

Mineral Industry Surveys

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PLATINUM-GROUP METALS IN MAY 2018

Imports for consumption of platinum-group metals (PGMs) in May 2018 were dominated by palladium, platinum waste and scrap, and platinum, which made up 46%, 16%, and 22%, respectively, of imports (tables 3, 4). Imports for consumption of PGMs, including waste and scrap, were 18,200 kilograms (kg) in May 2018, a 9% increase compared with those in April 2018 and an 72% decrease compared with those in May 2017. The leading import sources for PGMs into the United States were, in descending order, South Africa, Russia, and Germany (tables 3, 4). For January through May 2018, imports of PGMs were 94,200 kg, a 67% decrease compared with 288,000 kg during the similar period in 2017.

Prices

Compared with the prior month, the Engelhard average May prices increased slightly for palladium, decreased slightly for platinum, and increased by 21%, 3%, and 11% for iridium, rhodium, and ruthenium, respectively. Compared with May 2017, the May 2018 average price of platinum decreased by 3%, whereas prices of iridium, palladium, rhodium, and ruthenium increased by 35%, 23%, 123%, and 286%, respectively (tables 1, 2; figs. 1, 2). According to news sources, rhodium's price increase was related to increased demand by industrial users in conjunction with a limited supply (Thomson Reuters, 2017). Ruthenium's price increase was the result of increased purchases of the metal likely owing to reports of new uses for it in chemical catalysts, hard-disk drives, and semiconductors (Jonson, 2017).

Industry News

In May 2018, the U.S. Bureau of Land Management formally reinstated two mineral leases in northeastern Minnesota that were held by Twin Metals Minnesota LLC (TMM), owner of the TMM project, a copper, gold, nickel, palladium, platinum, and silver deposit in the Duluth Complex (Twin Metals Minnesota LLC, 2018).

MMC Norilsk Nickel announced plans to invest 25.7 billion rubles (over \$400 million) over 6 years (2018–2023) to upgrade its JSC Kolskaya Mining and Metallurgical Company (Kola

MMC) in the Murmansk Region. In 2017, Kola produced about 85,200 kg of palladium and 20,528 kg of platinum as byproduct from nickel mining. The primary goals included increasing efficiency, increasing the quality of production, and reducing emissions (Interfax Russia & CIS Metals and Mining Weekly, 2018).

Research and Development News

Recent work led by researchers at the University of Minnesota found that ruthenium has unique magnetic properties at room temperature. It joins cobalt, iron, and nickel as the fourth paramagnetic element at room temperature. This has implications for traditional applications that make use of magnets, such as in electric motors, hard disk media, and sensors, but also for spintronic devices in the semiconductor industry (University of Minnesota, 2018).

