

# Mineral Industry Surveys

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## PLATINUM-GROUP METALS IN DECEMBER 2018

Imports for consumption of platinum-group metals (PGMs), including waste and scrap, were 18,900 kilograms (kg) in December 2018, representing decreases of 4% and 14% compared with imports in November 2018 and December 2017, respectively. The leading import sources for PGMs into the United States were, in descending order, South Africa, Russia, and the United Kingdom (tables 3, 4). For January through December 2018, imports of palladium, platinum, and PGM scrap were 93,300 kg, 58,000 kg, and 40,800 kg, increases of 8%, 9%, and a decrease of 89%, respectively, compared with imports in the similar period in 2017.

### Prices

Compared with the prior month, the Engelhard average December prices increased by 9% for palladium, increased slightly for rhodium, remained essentially unchanged for iridium and ruthenium, and decreased by 7% for platinum. Compared with December 2017, the December 2018 average prices increased by 58%, 50%, 41%, and 22% for rhodium, iridium, ruthenium, and palladium, respectively. The price of platinum decreased by 13% (figs. 1, 2; tables 1, 2).

### Industry News

Sibanye-Stillwater produced 4,960 kg of platinum and palladium from its U.S. mines in the fourth quarter of 2018, a 15% increase from that in the third quarter. Production included 3,838 kg of palladium and 1,122 kg of platinum from the East Boulder and Stillwater Mines in Montana. Sibanye-Stillwater also recovered (defined as recycling sold plus tolled returned) 4,539 kg of palladium, platinum, and rhodium from scrap catalytic converters at its metallurgical complex in Columbus, MT, during the fourth quarter of 2018. This represented a 13% decrease compared with that in the previous quarter resulting from work on one of the furnaces (Sibanye Gold Ltd., 2019, p. 3, 37).

On December 13, North American Palladium Ltd. announced it had entered into a contract with mining engineering firm Redpath Canada Ltd. for a major expansion project for the Lac

des Iles Mine, located northwest of Thunder Bay, Ontario. Once complete, this project would double ore production to 12,000 metric tons per day. The mine development was predicted to take 2 years to complete (North American Palladium Ltd., 2018).

### Government and Legislation

On December 20, the U.S. Department of the Interior's Bureau of Land Management (BLM) announced its intent to renew hardrock mineral leases in the Superior National Forest, which includes a copper-gold-nickel-PGM-silver deposit in the Duluth Complex. BLM opened a 30-day public comment period which ended on January 22, 2019 (Bureau of Land Management, 2018).

### References Cited

- Bureau of Land Management, 2018, Bureau of Land Management proposes to renew hardrock mineral leases with updated stipulations in the Superior National Forest: Washington, DC, Bureau of Land Management press release, December 20. (Accessed March 11, 2019, at <https://www.blm.gov/press-release/bureau-land-management-proposes-renew-hardrock-mineral-leases-updated-stipulations>.)
- North American Palladium Ltd., 2018, North American Palladium signs major mine development contract; Strategic review process concludes: Toronto, Ontario, Canada, North American Palladium Ltd. press release, December 13. (Accessed March 11, 2019, at <https://www.nap.com/investors/news-releases/news-releases-details/2018/North-American-Palladium-Signs-Major-Mine-Development-Contract-Strategic-Review-Process-Concludes/default.aspx>.)
- Sibanye Gold Ltd., 2019, Operating and financial results for the six months and year ended 31 December 2018: Johannesburg, South Africa, Sibanye Gold Ltd., February 21, 40 p. (Accessed March 11, 2019, at [https://thevault.exchange/?get\\_group\\_doc=245/1550722223-sibanye-results-booklet-H2-YE-2018-21feb2019.pdf](https://thevault.exchange/?get_group_doc=245/1550722223-sibanye-results-booklet-H2-YE-2018-21feb2019.pdf).)

