

New Air Pollution Control Unit

PLATINUM CATALYST MAKES POSITIVE CONTRIBUTION TO THE EUROPEAN YEAR OF THE ENVIRONMENT

For over one hundred and fifty years the atmospheric pollution resulting from manufacturing processes has been recognised as a problem. However, all too frequently dilution of the offending substance with air has been considered to be a satisfactory solution which could be achieved relatively cheaply by exhausting the pollutants from a high stack, resulting in their dispersal over a wide area. Now an increasing scientific and public awareness of the short- and long-term effects of atmospheric pollution on all forms of life, and a greater appreciation of the fact that national boundaries do not provide a barrier to such pollution, has resulted at last in trans-national action to control industrial pollution more effectively.

One such initiative is the European Year of the Environment, and to coincide with this the Catalytic Systems Division of Johnson Matthey has launched its mobile Honeycat® Pilot Trial unit. Based upon long established catalytic

principles, the unit incorporates technology that has been proven in a wide range of industrial processes which produce hydrocarbon emissions that are malodorous or noxious. These include ceramic and fibre manufacture, chemical processing, food processing, metal and paper coating and printing, and plastic, resin and rubber coating, extrusion and moulding.

Although the use of platinum oxidation catalysts for air pollution control was noted in the first volume of this journal, in 1957, and has been the subject of several articles since, none the less many organisations apparently do not appreciate that the technology does exist to remove offending contaminants from industrial waste gases in an effective manner. For this reason the Honeycat® pilot trial is carried out on the premises of a potential customer where process conditions can be monitored accurately. A representative sample withdrawn from the exhaust gas is passed over a Honeycat® catalyst



The Honeycat® mobile pilot unit is designed for a full site trial, and once located close to the process gas outlet it only requires connection to an electricity power supply

The platinum metals catalyst formulation is dispersed over the surfaces of the ceramic honeycomb support, providing the maximum reaction surface with the smallest possible volume. This configuration ensures high catalyst activity and minimum pressure drop within the Honeycat® unit



where the organic components of the gas are destroyed by low temperature oxidation, yielding harmless carbon dioxide and water vapour. The catalyst unit consists of a finely divided platinum metals formulation supported on a ceramic honeycomb, to ensure that the surface area of a given weight of catalyst is maximised, and that there is little resistance to the flow of gas through the unit. While it is generally necessary to pre-heat the catalyst to the required operating temperature the fuel required

is significantly less than that required for thermal incineration of the pollutants.

By analysing the process exhaust gas composition and its temperature and flow characteristics a pollution control system incorporating a platinum metals catalyst can be designed which is optimised to meet the specific requirements of both the process and the plant. This is only one of the ways in which the platinum metals are contributing to an improvement in the quality of life.

Platinum 1987

The third annual survey of commercial aspects of the platinum group metals has just been published by Johnson Matthey. Well supported by statistical data, "Platinum 1987" concentrates on the events of 1986 that affected the six platinum group metals, and outlines the prospects for 1987, and beyond. Compiled from numerous sources, the 63 page review considers exploration and mining, prices, supply, major uses of the metals, demand for different purposes—and in the case of platinum and palladium demand by geographical region. While the emphasis is on these two metals, rhodium, ruthenium, iridium and osmium are also included.

In a year when the requirement for platinum for automobile emission control catalysts first exceeded 1 million troy ounces, and when the electronic industry in Japan consumed 750,000 troy ounces of palladium, record levels of demand for platinum, palladium and rhodium were closely matched by supplies of primary metals.

Readers of Platinum Metals Review who do not have ready access to a copy of "Platinum 1987", and who wish to receive one, should write to the compiler: Mr. G. G. Robson, Johnson Matthey P.L.C., New Garden House, 78 Hatton Garden, London EC1N 8JP.