

# Mineral Industry Surveys

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## PLATINUM-GROUP METALS IN FEBRUARY 2018

As of January 2018, this report now includes monthly estimates of U.S. platinum-group-metals (PGMs) production from Sibanye-Stillwater's East Boulder and Stillwater mines based on quarterly company reports (table 1). Annual data is also estimated for 2017 as the reported annual production figures do not include production from the mines prior to Sibanye Gold Ltd.'s acquisition of Stillwater Mining Company in May 2017.

Imports for consumption of PGMs in February 2018 were dominated by palladium, platinum waste and scrap, and platinum (excluding waste and scrap) which made up 49%, 17%, and 20%, respectively, of imports (fig. 1, tables 3, 4). Imports for consumption of PGMs, including waste and scrap, were 16,800 metric tons (t) in February 2018, a 21% decrease compared with January 2018 and a 7% increase compared with February 2017. For February 2018, the leading import sources for PGMs into the United States were Germany, Russia, and South Africa (tables 3, 4).

## Prices

Compared with the prior month, the Engelhard average February prices decreased by 7% for palladium, were essentially unchanged for platinum and iridium, and increased by 8% for rhodium and slightly for ruthenium. Compared with February 2017, the February 2018 average price of platinum decreased slightly, whereas those of palladium, iridium, rhodium, and ruthenium increased by 32%, 36%, 112%, and 375%, respectively (fig. 2, tables 1, 2). The recent increases in the prices of rhodium and ruthenium are more readily apparent as a price index (fig. 3). Rhodium's price increase largely stems from increased demand by industrial users in conjunction with a limited supply (Reuters, 2017). On the other hand, ruthenium's price increase is the result of purchases of the metal by speculative and industrial buyers (Jonson, 2017).

## Industry News

On February 7, PJSC MMC Norilsk Nickel and Russian Platinum LLC announced that they had signed a deal to develop three PGMs ore deposits in Taimyr in a 50-50 joint venture. They aim to produce 70 to 100 t of PGMs, 50,000 t of nickel, and 70,000 t of copper per year. The new combined reserves of the two companies are 4,300 t of PGMs and 6.3 million t of nickel and copper. A feasibility study is scheduled for the end of 2019 with the project set to begin in 2020. The first saleable material is expected in 2023 (Faye, 2018; Interfax, 2018; Zhukov, 2018).

## References Cited

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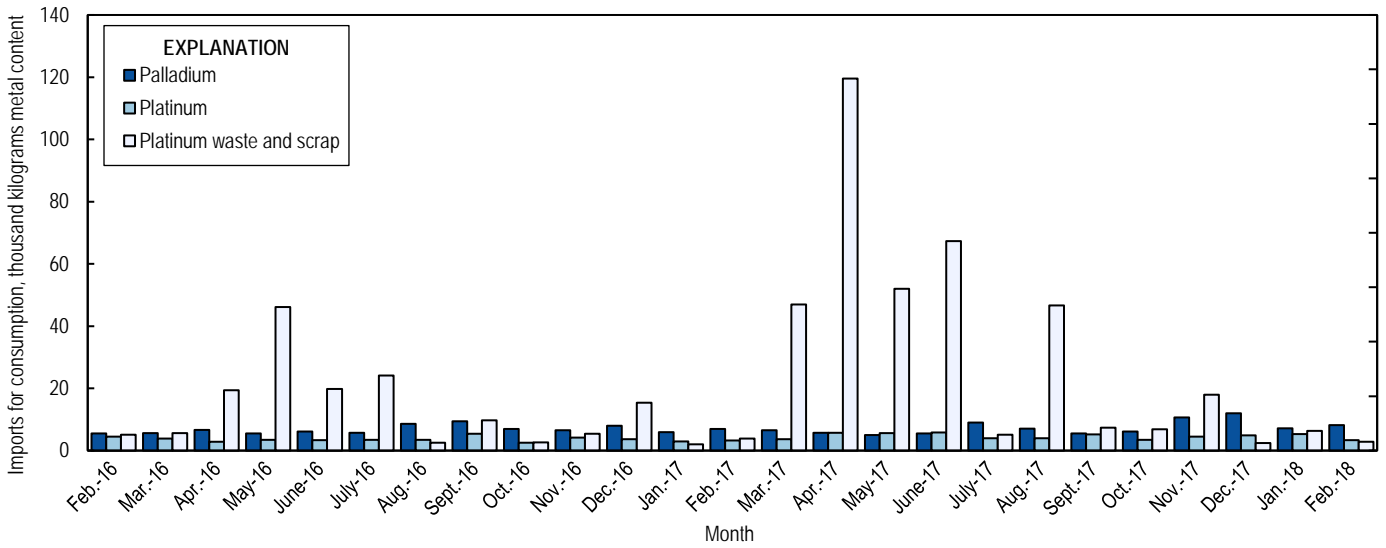


Figure 1. Palladium, platinum, and platinum waste and scrap imports for consumption from February 2016 through February 2018. Source: U.S. Census Bureau.

