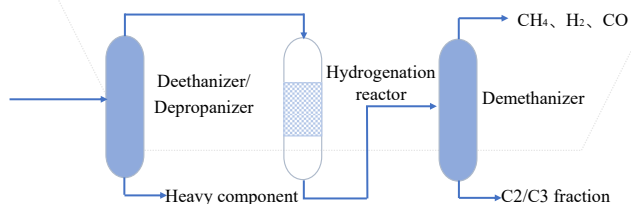


C2 Front-End hydrogenation Hydrogenation Catalyst

APPLICATION

The C2 front-end hydrogenation process is a critical step in the purification of ethylene-rich streams obtained from steam crackers or Methanol-To-Olefins (MTO) plants. It is performed upstream in the ethylene (C₂H₂) recovery section, across several stages, and focuses on removing impurities such as acetylene, methylacetylene-propadiene (MAPD), and carbon monoxide to prepare the C2 fraction for downstream separation and polymer-grade ethylene production. The catalyst formulation minimizes "green oil" formation, which can cause fouling. Excess hydrogen can be removed downstream in the demethanizer column.



DESCRIPTION

The catalyst is based on proprietary modified alumina as the carrier, palladium as the active component, and composite additives introduced through specialized processes to enhance the selectivity and stability of the catalyst during hydrogenation. It features excellent thermal stability, high hydrogenation activity, low green oil generation, outstanding anti-coking performance, and a long service life.

The catalyst exhibits strong adaptability to fluctuations in raw materials and offers wide operational flexibility. It also has high mechanical strength, a reduced attrition rate, and ensures a low pressure drop across the reactor bed.

PHYSICAL & CHEMICAL PROPERTIES

Parameter	Unit	Specification
Form	-	bids
Color	-	gray
Mean diameter	mm	2.5-4
Bulk Density	g/ml	0.90±0.05
Crushing Strength	N/cm	>40
Al ₂ O ₃	%	>99
Active component		Pd

PROCESS CONDITIONS & PERFORMANCE

Element	Unit	Specification
Pressure	MPa	>3.5
Temperature	°C	55-90
LHSV	m ³ _{feed} /m ³ _{catalyst} ×h	7000-15000
Catalyst life	years	>3
Residual C ₂ H ₂	ppm	<1
C ₂ H ₄ selectivity	%	>80
MAPD conv.	%	>50