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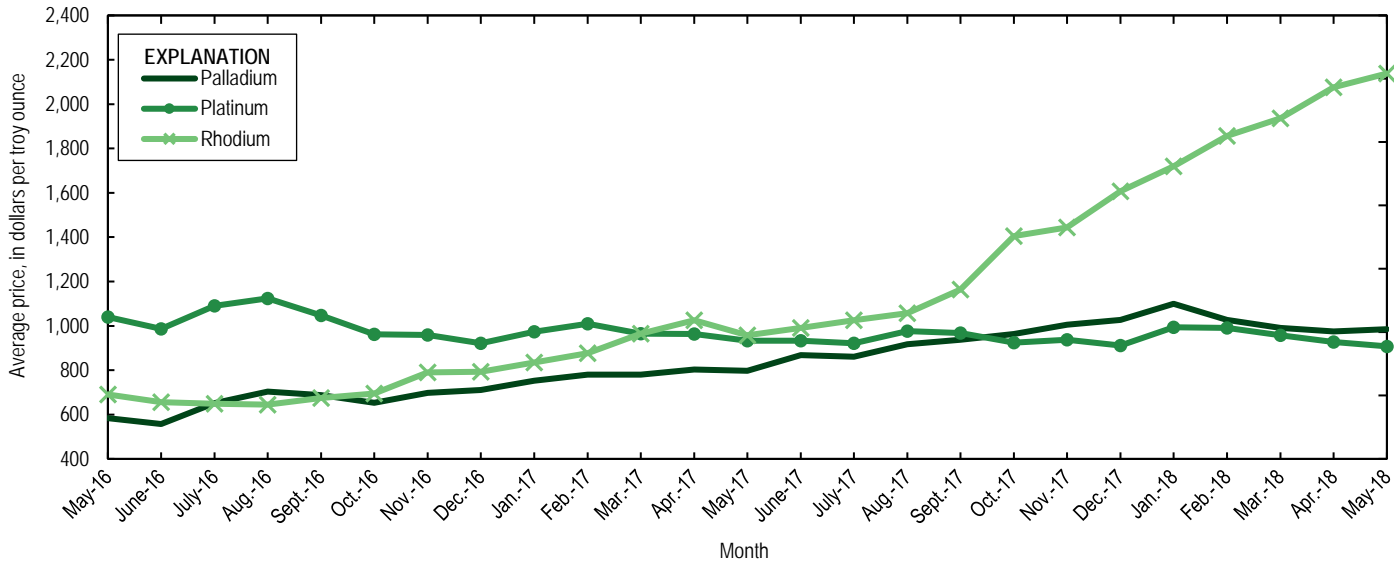


Figure 1. Engelhard unfabricated average monthly prices for palladium, platinum, and rhodium from May 2016 through May 2018. Source: Platts Metals Week.

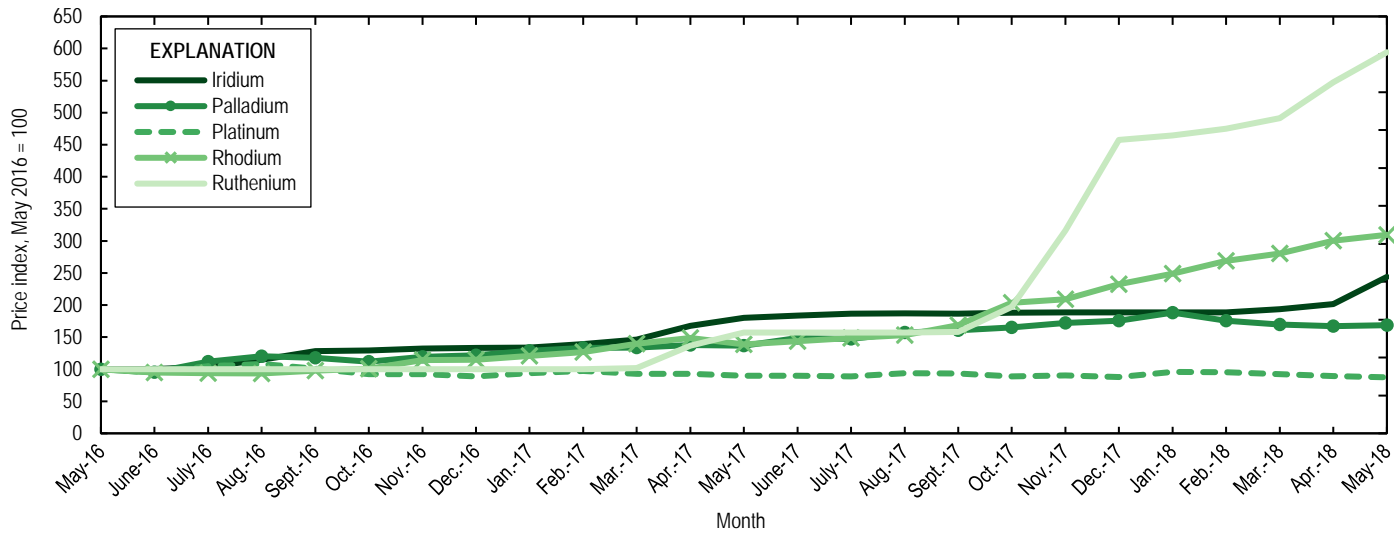


Figure 2. Indexed Engelhard unfabricated average monthly prices for iridium, palladium, platinum, rhodium, and ruthenium from May 2016 to May 2018. Prices are indexed to May 2016. Source: Platts Metals Week.

