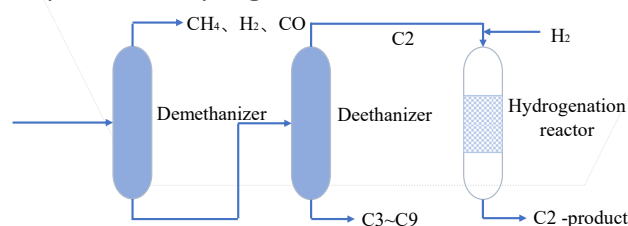


## C2 Post Hydrogenation Catalyst

### APPLICATION

The C2 post-hydrogenation process is a critical step in the purification of ethylene (C<sub>2</sub>H<sub>4</sub>) streams from steam crackers and Methanol-To-Olefins (MTO) plants, aiming to eliminate acetylene (C<sub>2</sub>H<sub>2</sub>) impurities for polymer-grade applications. The acetylene content must be reduced to below 5 ppm to meet polymer-grade ethylene specifications, while over-hydrogenation of ethylene into ethane should be minimized to maximize ethylene yield and economic value. Delion's advanced catalyst design ensures no losses of ethylene due to hydrogenation vs. the initial stream.



### DESCRIPTION

The catalyst is made using alumina with a unique pore size distribution as the carrier, palladium as the active component, and composite modifying elements that create synergistic effects and inhibit green oil formation. It is processed through a specialized preparation method.

This catalyst is suitable for use in single-stage, two-stage, and multi-stage reactor processes and is especially effective for the selective hydrogenation of C<sub>2</sub> fractions with varying acetylene contents (ranging from 10 ppm to 3%). The catalyst exhibits excellent acetylene hydrogenation activity and selectivity, outstanding anti-coking performance, a long single-cycle operational lifetime, and reliable operational stability. Additionally, the catalyst has high mechanical strength and ensures a low pressure drop across the reactor bed.

### PHYSICAL & CHEMICAL PROPERTIES

Parameter	Unit	Specification
Form	-	bids
Color	-	brownish-gray
Mean diameter	mm	2.5-4
Bulk Density	g/ml	0.75±0.05
Crushing Strength	N/cm	>50
Al <sub>2</sub> O <sub>3</sub>	%	>98
Active component		Pd

### PROCESS CONDITIONS & PERFORMANCE

Element	Unit	Specification
Pressure	MPa	>2.0
Temperature	°C	35-80
LHSV	m <sup>3</sup> <sub>feed</sub> /m <sup>3</sup> <sub>catalyst</sub> ×h	2000-8000
Catalyst cycle	months	3~6
Catalyst life	years	>5
Residual C <sub>2</sub> H <sub>2</sub>	ppm	<1
C <sub>2</sub> H <sub>4</sub> yield	%	≥100