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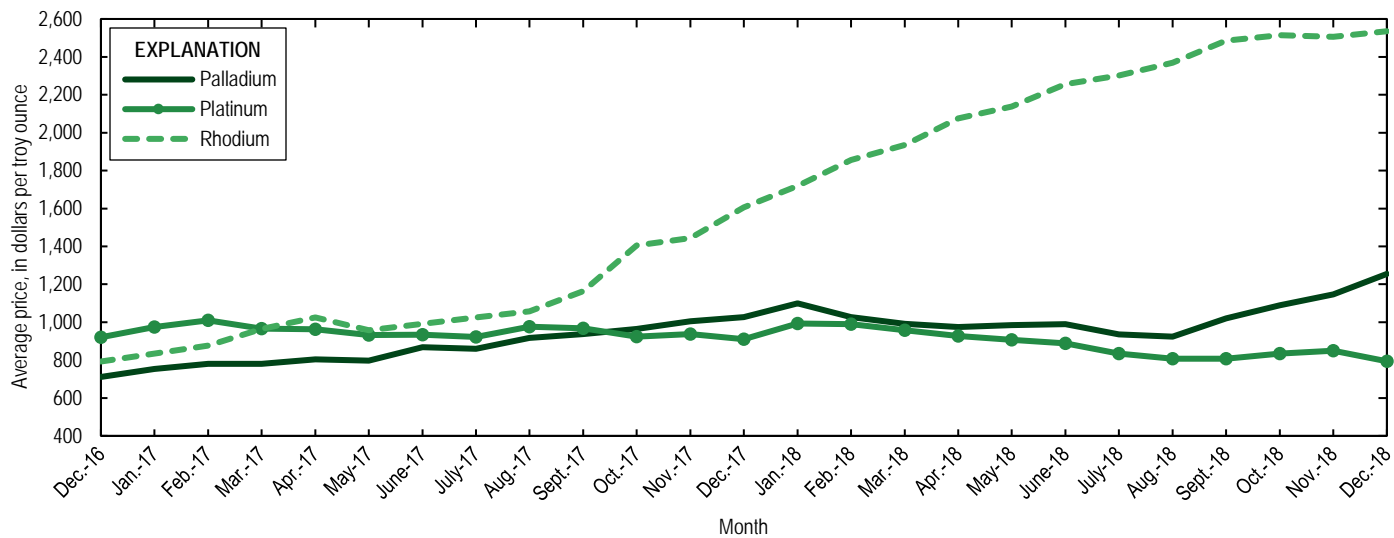


Figure 1. Engelhard unfabricated average monthly prices for palladium, platinum, and rhodium from December 2016 through December 2018. Source: Platts Metals Week.

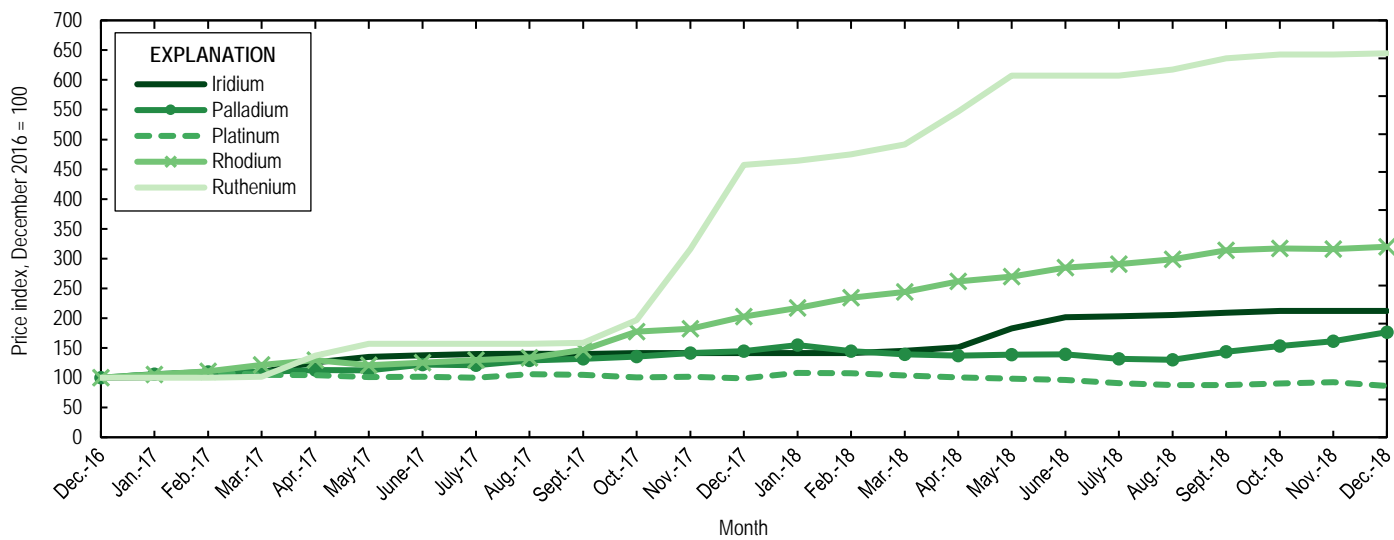


Figure 2. Indexed Engelhard unfabricated average monthly prices for iridium, palladium, platinum, rhodium, and ruthenium from December 2016 through December 2018. Prices are indexed to December 2016. Source: Platts Metals Week.

