

# Mineral Industry Surveys

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## PLATINUM-GROUP METALS IN MARCH 2018

Imports for consumption of platinum-group metals (PGMs) in March 2018 were dominated by palladium, platinum waste and scrap, and platinum, which made up 30%, 19%, and 30%, respectively, of imports (tables 3, 4). Imports for consumption of PGMs, including waste and scrap, were 21,100 kilograms (kg)\* in March 2018, a 26% increase compared with February 2018 and a 64% decrease compared with March 2017. For March 2018, the leading import sources for PGMs into the United States were Germany, South Africa, and the United Kingdom (tables 3, 4).

### Prices

Compared with the prior month, the Engelhard average March prices decreased by 3% for palladium and platinum and increased slightly, by 4%, and by 3% for iridium, rhodium, and ruthenium, respectively. Compared with March 2017, the March 2018 average price of platinum was essentially unchanged, whereas prices of iridium, palladium, rhodium, and ruthenium increased by 32%, 27%, 101%, and 383%, respectively (fig. 1, 2, tables 1, 2). Rhodium's price increase was related to increased demand by industrial users in conjunction with a limited supply (Thompson Reuters Corp., 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

Glencore plc and Vale SA, both of which produce byproduct PGMs at their Sudbury Basin operations in Canada, received board approval to develop their Onaping Depth and Copper Cliff Deep projects, respectively, to replace declining production from current mines. Glencore's Nickel Rim South Mine was scheduled to cease operations in 2022, and operations at its Fraser Mine were projected to continue until 2024–25. First production at Onaping Depth was expected in 2023, and full production would be reached by 2025. Full production for

Vale's Copper Cliff Deep project was expected by 2020–21 (Tollinsky, 2018).

Cyprus-based Karo Resources Ltd. signed an agreement with the Government of Zimbabwe to develop a platinum project west of Harare in the Mhondoro-Ngezi platinum belt. The project would include a mine and refinery and was expected to employ 15,000 workers. Construction was set to start in July with first production expected in 2020. The company anticipated an annual production of about 43,500 kilograms of PGMs during the first 3 years (Dzirutwe, 2018).

### References Cited

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\*Corrections posted on July 20, 2018.

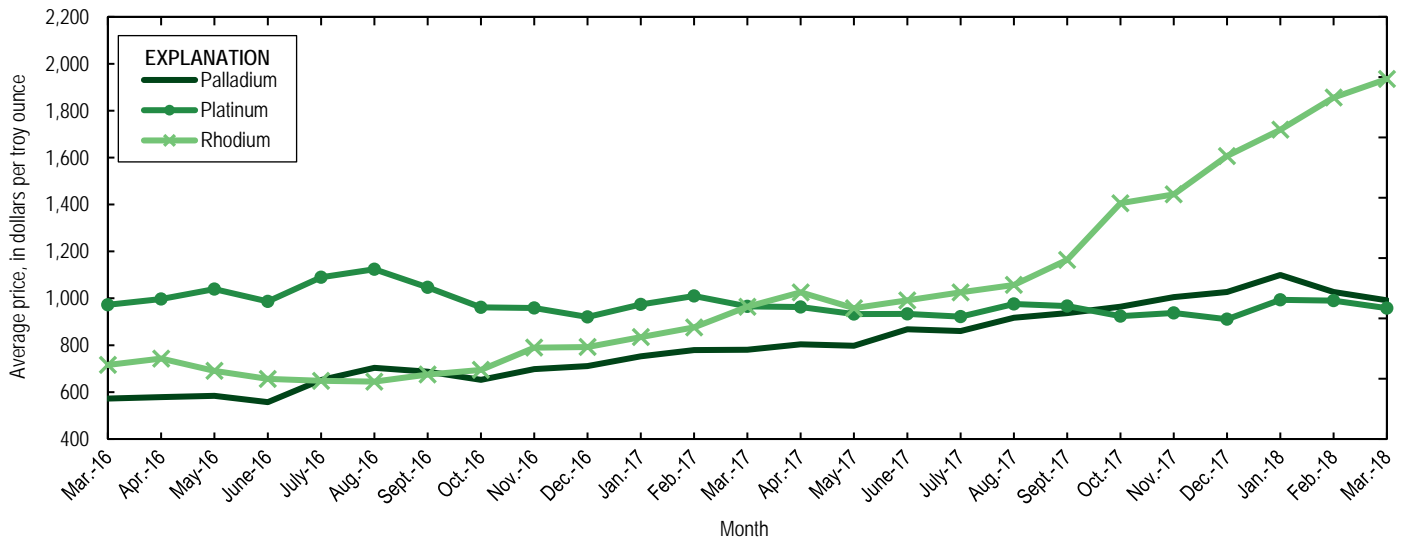


Figure 1. Engelhard unfabricated average monthly prices for palladium, platinum, and rhodium from March 2016 through March 2018. Source: Platts Metals Week.

