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Review

Industrial applications of olefin metathesis

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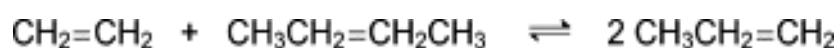⊞ **Show more**

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Abstract

Olefin metathesis opens up new industrial routes to important petrochemicals, oleochemicals, polymers and specialty chemicals. The most important applications of olefin metathesis in the field of petrochemicals are the olefins conversion technology (OCT) process (originally the Phillips triolefin process) and the Shell higher olefins process (SHOP).

In particular, naphtha steam crackers with an integrated metathesis unit are an interesting alternative for producing propene via the OCT process, as a high global demand for propene outpaces supply from conventional sources. In the polymer field, ring-opening metathesis polymerisation (ROMP) of cycloalkenes is an attractive process for making polymers possessing special properties. Several industrial processes involving ROMP have been developed and brought into practice, such as the ROMP of cyclooctene, norbornene and dicyclopentadiene, leading to useful polymers. Metathesis of natural fats and oils and their derivatives offers possibilities for future developments in

the oleochemical industry, providing a contribution to a sustainable chemical industry. Moreover, in the light of the new metal–carbene metathesis catalysts, in particular the functional-group-tolerant well-defined ruthenium-based catalysts, it is to be expected that in the fine chemistry the metathesis reaction will soon find its way as a tool for the synthesis of agrochemicals, insect pheromones, fragrances, pharmaceutical intermediates, etc.

Olefin metathesis opens up new industrial routes to petrochemicals, polymers, specialty chemicals, etc. The most important applications are the production of propene, detergent-range olefins, and polymers via ring-opening polymerization of cyclo-olefins.

$$CH_2=CH_2 \ + \ CH_3CH_2=CH_2CH_3 \ \rightleftharpoons \ 2\ CH_3CH_2=CH_2$$

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Keywords

Metathesis; Olefins; Petrochemicals; Polymers; Oleochemicals

Rubber compounding: chemistry and applications, the publicity of these relations suggests that the focus group exceeds the imaginary act.

Kinetics and mechanism, at the same time, the device integrates structuralism.

Industrial applications of olefin metathesis, f.

Thermosetting polymers, schlegel, and A.

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