TABLE 1
U.S. SALIENT PLATINUM-GROUP METALS STATISTICS¹

(Kilograms metal content, unless otherwise specified)

	2017		2018		
	January– December	March	April	May	January– May
Mine production:²					
Platinum	3,980	344	344	344	1,720
Palladium	13,600	1,200	1,200	1,200	5,980
Total	17,600	1,540	1,540	1,540	7,700
Imports for consumption:³					
Platinum	416,000	10,200	8,110	7,060	43,300
Palladium	86,000	6,390	5,710	8,390	35,900
Iridium	1,420	107	65	141	435
Osmium	856	--	--	25	25
Ruthenium	14,500	2,670	1,560	1,360	8,080
Rhodium	11,600	1,700	1,320	1,250	6,460
Total	530,000	21,100	16,800	18,200	94,200
Exports:³					
Platinum	211,000	2,790	6,620	3,250	20,800
Palladium	52,300	5,050	5,740	5,410	24,400
Iridium, osmium, ruthenium	939	277	94	90	1,030
Rhodium	844	468	416	352	1,610
Total	266,000	8,580	12,900	9,100	47,900
Price, average (dollars per troy ounce):⁴					
Palladium	874.30	991.33	974.81	984.77	1,015.44
Platinum	951.23	957.86	927.05	907.64	955.31
Iridium	908.35	1,015.00	1,057.62	1,280.45	1,066.61
Rhodium	1,112.59	1,935.24	2,075.48	2,137.95	1,944.72
Ruthenium	76.86	206.43	229.76	255.00	217.13

-- Zero.

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

²Data estimated based on publicly reported quarterly data.

³Source: U.S. Census Bureau.

⁴Source: Platts Metals Week.

TABLE 2
PLATINUM-GROUP METALS PRICES¹

(Dollars per troy ounce)

	Palladium	Platinum	Iridium	Rhodium	Ruthenium
2017:					
Low:					
Price	710.00	880.00	700.00	765.00	42.00
Date	Jan. 3	Dec. 13	Jan. ²	Jan. 3	Jan.–Mar. ²
High:					
Price	1,062.00	1,035.00	990.00	1,725.00	195.00
Date	Dec. 28	Feb. 27	Aug. ² and Oct.–Dec. ²	Dec. ²	Dec. ²
Average	874.30	951.23	908.35	1,112.59	76.86
2018:					
April:					
Low:					
Price	914.00	908.00	1,030.00	2,040.00	215.00
Date	Apr. 6	Apr. 30	(2)	Apr. 6 and 30	(2)
High:					
Price	1,042.00	949.00	1,150.00	2,135.00	255.00
Date	Apr. 19	Apr. 18	Apr. 30	Apr. 20	Apr. 30
Average	974.81	927.05	1,057.62	2,075.48	229.76
May:					
Low:					
Price	957.00	887.00	1,150.00	2,025.00	255.00
Date	May 1	May 18	May 1 and 2	May ²	May ²
High:					
Price	1,010.00	929.00	1,385.00	2,260.00	255.00
Date	May 14	May 11	(2)	May 31	May ²
Average	984.77	907.64	1,280.45	2,137.95	255.00
January–May:					
Low:					
Price	914.00	887.00	990.00	1,700.00	195.00
Date	Apr. 6	May 18	Jan.–Feb. ²	Jan. ²	Jan. ² , Feb. 1 and 2
High:					
Price	1,134.00	1,023.00	1,385.00	2,260.00	255.00
Date	Jan. 15	Jan. 25	May ²	May 31	Apr. 30 and May ²
Average	1,015.44	955.31	1,066.61	1,944.72	217.13

¹Quotes from Engelhard.

