

# Mineral Industry Surveys

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## PLATINUM-GROUP METALS IN OCTOBER 2023

Imports for consumption of platinum-group metals (PGMs), including waste and scrap, were 14,900 kilograms (kg) in October 2023, a decrease of 3% compared with imports in September 2023, and a decrease of 27% compared with imports in October 2022 (table 1). The leading import sources for PGMs into the United States in October 2023 were, in descending order of quantity, South Africa, Russia, and Canada (tables 3, 4).

In October 2023, exports of rhodium were 113 kg compared with 9 kg in September 2023, making exports in October 2023 12 times more than those in September 2023. Exports of platinum more than doubled, palladium exports increased by 58%, and PGM scrap exports were essentially unchanged compared with those in September 2023. The leading destinations for PGM exports were, in descending order of quantity, Switzerland, Germany, and Japan (tables 1, 5).

The Engelhard average October 2023 price of ruthenium was unchanged compared with the average price in September 2023. The average prices of rhodium increased by 8% and by 7% for iridium whereas the prices of palladium decreased by 8% and by 3% for platinum compared with prices in September. Compared with average prices in October 2022, the October 2023 average prices for iridium increased by 15%, but decreased by 67% for rhodium, by 45% for palladium, by 15% for ruthenium, and slightly for platinum (fig. 1; tables 1, 2).

### Industry News

Anglo American Platinum Ltd. (Amplats) (South Africa) reported third quarter PGM production from its wholly owned mines decreased by 3% to approximately 17,700 kg compared with third quarter production in 2022 owing to lower-than-expected ore grades from its Mogalakwena open pit PGM mine and poor ground conditions at Dishaba mine, one of its underground mines at Amandelbult. Primary refined PGM production, excluding tolling agreements, decreased by 9% to approximately 28,300 kg owing to unplanned water outages and lower metal contents in its concentrates. Amplats' production

guidance for 2023 remained unchanged, however (Anglo American Platinum Ltd., 2023; undated).

PJSC MMC Norilsk Nickel (Nornickel) (Russia) reported preliminary results for third quarter platinum and palladium production decreased by 13% and 14% to approximately 20,600 kg and 5,000 kg, respectively, compared with reported production in the third quarter of 2022. Compared with nine months in 2022, palladium production was essentially unchanged at approximately 66,700 kg, and platinum production increased by 7% to approximately 16,400 kg. Increased production was attributed to higher PGM content in ore from its Oktyabrsky mine, increasing ore output at its Medvezhiy Ruchey mine, and improved extraction of precious metals at its Kola refinery (PJSC MMC Norilsk Nickel, 2023).

### References Cited

- Anglo American Platinum Ltd., 2023, Anglo American Platinum Limited production report for the third quarter ended 30 September 2023: Johannesburg, South Africa, Anglo American Platinum Ltd. press release, October 24. (Accessed November 30, 2023, at <https://www.angloamericanplatinum.com/media/press-releases/2023/24-10-2023>.)
- Anglo American Platinum Ltd., [undated], Our platinum operations: Johannesburg, South Africa, Anglo American Platinum Ltd. (Accessed November 30, 2023, at <https://www.angloamerican.com/products/platinum>.)
- PJSC MMC Norilsk Nickel, 2023, Nornickel announces consolidated production results for 9 months of 2023: Moscow, Russia, PJSC MMC Norilsk Nickel press release, October 23, 3 p. (Accessed November 30, 2023, at [https://nornickel.com/upload/iblock/20e/crddwfoobsvwip8gykc2svvmy0pw617v/nornickel\\_production\\_results\\_3q2023\\_final\\_ENG\\_full.pdf](https://nornickel.com/upload/iblock/20e/crddwfoobsvwip8gykc2svvmy0pw617v/nornickel_production_results_3q2023_final_ENG_full.pdf).)

