Canada, which are available at https://www.usgs.gov/centers/nmic/south-america.

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 $\label{table 1} {\sf PARAGUAY} \ {\sf AND} \ {\sf URUGUAY} \\ : {\sf PRODUCTION} \ {\sf OF} \ {\sf MINERAL} \ {\sf COMMODITIES}^1$

(Metric tons, gross weight, unless otherwise specified)

Clay: 7,800 4,250 6,650 ° 6,640 6,600 Unspecified 23,120 30,890 ° 8,720 ° 2,390 2,400 Gemstones, agate, including amethyst 15,620 15,210 ° 9,780 ° 13,030 13,000 Gold, mine, Au content 6 kilograms 1,875 1,664 1,113 1,100 860 Iron ore, mine: Tron ore, mine: Tron ore, mine: 2,590 ° 2,530 2,500 Fe content 6,022 4,608 970 ° 950 ° 940 Iron and steel, raw steel 3 94,000 97,000 ° 61,000 60,000 60,000 Petroleum, refinery 7 thousand 42-gallon barrels 14,891 14,862 16,645 4,975 16,000 Stone, other, size and shape unspecified: 19,666 17,180 19,730 ° 15,130 15,000 Granite 2,900 2,630 2,430 ° 2,850 2,800 Limestone thousand metric tons 1,474 1,542 1,488 ° 1,363 1,400	Commodity ²		2014	2015	2016	2017	2018
Pig iron Pig iron	PARAG	GUAY					
Pig iron 71,000 73,000 50,000 38,000 39,000 Raw steel 47,000 48,000 35,000 24,000 25,000 Lime ^c 90,000 90,000 90,000 80,000 80,000 URUGUAY ⁴ Cement, hydraulic thousand metric tons 820 ° 730 ° 740 ° 817 ° 812 Clay: Bentonite 7,800 4,250 6,650 ° 6,640 6,600 Unspecified 23,120 30,890 ° 8,720 ° 2,390 2,400 Gemstones, agate, including amethyst 15,620 15,210 ° 9,780 ° 13,030 13,000 Gold, mine, Au content ⁶ kilograms 1,875 1,664 1,113 1,100 860 Iron ore, mine: 6,022 4,608 970 ° 950 ° 940 Fe content 6,022 4,608 970 ° 950 ° 940 Iron and steel, raw steel ³ 94,00 97,000 ° 61,000 60,000 60,000 <	Cement, hydraulic ^e	thousand metric tons	1,000	1,200	1,300 ^r	1,400	1,400
Pig iron 71,000 73,000 50,000 38,000 39,000 Raw steel 47,000 48,000 35,000 24,000 25,000 Lime ^c 90,000 90,000 90,000 80,000 80,000 URUGUAY ⁴ Cement, hydraulic thousand metric tons 820 ° 730 ° 740 ° 817 ° 812 Clay: Bentonite 7,800 4,250 6,650 ° 6,640 6,600 Unspecified 23,120 30,890 ° 8,720 ° 2,390 2,400 Gemstones, agate, including amethyst 15,620 15,210 ° 9,780 ° 13,030 13,000 Gold, mine, Au content ⁶ kilograms 1,875 1,664 1,113 1,100 860 Iron ore, mine: Gross weight 15,050 11,520 2,590 ° 2,530 2,500 Fe content 6,022 4,608 970 ° 950 ° 940 Iron and steel, raw steel ³ 94,000 97,000 ° 61,000 60,0	Iron and steel: ³						
Dime Po,000 Po,			71,000	73,000	50,000	38,000	39,000
Cement, hydraulic thousand metric tons 820 ° 730 ° 740 ° 817 ° 812	Raw steel		47,000	48,000	35,000	24,000	25,000
Cement, hydraulic thousand metric tons 820 ° 730 ° 740 5 817 5 812 Clay: Bentonite 7,800 4,250 6,650 ° 6,640 6,600 Unspecified 23,120 30,890 ° 8,720 ° 2,390 2,400 Gemstones, agate, including amethyst 15,620 15,210 ° 9,780 ° 13,030 13,000 Gold, mine, Au content 6 kilograms 1,875 1,664 1,113 1,100 860 Iron ore, mine: Gross weight 15,050 11,520 2,590 ° 2,530 2,500 Fe content 6,022 4,608 970 ° 950 ° 940 Iron and steel, raw steel 3 94,000 97,000 ° 61,000 60,000 60,000 Petroleum, refinery 7 thousand 42-gallon barrels 14,891 14,862 16,645 4,975 16,000 Stone, other, size and shape unspecified: Dolomite 19,666 17,180 19,730 ° 15,130 15,000 Granite	Lime ^e		90,000	90,000	90,000	80,000	80,000
