

# Mineral Industry Surveys

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**For information, contact:**

Ruth F. Schulte, PGM Commodity Specialist  
National Minerals Information Center  
U.S. Geological Survey  
989 National Center  
Reston, VA 20192  
Telephone: (703) 648-4963, Fax: (703) 648-7757  
Email: [rschulte@usgs.gov](mailto:rschulte@usgs.gov)

Christine Pisut (Data)  
Telephone: (703) 648-7942  
Fax: (703) 648-7975  
Email: [cpisut@usgs.gov](mailto:cpisut@usgs.gov)

**Internet:** <https://www.usgs.gov/centers/nmic>

## PLATINUM-GROUP METALS IN JULY 2021

Imports for consumption of platinum-group metals (PGMs), including waste and scrap, were 17,800 kilograms (kg) in July 2021, a decrease of 9% compared with imports in June 2021 and an increase of 39% compared with imports in July 2020. Year-to-date imports through July 2021 increased by 37% for all PGMs compared with year-to-date imports through July 2020 (table 1). The leading import sources for PGMs into the United States in July 2021 were, in descending order of quantity, South Africa, Germany, and Mexico (tables 3, 4). In July 2021, exports of platinum and rhodium, each, more than doubled compared with those in June 2021. Exports decreased by 12% for palladium and by 61% for PGM scrap compared with those in June 2021 (table 5). Year-to-date exports through July 2021 increased by 31% for PGM scrap and by 42% for platinum compared with year-to-date exports through July 2020. Exports of palladium and rhodium through July 2021 decreased slightly and by 28%, respectively, compared with year-to-date exports through July 2020 (table 1).

The Engelhard average July prices were essentially unchanged for palladium, and decreased by 3% for platinum, by 4% for ruthenium, by 6% for iridium, and by 13% for rhodium compared with average prices in the previous month. Compared with average prices in July 2020, the July 2021 average prices increased by 26% for platinum, by 34% for palladium, more than doubled for rhodium and ruthenium each, and more than tripled for iridium (fig. 1; tables 1, 2).

### Industry News

Elemental Holding S.A. (Poland) acquired Maryland Core, Inc., a PGM recycling center in Baltimore, MD, in coordination with the Polish International Development Fund. The acquisition expanded Elemental Holding's recycling capabilities in the United States. (American Recycler News, Inc., 2021).

Platinum Group Metals Ltd. and Lion Battery Technologies Inc. (Canada) announced Florida International University (FIU)

received a third patent from the U.S. Patent and Trademark Office for technology that uses PGMs as catalysts in lithium sulfur batteries. The new patent covered methods used when preparing PGM catalysts in carbon materials and expanded protection for a similar patent that was granted in August 2020. Lion Battery obtained exclusive rights to all technology developed by FIU using Lion Battery funding in a previously established sponsored research agreement (Platinum Group Metals Ltd., 2021).

### References Cited

- American Recycler News, Inc., 2021, Elemental expands position in U.S. metals recycling market: Maumee, OH, American Recycler News, Inc., July. (Accessed September 16, 2021, at <https://americanrecycler.com/8568759/index.php/news/metal-recycling/4896-elemental-expands-position-in-u-s-metals-recycling-market>.)
- Platinum Group Metals Ltd., 2021, Platinum Group Metals Ltd.'s subsidiary Lion Battery Technologies Inc. granted third US patent for PGMs focused on next generation lithium sulphur batteries: Vancouver, British Columbia, Canada, Platinum Group Metals Ltd. press release, July 14. (Accessed September 16, 2021, at <https://www.platinumgroupmetals.net/investor-relations/news/press-releases/press-releases-details/2021/Platinum-Group-Metals-Ltd.s-Subsidiary-Lion-Battery-Technologies-Inc.-Granted-Third-US-Patent-for-PGMs-Focused-on-Next-Generation-Lithium-Sulphur-Batteries/default.aspx>.)