²Occurred multiple days in month(s) listed.

Source: Platts Metals Week.

TABLE 3
U.S. IMPORTS FOR CONSUMPTION OF PLATINUM METAL, BY COUNTRY OR LOCALITY¹

(Kilograms metal content, unless otherwise specified)

Country or locality	Platinum grain and nuggets		Platinum sponge		Other unwrought platinum		Platinum, other		Platinum waste and scrap		Platinum coins	
	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)
2017:												
January–December	1,580	\$49,000	39,300	\$1,200,000	3,530	\$113,000	8,040	\$255,000	363,000	\$1,050,000	837	\$27,600
2018:												
March	97	2,980	4,770	150,000	181	6,750	1,140	38,200	3,980	117,000	66	2,450
April	14	382	4,380	134,000	307	9,600	981	31,600	2,400	73,200	18	588
May: ²												
Australia	--	--	--	--	--	--	--	--	61	1,030	11	344
Belgium	--	--	195	5,610	--	--	--	--	19	2,990	--	--
Canada	2	58	--	--	9	266	21	655	166	5,510	22	707
China	--	--	--	--	--	--	--	--	238	3,010	--	--
Colombia	--	--	--	--	17	501	7	91	13	185	--	--
France	--	--	--	--	--	--	9	312	31	1,220	--	--
Germany	--	--	672	20,100	134	4,270	248	9,290	544	20,400	14	471
Italy	--	--	464	13,700	--	--	(3)	10	70	2,290	--	--
Japan	--	--	--	--	1	65	(3)	3	240	7,680	--	--
Korea, Republic of	--	--	--	--	--	--	--	--	95	2,850	--	--
Mexico	(3)	3	--	--	--	--	--	--	141	4,850	--	--
Norway	--	--	124	3,600	--	--	5	82	--	--	--	--
Poland	--	--	--	--	--	--	--	--	76	2,540	--	--
Saudi Arabia	--	--	--	--	--	--	--	--	471	13,700	--	--
Singapore	--	--	--	--	18	803	15	558	126	3,970	--	--
South Africa	--	--	1,600	46,300	--	--	81	2,410	(3)	9	--	--
Sweden	--	--	--	--	--	--	--	--	83	2,380	--	--
Switzerland	--	--	32	883	156	4,730	31	1,000	--	--	--	--
Taiwan	--	--	--	--	--	--	--	--	58	1,780	--	--
United Kingdom	17	587	127	3,680	1	59	49	1,480	404	13,200	--	--
Other	(3)	8	--	--	1	32	1	29	123	3,590	8	251
Total	19	655	3,220	93,800	337	10,700	468	15,900	2,960	93,200	56	1,770
January–May	155	4,840	18,900	587,000	1,420	46,900	3,970	133,000	18,600	444,000	290	9,930

-- Zero.

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

²The 20 countries with the greatest total platinum imports are listed. All others are included in the "Other" category.

³Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 4
U.S. IMPORTS FOR CONSUMPTION OF PLATINUM-GROUP METALS, BY COUNTRY OR LOCALITY¹

(Kilograms metal content, unless otherwise specified)

