

Hydrofining Catalyst for Middle and Low Distillate Oil

APPLICATION

The hydrofining process is a refining technique used to enhance the quality of middle and low distillate oils, such as naphtha, kerosene, jet fuel, diesel, and light gas oils. This process removes impurities such as sulfur, nitrogen, oxygen, and trace metals, and saturates olefins to produce cleaner, more stable, and environmentally compliant fuels or clean feedstock for further upgrading. For example, it can be used to pretreat naphtha feedstock before the CCR reforming process. It also saturates olefins to improve the thermal and oxidative stability of jet fuel, reducing gum formation during storage and transportation. Hydrofining for middle and low distillate oils is a critical process in modern refineries, ensuring compliance with environmental standards, preparing feedstocks for smooth processing, and producing high-quality, stable fuels.

DESCRIPTION

This catalyst uses composite alumina as the carrier and nickel, molybdenum, and cobalt as the active components, prepared using a proprietary processing technology. The catalyst exhibits good thermal stability, a low acid content on the surface, resulting in high selectivity, excellent anti coking performance, operational stability, and a long service life. It is suitable for the pretreatment of naphtha feedstock and reformat product. The reactive components are highly dispersed, providing excellent hydrogenation activity and a low starting temperature. The catalyst demonstrates high resistance to sulfur fluctuations and is well-adapted to both high-sulfur and low-sulfur feedstocks (< 50 ppm). The sulfur content in the product can be reduced to less than 0.2 µg/g.

PHYSICAL & CHEMICAL PROPERTIES

Parameter	Unit	Specification
Form	-	trilobes
Color	-	blue-gray
Mean diameter	mm	1.25×7-12
Bulk Density	g/ml	0.70±0.05
Crushing Strength	N/cm	> 90
Al ₂ O ₃	%	>85
Active component		Mo-Co-Ni

PROCESS CONDITIONS & PERFORMANCE

Element	Unit	Specification
Pressure	MPa	>2.0
Temperature	°C	280-340
LHSV	m ³ _{feed} /m ³ _{catalyst} ×h	1.0 -10.0
Catalyst life	years	>3
S- content in product	ppm	<0.5
N- content in product	ppm	<0.5
gBr/100g	ppm	<0.5