



# MINERAL INDUSTRY SURVEYS

U. S. DEPARTMENT OF THE INTERIOR  
BUREAU OF MINES  
WASHINGTON, D.C. 20241



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Platinum, Quarterly

## PLATINUM-GROUP METALS IN THE SECOND QUARTER 1988

Refined production, stocks, and sales of platinum-group metals (PGM) increased in the second quarter, according to the Bureau of Mines, U.S. Department of the Interior. Stocks and refined production figures for 1988 have been revised to reflect major changes made by reporting companies; 1988 figures are not comparable with 1987 figures. Imports and exports of PGM for the second quarter were not available at the time of this publication. Monthly average dealer prices for platinum were higher in the second quarter.

The Audiovisual Library of the Bureau of Mines, in cooperation with the Platinum Guild International (USA) Inc., has released a new film on videotape called PLATINUM: THE ELEMENT Pt. The 28-minute film is available on a free-loan basis to schools, scientific, civic and professional organizations and individuals in 3/4" U-Matic and 1/2" VHS videotape formats. Requests to borrow the film should be addressed to:

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In July, the American Society of Metals International (ASMI), Metals Park, OH, published a final report for the U.S. Department of Commerce and the Federal Emergency Management Agency (FEMA) entitled: "Assessment of Quality and Material Form of Rhodium, Ruthenium, Iridium and Osmium For the National Defense Stockpile." The ASMI Panel of experts that made the recommendations included industry producers and consumers of PGM as well as government officials from Department of Commerce, Department of Defense, FEMA, General Services Administration (GSA), and Bureau of Mines.

In summary, the panel recommended that the U.S. Government should:

- Consider stockpiling 99.95% rhodium sponge or powder.
- Retain the current inventory of iridium, consider upgrading the material to 99.95% purity, and purchase additional 99.95% iridium if necessary.
- Consider stockpiling 99.95% ruthenium in "leafy" sponge form.
- Not stockpile osmium because information on requirements for defense applications was not available.

Persons wishing to obtain copies of the final report may telephone the Department of Defense at: 202-696-6866.

Table 1. - Platinum-group metals 1/ refined in the United States  
(Troy ounces)

Period	Platinum	Palladium	Iridium	Osmium	Rhodium	Ruthenium	Total
1987:							
Nontoll-refined:							
First quarter--	40,360	74,341	31	---	414	160	115,306
Second quarter--	36,635	52,252	49	281	2,637	224	92,078
Third quarter--	38,555	48,983	5	125	471	750	88,889
Fourth quarter--	40,534	46,978	25	150	1,161	445	89,293
Total 2/-----	38,971	125,446	115	604	3,944	1,567	170,647
Toll-refined:							
First quarter--	200,049	90,992	5,605	380	10,846	8,070	315,942
Second quarter--	162,616	149,460	393	6	12,842	12,443	337,760
Third quarter--	166,508	138,143	1,154	220	11,859	5,505	323,389
Fourth quarter--	169,821	136,007	1,011	190	9,623	10,912	327,564
Total 2/-----	725,961	616,311	3,269	796	60,930	37,430	1,444,697
1988:							
Nontoll-refined:							
First quarter--	6,765	r/26,557	10	---	847	---	r/34,179
Second quarter--	10,094	50,623	89	12	1,459	14	62,291
Toll-refined:							
First quarter--	199,008	151,623	1,378	190	21,459	1,490	375,148
Second quarter--	175,981	173,805	1,181	190	18,269	8,089	377,515

r/Revised.

1/Typically, about 99.8% of the platinum and 99% of the palladium are secondary metal; the other metals are entirely secondary.

2/Includes data for companies reporting annually; quarterly figures not adjusted.

Table 2. - Stocks of platinum-group metals held by refiners, importers,  
and dealers in the United States 1/  
(Troy ounces)

Period	Platinum	Palladium	Iridium	Osmium	Rhodium	Ruthenium	Total
1987:							
Mar. 31-----	1,181,803	841,211	25,110	234	94,872	82,682	2,225,912
June 30-----	1,389,715	1,030,991	24,896	242	116,734	103,705	2,666,283
Sept. 30-----	1,682,419	1,253,937	27,753	113	156,518	126,756	3,247,496
Dec. 31-----	1,942,141	1,421,634	29,495	49	189,402	155,527	3,738,248
Yearend 2/----	1,929,881	1,421,592	28,732	49	186,622	150,145	3,717,021
=====							
1988:							
Mar. 31 r/-----	521,402	560,786	15,047	7	26,975	20,018	1,144,235
June 30-----	515,701	581,415	15,438	58	29,849	30,416	1,172,877

r/Revised.

