



Highly Effective C3 Selective Hydrogenation Catalyst For MAPD Reduction In Propylene Production

Our Product Introduction

Basic Information

- Place of Origin: CHINA



Product Specification

- Active Metal: Palladium
- Catalyst Type: Heterogeneous
- Thermal Stability: High
- Particle Size: 1-3 Mm
- Selectivity: >95%
- Palladium: 0.3%
- Pore Size: 100-200 Å
- Stability: >1000 Hours
- Regenerability: Good
- Application: Selective Hydrogenation Of C3 Hydrocarbons In Petrochemical Industry
- Operating Temperature: 100-150°C
- Activity: >90%
- Pd Loading: 5-10 Wt%
- Material: Alumina

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Product Description

Description:

The C3 selective hydrogenation catalyst is designed to address the challenges associated with C3 fractions, which are primarily sourced from units that utilize diesel, naphtha, or light hydrocarbons for cracking, as well as from methanol-to-propylene (MTP) processes and propane dehydrogenation units in refineries. Notably, C3 fractions produced by refinery units typically lack acetylene and propylene diene (MAPD), while those from other sources may contain MAPD at concentrations of 4-6 mol%.

For chemical-grade propylene, the acceptable limit for MAPD is ≤ 15 ppm. Therefore, effective treatment to remove MAPD is essential to meet this standard. Catalytic selective hydrogenation presents a viable solution for this issue.

Through the hydrogenation process, hydrogen (H_2) reacts with propylene and MAPD, converting them into propylene and significantly reducing the MAPD content to ≤ 15 ppm.

The catalyst not only facilitates the removal of unwanted compounds but also enhances the yield of propylene, making it a crucial component in refining and chemical production processes. Overall, the C3 selective hydrogenation catalyst plays a vital role in improving the purity and yield of propylene, thereby ensuring compliance with industry standards and optimizing production efficiency.

Specifications:

Specification	Details
Catalyst Composition	Typically contains metals like Pd, Ni, Cu
Pore Structure	Bimodal
Specific Surface Area	Typically varies (exact value may vary)
Small Pore Diameter	Usually in the range of 10-50 nm
Macro-Pore Diameter	Typically between 80-500 nm
Hydrogenation Efficiency	Reduces MAPD content to ≤ 15 ppm
Application Area	C3 fraction purification
Yield Improvement	Increases propylene yield
Chemical Purity Requirement	MAPD ≤ 15 ppm for chemical-grade propylene
Operating Conditions	Varies based on specific process needs

Applications:

The C3 selective hydrogenation catalyst plays a critical role in the processing of C3 fractions derived from various sources, including cracking units that utilize diesel, naphtha, or light hydrocarbons, as well as from methanol-to-propylene (MTP) and propane dehydrogenation units in refineries. One of the significant challenges in handling these C3 fractions is the presence of acetylene and propylene diene (MAPD), which can adversely affect the quality of the final product.

Refinery-produced C3 fractions typically do not contain MAPD, while those from other units may have it in concentrations ranging from 4% to 6%. Given that the acceptable level of MAPD in chemical-grade propylene is less than or equal to 15 ppm, effective removal of these compounds is crucial for compliance with industry standards.

The application of catalytic selective hydrogenation is an efficient method for this purpose. During the hydrogenation process, hydrogen reacts with propylene and MAPD, transforming them into propylene and significantly lowering the MAPD concentration to meet the required specifications. This process not only purifies the propylene but also enhances its yield, making it advantageous for industrial applications.

Furthermore, the C3 selective hydrogenation catalyst is essential in improving the overall quality of propylene used in various chemical syntheses and manufacturing processes. By ensuring that the propylene is free from impurities like MAPD, the catalyst supports the production of high-purity chemicals that are vital for downstream applications, including the production of plastics, fibers, and other synthetic materials.

In summary, the C3 selective hydrogenation catalyst is indispensable in the petrochemical industry. It facilitates the efficient removal of undesirable compounds, enhances propylene yield, and ensures that the final product meets stringent quality standards, ultimately contributing to more sustainable and efficient production processes.



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