

Purification Adsorbents

Description

Evonik’s adsorbents efficiently remove contaminants, providing the reliability and quality your process and products demand.

- C3 and C4 Dehydrogenation
- C4 and C5/C6 Isomerization
- Olefin Purification
 - Ethylene — Propylene
 - C4 olefins — Alpha olefins

Many catalysts and products are negatively impacted by trace contaminants. Lower catalytic activity or selectivity or lower quality products can result, if these trace contaminants are not efficiently removed from the process streams. Our purification adsorbents remove contaminants to ensure the reliability, performance and product quality of your process. We offer a variety of regenerable and non-regenerable adsorbents, that provide the contaminant removal that your process requires.

Evonik provides the services you value.

For many reasons, the capabilities of adsorption systems need to be routinely evaluated. The impact of the adsorbents’ performance on process reliability and product quality need to be well defined if opportunistic feeds are to be processed, a more contaminant-sensitive catalyst is being considered for use, or if the installed catalyst is required to perform beyond its extended life.

Technical services

- In-depth review of your process for unit optimization
- Tailored adsorbent solutions for your unique need
- Technical support - onsite and remote

Contaminants	Solutions
• Hydrogen Sulfide	• Dynocel 641
• Carbon Dioxide	• Dynocel 642
• Carbonyl Sulfide	• Dynocel 643
• Methanol	• Dynocel 650
• Mercaptans	• Dynocel 680
• Mercury	• Dynocel ASR
• Arsine	• Dynocel HG
• Carbon Monoxide	• Durocel 222
• Oxygen	• Durocel 235
• Others	• AC-99

Purification Adsorbents

Dynocel 641 is a large pore molecular sieve designed to remove water, oxygenates and certain sulfur compounds from olefinic process streams. Dynocel 641 has a high capacity for these contaminants; however, Dynocel 641 does require a pre-load step when it is used to purify olefinic process streams.

Dynocel 642 is a specialty purification adsorbent designed to remove acid gas (hydrogen sulfide, carbon dioxide, etc.) compounds from olefinic process streams, especially ethylene and propylene. Dynocel 642 does not require a pre-load step.

Dynocel 643 is a small pore molecular sieve designed to remove water from olefinic process streams. Dynocel 643 does not require a pre-load step.

Dynocel 650 is a specialty purification adsorbent designed to remove polar compounds (oxygenates, mercaptans, etc.) from olefinic process streams, especially ethylene and propylene. Dynocel 650 does not require a pre-load step.

Dynocel 680 is a specialty purification adsorbent designed to remove both polar (oxygenates, mercaptans, etc.) and acid-gas (hydrogen sulfide, carbon dioxide, etc.) compounds from olefinic process streams, especially ethylene and propylene. Dynocel 680 does not require a pre-load step.

Dynocel ASR is a metal oxide promoted adsorbent with a high affinity for various sulfur compounds, arsine and phosphine.

- Adsorbs up to 8 wt % arsine (AsH₃) and 10 wt % H₂S and light mercaptans.
- Protects contaminant-sensitive catalysts and processes.

Dynocel HG is a metal oxide promoted adsorbent with a high affinity for mercury compounds.

- Removes elemental, inorganic and organic mercury species.
- Removes mercury to below 0.01 micrograms/Nm³.
- Minimizes the risk of mercury-associated environmental issues.
- Protects aluminum heat exchangers from mercury corrosion.
- Protects contaminant-sensitive catalysts and processes.

