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Silica-based products: New tools to simplify synthesis, purification & metal removal

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Removal of spent catalysts from active pharmaceutical ingredients can be a major challenge. These residual metals have a negative impact on the health and so their presence is not desirable, even at trace level, in the drugs that they helped synthesized. The FDA and other regulatory agencies around the world have put forth, level limits on these metals above which a batch of active pharmaceutical ingredient would have to be rejected. Needless to say, if such rejection were to occur it would come with a significant loss of money. SiliCycle has developed functionalized silica gels to be used as metal scavengers in the cleanup of spent catalysts use in the pharma industry. These silica's are modified with ligands that are highly specific to the metals used in catalysis, namely palladium, platinum, osmium, nickel and so forth. After the catalysis reaction is completed, the metal scavengers are mixed with the reaction mixture for some time then the silica is filtered off affording a metal free solution. This is important as residual metals in active pharmaceutical ingredients are subject to ever increasing regulations. Being already used with success by various big players in the pharmaceutical industry, Silia*MetS* metal scavengers proved to be powerful and efficient tools to purify contaminated active pharmaceutical ingredients from spent catalysts. These products can be used in batch or in cartridges, as well as in flow chemistry, for scale-up and manufacturing. Here we present results from scavenging experiments of pharmaceutical relevant catalytic reactions.

Biography

N Rajasekar has completed his Ph.D., at the age of 25 years from the Indian Institute of Science and postdoctoral studies from Kent State University, Ohio, USA and University of Guelph, Ontario, Canada. He was responsible for Quality Assurance and Regulatory Affairs while associated with international pharmaceutical organizations, engaged in API manufacturing. Presently he is with SiliCycle, providing technical support to customers in India. He has published more than 20 research papers all appearing in highly reputed international journals.

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