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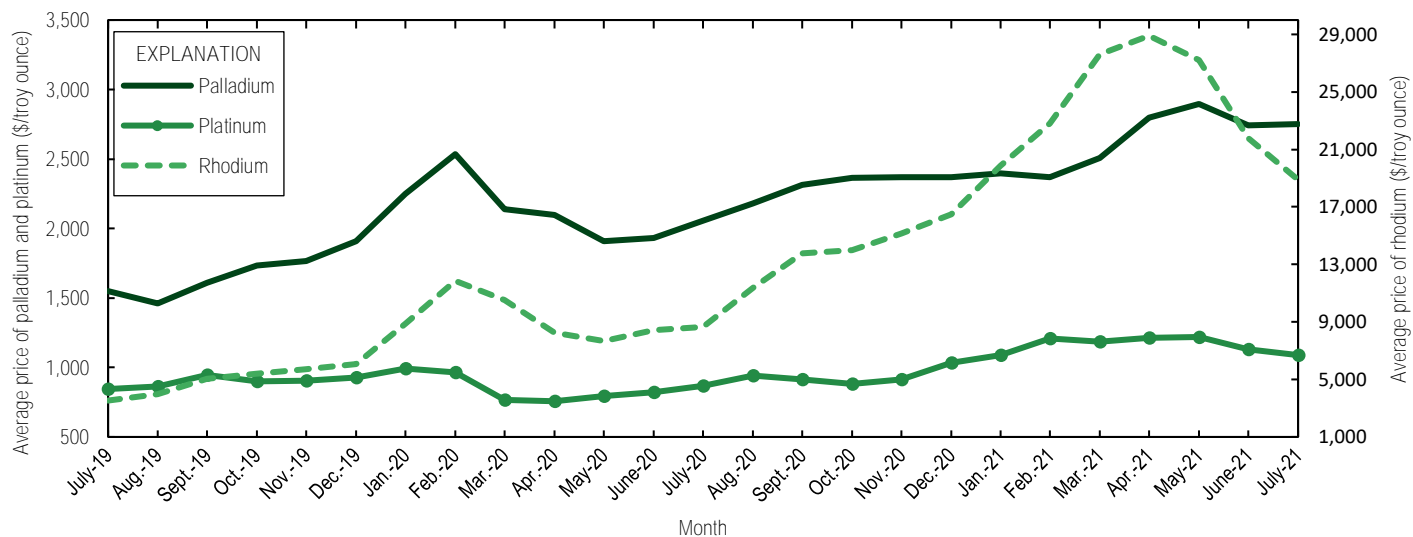


Figure 1. Engelhard unfabricated average monthly prices for palladium, platinum, and rhodium in dollars per troy ounce from July 2019 through July 2021. Source: S&P Global Platts Metals Week.

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

(Kilograms metal content, unless otherwise specified)

	2020	2021			
	January– December	May	June	July	January– July
Mine production: <sup>2</sup>					
Palladium	14,600	1,150 <sup>r</sup>	1,150 <sup>r</sup>	1,150	8,330
Platinum	4,200	339 <sup>r</sup>	339 <sup>r</sup>	339	2,450
Total	18,800	1,490 <sup>r</sup>	1,490 <sup>r</sup>	1,490	10,800
Imports for consumption: <sup>3</sup>					
Palladium	76,400	5,180	4,770	4,990	46,100
Platinum	64,800	4,320	4,370	3,040	33,700
Iridium	1,620	422	174	168	1,510
Osmium	1	1	--	--	1
Rhodium	20,700	1,060	1,180	1,180	9,890
Ruthenium	13,900	1,320	1,250	941	13,900
Waste and scrap <sup>4</sup>	188,000	11,200	7,820	7,510	133,000
Total	365,000	23,600	19,600	17,800	238,000
Exports: <sup>3</sup>					
Palladium	48,600	5,390	3,580	3,170	23,700
Platinum	28,900	1,750	2,330	6,050	16,700
Iridium, osmium, ruthenium	1,440	99	927	180	1,850
Rhodium	1,470	82	56	121	636
Waste and scrap <sup>4</sup>	33,200	2,680	4,920	1,920	24,900
Total	114,000	10,000	11,800	11,400	67,800
Price, average (dollars per troy ounce): <sup>5</sup>					
Palladium	2,205.27	2,896.10	2,741.27	2,749.86	2,640.99
Platinum	886.02	1,219.30	1,128.00	1,090.43	1,162.17
Iridium	1,633.51	6,320.00	5,881.82	5,504.76	5,414.83
Rhodium	11,205.06	27,210.00	21,761.36	18,869.05	23,944.83
Ruthenium	271.83	596.75	779.55	750.00	512.62