Clay: 7,800 4,250 6,650 ° (6,640) 6,600 Unspecified 23,120 30,890 ° (8,720 ° 2,390) 2,400 Gemstones, agate, including amethyst 15,620 15,210 ° 9,780 ° 13,030 13,000 Gold, mine, Au content 6 kilograms 1,875 1,664 1,113 1,100 860 Iron ore, mine: Gross weight 15,050 11,520 2,590 ° 2,530 2,500 Fe content 6,022 4,608 970 ° 950 ° 940 Iron and steel, raw steel 3 94,000 97,000 ° 61,000 60,000 60,000 Petroleum, refinery 7 thousand 42-gallon barrels 14,891 14,862 16,645 4,975 16,000 Stone, other, size and shape unspecified: Dolomite 19,666 17,180 19,730 ° 15,130 15,000 Granite 2,900 2,630 2,430 ° 2,850 2,800 Limestone thousand metric tons 1,474 1,542 1,488 ° 1,363 1,400 Other do. 1,552 1,383 ° 1,918 ° 1,381 1,381 1,400	URUG	GUAY ⁴					_
Rentonite 7,800 4,250 6,650 r 6,640 6,600 Unspecified 23,120 30,890 r 8,720 r 2,390 2,400 Gemstones, agate, including amethyst 15,620 15,210 r 9,780 r 13,030 13,000 Gold, mine, Au content	Cement, hydraulic	thousand metric tons	820 e	730 ^e	740 5	817 5	812 5
Unspecified 23,120 30,890 r 8,720 r 2,390 2,400 Gemstones, agate, including amethyst 15,620 15,210 r 9,780 r 13,030 13,000 Gold, mine, Au content ⁶ kilograms 1,875 1,664 1,113 1,100 860 Iron ore, mine: Gross weight 15,050 11,520 2,590 r 2,530 2,500 Fe content 6,022 4,608 970 r 950 c 940 Iron and steel, raw steel ³ 94,000 97,000 c 61,000 60,000 60,000 Petroleum, refinery ⁷ thousand 42-gallon barrels 14,891 14,862 16,645 4,975 16,000 Stone, other, size and shape unspecified: Dolomite 19,666 17,180 19,730 r 15,130 15,000 Granite 2,900 2,630 2,430 r 2,850 2,800 Limestone thousand metric tons 1,474 1,542 1,488 r 1,363 1,400 Other do. 1,552 1,383 r	Clay:						
Gemstones, agate, including amethyst 15,620 15,210 ° 9,780 ° 13,030 13,030 13,000 Gold, mine, Au content ⁶ kilograms 1,875 1,664 1,113 1,100 860 Iron ore, mine: Gross weight 15,050 11,520 2,590 ° 2,530 2,500 Fe content 6,022 4,608 970 ° 950 ° 940 Iron and steel, raw steel ³ 94,000 97,000 ° 61,000 60,000 60,000 Petroleum, refinery ⁷ thousand 42-gallon barrels 14,891 14,862 16,645 4,975 16,000 Stone, other, size and shape unspecified: Dolomite 19,666 17,180 19,730 ° 15,130 15,000 Granite 2,900 2,630 2,430 ° 2,850 2,800 Limestone thousand metric tons 1,474 1,542 1,488 ° 1,363 1,400 Other do. 1,552 1,383 ° 1,918 ° 1,381 1,300	Bentonite		7,800	4,250	6,650 ^r	6,640	6,600 e
Gold, mine, Au content ⁶ kilograms 1,875 1,664 1,113 1,100 860 Iron ore, mine: Gross weight 15,050 11,520 2,590 ° 2,530 2,500 Fe content 6,022 4,608 970 ° 950 ° 940 Iron and steel, raw steel ³ 94,000 97,000 ° 61,000 60,000 60,000 Petroleum, refinery ⁷ thousand 42-gallon barrels 14,891 14,862 16,645 4,975 16,000 Stone, other, size and shape unspecified: Dolomite 19,666 17,180 19,730 ° 15,130 15,000 Granite 2,900 2,630 2,430 ° 2,850 2,800 Limestone thousand metric tons 1,474 1,542 1,488 ° 1,363 1,400 Other do. 1,552 1,383 ° 1,918 ° 1,381 1,400	Unspecified		23,120	30,890 ^r	8,720 ^r	2,390	2,400 e
Iron ore, mine: Gross weight 15,050 11,520 2,590 ° 2,530 2,500 Fe content 6,022 4,608 970 ° 950 ° 940 Iron and steel, raw steel³ 94,000 97,000 ° 61,000 60,000 60,000 Petroleum, refinery¹ thousand 42-gallon barrels 14,891 14,862 16,645 4,975 16,000 Stone, other, size and shape unspecified: 19,666 17,180 19,730 ° 15,130 15,000 Granite 2,900 2,630 2,430 ° 2,850 2,800 Limestone thousand metric tons 1,474 1,542 1,488 ° 1,363 1,400 Other do. 1,552 1,383 ° 1,918 ° 1,381 1,400	Gemstones, agate, including amethyst		15,620	15,210 ^r	9,780 ^r	13,030	13,000 e
