

Mineral Industry Surveys

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PLATINUM-GROUP METALS IN APRIL 2004

A key factor in the demand for platinum and palladium is their use for auto catalysts. The choice between the two usually depends on the relative price of the metals, but while price is important, the two metals are not interchangeable. A switch from one to the other cannot readily be made in the short term given the long lead time between design and certification of an emissions system and the launch of the vehicle model to which it is fitted. Technical factors, which preclude the use of palladium in auto catalysts for diesel engines, also play a role in the choice. The increased market penetration of diesel cars in recent years has therefore been a benefit to platinum demand. On April 2, 2004, n.v. Umicore s.a., announced the introduction of technology that reportedly will enable the use of palladium as a catalyst in diesel emission systems for passenger cars. The new diesel oxidation catalyst technology may enable the replacement of about 25 % of current platinum loadings by palladium, significantly lowering demand for platinum. The actual level of substitution would require about 1.5 times the amount of palladium to achieve the same results of platinum. The new palladium auto catalysts are still in the early stages of development, with results not expected for a number of years

and will not have an immediate effect on platinum demand. According to Anglo Platinum Ltd., this development will have no impact on its plans to expand platinum production. Anglo Platinum produced 68,400 kilograms (kg) of platinum and 35,800 kg of palladium in 2003 (Anglo Platinum Ltd., 2004, oral commun., May 28, 2004; n.v. Umicore s.a., 2004).

On May 5, 2004, the Defense National Stockpile Center (DNSC) announced the aggregated April 2004 platinum-group metals (PGM) sales results under the Basic Ordering Agreement DLA-PGM-002. During April, DNSC sold 93.3 kg of palladium for an overall value of approximately \$950,000 to A-1 Specialized Services & Supplies, Inc., Croydon, PA (Defense National Stockpile Center, 2004).

References Cited

- Defense National Stockpile Center, 2004, Stockpile announces PGM BOA sales for April 2004: Fort Belvoir, VA, Defense National Stockpile Center news release, May 5, 1 p.
n.v. Umicore s.a., 2004, Palladium use in diesel emission control systems for cars now a reality: Brussels, Belgium, n.v. Umicore s.a. press release, April 2, 1 p.

TABLE 1
PLATINUM-GROUP METALS PRICES¹

(Dollars per troy ounce)

	Platinum	Palladium	Rhodium	Iridium	Ruthenium
2003:					
Low/date	605.00 April 30	151.00 April 16	NA	NA	NA
High/date	842.00 December 17	273.00 January 23	NA	NA	NA
Average	694.44	203.00	NA	NA	NA
2004:					
February:					
Low/date	825.00/5	229.00/23 and 26	520.00/2	87.00 ²	43.00 ²
High/date	882.00/27	248.00/18	715.00/27	130.00/27	68.00/27
Average	849.53	237.95	579.21	98.05	50.11
March:					
Low/date	884.00/2	239.00/2	750.00/1	150.00/1	65.00 ²
High/date	920.00/24	290.00/24	900.00 ²	230.00 ²	72.00 ²
Average	902.78	272.43	813.04	214.57	68.91
April:					
Low/date	799.00/29	248.00/29	775.00/2 and 5	210.00 ²	61.00 ²
High/date	940.00/19	340.00/12	840.00 ²	230.00 ²	65.00 ²
Average	884.76	299.52	818.10	222.86	63.57
Year to date:					
Low/date	799.00 April 29	200.00 January 5	500.00 January 5 and 6	87.00	41.00 January 5 and 6
High/date	940.00 April 19	340.00 April 12	900.00 March ²	230.00 March and April ²	72.00 March ²
Average	873.26	257.65	681.02	155.62	56.35

NA Not available.

¹Quotes from Engelhard Industries.

²Occured multiple days in month listed.

Source: Platts Metals Week.