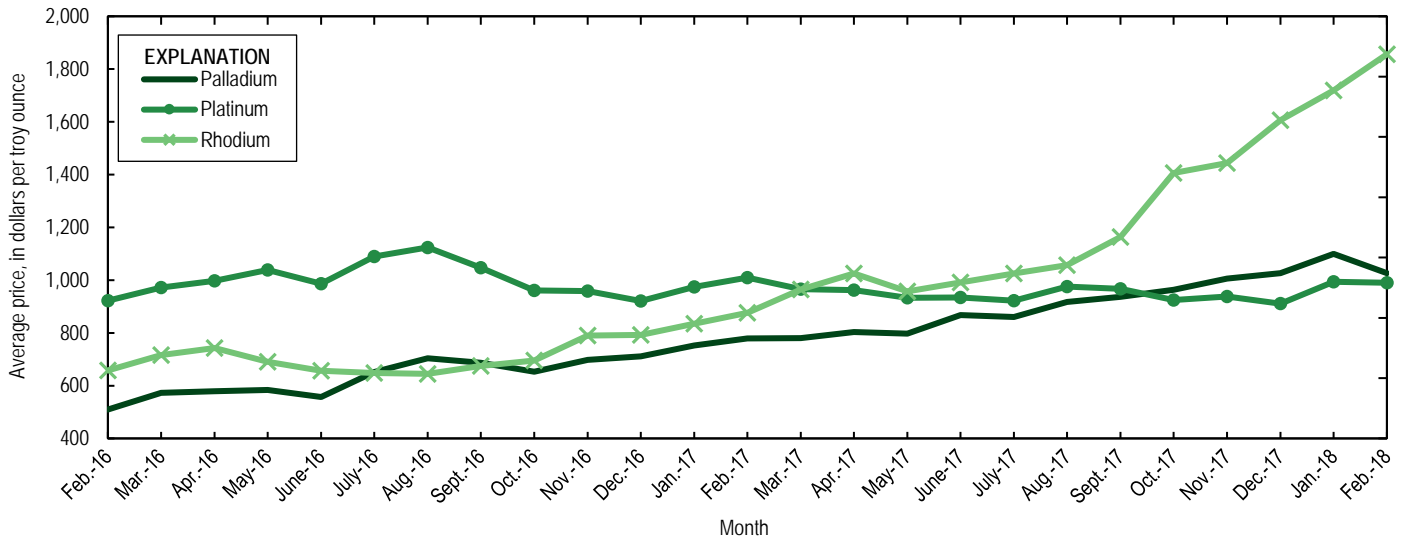


Figure 2. Engelhard unfabricated average monthly prices for platinum, palladium, and rhodium from February 2016 through February 2018. Source: Platts Metals Week.

