A drug developer’s guide to enhancing catalytic processes

Throughout the pharmaceutical industry, there is a growing demand for greener, and more sustainable approaches to research, development and manufacturing. A key part of this shift is the desire to optimise the cost and efficiency of processes, and this starts well before commercial launch.

Catalysing the pharmaceutical industry

At Umicore, our experts work hand-in-hand to provide our clients with a collaborative approach that starts well before commercial launch. We are pleased to share a guide to catalytic processes developed in collaboration with our clients.

The importance of catalysis has been recognised by several Nobel Prizes in Chemistry. The importance of catalysis has been recognised by several Nobel Prizes in Chemistry. The global catalyst market size was estimated at US$33.5 billion in 2019 and will witness robust growth at a CAGR of 14.4% in the next years.

The Road to Catalyst Recovery

In the pharmaceutical industry, the strategic control of precious metal catalysts is crucial for maintaining the value chain while meeting regulatory and environmental challenges. For this, Umicore specialises in a closed-loop approach that starts from identifying the optimal catalyst for a given transformation and designing the process with precious metal recovery in mind, leading to efficient commercial processes with minimal risk.

The Closed-loop Approach

The traditional approach to sampling begins with an incineration step to homogenise the material. However, this can lead to erroneous results as some metal content can be lost during the incineration process and the concentration of elemental impurities in the incineration ash is not always the same as in the original material. Hence, it is essential to optimise the post-reaction analytical procedures allowing refiners to accurately measure the precious metals content of materials being reclaimed.

Barriers to Implementing Catalysis

Implementing new technology always driven by the demands of the project. This can spark supply chain concerns. As they are traded in the public market, precious metals constantly fluctuating. With the prices of PGMs and other metals already fluctuating, it becomes a vital tool for developing innovative routes towards today’s pharmaceutical targets.

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