

New ProCat2 Process Catalyst Plant

On 12th October 2000, Johnson Matthey opened a new plant at its site in Royston, Hertfordshire, to manufacture the latest generations of supported catalysts, including platinum group metals catalysts, for chemical processes. The new facility, which uses state-of-the-art production technology, has the capacity and flexibility to produce several hundred tons of catalyst per year for a wide range of applications.

This Johnson Matthey plant has been designed initially to manufacture special catalysts for two new processes belonging to BP Chemicals. The first of these, known as LEAP™, uses fluid bed technology to produce vinyl acetate monomer (VAM), a key intermediate for polymer manufacture. The process, based on a radical new fluid-bed reactor and new catalyst design, rather than the traditional fixed-bed system, offers large savings in capital and downstream process costs. Johnson Matthey has worked in close partnership with BP Chemicals to optimise the performance of the catalyst and to scale-up its production. LEAP™ is the first fluid-bed process to use a supported precious metal catalyst. For its work in helping to develop the new

catalyst, Johnson Matthey was given a BP Amoco Chemicals Breakthrough Award in 1999.

The second BP Chemicals process is known as AVADA™, and is to be used for the single-

step manufacture of ethyl acetate. The new AVADA™ plant is based on BP Chemicals 'direct addition' method for the manufacture of ethyl acetate from ethylene and acetic acid. The process is simpler and cleaner than other routes and is suited to locations where feedstocks, such as the ethanol needed for these current processes, are not competitively available. Johnson Matthey has again worked with BP Chemicals to develop a manufacturing route for the catalyst used here.

While the new facility is now being used to produce these two catalysts, the plant is highly

versatile and is designed to manufacture a wide range of supported catalysts, including platinum group metals catalysts, for the fine and speciality chemicals industries. B. HARRISON

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The view inside the Procat2 catalyst plant, looking down to the working area. The building has 3 storeys to facilitate the transport of materials between process stages, largely by gravity. The silver-coloured circular vessel on the ground floor is one of the catalyst production vessels. The red vessel to the left filters the catalyst from the mother liquor; it discharges to the floor below for further treatment. The red columns are vent pipes. Catalysts for BP's LEAP™ and AVADA™ processes are currently made in the plant, which has been designed as a multi-purpose unit