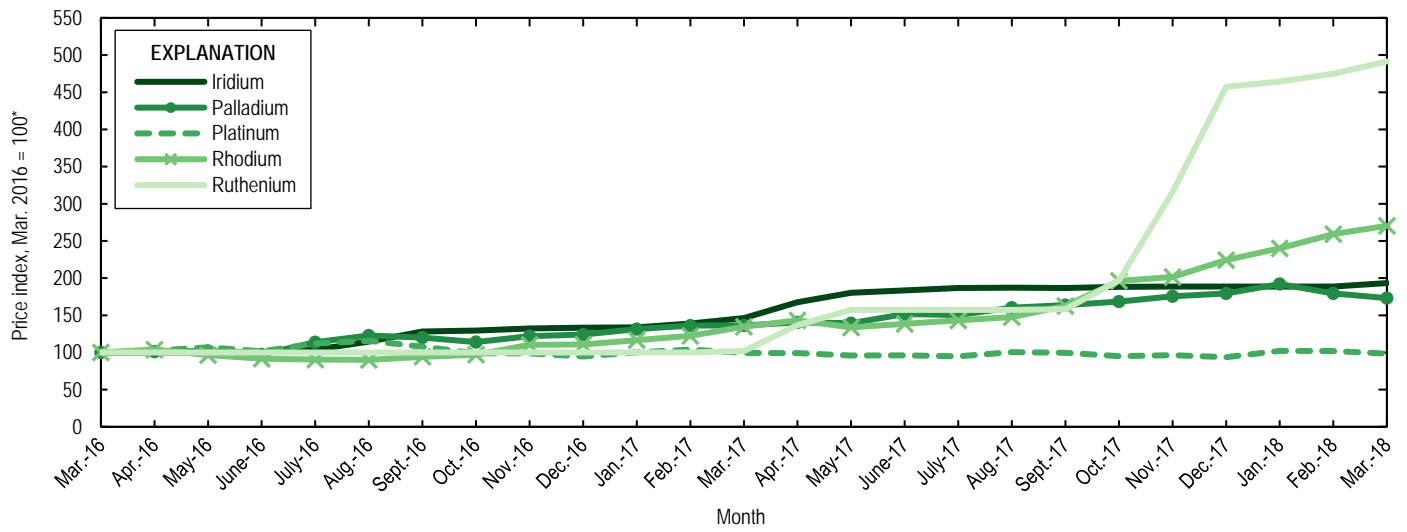


Figure 2. Indexed Engelhard unfabricated average monthly prices for iridium, palladium, platinum, rhodium, and ruthenium from March 2016 to March 2018. Prices are indexed to March 2016. Source: Platts Metals Week.

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

(Kilograms metal content, unless otherwise specified)

	2017	2018			
	January– December	January	February	March	January– March
<b>Mine production:</b> <sup>2</sup>					
Platinum	3,980	344 <sup>r</sup>	344 <sup>r</sup>	344	1,030
Palladium	13,600	1,200 <sup>r</sup>	1,200 <sup>r</sup>	1,200	3,590
Total	17,600	1,540 <sup>r</sup>	1,540 <sup>r</sup>	1,540	4,620
<b>Imports for consumption:</b> <sup>3</sup>					
Platinum	431,000	11,700	6,210	10,200	28,200
Palladium	86,000	7,170	8,200	6,390	21,800
Iridium	1,430	71	52	107	230
Osmium	856	--	--	--	--
Ruthenium	14,500	1,200	1,290	2,670	5,160
Rhodium	11,600	1,150	1,040	1,700	3,890
Total	546,000	21,300	16,800	21,100	59,200
<b>Exports:</b> <sup>3</sup>					
Platinum	197,000	4,830	3,320	2,790	10,900
Palladium	49,500	3,640	4,610	5,050	13,300
Iridium, osmium, ruthenium	939	299	273	277	848
Rhodium	844	213	160	468	841
Total	248,000	8,980	8,360	8,580	25,900
<b>Price, average (dollars per troy ounce):</b> <sup>4</sup>					
Palladium	874.30	1,099.45	1,026.84	991.33	1,039.21
Platinum	951.23	993.68	990.32	957.86	980.62
Iridium	908.35	990.00	990.00	1,015.00	998.33
Rhodium	1,112.59	1,718.86	1,856.05	1,935.24	1,836.72
Ruthenium	76.86	195.00	199.47	206.43	200.30

<sup>1</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>Source: Platts Metals Week.