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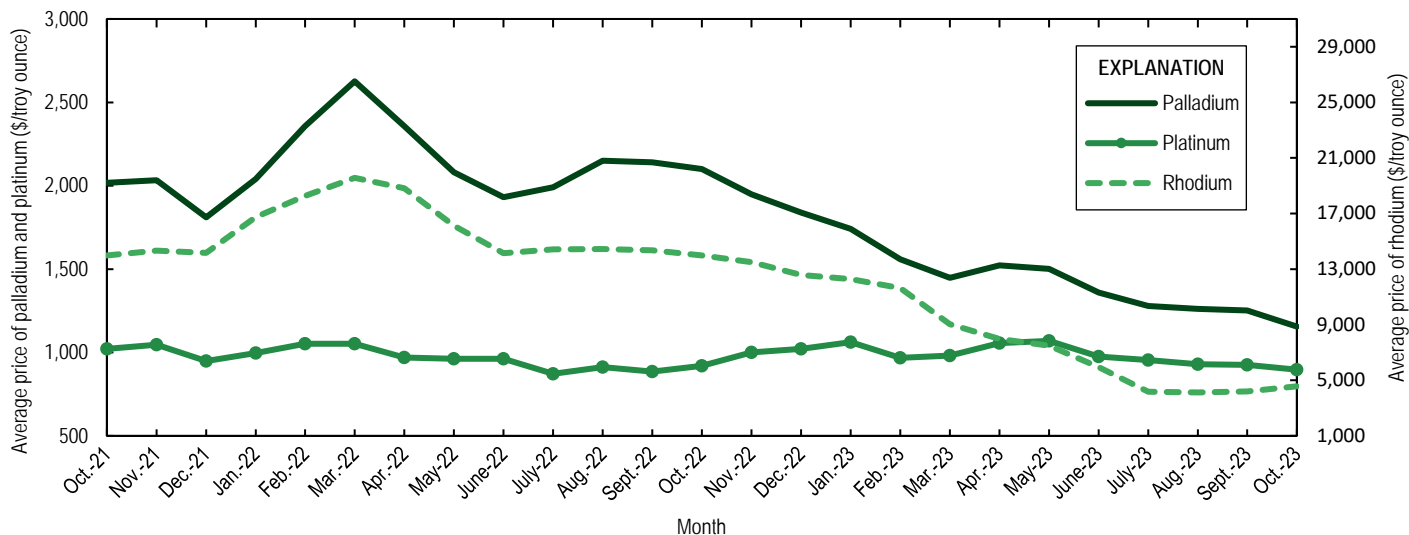


Figure 1. Engelhard unfabricated average monthly prices for palladium, platinum, and rhodium in dollars per troy ounce from October 2021 through October 2023. Source: S&P Global Platts Metals Week.

TABLE 1  
U.S. SALIENT PLATINUM-GROUP METALS STATISTICS<sup>1</sup>

(Kilograms metal content, unless otherwise specified)

	2022	2023			
	January– December	August	September	October	January– October
Mine production: <sup>2</sup>					
Palladium	10,100	843	843	843	8,300
Platinum	3,000	251	251	251	2,470
Total	13,100	1,090	1,090	1,090	10,800
Imports for consumption: <sup>3</sup>					
Palladium	65,200	6,860	6,360	5,670	54,900
Platinum	64,200	6,370	5,610	4,040	56,000
Iridium	1,610	112	144	153	1,560
Osmium	1	--	--	--	--
Rhodium	13,200	1,410	924	1,050	9,530
Ruthenium	13,300	761	593	706	8,500
Waste and scrap <sup>4</sup>	41,500	3,100	1,690	3,270	26,400
Total	199,000	18,600	15,300	14,900	157,000
Exports: <sup>3</sup>					
Palladium	42,200	3,930	2,400	3,790	28,700
Platinum	23,100	511	661	1,430	10,200
Iridium, osmium, ruthenium	906	65	141	124	680
Rhodium	677	1	9	113	239
Waste and scrap <sup>4</sup>	35,200	1,110	1,170	1,180	10,800
Total	102,000	5,620	4,380	6,640	50,700
Price, average (dollars per troy ounce): <sup>5</sup>					
Palladium	2,133.81	1,262.22	1,252.40	1,155.45	1,403.52
Platinum	966.54	930.57	926.60	897.18	981.01
Iridium	4,581.93	4,552.17	4,525.00	4,825.00	4,612.68
Rhodium	15,585.00	4,126.09	4,200.00	4,556.82	7,073.21
Ruthenium	577.02	465.00	465.00	465.00	466.91

-- Zero.

