

# Mineral Industry Surveys

**For information, contact:**

Ruth F. Schulte, PGM Commodity Specialist  
National Minerals Information Center  
Telephone: (703) 648-4963  
Email: [rschulte@usgs.gov](mailto:rschulte@usgs.gov)

Christine Pisut (Data)  
Telephone: (703) 648-7942  
Email:

**Internet:** <https://www.usgs.gov/centers/national-minerals-information-center/mineral-industry-surveys>

## PLATINUM-GROUP METALS IN SEPTEMBER 2023

Imports for consumption of platinum-group metals (PGMs), including waste and scrap, were 15,300 kilograms (kg) in September 2023, a decrease of 18% compared with imports in August 2023, and an increase of 5% compared with imports in September 2022 (table 1). The leading import sources for PGMs into the United States in September 2023 were, in descending order of quantity, South Africa, Russia, and Germany (tables 3, 4).

In September 2023, exports of rhodium were nine times more than those in August 2023; however, quantities were low, with rhodium exports at 9 kg compared with 1 kg in August 2023. Exports of platinum increased by 30% and PGM scrap by 5% compared with those in August 2023; exports of palladium decreased by 39%. The leading destinations for PGM exports were, in descending order of quantity, Germany, Switzerland, and Japan (tables 1, 5).

The Engelhard average September 2023 prices of ruthenium and platinum were unchanged compared with the average prices in August 2023 and iridium and palladium were essentially unchanged, each. The average price for rhodium increased slightly compared with prices in August. Compared with average prices in September 2022, the September 2023 average prices for platinum increased by 5%, but decreased by 71% for rhodium, by 41% for palladium, and by 17% for ruthenium. The average price of iridium was essentially unchanged compared with those in September 2022 (fig. 1; tables 1, 2).

### Industry News

Aurubis AG (Germany) reported discrepancies in its metal inventory as well as missing recycled material to be refined into precious metals, including PGMs, following a routine inspection. These discrepancies led Aurubis to conclude it had been targeted by additional criminal activity first identified in June 2023. In response to the thefts, Aurubis pulled internal resources to work closely with investigative authorities and increased security measures, including more frequent checks of individuals and vehicles, restrictions to access sensitive areas, and surveillance (Aurubis AG, 2023; CRU Group, 2023).

### References Cited

- Aurubis AG, 2023, Aurubis identifies serious indications of shortfall in metals: Hamburg, Germany, Aurubis AG, ad-hoc release, August 31. (Accessed October 31, 2023, at <https://www.aurubis.com/en/media/press-releases/press-releases-2023/ad-hoc-release-aurubis-identifies-serious-indications-of-shortfall-in-metals>.)
- CRU Group, 2023, Metal theft costs Aurubis €185 M: CRU Group, September 20. (Accessed October 31, 2023, via <http://www.crugroup.com/>.)

*List services and web feed subscribers are the first to receive notification of USGS minerals information publications and data releases. For information on how to subscribe, go to <https://www.usgs.gov/centers/national-minerals-information-center/minerals-information-publication-list-services>.*