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

(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. <sup>2</sup>	Jan. 3	Jan.–Mar. <sup>2</sup>
High:					
Price	1,062.00	1,035.00	990.00	1,725.00	195.00
Date	Dec. 28	Feb. 27	Aug. <sup>2</sup> and Oct.–Dec. <sup>2</sup>	Dec. <sup>2</sup>	Dec. <sup>2</sup>
Average	874.30	951.23	908.35	1,112.59	76.86
2018:					
February:					
Low:					
Price	974.00	968.00	990.00	1,840.00	195.00
Date	Feb. 9	Feb. 12	(2)	(2)	Feb. 1 and 2
High:					
Price	1,067.00	1,008.00	990.00	1,875.00	200.00
Date	Feb. 26 and 27	Feb. 16	(2)	Feb. 28	(2)
Average	1,026.84	990.32	990.00	1,856.05	199.47
March:					
Low:					
Price	975.00	939.00	1,000.00	1,865.00	200.00
Date	Mar. 29	Mar. 29	(2)	(2)	(2)
High:					
Price	1,016.00	974.00	1,030.00	2,050.00	215.00
Date	Mar. 1	Mar. 13	(2)	Mar. 28 and 29	(2)
Average	991.33	957.86	1,015.00	1,935.24	206.43
January–March:					
Low:					
Price	974.00	939.00	990.00	1,700.00	195.00
Date	Feb. 9	Jan. 2 and Mar. 29	Jan.–Feb. <sup>2</sup>	Jan. <sup>2</sup>	Jan. <sup>2</sup> , Feb. 1 and 2
High:					
Price	1,134.00	1,023.00	1,030.00	2,050.00	215.00
Date	Jan. 15	Jan. 25	Mar. <sup>2</sup>	Mar. 28 and 29	Mar. <sup>2</sup>
Average	1,039.21	980.62	998.33	1,836.72	200.30

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

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

Source: 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 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	8,030	\$255,000	378,000	\$1,050,000	837	\$27,600
2018:												
January	22	759	4,180	132,000	303	9,420	728	24,300	6,360	70,000	119	4,030
February	2	63	2,380	77,200	291	10,400	652	23,200	2,850	90,400	32	1,080
March: <sup>2</sup>												
Australia	--	--	--	--	--	--	(3)	3	88	911	21	701
Belgium	--	--	173	5,790	--	--	--	--	--	--	--	--
Brazil	--	--	--	--	--	--	--	--	32	779	--	--
Canada	4	118	--	--	--	--	26	861	614	8,380	4	177
China	--	--	--	--	--	--	--	--	200	4,720	--	--
Colombia	--	--	--	--	27	792	4	44	9	151	--	--
France	--	--	--	--	--	--	16	611	50	1,830	--	--
Germany	--	--	988	33,400	148	5,730	607	21,500	562	25,500	--	--
Italy	--	--	192	5,950	--	--	(3)	6	104	3,400	--	--
Japan	--	--	--	--	3	112	5	158	218	7,900	--	--
Korea, Republic of	--	--	140	4,480	--	--	--	--	--	--	--	--
Malaysia	--	--	--	--	--	--	--	--	56	1,230	--	--
Mexico	(3)	12	--	--	--	--	--	--	185	6,030	--	--
New Zealand	--	--	--	--	--	--	--	--	163	5,650	--	--
Norway	--	--	93	2,940	--	--	--	--	--	--	--	--
Russia	--	--	261	8,040	--	--	14	455	--	--	--	--
Singapore	--	--	--	--	1	45	20	611	1,330	41,800	--	--
South Africa	93	2,850	2,450	74,900	--	--	--	--	--	--	1	92
Switzerland	--	--	172	5,420	--	--	49	1,500	--	--	--	--
United Kingdom	--	--	301	9,220	--	--	377	11,700	263	5,310	35	1,290
Other	--	--	--	--	2	78	20	707	104	3,150	6	185
Total	97	2,980	4,770	150,000	181	6,750	1,140	38,200	3,980	117,000	66	2,450
January–March	121	3,800	11,300	359,000	775	26,500	2,520	85,700	13,200	277,000	216	7,570

-- Zero.