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

<sup>2</sup>Annual data are based on publicly available annual reports. Monthly and year-to-date data are estimated based on publicly reported quarterly data.

<sup>3</sup>Source: U.S. Census Bureau.

<sup>4</sup>Includes waste and scrap for all platinum-group elements. Previously included within platinum.

<sup>5</sup>Source: S&P Global Platts Metals Week.

TABLE 2  
PLATINUM-GROUP METALS PRICES<sup>1</sup>

(Dollars per troy ounce)

	Palladium	Platinum	Iridium	Rhodium	Ruthenium
2022:					
Low:					
Price	1,690.00	834.00	3,750.00	12,250.00	475.00
Date	Dec. 20	Jul. 14	Nov. <sup>2</sup> –Dec. <sup>2</sup>	Dec. <sup>2</sup>	Dec. 21
High:					
Price	3,050.00	1,155.00	5,000.00	20,250.00	625.00
Date	Mar. 8	Mar. 8	Mar.–Jul. <sup>2</sup>	Feb. <sup>2</sup>	Mar.–Jul. <sup>2</sup>
Price, average	2,133.81	966.54	4,581.93	15,585.00	577.02
2023:					
August:					
Low:					
Price	1,230.00	895.00	4,500.00	4,100.00	465.00
Date	Aug. 8	Aug. 15 and 16	Aug. <sup>2</sup>	Aug. <sup>2</sup>	Aug. <sup>2</sup>
High:					
Price	1,340.00	988.00	4,600.00	4,200.00	465.00
Date	Aug. 11	Aug. 30	Aug. <sup>2</sup>	Aug. <sup>2</sup>	Aug. <sup>2</sup>
Price, average	1,262.22	930.57	4,552.17	4,126.09	465.00
September:					
Low:					
Price	1,215.00	905.00	4,500.00	4,200.00	465.00
Date	Sep. 5 and 6	Sep. <sup>2</sup>	Sep. <sup>2</sup>	Sep. <sup>2</sup>	Sep. <sup>2</sup>
High:					
Price	1,305.00	987.00	4,700.00	4,200.00	465.00
Date	Sep. 20	Sep. 1	Sep. 29	Sep. <sup>2</sup>	Sep. <sup>2</sup>
Price, average	1,252.40	926.60	4,525.00	4,200.00	465.00
October:					
Low:					
Price	1,114.00	863.00	4,700.00	4,200.00	465.00
Date	Oct. 20	Oct. 6	Oct. <sup>2</sup>	Oct. <sup>2</sup>	Oct. <sup>2</sup>
High:					
Price	1,225.00	945.00	4,950.00	5,350.00	465.00
Date	Oct. 2	Oct. 31	Oct. <sup>2</sup>	Oct. 18 and 19	Oct. <sup>2</sup>
Price, average	1,155.45	897.18	4,825.00	4,556.82	465.00
January–October:					
Low:					
Price	1,114.00	863.00	4,500.00	4,000.00	465.00
Date	Oct. 20	Oct. 6	Aug.–Sep. <sup>2</sup>	Jul. <sup>2</sup>	Jan.–Oct. <sup>2</sup>
High:					
Price	1,820.00	1,135.00	4,950.00	12,400.00	485.00
Date	Jan. 10	Apr. 21	Oct. <sup>2</sup>	Jan. <sup>2</sup>	Jan. <sup>2</sup> and Feb. 2
Price, average	1,403.52	981.01	4,612.68	7,073.21	466.91

<sup>1</sup>Quotes from Engelhard.

<sup>2</sup>Occurred multiple days in month(s) listed.

Source: S&P Global Platts Metals Week.

