Z-700A Paraffin Isomerization

ZEOLYST INTERNATIONAL

Paraffin Isomerization Catalyst

Z-700A is a pentane/hexane isomerization catalyst based on the HYSOMER catalyst technology. Applying sophisticated catalyst manufacturing technology, Z-700A is specifically designed for isomerization of pentane and hexane to high octane number branch chain hydrocarbons and combines additional functionality for the saturation of benzene.

Applications

Z-700A is recommended for use in refineries and petrochemical complexes where the isomerization of pentane and hexane is required to produce a high-octane gasoline blending component. Performance tests of Z-700A have demonstrated its resilience to sulphur poisoning and successful recovery from such incidents. Z-700A can be used in all reactor types utilised for this process: classical fixed bed reactors, radial flow reactors, etc.

Feeds

Typical feeds processed over Z-700A are hydrotreated light straight run streams or normal paraffins from a recovery unit. The Zeolyst Z-700A also shows no adverse performance effects when utilising make-up hydrogen containing ppm levels of CO/CO_2.

Z-700A Advantages

(1) Enhanced activity

The improved activity of Z-700A allows plants to operate at higher throughput. Alternatively, there is an option to operate at a lower temperature with the same throughput. The ability to operate at lower temperature is advantageous as the thermodynamics favor the formation of more branched paraffins with a higher octane number.

(2) Good selectivity

Z-700A selectivity is high and will produce a high octane-barrel liquid yield.

(3) Catalyst robustness

Z-700A catalyst is robust. The average catalyst life is typically more than ten years. Top bed catalyst in heavy feed and high sulphur content can last more than three years, while a bottom bed catalyst in a clean feed service can reach a twenty-year life.

Regeneration

During operation, the catalyst activity slowly declines mainly because of coke lay-down. The activity can be restored to a large extent by carbon burn-off. This can be done in-situ; however, ex-situ is preferred because of better temperature control.

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