TABLE 2
U.S. IMPORTS FOR CONSUMPTION OF PLATINUM METAL, BY COUNTRY¹

(Kilograms metal content, unless otherwise specified)

Period and country	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)
2003	849	\$18,600	69,700	\$1,480,000	7,210	\$143,000	4,990	\$89,700	5,670	\$37,200	16	\$426
2004:												
January	2	51	4,520	111,000	143	3,840	276	5,260	41,600	9,640	1	15
February	146	3,710	4,850	125,000	403	10,100	398	8,510	185,000	7,920	--	--
March:												
Australia	--	--	--	--	--	--	--	--	--	--	1	29
Belgium	--	--	355	9,870	(2)	6	--	--	--	--	--	--
Brazil	--	--	--	--	--	--	--	--	(2)	3	--	--
Canada ³	5	118	--	--	--	--	43	1,380	23	634	--	--
Colombia	--	--	--	--	42	1,010	--	--	10	283	--	--
Dominican Republic	--	--	--	--	--	--	--	--	2	32	--	--
France	--	--	--	--	--	--	--	--	8	166	--	--
Germany ³	--	--	44	1,280	82	2,180	148	3,130	43,000	1,280	--	--
Italy	--	--	72	2,100	--	--	--	--	--	--	--	--
Japan ³	--	--	--	--	--	--	--	--	74	1,420	--	--
Jordan ³	--	--	--	--	--	--	--	--	2	99	--	--
Korea, Republic of ³	--	--	--	--	--	--	--	--	17,400	273	--	--
Mexico	--	--	--	--	--	--	1	6	8	124	--	--
Norway	--	--	16	420	--	--	--	--	--	--	--	--
Philippines	--	--	--	--	--	--	--	--	10	192	--	--
Russia	--	--	321	9,190	55	1,630	--	--	--	--	--	--
South Africa ³	--	--	6,550	181,000	--	--	14	378	--	--	--	--
Switzerland	--	--	--	--	4	116	5	77	202	2,080	--	--
United Kingdom ³	--	--	1,080	27,600	1	18	29	686	73,600	3,850	--	--
Total	5	118	8,440	231,000	184	4,960	240	5,660	134,000	10,400	1	29
Year to date	153	3,870	17,800	468,000	729	18,900	911	19,400	361,000	28,000	2	44

-- Zero.

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

²Less than 1/2 unit.

³All or part of these data have been referred to the U.S. Census Bureau for verification.

Source: U.S. Census Bureau.

TABLE 3
U.S. IMPORTS FOR CONSUMPTION OF PLATINUM-GROUP METALS, BY COUNTRY¹

(Kilograms metal content, unless otherwise specified)

Period and country	Unwrought palladium		Palladium, other		Iridium ²		Unwrought osmium		Unwrought ruthenium		Rhodium ³	
	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)
2003	83,500	\$518,000	21,000	\$145,000	2,200	\$6,090	53	\$430	15,900	\$16,700	12,000	\$202,000
2004:												
January	8,360	56,600	738	5,590	433	1,360	--	--	2,060	2,360	704	10,600
February	15,000	112,000	599	4,520	332	1,040	33	77	1,200	1,610	622	9,900
March:												
Belgium	416	3,410	32	275	--	--	--	--	--	--	105	2,690
Canada ⁴	156	1,690	2	5	--	--	--	--	--	--	--	--
Germany	329	3,090	224	2,000	1	6	--	--	281	636	20	524
Ireland	--	--	--	--	1	7	--	--	--	--	--	--
Italy	101	855	85	733	--	--	--	--	--	--	--	--
Japan ⁴	133	503	72	272	--	--	--	--	--	--	--	--
Norway	360	5,330	--	--	--	--	--	--	--	--	--	--
Russia	7,200	56,300	846	6,860	--	--	--	--	--	--	15	262
South Africa ⁴	2,890	21,800	--	--	304	938	--	--	1,090	2,350	967	19,200
Switzerland	2	7	200	1,710	--	--	--	--	--	--	--	--
Turkey	--	--	--	--	--	--	--	--	--	--	(5)	8
United Kingdom ⁴	1,820	15,900	58	485	167	1,260	--	--	--	--	445	10,600
Total	13,400	109,000	1,520	12,300	473	2,210	--	--	1,370	2,990	1,550	33,300
Year to date	36,800	277,000	2,850	22,400	1,240	4,600	33	77	4,630	6,960	2,880	53,800

-- Zero.