TABLE 3  
U.S. IMPORTS FOR CONSUMPTION OF PLATINUM METAL, BY COUNTRY OR LOCALITY<sup>1</sup>

(Kilograms metal content, unless otherwise specified)

Country or locality	Platinum grain and nuggets		Platinum sponge		Other unwrought platinum		Platinum, other		Platinum coins	
	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)
2022, January–December	1,320	\$42,000	47,800	\$1,500,000	2,350	\$146,000	12,100	\$529,000	642	\$21,000
2023:										
August	78	2,350	5,200	156,000	82	2,720	933	32,700	70	2,190
September	20	639	4,690	143,000	93	3,170	766	29,100	35	1,070
October:										
Australia	--	--	--	--	--	--	(2)	19	--	--
Austria	--	--	--	--	--	--	33	1,250	--	--
Belgium	--	--	593	17,200	--	--	--	--	--	--
Canada	21	616	--	--	8	230	17	550	58	1,730
China	--	--	1	20	--	--	--	--	1	22
Colombia	1	25	--	--	18	487	8	251	--	--
Costa Rica	--	--	--	--	--	--	202	7,440	--	--
Czechia	--	--	--	--	--	--	(2)	16	--	--
France	--	--	8	266	--	--	12	337	--	--
Germany	--	--	6	174	51	1,660	364	13,300	(2)	10
Italy	--	--	164	4,770	--	--	1	35	--	--
Japan	2	45	28	804	183	5,390	5	192	--	--
Korea, Republic of	--	--	253	10,200	--	--	--	--	--	--
Portugal	--	--	--	--	--	--	(2)	4	--	--
Singapore	--	--	--	--	1	362	2	113	--	--
South Africa	--	--	1,710	49,800	6	197	--	--	36	970
Switzerland	--	--	54	1,570	--	--	77	2,240	--	--
United Kingdom	--	--	81	2,320	--	--	39	1,260	1	46
Total	23	686	2,900	87,100	266	8,330	761	27,100	97	2,780
January–October	565	18,200	44,100	1,390,000	1,820	72,500	8,830	334,000	683	22,200

-- Zero.

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

<sup>2</sup>Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 4  
U.S. IMPORTS FOR CONSUMPTION OF PLATINUM-GROUP METALS, BY COUNTRY OR LOCALITY<sup>1</sup>

(Kilograms metal content, unless otherwise specified)

Country or locality	Palladium <sup>2</sup>		Iridium <sup>2</sup>		Osmium <sup>2</sup>		Rhodium <sup>2</sup>		Ruthenium <sup>2</sup>		Waste and scrap <sup>3</sup>	
	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)
2022, January–December	65,200	\$4,370,000	1,610	\$194,000	1	\$3	13,200	\$6,780,000	13,300	\$226,000	41,500	\$1,350,000
2023:												
August	6,860	283,000	112	14,600	--	--	1,410	305,000	761	11,200	3,100	82,000
September	6,360	253,000	144	15,600	--	--	924	125,000	593	8,020	1,690	48,000
October: <sup>4</sup>												
Australia	--	--	--	--	--	--	(5)	3	--	--	11	366
Austria	16	62	--	--	--	--	--	--	--	--	--	--
Belgium	304	11,800	--	--	--	--	34	4,300	--	--	26	2,670
Brazil	--	--	--	--	--	--	--	--	--	--	29	1,140
Canada	224	9,660	--	--	--	--	--	--	--	--	1,990	9,020
Colombia	--	--	--	--	--	--	--	--	--	--	26	379
Czechia	--	--	--	--	--	--	--	--	--	--	30	853
France	--	--	--	--	--	--	--	--	--	--	84	2,580
Germany	14	514	3	324	--	--	332	51,100	284	4,170	315	10,700
India	108	4,990	--	--	--	--	--	--	--	--	--	--
Italy	99	3,800	1	199	--	--	46	7,340	--	--	135	6,010
Japan	72	2,850	--	--	--	--	1	193	--	--	--	--
Korea, Republic of	241	8,280	--	--	--	--	16	2,040	16	201	--	--
Malaysia	--	--	--	--	--	--	--	--	--	--	12	326
Mexico	2	40	--	--	--	--	--	--	--	--	95	3,420
New Zealand	--	--	--	--	--	--	--	--	--	--	12	354
Russia	2,400	95,800	--	--	--	--	--	--	--	--	--	--
Singapore	--	--	--	--	--	--	--	--	--	--	213	12,000
South Africa	2,190	80,900	63	7,580	--	--	613	79,200	376	5,070	97	3,020
United Kingdom	4	357	86	13,700	--	--	5	955	31	460	164	6,700
Other	3	50	--	--	--	--	5	790	--	--	27	911
Total	5,670	219,000	153	21,800	--	--	1,050	146,000	706	9,900	3,270	60,400
January–October	54,900	2,560,000	1,560	190,000	--	--	9,530	2,660,000	8,500	118,000	26,400	793,000