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

(Kilograms metal content, unless otherwise specified)

	2017		2018		
	January– December	October	November	December	January– December
<b>Mine production:<sup>2</sup></b>					
Platinum	3,980	374 <sup>r</sup>	374 <sup>r</sup>	374	4,160
Palladium	13,600	1,280 <sup>r</sup>	1,280 <sup>r</sup>	1,280	14,300
Total	17,600	1,650 <sup>r</sup>	1,650 <sup>r</sup>	1,650	18,400
<b>Imports for consumption:<sup>3</sup></b>					
Platinum	416,000 <sup>4</sup>	8,600	7,360	7,840	98,900
Palladium	86,000	8,950	9,670	7,870	93,300
Iridium	1,420	96	78	92	1,020
Osmium	856	--	--	--	25
Ruthenium	14,500	1,910	1,270	1,820	17,900
Rhodium	11,600	1,100	1,270	1,240	14,500
Total	530,000	20,700	19,600	18,900	226,000
<b>Exports:<sup>3</sup></b>					
Platinum	211,000	6,100	5,670	2,780	52,800
Palladium	52,300	1,880	2,410	2,790	51,700
Iridium, osmium, ruthenium	939	209	261	57	2,600
Rhodium	844	571	46	217	3,650
Total	266,000	8,770	8,380	5,840	111,000
<b>Price, average (dollars per troy ounce):<sup>5</sup></b>					
Palladium	874.30	1,089.52	1,146.45	1,254.79	1,036.43
Platinum	951.23	833.57	849.50	793.68	882.66
Iridium	908.35	1,485.00	1,485.00	1,485.00	1,293.27
Rhodium	1,112.59	2,514.35	2,505.75	2,535.26	2,224.47
Ruthenium	76.86	270.00	270.00	270.79	244.41

<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>All or part of these data have been referred to the U.S. Census Bureau for verification.

<sup>5</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:					
November:					
Low:					
Price	1,099.00	808.00	1,485.00	2,250.00	270.00
Date	Nov. 1	Nov. 30	(2)	Nov. 7	(2)
High:					
Price	1,212.00	877.00	1,485.00	2,600.00	270.00
Date	Nov. 30	Nov. 6	(2)	Nov. 28 and 29	(2)
Average	1,146.45	849.50	1,485.00	2,505.75	270.00
December:					
Low:					
Price	1,215.00	785.00	1,485.00	2,460.00	270.00
Date	7	17	(2)	(2)	(2)
High:					
Price	1,277.00	807.00	1,485.00	2,600.00	275.00
Date	20	3, 4	(2)	(2)	(2)
Average	1,254.79	793.68	1,485.00	2,535.26	270.79
January–December:					
Low:					
Price	854.00	775.00	990.00	1,700.00	195.00
Date	Aug. 15	Sep. 4	Jan.–Feb. <sup>2</sup>	Jan. <sup>2</sup>	Jan. <sup>2</sup> , Feb. 1 and 2
High:					
Price	1,277.00	1,023.00	1,485.00	2,600.00	275.00
Date	Dec. 20	Jan. 25	Sep.–Dec. <sup>2</sup>	Nov.–Dec.2	Sep.–Nov. <sup>2</sup>
Average	1,036.43	882.66	1,293.27	2,224.47	244.41

<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	8,040	\$255,000	363,000 <sup>2</sup>	\$1,050,000 <sup>2</sup>	837	\$27,600
2018:												
October	29	811	3,270	87,400	396	14,300	1,140	32,800	3,620	73,000	149	4,580
November	16	492	3,310	90,200	195	5,970	945	28,700	2,790	83,100	103	3,070
December: <sup>3</sup>												
Australia	--	--	--	--	--	--	--	--	44	930	23	644
Belgium	--	--	100	2,740	--	--	--	--	8	303	--	--
Brazil	--	--	--	--	--	--	--	--	169	6,000	--	--
Canada	31	895	--	--	--	--	34	986	226	8,920	93	2,570
Colombia	1	24	--	--	34	891	--	--	58	1,510	--	--
Croatia	--	--	--	--	--	--	--	--	92	2,540	--	--
France	(4)	2	--	--	--	--	33	521	200	5,190	--	--
Germany	1	31	117	3,140	67	2,020	234	7,790	232	9,490	2	41
Italy	--	--	65	1,640	--	--	--	--	113	3,800	--	--
Japan	--	--	--	--	--	--	4	72	167	6,390	--	--
Mexico	--	--	--	--	--	--	--	--	222	7,390	--	--
Netherlands	--	--	--	--	--	--	--	--	98	2,600	--	--
Norway	--	--	78	2,080	--	--	2	58	--	--	--	--
Qatar	--	--	--	--	--	--	--	--	29	728	--	--
Russia	--	--	350	9,510	--	--	--	--	--	--	6	99
Singapore	--	--	--	--	73	3,430	13	469	1,020	32,300	--	--
South Africa	--	--	2,110	56,200	--	--	--	--	--	--	--	--
Switzerland	--	--	--	--	(4)	4	64	1,700	--	--	--	--
Taiwan	--	--	--	--	--	--	--	--	41	1,630	--	--
United Kingdom	15	509	6	163	--	--	337	8,650	1,110	25,300	46	1,050
Other	--	--	--	--	(4)	16	(4)	17	85	2,140	(4)	8
Total	49	1,460	2,820	75,500	174	6,350	721	20,300	3,910	117,000	171	4,400
January–December	1,040	28,100	43,000	1,240,000	3,090	101,000	9,780	304,000	40,800	1,070,000	1,160	34,900