<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>Data 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
2020:					
Low:					
Price	1,585.00	610.00	1,490.00	6,000.00	255.00
Date	Mar. 17	Mar. 19	Jan.–Feb. <sup>2</sup>	Mar. <sup>2</sup>	Jan.–Apr. <sup>2</sup>
High:					
Price	2,790.00	1,085.00	2,600.00	17,150.00	280.00
Date	Feb. 19	Dec. 31	Dec. 30 and 31	Dec. 31	May–Dec. <sup>2</sup>
Price, average	2,205.27	886.02	1,633.51	11,205.06	271.83
2021:					
May:					
Low:					
Price	2,759.00	1,174.00	6,000.00	22,750.00	450.00
Date	May 25	May 28	May <sup>2</sup>	May 26	May <sup>2</sup>
High:					
Price	3,020.00	1,271.00	6,400.00	29,500.00	825.00
Date	May 4	May 10	Apr.–May <sup>2</sup>	May 3 and 4	May 21 and 24
Price, average	2,896.10	1,219.30	6,320.00	27,210.00	596.75
June:					
Low:					
Price	2,543.00	1,044.00	5,600.00	19,250.00	750.00
Date	Jun. 21	Jun. 21	Jun. <sup>2</sup>	Jun. 24 and 25	Jun. <sup>2</sup>
High:					
Price	2,870.00	1,194.00	6,000.00	25,250.00	800.00
Date	Jun. 2	Jun. 2	Jun. <sup>2</sup>	Jun. 1	Jun. <sup>2</sup>
Price, average	2,741.27	1,128.00	5,881.82	21,761.36	779.55
July:					
Low:					
Price	2,613.00	1,048.00	5,500.00	17,750.00	750.00
Date	Jul. 20	Jul. 30	Jul. <sup>2</sup>	Jul. 9	Jul. <sup>2</sup>
High:					
Price	2,889.00	1,138.00	5,600.00	19,750.00	750.00
Date	Jul. 6	Jul. 16	Jul. 1	Jul. <sup>2</sup>	Jul. <sup>2</sup>
Price, average	2,749.86	1,090.43	5,504.76	18,869.05	750.00
January–July:					
Low:					
Price	2,283.00	1,009.00	3,000.00	17,650.00	280.00
Date	Feb. 2 and 4	Jan. 26	Jan. <sup>2</sup>	Jan. 4	Jan. <sup>2</sup>
High:					
Price	3,020.00	1,298.00	6,400.00	30,000.00	825.00
Date	May 4	Feb. 19	Apr.–May <sup>2</sup>	Mar. 22	May 21 and 24
Price, average	2,640.99	1,162.17	5,414.83	23,944.83	512.62

<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)
2020, January–December	162	\$4,780	30,900	\$874,000	5,370	\$255,000	25,900	\$853,000	2,510	\$75,300
2021:										
May	13	539	3,460	134,000	356	16,700	465	21,600	28	1,510
June	21	774	2,300	86,500	324	13,500	1,670	73,600	52	2,300
July:										
Argentina	--	--	--	--	9	1,140	--	--	--	--
Australia	--	--	--	--	--	--	--	--	29	1,070
Austria	--	--	--	--	(2)	10	(2)	7	--	--
Belgium	--	--	614	21,700	--	--	--	--	--	--
Canada	10	372	--	--	1	33	27	1,030	63	2,370
China	--	--	--	--	--	--	(2)	4	--	--
Colombia	11	322	--	--	36	1,220	--	--	--	--
Costa Rica	--	--	--	--	--	--	84	3,020	--	--
Czechia	--	--	--	--	--	--	2	52	--	--
France	--	--	--	--	--	--	11	410	--	--
Germany	--	--	79	2,810	72	2,760	412	31,400	1	24
Ireland	--	--	--	--	--	--	1	28	--	--
Italy	--	--	364	12,900	--	--	(2)	9	--	--
Japan	--	--	--	--	(2)	91	38	1,240	--	--
Korea, Republic of	--	--	45	1,560	--	--	--	--	--	--
Portugal	--	--	--	--	--	--	(2)	2	--	--
Russia	--	--	100	3,440	--	--	--	--	--	--
Singapore	--	--	--	--	47	8,970	18	747	--	--
South Africa	--	--	883	32,800	16	1,740	--	--	--	--
Switzerland	--	--	--	--	19	718	36	1,190	--	--
United Kingdom	--	--	1	18	--	--	9	283	(2)	7
Total	22	694	2,090	75,200	200	16,700	638	39,500	93	3,470
January–July	278	10,700	20,600	766,000	3,520	171,000	8,350	368,000	955	33,400