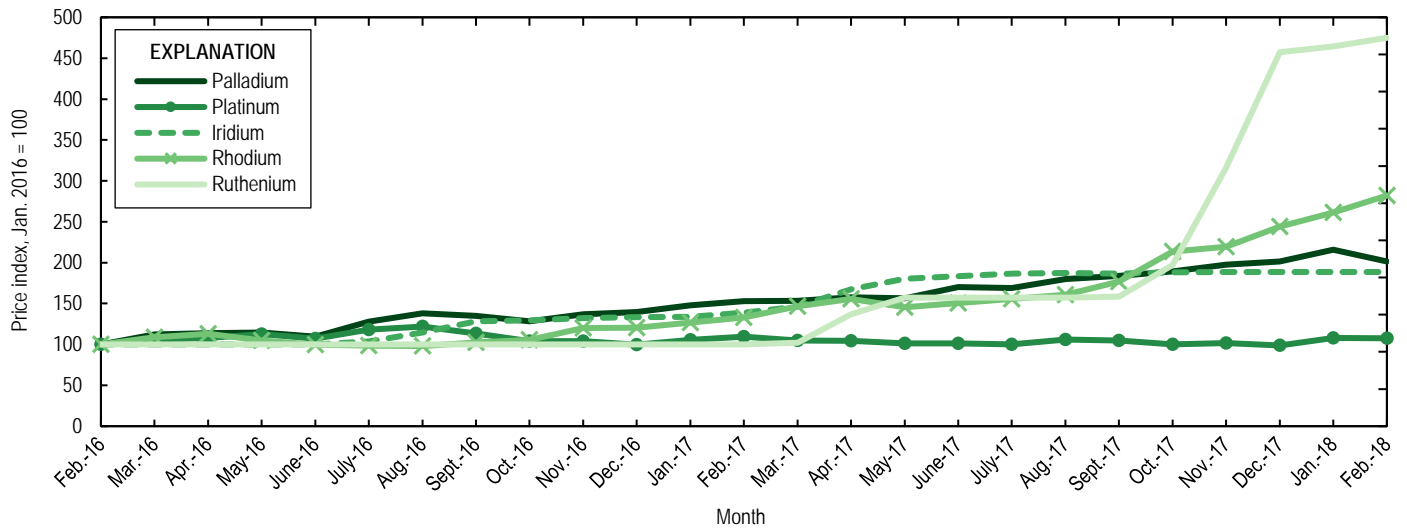


Figure 3. Indexed Engelhard unfabricated average monthly prices for palladium, platinum, iridium, rhodium, and ruthenium from February 2016 to February 2018. Prices are indexed to February 2016. Source: Platts Metals Week.

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

(Kilograms metal content, unless otherwise specified)

	2017		2018		
	December	January– December	January	February	January– February
<b>Mine production:<sup>2</sup></b>					
Platinum	331	3,980	331	331	662
Palladium	1,130	13,600	1,130	1,130	2,260
Total	1,460	17,600	1,460	1,460	2,930
<b>Imports for consumption:<sup>3</sup></b>					
Platinum	7,430	431,000	11,700	6,210	17,900
Palladium	12,000	86,000	7,170	8,200	15,400
Iridium	72	1,430	71	52	123
Osmium	--	856	--	--	--
Ruthenium	1,470	14,500	1,200	1,290	2,490
Rhodium	963	11,600	1,150	1,040	2,190
Total	21,900	546,000	21,300	16,800	38,100
<b>Exports:<sup>3</sup></b>					
Platinum	4,090	197,000	4,830	3,320	8,150
Palladium	4,960	49,500	3,640	4,610	8,250
Iridium, osmium, ruthenium	213	939	299	273	572
Rhodium	176	844	213	160	373
Total	9,440	248,000	8,980	8,360	17,300
<b>Price, average (dollars per troy ounce):<sup>4</sup></b>					
Palladium	1,026.74	874.30	1,099.45	1,026.84	1,063.15
Platinum	910.68	951.23	993.68	990.32	992.00
Iridium	990.00	908.35	990.00	990.00	990.00
Rhodium	1,606.58	1,112.59	1,718.86	1,856.05	1,787.46
Ruthenium	192.11	76.86	195.00	199.47	197.24

-- 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:					
January:					
Low:					
Price	1,056.00	939.00	990.00	1,700.00	195.00
Date	Jan. 31	Jan. 2	(2)	(2)	(2)
High:					
Price	1,134.00	1,023.00	990.00	1,825.00	195.00
Date	Jan. 15	Jan. 25	(2)	Jan. 31	(2)
Average	1,099.45	993.68	990.00	1,718.86	195.00
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
January–February:					
Low:					
Price	974.00	939.00	990.00	1,700.00	195.00
Date	Feb. 9	Jan. 2	(2)	(2)	(2)
High:					
Price	1,134.00	1,023.00	990.00	1,875.00	200.00
Date	Jan. 15	Jan. 25	(2)	Feb. 28	(2)
Average	1,063.15	992.00	990.00	1,787.46	197.24