-- Zero.

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

<sup>2</sup>Unwrought and other forms.

<sup>3</sup>Includes waste and scrap for all platinum-group elements.

<sup>4</sup>The 20 countries and (or) localities with the greatest total platinum-group metal imports are listed. All others are included in the "Other" category.

<sup>5</sup>Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 5  
U.S. EXPORTS OF PLATINUM-GROUP METALS, BY COUNTRY OR LOCALITY<sup>1</sup>

(Kilograms metal content, unless otherwise specified)

Country or locality	Palladium <sup>2</sup>		Platinum <sup>2</sup>		Iridium, osmium and ruthenium <sup>2,3</sup>		Rhodium <sup>2</sup>		Waste and scrap <sup>4</sup>	
	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)
2022, January–December	42,200	\$2,770,000	23,100	\$885,000	906	\$36,500	677	\$355,000	35,200	\$2,990,000
2023:										
August	3,930	124,000	511	22,800	65	9,100	1	350	1,110	65,800
September	2,400	89,500	661	32,700	141	19,100	9	1,150	1,170	74,400
October: <sup>5</sup>										
Australia	4	133	24	742	4	391	(6)	33	--	--
Belgium	38	1,340	18	496	(6)	13	5	780	141	7,690
Brazil	107	4,230	6	161	--	--	(6)	6	--	--
Canada	562	21,300	40	1,460	--	--	(6)	6	94	3,200
China	38	1,550	22	797	(6)	45	--	--	--	--
Costa Rica	1	34	55	3,090	(6)	5	--	--	--	--
France	5	252	4	117	(6)	18	(6)	3	--	--
Germany	511	18,500	300	11,900	(6)	23	--	--	324	45,700
Hong Kong	11	417	4	142	40	5,130	39	6,330	--	--
India	7	279	107	3,160	--	--	--	--	--	--
Ireland	2	82	68	2,400	(6)	3	--	--	--	--
Israel	209	8,550	1	30	--	--	--	--	--	--
Italy	219	9,090	95	2,720	--	--	--	--	112	7,000
Japan	101	3,730	544	16,000	1	129	--	--	464	27,100
Korea, Republic of	9	358	17	663	(6)	29	68	8,830	--	--
Mexico	13	485	38	1,310	--	--	--	--	--	--
Switzerland	1,900	71,600	(6)	12	(6)	23	(6)	4	--	--
Taiwan	36	1,580	--	--	1	153	--	--	--	--
United Arab Emirates	--	--	16	465	--	--	--	--	5	371
United Kingdom	2	76	63	2,130	77	11,700	--	--	39	1,550
Other	15	571	6	285	(6)	61	--	--	6	246
Total	3,790	144,000	1,430	48,100	124	17,700	113	16,000	1,180	92,900
January–October	28,700	1,180,000	10,200	502,000	680	88,600	239	63,800	10,800	824,000

-- Zero.

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

<sup>2</sup>Unwrought and other forms.

<sup>3</sup>Gross weight.

<sup>4</sup>Includes waste and scrap for all platinum-group elements. Previously categorized as "Platinum waste and scrap."

<sup>5</sup>The 20 countries and (or) localities with the greatest total platinum-group metal exports are listed. All others are included in the "Other" category.

<sup>6</sup>Less than ½ unit.

Source: U.S. Census Bureau.