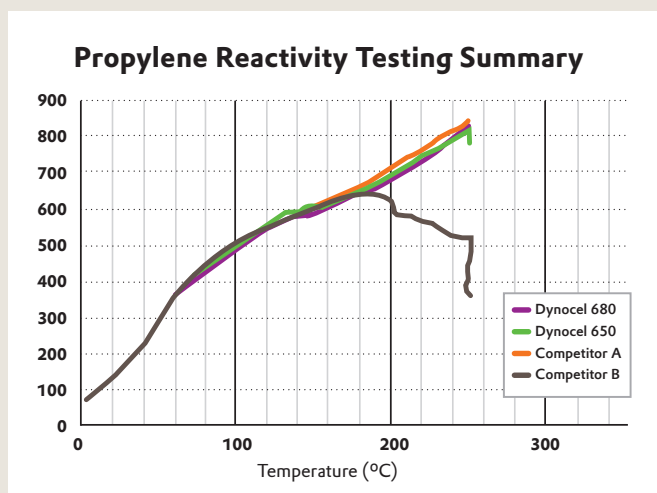
Inert Bed Support

Evonik manufactures high quality, low cost inert ceramic and alumina bed supports. The quality of Durocel inert bed support is maintained by using high quality raw materials, world class manufacturing techniques and modern quality control testing techniques. Evonik's Durocel inert bed support offers our customers reliable, economical and value-added inert supports.

- **Durocel 222** is an inert ceramic bed support available in sizes ranging from 3mm (1/8 inch) to 50 mm (2 inch).
- **Durocel 235** is an inert alumina bed support available in sizes ranging from 3mm (1/8 inch) to 50 mm (2 inch).
- **AC-99** is a tabular, high density, fully shrunk, coarse, crystalline alpha-phase alumina grain. AC-99 is used as a heat sink in various catalytic processes available in sizes ranging from 3/4 inch to 28x48 mesh.

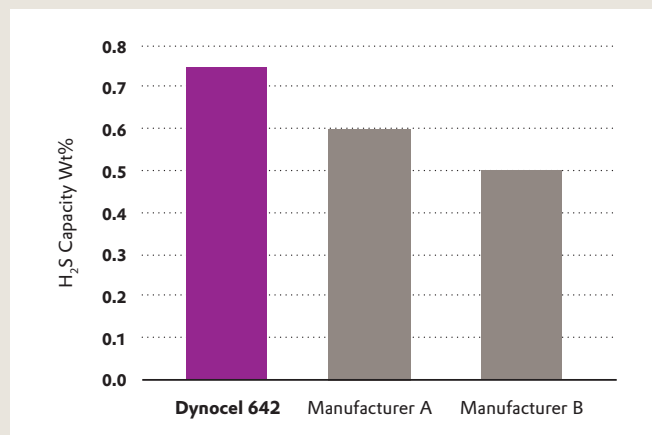
Reactivity

Evonik adsorbents exhibit no reactivity in olefinic process streams.



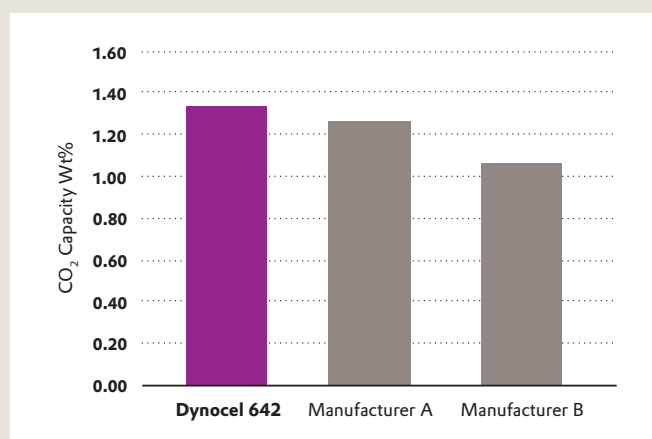
H₂S Equilibrium Adsorption Capacity

Dynocel 642 has higher H₂S capacity than other regenerative adsorbents



CO₂ Dynamic Adsorption Capacity

Dynocel 642 has higher CO₂ capacity than other regenerative adsorbents



No Preload Required

Evonik offers adsorbents that DO NOT require preloading. Ask your Evonik sales contact to learn more.

Disclaimer

This information and all further technical advice are based on our present knowledge and experience. However, it implies no liability or other legal responsibility on our part, including with regard to existing third party intellectual property rights, especially patent rights. In particular, no warranty, whether express or implied, or guarantee of product properties in the legal sense is intended or implied. We reserve the right to make any changes according to technological progress or further developments. The customer is not released from the obligation to conduct careful inspection and testing of incoming goods. Performance of the product described herein should be verified by testing, which should be carried out only by qualified experts in the sole responsibility of a customer. Reference to trade names used by other companies is neither a recommendation, nor does it imply that similar products could not be used.

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