<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:												
December	4	\$130	3,980	\$118,000	163	\$4,910	692	\$22,300	2,470	\$83,900	116	\$3,460
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: <sup>2</sup>												
Australia	--	--	--	--	--	--	--	--	27	622	21	731
Belgium	--	--	118	3,840	--	--	--	--	--	--	--	--
Brazil	--	--	--	--	--	--	--	--	31	740	--	--
Canada	1	46	--	--	(3)	8	30	991	340	9,390	11	352
China	--	--	--	--	--	--	--	--	180	4,180	--	--
Colombia	--	--	--	--	15	425	--	--	12	124	--	--
France	--	--	15	507	--	--	19	589	98	1,550	--	--
Germany	--	--	851	29,000	170	6,530	361	13,400	342	14,800	--	--
Italy	--	--	365	12,100	--	--	3	50	118	3,850	--	--
Japan	--	--	--	--	102	3,220	(3)	8	208	7,940	--	--
Malaysia	--	--	--	--	--	--	--	--	20	449	--	--
Mexico	1	11	--	--	--	--	(3)	17	45	1,510	--	--
New Zealand	--	--	--	--	--	--	--	--	97	3,370	--	--
Norway	--	--	187	5,890	--	--	--	--	--	--	--	--
Singapore	--	--	--	--	(3)	7	7	251	597	19,600	--	--
Slovakia	--	--	--	--	--	--	--	--	172	5,370	--	--
South Africa	--	--	840	25,700	--	--	--	--	--	--	--	--
Switzerland	--	--	--	--	--	--	131	4,210	--	--	--	--
Taiwan	--	--	--	--	--	--	--	--	29	891	--	--
United Kingdom	--	--	6	192	(3)	39	73	2,630	473	14,400	--	--
Other	(3)	5	--	--	4	132	28	1,020	60	1,650	--	--
Total	2	63	2,380	77,200	291	10,400	652	23,200	2,850	90,400	32	1,080
January–February	24	822	6,570	209,000	594	19,800	1,380	47,500	9,210	160,000	150	5,120

-- 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:												
December	9,960	\$318,000	2,030	\$67,100	72	\$2,210	--	--	1,470	\$6,840	963	\$45,100
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:												
Belgium	54	1,910	--	--	--	--	--	--	--	--	50	2,830
Canada	--	--	362	13,700	--	--	--	--	--	--	4	111
Czechia	79	2,350	--	--	--	--	--	--	--	--	--	--
Germany	1,680	60,800	1	10	2	41	--	--	558	4,540	177	11,300
Italy	210	6,940	2	62	--	--	--	--	--	--	60	3,460
Netherlands	--	--	--	--	1	31	--	--	--	--	--	--
Norway	187	6,000	--	--	--	--	--	--	--	--	12	728
Russia	3,090	105,000	289	7,820	10	299	--	--	--	--	80	4,260
South Africa	1,850	60,300	--	--	15	449	--	--	718	4,170	654	33,800
Switzerland	31	544	174	5,790	--	--	--	--	--	--	--	--
United Kingdom	191	6,100	5	165	24	758	--	--	15	96	3	199
Other <sup>4</sup>	--	--	(3)	3	--	--	--	--	--	--	--	--
Total	7,370	250,000	834	27,500	52	1,580	--	--	1,290	8,800	1,040	56,700
January–February	13,800	477,000	1,570	56,400	123	3,750	--	--	2,490	15,000	2,190	116,000

-- 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:										
December	1,260	\$37,200	2,830	\$78,900	4,960	\$82,600	213	\$2,330	176	\$8,050
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: <sup>4</sup>										
Belarus	--	--	--	--	17	198	--	--	--	--
Belgium	--	--	92	2,070	--	--	--	--	--	--
Canada	12	456	118	124	93	1,580	1	6	(5)	5
China	24	378	--	--	358	10,300	(5)	9	34	1,530
Costa Rica	17	221	--	--	--	--	--	--	--	--
France	4	72	136	20	23	223	(5)	3	--	--
Germany	1,020	34,900	124	4,300	1,620	28,200	3	17	82	5,300
Hong Kong	1	41	--	--	43	1,390	13	119	(5)	7
India	78	2,450	10	310	19	522	5	55	1	41
Ireland	20	646	--	--	18	151	--	--	--	--
Israel	1	20	--	--	105	875	--	--	--	--
Italy	--	--	340	10,900	25	90	2	63	--	--
Japan	462	14,800	267	9,210	29	587	232	9,050	39	2,310
Korea, Republic of	98	3,180	--	--	53	562	--	--	(5)	3
Mexico	16	532	--	--	6	126	5	37	--	--
Russia	20	781	--	--	--	--	--	--	--	--
Spain	--	--	136	20	1	11	--	--	--	--
Switzerland	2	59	254	4,010	2,030	26,800	--	--	--	--
Taiwan	9	292	--	--	106	4,220	4	31	(5)	8
United Kingdom	23	687	7	267	30	892	3	43	4	571
Other	21	657	5	184	30	671	5	134	--	--
Total	1,830	60,200	1,490	31,500	4,610	77,400	273	9,570	160	9,780
January–February	3,580	116,000	4,570	112,000	8,250	161,000	572	12,000	373	20,000

-- 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>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.