Gross weight 15,050 11,520 2,590 ° 2,530 2,500 Fe content 6,022 4,608 970 ° 950 ° 940 Iron and steel, raw steel³ 94,000 97,000 ° 61,000 60,000 60,000 Petroleum, refinery¹ thousand 42-gallon barrels 14,891 14,862 16,645 4,975 16,000 Stone, other, size and shape unspecified: 19,666 17,180 19,730 ° 15,130 15,000 Granite 2,900 2,630 2,430 ° 2,850 2,800 Limestone thousand metric tons 1,474 1,542 1,488 ° 1,363 1,400 Other do. 1,552 1,383 ° 1,918 ° 1,381 1,400	Gold, mine, Au content ⁶	kilograms	1,875	1,664	1,113	1,100	860
Fe content 6,022 4,608 970 ° 950 ° 940 Iron and steel, raw steel³ 94,000 97,000 ° 61,000 60,000 60,000 Petroleum, refinery³ thousand 42-gallon barrels 14,891 14,862 16,645 4,975 16,000 Stone, other, size and shape unspecified: Dolomite 19,666 17,180 19,730 ° 15,130 15,000 Granite 2,900 2,630 2,430 ° 2,850 2,800 Limestone thousand metric tons 1,474 1,542 1,488 ° 1,363 1,400 Other do. 1,552 1,383 ° 1,918 ° 1,381 1,400	Iron ore, mine:						
Iron and steel, raw steel³ 94,000 97,000 ° 61,000 60,000 60,000 Petroleum, refinery⁵ thousand 42-gallon barrels 14,891 14,862 16,645 4,975 16,000 Stone, other, size and shape unspecified: Dolomite 19,666 17,180 19,730 ° 15,130 15,000 Granite 2,900 2,630 2,430 ° 2,850 2,800 Limestone thousand metric tons 1,474 1,542 1,488 ° 1,363 1,400 Other do. 1,552 1,383 ° 1,918 ° 1,381 1,400	Gross weight		15,050	11,520	2,590 ^r	2,530	2,500
Petroleum, refinery ⁷ thousand 42-gallon barrels 14,891 14,862 16,645 4,975 16,000 Stone, other, size and shape unspecified: Dolomite 19,666 17,180 19,730 ° 15,130 15,000 Granite 2,900 2,630 2,430 ° 2,850 2,800 Limestone thousand metric tons 1,474 1,542 1,488 ° 1,363 1,400 Other do. 1,552 1,383 ° 1,918 ° 1,381 1,400	Fe content		6,022	4,608	970 ^r	950 ^e	940 ^e
Stone, other, size and shape unspecified: Dolomite 19,666 17,180 19,730 ° 15,130 15,000 Granite 2,900 2,630 2,430 ° 2,850 2,800 Limestone thousand metric tons 1,474 1,542 1,488 ° 1,363 1,400 Other do. 1,552 1,383 ° 1,918 ° 1,381 1,300	Iron and steel, raw steel ³		94,000	97,000 °	61,000	60,000	60,000
Dolomite 19,666 17,180 19,730 r 15,130 15,000 Granite 2,900 2,630 2,430 r 2,850 2,800 Limestone thousand metric tons 1,474 1,542 1,488 r 1,363 1,400 Other do. 1,552 1,383 r 1,918 r 1,381 1,400	Petroleum, refinery ⁷	thousand 42-gallon barrels	14,891	14,862	16,645	4,975	16,000 e
Granite 2,900 2,630 2,430 r 2,850 2,800 Limestone thousand metric tons 1,474 1,542 1,488 r 1,363 1,400 Other do. 1,552 1,383 r 1,918 r 1,381 1,400	Stone, other, size and shape unspeci	ified:					
Limestone thousand metric tons 1,474 1,542 1,488 r 1,363 1,400 Other do. 1,552 1,383 r 1,918 r 1,381 1,400	Dolomite		19,666	17,180	19,730 ^r	15,130	15,000 e
Other do. 1,552 1,383 ^r 1,918 ^r 1,381 1,400	Granite		2,900	2,630	2,430 ^r	2,850	2,800 °
	Limestone	thousand metric tons	1,474	1,542		1,363	1,400 e
Talc 360 590 ^r 290 ^r 100 100	Other	do.	1,552	1,383 ^r	1,918 ^r	1,381	1,400 e
	Talc		360	590 r	290 r	100	100 e

