



Innovative C2 Selective Hydrogenation Catalyst For Selective Hydrogenation Processes





Product Specification

- Operating Temperature: 150-250°C
- Shape: Spherical
- Activity:
- Pore Size:
- Pore Volume:
- Material:
- Application: Selective Hydrogenation Of C2

>90%

8-12 Nm

Alumina

0.3-0.5 ML/g

150-200 M2/g

- Surface Area:
- Selectivity: >99%
- Bulk Density: 0.6-0.8 G/cm3

Description:

The C2 selective hydrogenation catalyst is primarily based on aluminum oxide, featuring a bimodal pore structure. This catalyst exhibits a specific surface area ranging from 20 to 50 m²/g. It has a dual pore distribution, with small pores measuring between 15 and 50 nm, and larger macro-pores spanning 80 to 500 nm.

The catalyst composition includes essential metals such as palladium (Pd), nickel (Ni), and copper (Cu). In terms of proportions, when the carrier mass is considered to be 100%, the palladium content is specified to be between 0.035% and 0.08%, while nickel content varies from 0.5% to 5%. Additionally, the weight ratio of copper to nickel (Cu/Ni) is maintained between 0.1 and 1.0.

To enhance performance, a microemulsion is utilized to load nickel, copper, and a portion of palladium. The particle size of this microemulsion is designed to be larger than the maximum diameter of the small pores but smaller than that of the macro-pores. The amount of palladium incorporated through this microemulsion is controlled to be between 1/100 and 1/200 of the combined content of nickel and copper. Furthermore, additional palladium is introduced via a solution method.

This innovative catalyst is particularly suited for selective hydrogenation processes involving C2 fractions. It demonstrates excellent resistance to coking, ensuring that it maintains robust hydrogenation activity while achieving superior selectivity over extended periods of operation. This combination of properties makes the catalyst highly effective for industrial applications, contributing to efficient and sustainable chemical processes.

Specifications:

Specification	Specification
Carrier Material	Carrier Material
Pore Distribution Structure	Bimodal
Palladium (Pd) Content	0.035 - 0.08%
Microemulsion Particle Size	Larger than small pores but smaller than macro-pores
Application	C2 Fraction Selective Hydrogenation Process
Performance	Good anti-coking, maintained hydrogenation activity and selectivity

Applications:

The C2 selective hydrogenation catalyst serves a vital role in the petrochemical industry, primarily facilitating the conversion of ethylene (C2H4) into ethane (C2H6). This catalytic process is crucial for several key applications. Firstly, one of the main purposes of this catalyst is to purify ethylene streams. By selectively hydrogenating ethylene, it effectively reduces the amount of unreacted ethylene, thereby enhancing the quality of the resulting ethane. This purification step is essential for ensuring that the feedstock meets the required specifications for various chemical processes.

Secondly, ethane produced from this process is a significant feedstock for steam cracking, where it can be transformed into valuable chemicals and fuels. The selective hydrogenation of ethylene ensures a higher yield of ethane, optimizing production efficiency in downstream applications.

Moreover, the use of the C2 selective hydrogenation catalyst contributes to environmental sustainability. By converting ethylene into ethane, the catalyst helps minimize the release of ethylene, which is known to be a potent greenhouse gas. This reduction is beneficial for mitigating the environmental impact of petrochemical operations.

Additionally, the catalyst offers operational flexibility, allowing it to function under various conditions. This adaptability enables manufacturers to tailor their processes to meet specific production requirements, enhancing overall efficiency. Lastly, safety is another critical aspect of using the C2 selective hydrogenation catalyst. By lowering the concentration of ethylene, which is flammable and poses safety risks, the catalyst helps create a safer working environment in industrial settings.

In summary, the C2 selective hydrogenation catalyst is essential for improving product quality, optimizing feedstock preparation, supporting environmental sustainability, and enhancing safety in petrochemical operations. Its versatility and effectiveness make it a crucial component in modern chemical manufacturing processes.





jycat@qdjunyao.com.cn

jyalumcatalyst.com