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

²Unwrought and other forms of iridium.

³Unwrought and other forms of rhodium.

⁴All or part of these data have been referred to the U.S. Census Bureau for verification.

⁵Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 4
U.S. EXPORTS OF PLATINUM-GROUP METALS, BY COUNTRY¹

(Kilograms of metal content, unless otherwise specified)

Period and country	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)
2003	22,200	\$345,000	23,700	\$377,000	22,300	\$110,000	989	\$7,850	479	\$15,100
2004:										
January	1,580	29,200	2,790	61,200	3,070	11,400	302	2,480	73	1,490
February	1,160	19,800	3,000	55,600	4,480	14,200	109	641	196	3,840
March:										
Australia ⁴	4	38	--	--	37	215	(5)	3	--	--
Austria	1	14	--	--	--	--	--	--	--	--
Belgium ⁴	1	9	--	--	--	--	--	--	(5)	4
Brazil ⁴	40	261	--	--	--	--	--	--	--	--
Canada ⁴	146	3,490	168	1,600	91	916	1	5	(5)	29
China	(5)	4	--	--	56	382	15	109	--	--
Denmark	--	--	--	--	4	43	--	--	--	--
Dominican Republic	(5)	4	--	--	--	--	--	--	--	--
Finland	2	40	--	--	4	50	--	--	--	--
France ⁴	21	221	--	--	43	176	--	--	--	--
Germany ⁴	119	1,930	18	488	450	3,100	--	--	--	--
Hong Kong ⁴	41	605	--	--	333	2,450	16	377	1	97
Hungary ⁴	--	--	--	--	4	12	--	--	--	--
Iceland	--	--	--	--	(5)	4	--	--	--	--
India ⁴	--	--	--	--	--	--	--	--	(5)	17
Ireland ⁴	12	183	--	--	228	660	--	--	--	--
Israel ⁴	(5)	6	--	--	138	298	--	--	--	--
Italy	--	--	--	--	14	68	--	--	--	--
Japan ⁴	15	235	109	2,760	43	176	--	--	--	--
Korea, Republic of ⁴	2	30	--	--	4	25	3	18	--	--
Kuwait	--	--	--	--	3	16	--	--	--	--
Malaysia ⁴	2	32	--	--	--	--	1	29	--	--
Mexico ⁴	8	122	--	--	22	114	--	--	(5)	6
Netherlands ⁴	4	64	--	--	276	712	--	--	--	--
New Zealand	--	--	--	--	7	69	--	--	--	--
Norway	--	--	--	--	2	31	--	--	--	--
Philippines	3	37	--	--	--	--	--	--	--	--
Romania	1	6	--	--	--	--	--	--	--	--
Singapore ⁴	1	17	--	--	4	33	(5)	4	--	--
Slovakia ⁴	--	--	--	--	2	8	--	--	--	--
South Africa ⁴	--	--	--	--	--	--	6	264	--	--
Spain	1	9	--	--	3	26	--	--	--	--
Sweden	2	27	--	--	--	--	--	--	--	--
Switzerland	4	61	2	80	53	473	--	--	--	--
Taiwan ⁴	55	801	--	--	640	2,110	--	--	--	--
Thailand ⁴	4	31	--	--	8	49	1	3	1	99
Turkey ⁴	1	12	--	--	2	3	--	--	--	--
United Kingdom ⁴	369	6,400	1,730	34,100	468	1,700	117	712	--	--
Total	857	14,700	2,030	39,000	2,940	13,900	159	1,530	1	251
Year to date	3,600	63,700	7,810	156,000	10,500	39,500	571	4,650	270	5,590

-- Zero.

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

²Unwrought and other forms.

³Gross weight.

⁴All or part of these data have been referred to the U.S. Census Bureau for verification.

⁵Less than 1/2 unit.

Source: U.S. Census Bureau.