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

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

<sup>3</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	Unwrought palladium		Palladium, other		Iridium <sup>2</sup>		Osmium <sup>2</sup>		Ruthenium <sup>2</sup>		Rhodium <sup>2</sup>	
	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	1,430	\$38,200	856	\$1,740	14,500	\$34,200	11,600	\$386,000
2018:												
January	6,440	226,000	732	28,900	71	2,170	--	--	1,200	6,190	1,150	59,000
February	7,370	250,000	834	27,500	52	1,580	--	--	1,290	8,800	1,040	56,700
March:												
Belgium	105	3,470	--	--	--	--	--	--	(3)	4	109	7,000
Canada	--	--	604	26,100	--	--	--	--	--	--	1	22
Czechia	26	818	(3)	4	--	--	--	--	20	49	--	--
Germany	1,690	60,700	4	49	--	--	--	--	361	2,380	238	15,900
Italy	263	8,650	3	112	1	49	--	--	--	--	78	4,700
Japan	60	943	2	57	8	270	--	--	--	--	--	--
Mexico	--	--	40	1,500	--	--	--	--	--	--	--	--
Norway	124	4,140	--	--	--	--	--	--	--	--	26	1,810
Russia	928	30,200	294	9,330	--	--	--	--	--	--	87	5,040
South Africa	1,840	63,200	--	--	30	927	--	--	1,090	9,370	697	32,500
Switzerland	--	--	2	65	--	--	--	--	--	--	--	--
Taiwan	68	2,210	--	--	--	--	--	--	40	247	--	--
United Kingdom	342	11,600	7	267	68	2,060	--	--	1,160	7,610	463	28,500
Other <sup>4</sup>	--	--	(3)	5	(3)	6	--	--	--	--	--	--
Total	5,440	186,000	956	37,500	107	3,310	--	--	2,670	19,700	1,700	95,500
January–March	19,200	663,000	2,520	93,900	230	7,060	--	--	5,160	34,600	3,890	211,000

-- 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>Less than ½ unit.

<sup>4</sup>Includes countries with total exports of platinum-group metals of less than 1 kilogram.

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	Platinum <sup>2</sup>		Platinum waste and scrap		Palladium <sup>2</sup>		Iridium, osmium and ruthenium <sup>2,3</sup>		Rhodium <sup>2</sup>	
	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)
2017:										
January–December	16,700	\$494,000	180,000	\$676,000	49,500	\$849,000	939	\$11,700	844	\$30,700
2018:										
January	1,750	55,900	3,080	80,500	3,640	83,900	299	2,420	213	10,200
February	1,830	60,200	1,490	31,500	4,610	77,400	273	9,570	160	9,780
March: <sup>4</sup>										
Australia	10	308	--	--	7	191	25	201	1	12
Belgium	--	--	730	23,100	1	26	--	--	(5)	5
Canada	17	526	1	20	80	1,360	--	--	(5)	13
China	8	214	--	--	304	10,100	1	13	33	1,730
Costa Rica	16	192	--	--	6	122	--	--	--	--
France	1	45	--	--	18	145	--	--	--	--
Germany	233	7,550	137	4,420	573	10,700	7	45	1	35
Hong Kong	9	294	--	--	95	2,740	17	191	--	--
India	4	72	20	620	11	330	19	191	1	27
Ireland	16	555	--	--	24	222	1	3	--	--
Israel	1	19	--	--	120	898	--	--	--	--
Italy	1	24	276	9,690	18	442	--	--	--	--
Japan	32	743	383	12,300	291	8,630	187	5,540	40	2,600
Korea, Republic of	1	34	--	--	77	713	--	--	15	923
Mexico	22	676	--	--	38	334	3	22	(5)	10
South Africa	--	--	16	544	--	--	--	--	373	7,210
Switzerland	12	359	677	12,900	3,070	48,300	--	--	--	--
Taiwan	15	492	--	--	178	3,810	7	43	--	--
Thailand	5	152	--	--	47	538	--	--	(5)	37
United Kingdom	37	1,010	83	2,500	75	2,250	4	99	4	217
Other	22	828	4	128	12	168	6	169	--	--
Total	462	14,100	2,330	66,200	5,050	92,000	277	6,520	468	12,800
January–March	4,040	130,000	6,900	178,000	13,300	253,000	848	18,500	841	32,800

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

<sup>5</sup>Less than ½ unit.

Source: U.S. Census Bureau.