1/Includes metals in depositories of the New York Mercantile Exchange; on July 8, 1988 comprised 205,400 ounces of platinum and 114,700 ounces of palladium.

2/Includes data from companies reporting annually; quarterly figures not adjusted.

Table 3. - Platinum-group metals sold to consuming industries in the United States  
(Troy ounces)

Period and industry	Platinum	Palladium	Iridium	Osmium	Rhodium	Ruthenium	Total
1987:							
Automotive 1/--	605,000	160,000	55	---	63,000	---	828,055
Chemical-----	61,719	34,682	884	---	3,446	2,242	102,973
Dental and							
medical-----	15,387	333,601	3,252	919	334	341	353,834
Electrical-----	58,545	318,301	882	---	5,775	24,857	408,360
Glass-----	9,157	---	55	---	1,772	24	11,008
Jewelry and							
decorative---	5,706	7,099	626	---	7,391	259	21,081
Petroleum-----	23,773	41,344	---	---	---	---	65,117
Miscellaneous--	45,962	100,239	2,330	---	4,823	630	153,984
Year-----	825,249	995,266	8,084	919	86,541	28,353	1,944,412
=====							
1988:							
First quarter:							
Automotive 1/--	153,000	40,000	11	---	16,000	---	209,011
Chemical-----	7,074	4,052	110	---	629	650	12,515
Dental and							
medical-----	r/2,403	r/51,058	804	179	72	80	r/54,596
Electrical-----	r/17,580	r/68,323	135	---	552	8,418	r/95,008
Glass-----	2,154	---	11	---	379	6	2,550
Jewelry and							
decorative---	1,900	601	124	---	161	56	2,842
Petroleum-----	10,810	3,926	---	---	---	---	14,736
Miscellaneous--	18,182	24,294	288	---	1,037	22	43,823
Total-----	r/213,103	r/192,254	1,483	179	18,830	9,232	r/435,081
=====							
Second quarter:							
Automotive 1/--	172,000	45,000	408	---	19,000	---	236,408
Chemical-----	13,783	27,643	463	---	663	8,057	50,609
Dental and							
medical-----	2,065	63,381	11	59	33	35	65,584
Electrical-----	20,332	92,585	111	---	892	6,604	120,524
Glass-----	2,436	100	---	---	664	8	3,208
Jewelry and							
decorative---	2,404	1,849	152	---	1,607	95	6,107
Petroleum-----	7,629	1,101	1,000	---	45	---	9,775
Miscellaneous--	13,220	42,091	408	8	7,368	1,992	65,087
Total-----	233,869	273,750	2,553	67	30,272	16,791	557,302

r/Revised.

1/Platinum, palladium, and rhodium sales to the automotive industry are estimated based on U.S. light truck sales and U.S. automobile production.

Table 4. - U.S. imports for consumption of platinum-group metals  
(Troy ounces and thousand dollars)

Period and country	Unwrought										PGM from precious metal ores
	Platinum grains and nuggets	Platinum sponge	Palla- dium	Iri- dium	Os- mium	Osmiri- dium	Rho- dium	Ruthe- nium	Unspecified combinations		
1987:											
First quarter-----	11	328,761	391,072	2,728	394	5,800	54,665	17,264	1,645	139	
Second quarter-----	419	213,759	347,020	1,439	1,043	---	38,512	26,249	3,007	818	
Third quarter-----	62	266,949	368,861	5,033	370	---	60,375	16,947	644	120	
Fourth quarter-----	329	314,549	422,208	2,614	241	---	57,914	23,939	2,687	712	
Total-----	821	1,124,018	1,529,161	11,814	2,048	5,800	211,466	84,399	7,983	1,789	
1988:											
First quarter:											
Belgium-Luxembourg-----	741	11,832	51,972	---	---	---	400	---	---	---	
Canada-----	---	---	10,291	---	---	---	---	---	---	25	
Colombia-----	---	3,000	---	---	---	---	---	---	---	---	
France-----	---	1,250	---	---	---	---	1,028	---	---	---	
Germany, Federal Republic of-----	---	5,518	10,544	1,188	---	---	129	69	---	---	
Hong Kong-----	---	---	1,248	---	---	---	---	---	---	---	
Italy-----	---	7,625	10,262	---	---	---	334	---	---	---	
Mexico-----	---	---	---	---	---	---	---	---	---	---	
Netherlands-----	---	2,800	1,814	---	---	---	1,017	---	---	---	
Norway-----	---	---	32	---	---	---	---	---	---	---	
Somalia-----	---	---	3,474	---	---	---	---	---	---	---	
South Africa, Republic of-----	---	232,791	183,568	1,675	400	---	31,400	17,459	---	---	
Sweden-----	---	---	---	---	---	---	---	---	---	---	
Taiwan-----	---	---	2,780	---	---	---	---	---	---	---	
U.S.S.R-----	---	8,879	49,514	---	---	---	6,940	---	---	---	
United Kingdom-----	25	35,884	43,266	---	---	---	3,508	2,282	---	---	
Other-----	108	---	3,421	---	---	---	100	---	---	---	
Total-----	874	309,579	372,186	2,863	400	---	44,856	19,810	---	25	

