

Platinum 1992

PLATINUM SUPPLY AND DEMAND REACHED RECORD LEVELS

The eighth annual survey of the platinum group metals was published by Johnson Matthey in May and is based, for the most part, on information available up to the end of March 1992. During 1991 both the supply and demand for platinum were the highest ever, at 4.16 and 4.04 million ounces, respectively, the former being boosted by Russian sales. This increase in supply was only one of several factors that contributed to a lowering of prices, the average London fixing being U.S. \$376 in 1991 compared with U.S. \$472 in 1990.

Once again the largest application for platinum was for automobile catalysts, as an increasing number of cars in Europe were fitted with catalytic converters, and as emissions standards were introduced in additional countries. Demand amounted to some 1.57 million ounces. This was closely followed by demand from the jewellery sector, at 1.47 million ounces worldwide, over 85 per cent of which was taken by Japan. Usage in the chemical industry fluctuated with changes in the various components that make up this sector. The use of platinum in connection with motor vehicles is not restricted to its use in catalytic converters, which are featured in a separate section of the report, as petroleum refining is already an established application for platinum catalysts. Now platinum is also used in a new process to catalyse the production of iso-butylene, a feed material for methyl tertiary butyl ether which is added to gasoline as an octane improver. Furthermore, the electronic management systems that are required to optimise vehicle fuel injection and enable autocatalysts to function effectively depend upon platinum sensors. Although the quantity of platinum in each sensor is very small, the total requirement is significant. Increasingly spark plugs are also incorporating platinum tips to increase engine efficiency and reduce pollutant emissions.

The average price for palladium was U.S. \$88, down U.S. \$27 from 1990 prices as supplies outstripped demand for the second successive year. 1.82 million ounces, approximately fifty per cent of demand, were used in electronic components. While the use of hybrid integrated circuits containing silver-palladium conductive tracks has declined, the production of multi-layer ceramic capacitors, which generally use pure palladium or silver-palladium as the conductive material, has increased. The demand for palladium for dental alloys rose from the 1990 figure of 1.02 million ounces to 1.07 million ounces.

Both the supply and demand for rhodium were lower than in 1990. Its outstanding activity for nitrogen oxides reduction, coupled with its ability to convert the other major pollutants in exhaust emissions, ensures its presence in three-way catalysts and explains why over 80 per cent of consumption was by the automobile industry.

In 1991 demand for ruthenium rose to 169,000 ounces, with some 64 per cent being used in the electrical sector as a resistive material. The chemical industry accounted for 34 per cent of demand; the use of ruthenium coated titanium anodes for the electrolysis of brine is slowly decreasing as the pulp and paper industry replaces chlorine with sodium chlorate and hydrogen peroxide, now regarded as "environmentally friendly" bleaching agents. Production of these utilises iridium-platinum electrodes and palladium catalysts, respectively.

Readers of *Platinum Metals Review* who do not have ready access to this important fifty-six page survey of the commercial aspects of the platinum group metals, and who require an authoritative source of such information, are invited to address their requests to the author: Mr. Jeremy S. Coombes, Johnson Matthey P.L.C., New Garden House, 78 Hatton Garden, London EC1N 8JP, England; Fax 071-269 8135.