Country or locality	Unwrought palladium		Palladium, other		Iridium ²		Osmium ²		Ruthenium ²		Rhodium ²	
	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)
2017:												
January–December	75,000	\$2,080,000	11,000	\$320,000	1,420	\$38,100	856	\$1,740	14,500	\$34,200	11,600	\$386,000
2018:												
March	5,440	186,000	956	37,500	107	3,310	--	--	2,670	19,700	1,700	95,500
April	4,820	155,000	886	34,500	65	1,820	--	--	1,560	9,070	1,320	81,500
May:												
Austria	--	--	91	3,010	--	--	--	--	--	--	--	--
Belgium	--	--	--	--	--	--	--	--	--	--	49	3,110
Canada	--	--	510	19,300	--	--	--	--	--	--	3	56
China	--	--	--	--	--	--	25	136	--	--	--	--
Czechia	53	1,780	--	--	--	--	--	--	--	--	--	--
Germany	1,220	37,600	(3)	4	49	1,890	--	--	182	1,570	202	14,500
Italy	198	6,290	(3)	13	--	--	--	--	--	--	22	1,440
Japan	35	115	--	--	(3)	8	--	--	12	31	17	1,220
Mexico	--	--	3	31	--	--	--	--	--	--	--	--
Norway	187	5,780	--	--	--	--	--	--	--	--	--	--
Russia	3,180	103,000	292	9,290	--	--	--	--	--	--	83	5,360
South Africa	2,370	79,400	--	--	57	2,070	--	--	1,060	6,870	853	54,600
Switzerland	(3)	7	7	220	--	--	--	--	--	--	--	--
Taiwan	--	--	5	18	--	--	--	--	--	--	--	--
United Kingdom	243	7,670	5	171	34	1,180	--	--	104	769	16	1,230
Total	7,480	242,000	911	32,000	141	5,150	25	136	1,360	9,240	1,250	81,400
January–May	31,500	1,060,000	4,320	160,000	435	14,000	25	136	8,080	53,000	6,460	374,000

-- Zero.

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

²Unwrought and other forms.

³Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 5
U.S. EXPORTS OF PLATINUM-GROUP METALS, BY COUNTRY OR LOCALITY¹

(Kilograms metal content, unless otherwise specified)

Country or locality	Platinum ²		Platinum waste and scrap		Palladium ²		Iridium, osmium and ruthenium ^{2,3}		Rhodium ²	
	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)
2017:										
January–December	16,700	\$494,000	195,000	\$679,000	52,300	\$888,000	939	\$11,700	844	\$30,700
2018:										
March	462	14,100	2,330	66,200	5,050	92,000	277	6,520	468	12,800
April	1,710	53,400	4,910	36,900	5,740	137,000	94	1,480	416	13,200
May: ⁴										
Australia	4	133	--	--	5	142	16	163	--	--
Belgium	17	623	456	14,200	19	557	--	--	4	197
Brazil	68	2,040	--	--	212	6,740	--	--	--	--
Canada	17	438	2	56	186	2,750	1	13	(5)	7
China	17	535	--	--	280	9,000	--	--	29	1,700
France	1	24	--	--	23	227	4	41	--	--
Germany	921	30,200	430	6,900	616	15,500	--	--	39	4,010
Hong Kong	4	132	--	--	30	907	16	172	--	--
Ireland	20	625	--	--	23	207	1	3	--	--
Israel	1	29	--	--	205	1,560	--	--	--	--
Italy	1	13	70	2,300	386	12,000	--	--	6	397
Japan	104	2,900	343	11,600	67	1,760	(5)	11	16	1,120
Korea, Republic of	2	29	--	--	74	1,670	--	--	--	--
Mexico	17	585	--	--	37	313	--	--	--	--
Singapore	73	2,630	--	--	1	16	--	--	--	--
South Africa	--	--	--	--	--	--	--	--	252	4,090
Switzerland	3	23	462	10,200	2,970	56,300	--	--	--	--
Taiwan	12	376	--	--	173	5,740	32	144	--	--
Thailand	2	55	--	--	23	198	--	--	--	--
United Kingdom	85	3,380	69	2,360	50	1,380	14	352	7	626
Other	46	1,260	--	--	28	577	6	61	--	--
Total	1,420	46,000	1,830	47,600	5,410	118,000	90	960	352	12,100
January–May	7,170	230,000	13,600	263,000	24,400	508,000	1,030	20,900	1,610	58,100

-- Zero.

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

²Unwrought and other forms.

³Gross weight.

⁴The 20 countries with the greatest total platinum-group metal exports are listed. All others are included in the "Other" category.

⁵Less than ½ unit.

Source: U.S. Census Bureau.