Table 4. - U.S. imports for consumption of platinum-group metals (continued)  
(Troy ounces and thousand dollars)

Period and country	Unwrought Sweepings, waste and scrap	Semimanufactured					PGM in materials not elsewhere specified	Total	
		Plati- num	Palla- dium	Iri- dium	Rho- dium	Unspecified combinations		quantity	Value
1987:									
First quarter	173,381	7,194	33,917	---	---	3,875	20	1,020,866	\$336,397
Second Quarter	99,024	13,522	31,011	36	669	---	208	776,736	252,309
Third quarter	181,954	13,739	27,358	---	160	3	---	942,575	330,535
Fourth quarter	170,557	11,349	59,213	29	---	---	29	1,066,370	320,843
Total	624,916	45,804	151,499	65	829	3,878	257	3,806,547	1,240,080
1988:									
First quarter:									
Belgium-Luxembourg	19	---	---	---	---	---	---	64,964	13,642
Canada	72,142	496	---	---	---	---	45	82,999	8,117
Colombia	1,800	---	---	---	---	---	---	4,800	2,235
France	15	---	---	---	---	---	---	2,293	1,917
Germany, Federal Republic of	3,987	---	1,758	---	---	---	---	23,193	7,070
Hong Kong	3,283	---	---	---	---	---	---	4,531	1,646
Italy	---	---	---	---	---	---	---	18,221	5,167
Mexico	5,239	---	---	---	---	---	15	5,254	228
Netherlands	---	---	---	---	---	---	---	5,631	1,213
Norway	4,156	---	---	---	---	---	---	4,188	353
Somalia	---	---	---	---	---	---	---	3,474	445
South Africa, Republic of	---	---	---	---	---	---	---	467,293	176,000
Sweden	6,417	---	---	---	---	---	---	6,417	4,538
Taiwan	9,415	---	1,551	---	---	---	---	13,746	1,704
U.S.S.R.	---	963	19,600	---	---	---	---	85,896	20,084
United Kingdom	19,167	2,188	20,474	---	---	5	---	126,799	37,804
Other	465	---	---	1,300	---	---	---	5,394	1,756
Total	126,105	3,647	43,383	1,300	---	5	60	925,093	283,919

Source: Bureau of the Census.

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Table 5. - Monthly average producer and dealer prices of platinum-group metals 1/  
(Dollars per troy ounce)

	Platinum		Palladium		Rhodium		Iridium		Ruthenium 2/	Osmium 2/
	Pro- ducer	Dealer	Pro- ducer	Dealer	Pro- ducer	Dealer	Pro- ducer	Dealer	Dealer	Dealer
1987:										
January-----	600	515	150	123	1,200	1,124	600	397	74	650
February-----	600	515	150	120	1,200	1,180	600	394	71	650
March-----	600	525	150	123	1,200	1,157	600	384	71	650
April-----	600	585	150	136	1,200	1,201	600	375	72	626
May-----	600	605	150	145	1,200	1,245	600	384	72	625
June-----	600	565	150	137	1,220	1,225	600	379	72	625
July-----	600	568	150	140	1,275	1,230	507	345	67	632
August-----	600	608	150	140	1,275	1,273	600	350	68	650
September-----	600	586	150	137	1,275	1,272	420	354	68	650
October-----	600	564	150	129	1,275	1,270	420	332	68	650
November-----	600	494	150	111	1,275	1,246	420	330	67	600
December-----	600	500	150	121	1,275	1,243	420	335	67	590
Average-----	600	553	150	130	1,239	1,222	532	363	70	633
1988:										
January-----	600	492	150	124	1,275	1,187	420	333	67	602
February-----	600	452	150	119	1,275	1,238	420	326	65	610
March-----	600	491	150	121	1,275	1,235	420	310	62	603
April-----	600	492	150	124	1,275	1,230	420	315	62	509
May-----	600	545	150	122	1,275	1,231	420	310	60	580
June-----	600	576	150	127	1,275	1,266	420	309	61	590
Average-----	600	508	150	123	1,275	1,231	420	317	63	582

1/Average prices calculated at the low end of the range and rounded to the nearest dollar.

2/Producer prices suspended in 1984.

Source: Metals Week.