-- Zero.

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

<sup>2</sup>All or part of these data have been referred to the U.S. Census Bureau for verification.

<sup>3</sup>The 20 countries and (or) localities with the greatest total platinum imports are listed. All others are included in the "Other" category.

<sup>4</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	1,420	\$38,100	856	\$1,740	14,500	\$34,200	11,600	\$386,000
2018:												
October	8,350	281,000	603	22,800	96	4,450	--	--	1,910	16,200	1,100	88,000
November:	8,300	290,000	1,370	49,500	78	3,370	--	--	1,270	10,900	1,270	99,500
December:												
Belgium	30	1,100	--	--	--	--	--	--	--	--	55	5,520
Canada	--	--	716	24,500	--	--	--	--	--	--	--	--
Germany	352	11,300	--	--	23	736	--	--	667	6,360	283	24,300
Italy	194	7,760	5	116	--	--	--	--	--	--	32	2,650
Japan	253	10,100	--	--	4	118	--	--	--	--	25	2,090
Norway	187	7,020	--	--	--	--	--	--	--	--	--	--
Russia	3,030	116,000	205	8,130	--	--	--	--	155	1,350	135	10,900
South Africa	2,870	99,300	--	--	58	2,780	--	--	340	2,790	702	57,300
Switzerland	1	37	4	121	--	--	--	--	--	--	--	--
United Kingdom	24	947	1	67	7	238	--	--	661	5,770	6	597
Total	6,940	253,000	931	33,000	92	3,870	--	--	1,820	16,300	1,240	103,000
January–December	81,500	2,710,000	11,800	414,000	1,020	38,000	25	136	17,900	133,000	14,500	987,000

-- 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.

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	195,000 <sup>4</sup>	\$679,000 <sup>4</sup>	52,300	\$888,000	939	\$11,700	844	\$30,700
2018:										
October	1,880	61,200	4,220	68,200	1,880	40,400	209	3,490	571	16,700
November	1,080	31,500	4,590	98,700	2,410	56,500	261	2,730	46	3,920
December: <sup>5</sup>										
Australia	6	211	--	--	3	94	18	228	--	--
Belgium	33	876	65	1,780	65	682	--	--	10	390
Brazil	7	255	1	15	160	4,050	1	13	(6)	12
Canada	8	148	--	--	50	669	6	168	1	89
China	27	442	--	--	1	36	--	--	--	--
Costa Rica	1	34	--	--	32	281	1	9	--	--
France	465	12,900	141	4,240	459	15,700	1	7	--	--
Germany	3	72	--	--	25	705	2	22	--	--
Hong Kong	14	670	--	--	1	15	(6)	3	--	--
India	22	554	--	--	14	127	--	--	--	--
Ireland	38	978	209	7,960	108	418	3	63	--	--
Italy	600	17,100	300	10,800	33	1,080	7	63	14	1,550
Japan	1	36	--	--	34	735	--	--	--	--
Korea, Republic of	7	228	--	--	--	--	--	--	--	--
Mexico	13	326	--	--	5	132	--	--	--	--
South Africa	--	--	--	--	--	--	--	--	185	3,900
Switzerland	2	25	614	13,300	1,640	17,500	1	15	--	--
Taiwan	4	114	--	--	6	38	15	115	--	--
Thailand	3	74	--	--	43	363	--	--	(6)	11
United Kingdom	31	787	154	6,050	93	3,380	1	5	7	537
Other	11	286	--	--	16	270	2	40	--	--
Total	1,300	36,100	1,490	44,200	2,790	46,200	57	750	217	6,490
January–December	18,100	545,000	34,800	706,000	51,700	1,040,000	2,600	42,600	3,650	130,000

-- 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>All or part of these data have been referred to the U.S. Census Bureau for verification.

<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.