-- 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)
2020, January–December	76,400	\$4,490,000	1,620	\$70,100	1	\$17	20,700	\$4,590,000	13,900	\$117,000	188,000	\$1,500,000
2021:												
May	5,180	463,000	422	36,400	1	17	1,060	918,000	1,320	21,500	11,200	267,000
June	4,770	421,000	174	31,000	--	--	1,180	947,000	1,250	21,200	7,820	298,000
July: <sup>4</sup>												
Austria	76	5,880	--	--	--	--	--	--	--	--	--	--
Belgium	678	58,800	--	--	--	--	159	108,000	--	--	18	669
Brazil	--	--	--	--	--	--	--	--	--	--	415	5,940
Canada	301	24,700	--	--	--	--	1	85	--	--	1,010	41,700
Egypt	--	--	--	--	--	--	--	--	--	--	24	849
France	--	--	--	--	--	--	--	--	--	--	55	1,600
Germany	35	3,180	21	4,070	--	--	191	136,000	256	4,830	2,360	77,400
India	--	--	--	--	--	--	--	--	--	--	70	9,570
Italy	526	24,100	2	305	--	--	282	25,300	--	--	29	944
Japan	109	8,260	8	1,430	--	--	3	1,590	5	84	433	13,900
Korea, Republic of	536	46,300	--	--	--	--	--	--	--	--	--	--
Malaysia	--	--	--	--	--	--	--	--	--	--	42	1,470
Mexico	(5)	12	--	--	--	--	--	--	--	--	1,560	51,700
New Zealand	--	--	--	--	--	--	--	--	--	--	286	9,590
Russia	566	50,900	20	3,630	--	--	63	36,800	--	--	--	--
South Africa	1,790	158,000	102	16,800	--	--	476	342,000	446	9,420	8	1,600
Switzerland	374	31,200	--	--	--	--	--	--	--	--	--	--
United Arab Emirates	--	--	--	--	--	--	--	--	--	--	606	19,700
United Kingdom	5	428	16	2,880	--	--	1	52	233	3,890	438	13,900
Venezuela	--	--	--	--	--	--	--	--	--	--	38	1,230
Other	--	--	--	--	--	--	(5)	10	--	--	115	4,170
Total	4,990	412,000	168	29,100	--	--	1,180	650,000	941	18,200	7,510	256,000
January–July	46,100	3,440,000	1,510	172,000	1	17	9,890	6,470,000	13,900	164,000	133,000	1,520,000

-- 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)
2020, January–December	48,600	\$2,900,000	28,900	\$930,000	1,440	\$24,900	1,470	\$426,000	33,200	\$1,400,000
2021:										
May	5,390	507,000	1,750	73,900	99	3,660	82	71,200	2,680	344,000
June	3,580	310,000	2,330	96,200	927	23,000	56	42,000	4,920	445,000
July: <sup>5</sup>										
Belgium	88	7,360	57	1,930	1	21	13	7,570	1	32
Canada	642	55,900	81	3,140	--	--	12	7,550	(6)	11
China	4	296	29	674	1	12	1	881	--	--
Costa Rica	(6)	30	52	1,090	--	--	--	--	2	70
Germany	231	19,700	395	17,300	20	263	--	--	790	101,000
Hong Kong	41	3,470	16	415	--	--	45	35,000	--	--
India	87	7,630	37	1,240	--	--	--	--	--	--
Ireland	3	254	50	1,550	--	--	--	--	--	--
Italy	794	71,100	2	53	25	838	(6)	15	--	--
Japan	239	21,300	119	4,200	2	13	--	--	541	54,400
Korea, Republic of	237	20,800	5	118	(6)	4	(6)	96	--	--
Mexico	4	342	314	13,600	--	--	--	--	--	--
Netherlands	129	11,600	(6)	4	--	--	--	--	--	--
Russia	--	--	--	--	--	--	--	--	60	2,620
Singapore	1	65	100	3,540	--	--	--	--	--	--
South Africa	(6)	3	692	24,200	--	--	41	25,800	154	5,400
Switzerland	446	37,200	2,460	92,900	57	1,960	1	904	78	2,820
Taiwan	65	6,140	16	583	41	406	--	--	--	--
United Arab Emirates	--	--	(6)	9	4	118	--	--	47	1,650
United Kingdom	119	10,100	1,580	55,400	17	506	8	5,280	244	84,900
Other	38	3,330	39	1,010	12	222	--	--	2	83
Total	3,170	277,000	6,050	223,000	180	4,360	121	83,100	1,920	253,000
January–July	23,700	2,030,000	16,700	680,000	1,850	46,100	636	439,000	24,900	2,170,000

-- 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.