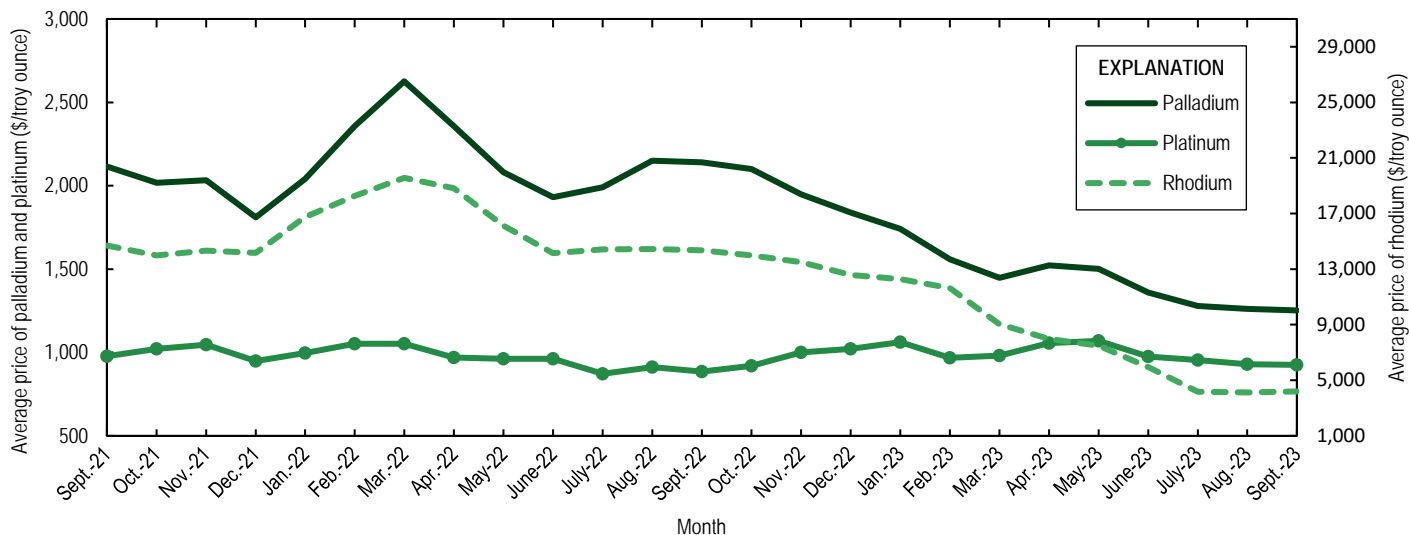


Figure 1. Engelhard unfabricated average monthly prices for palladium, platinum, and rhodium in dollars per troy ounce from September 2021 through September 2023. Source: S&P Global Platts Metals Week.

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

(Kilograms metal content, unless otherwise specified)

	2022	2023			
	January– December	July	August	September	January– September
Mine production: <sup>2</sup>					
Palladium	10,100	843	843	843	7,450
Platinum	3,000	251 <sup>r</sup>	251 <sup>r</sup>	251	2,220
Total	13,100	1,090	1,090	1,090	9,680
Imports for consumption: <sup>3</sup>					
Palladium	65,200	4,960	6,860	6,360	49,300
Platinum	64,200	7,540	6,370	5,610	52,000
Iridium	1,610	111	112	144	1,400
Osmium	1	--	--	--	--
Rhodium	13,200	818	1,410	924	8,480
Ruthenium	13,300	706	761	593	7,790
Waste and scrap <sup>4</sup>	41,500	2,000	3,100	1,690	23,100
Total	199,000	16,100	18,600	15,300	142,000
Exports: <sup>3</sup>					
Palladium	42,200	4,840	3,930	2,400	24,900
Platinum	23,100	835	511	661	8,800
Iridium, osmium, ruthenium	906	92	65	141	555
Rhodium	677	23	1	9	126
Waste and scrap <sup>4</sup>	35,200	580	1,110	1,170	9,600
Total	102,000	6,370	5,620	4,380	44,000
Price, average (dollars per troy ounce): <sup>5</sup>					
Palladium	2,133.81	1,278.30	1,262.22	1,252.40	1,432.70
Platinum	966.54	953.80	930.57	926.60	990.88
Iridium	4,581.93	4,600.00	4,552.17	4,525.00	4,587.70
Rhodium	15,585.00	4,172.50	4,126.09	4,200.00	7,369.25
Ruthenium	577.02	465.00	465.00	465.00	467.14

<sup>r</sup>Revised. -- 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:					
July:					
Low:					
Price	1,215.00	910.00	4,600.00	4,000.00	465.00
Date	Jul. 10	Jul. 6	Jul. <sup>2</sup>	Jul. <sup>2</sup>	Jul. <sup>2</sup>
High:					
Price	1,330.00	990.00	4,600.00	4,400.00	465.00
Date	Jul. 18	Jul. 19	Jul. <sup>2</sup>	Jul. 12 and 13	Jul. <sup>2</sup>
Price, average	1,278.30	953.80	4,600.00	4,172.50	465.00
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
January–September:					
Low:					
Price	1,215.00	895.00	4,500.00	4,000.00	465.00
Date	Jul. 10; Sep. 5 and 6	Aug. 15 and 16	Aug.–Sep. <sup>2</sup>	Jul. <sup>2</sup>	Jan.–Sep. <sup>2</sup>
High:					
Price	1,820.00	1,135.00	4,700.00	12,400.00	485.00
Date	Jan. 10	Apr. 21	Jan. 3–5 and Sep. 29	Jan. <sup>2</sup>	Jan. <sup>2</sup> and Feb. 2
Price, average	1,432.70	990.88	4,587.70	7,369.25	467.14

<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:										
July	41	1,280	6,710	208,000	112	4,140	591	20,900	81	2,690
August	78	2,350	5,200	156,000	82	2,720	933	32,700	70	2,190
September:										
Argentina	--	--	--	--	6	266	--	--	--	--
Australia	--	--	--	--	--	--	(2)	20	2	47
Austria	--	--	--	--	--	--	31	1,210	--	--
Belgium	--	--	401	11,000	(2)	3	--	--	--	--
Canada	20	635	--	--	(2)	16	35	1,130	17	543
China	--	--	--	--	--	--	--	--	1	49
Colombia	--	--	--	--	17	509	12	369	--	--
Costa Rica	--	--	--	--	--	--	142	5,980	--	--
Czechia	--	--	--	--	--	--	6	287	--	--
France	--	--	16	471	--	--	8	235	--	--
Germany	--	--	663	20,300	69	2,290	402	15,800	1	15
Italy	--	--	152	4,620	--	--	(2)	3	--	--
Japan	--	--	6	310	--	--	14	439	--	--
Korea, Republic of	--	--	261	10,800	--	--	--	--	1	32
Singapore	(2)	4	--	--	(2)	3	1	95	--	--
South Africa	--	--	2,980	88,700	--	--	--	--	12	356
Switzerland	--	--	54	1,610	--	--	73	2,270	1	19
United Kingdom	--	--	160	4,890	1	83	40	1,250	(2)	11
Total	20	639	4,690	143,000	93	3,170	766	29,100	35	1,070
January–September	542	17,500	41,200	1,310,000	1,550	64,200	8,070	307,000	586	19,400