^eEstimated. ^rRevised. do. Ditto.

¹Table includes data available through July 1, 2019. All data are reported unless otherwise noted. Estimated data are rounded to no more than three significant digits.

²In addition to the commodities listed, construction materials (clay, limestone, marble, and sand) may have been produced, but available information was inadequate to make reliable estimates of output.

³Source: World Steel Association.

⁴In addition to the commodities listed, feldspar and marble were produced in small quantities. Source: Ministerio de Industria, Energía y Minería - Dirección Nacional de Minería y Geología, Data are for fiscal year beginning April 1 and ending March 31.

⁵Based on total sales of cement (domestic and exports).

⁶Source: Orosur Mining Inc. Production is based on fiscal year, with a starting date of April 1 of the year shown.

⁷Source: Ministerio de Industria, Energía y Minería -Dirección de Energía.

${\it TABLE~2}$ PARAGUAY AND URUGUAY: STRUCTURE OF THE MINERAL INDUSTRIES IN 2018

(Thousand metric tons unless otherwise specified)

			T 6 6	Annual
Country and commodity		Major operating companies and major equity owners	Location of main facilities	capacity
PARAGUAY				
Cement		Industria Nacional del Cemento	Puerto Vallemi plant, about	1,060
			350 kilometers northwest	
			of Asuncion	
Do.		do.	Villeta plant, about 25 kilometers	730
			south of Asuncion	
Do.		Yguazú Cementos S.A. (Intercement Brasil S.A., 51%,	Villa Hayes plant in Presidente Hayes	400
		and Concret-Mix S.A., 49%)	Department	
Iron and steel, raw steel		Aceros del Paraguay S.A. (ACEPAR)	Villa Hayes, about 25 kilometers	150
			northeast of Asuncion	
URUGUAY				
Cement		Cementos Artigas S.A. (Votorantim Cimentos, 51%,	Minas plant in Lavalleja Department	500
		and Cementos Molins S.A., 49%)	and Sayago Plant in Montevideo	
Do.		Cementos del Plata S.A. (Administración Nacional de	Minas plant in Lavalleja Department	530
		Combustibles, Alcohol, y Portland, 99.74%)	Paysandu plant in Paysandu	
		•	Department	
Gold, mine, Au content kil	lograms	Minera San Gregorio S.A. (Orosur Mining Inc., 100%)	Mina de San Gregorio in Rivera	2,000
	C		Department, about 450 kilometers	ŕ
			north of Asuncion ¹	
Iron and steel, raw steel		Gerdau Laisa S.A.	Montevideo	90
Petroleum, refinery thousand 42	2-gallon	Administración Nacional de Combustibles, Alcohol, y	La Teja oil refinery near Montevideo	18,000
products	barrels	Portland	-	
•				

^eEstimated. Do., do. Ditto.

¹The San Gregorio mining operations were placed on care-and-maintenance status in August 2018.