



# 17,500 BPD Cat Naphtha Sulfur Removing Unit for Sale

## Capacity: 17,500 BPD

**Raw Materials:** Wide Cut Naphtha, Cat Naphtha

**End Product:** Ultra Low-Sulfur Gasoline Blendstock

### **Process Information:**

This process is designed to upgrade FCC naphtha by catalytically hydrogenating sulfur compounds in the feed to form H2S in order to meet sulfur specifications. This also minimizes the hydrogenation of olefins, preserving the octane rating of the final petrol or jet fuel products, and also reduces the consumption of hydrogen in the refinery.

### **Major Equipment**

- Furnaces
- Drums & Filters
- Reactors
- Tanks
- Towers
- Scrubbers
- Heat Exchanger
- Air Fin Coolers
- Pumps & Compressors
- Valves

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#### **BRIEF PLANT DESCRIPTION**

Phoenix Equipment has for sale this world class, 17,500 BPD Cat Naphtha Sulfur Removing Unit. This unit was designed to upgrade FCC naphtha by catalytically hydrogenating sulfur compounds in the feed to form H<sub>2</sub>S in order to meet sulfur specifications. The primary sulfur hydrogenation reaction is the breaking of the carbonsulfur bond and the subsequent reaction of the sulfur with hydrogen to produce H<sub>2</sub>S. The sulfur compounds in FCC product can be classified as mercaptans, sulfides, disulfides, or thiophenics. Mercaptans, sulfides, and disulfides are converted relatively quickly, while the thiophenics require more severe conditions. Below are examples of the hydrodesulfurization (HDS) reactions for each compound:

Mercaptans:  $RSH + H_2 \rightarrow RH + H_2S$ Sulfides:  $RSR' + 2H_2 \rightarrow RH + R'H + H_2S$ 

Thiophenes: HC—CH		$H_2C$ — $CH_2$	H2C—CH <sub>2</sub>
 HC CH	+ 2	1 1	$+2H_2 \rightarrow H_3C  CH_3 \qquad +H_2S$
\	$H_2 \rightarrow$	\ / S	(n-butane)

The unit can achieve 38 wppm product sulfur level (94.6% desulfurization) to produce ultra low sulfur gasoline blendstock.