-- 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:												
July	4,960	217,000	111	17,200	--	--	818	214,000	706	9,810	2,000	74,700
August	6,860	283,000	112	14,600	--	--	1,410	305,000	761	11,200	3,100	82,000
September: <sup>4</sup>												
Belgium	274	10,800	--	--	--	--	23	2,980	--	--	--	--
Brazil	--	--	--	--	--	--	--	--	--	--	22	950
Canada	302	12,400	--	--	--	--	--	--	--	--	147	8,010
Colombia	10	287	--	--	--	--	--	--	--	--	33	386
Egypt	--	--	--	--	--	--	--	--	--	--	463	7,190
France	--	--	--	--	--	--	--	--	--	--	64	2,130
Germany	39	2,250	17	2,200	--	--	256	36,900	120	1,740	457	14,200
Guatemala	--	--	--	--	--	--	--	--	--	--	21	674
India	--	--	--	--	--	--	--	--	--	--	19	613
Italy	221	8,540	1	95	--	--	11	1,900	--	--	42	1,360
Japan	29	834	4	453	--	--	1	157	20	239	--	--
Korea, Republic of	180	8,050	--	--	--	--	31	5,830	--	--	--	--
Kuwait	--	--	--	--	--	--	--	--	--	--	20	740
Mexico	14	68	--	--	--	--	--	--	--	--	116	2,120
Netherlands	--	--	--	--	--	--	--	--	--	--	71	2,130
Russia	2,820	112,000	--	--	--	--	--	--	--	--	--	--
Saudi Arabia	--	--	--	--	--	--	--	--	--	--	43	1,250
South Africa	2,440	97,100	101	9,370	--	--	600	76,400	360	4,650	3	355
Switzerland	17	679	--	--	--	--	--	--	--	--	--	--
United Kingdom	7	380	23	3,470	--	--	2	276	93	1,400	100	3,260
Other	6	56	--	--	--	--	--	--	--	--	71	2,610
Total	6,360	253,000	144	15,600	--	--	924	125,000	593	8,020	1,690	48,000
January–September	49,300	2,340,000	1,400	168,000	--	--	8,480	2,520,000	7,790	108,000	23,100	733,000

-- 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.

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:										
July	4,840	158,000	835	44,000	92	13,200	23	9,010	580	36,600
August	3,930	124,000	511	22,800	65	9,100	1	350	1,110	65,800
September: <sup>5</sup>										
Australia	2	107	20	814	4	407	--	--	--	--
Belgium	40	1,610	19	599	--	--	5	627	413	17,600
Brazil	79	4,320	3	610	--	--	--	--	--	--
Canada	543	23,100	13	463	(6)	3	(6)	19	55	1,880
China	13	745	10	344	3	395	--	--	--	--
Costa Rica	6	421	39	2,670	--	--	--	--	--	--
France	12	752	2	61	(6)	11	--	--	--	--
Germany	324	13,600	37	2,180	2	208	--	--	369	38,400
Hong Kong	11	695	3	214	29	3,620	--	--	--	--
Ireland	1	56	61	2,200	(6)	7	--	--	--	--
Italy	361	15,400	66	2,230	5	472	--	--	29	1,110
Japan	268	10,800	281	14,000	9	1,700	--	--	143	9,570
Mexico	4	262	17	704	--	--	--	--	--	--
Netherlands	14	789	(6)	6	--	--	--	--	1	18
Singapore	(6)	15	9	2,650	--	--	--	--	--	--
Sweden	--	--	--	--	--	--	--	--	7	1,310
Switzerland	699	15,600	(6)	13	1	68	--	--	20	502
Taiwan	4	236	3	101	--	--	--	--	--	--
United Arab Emirates	--	--	--	--	--	--	--	--	25	752
United Kingdom	1	53	72	2,280	88	12,200	1	92	101	2,840
Other	16	983	7	582	(6)	6	3	410	7	458
Total	2,400	89,500	661	32,700	141	19,100	9	1,150	1,170	74,400
January–September	24,900	1,030,000	8,800	454,000	555	70,900	126	47,800	9,600	731,000

-- 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.