



FINE CHEMICALS GROUP

## Products for Presulfiding



# The Benefits of Presulfiding with ATOFINA Chemicals' Catalyst Sulfiding Products

## IMPROVED CATALYST ACTIVITY AND LONGER CATALYST LIFE

Experience has shown that presulfiding with ATOFINA Chemicals organosulfur products significantly improves the initial activity and lengthens the effective cycle of nickel-molybdenum (NiMo), cobalt-molybdenum (CoMo), nickel-tungsten (NiW), and cobalt-tungsten (CoW) hydroprocessing catalysts, relative to presulfiding with sour feed or refinery H<sub>2</sub>S.

## REDUCED HYDROTREATING TEMPERATURES RESULT IN ENERGY SAVINGS

Proper catalyst presulfiding with ATOFINA Chemicals presulfiding products allows refiners to operate their hydrotreating units at lower temperatures without sacrificing conversion rates. In addition to saving energy, lowering operating temperatures help to minimize cracking of the feed and coke-lay down, thus extending cycle length.

## IMPROVED CONVERSION RATES

Improved catalyst activity can be taken advantage of by increasing unit throughput or through improved product quality, at constant throughput, thus increasing refinery productivity.

## COST EFFECTIVE

When compared with the alternatives, ATOFINA Chemicals presulfiding products provide an efficient, cost-effective route to getting the most out of your hydroprocessing catalyst.

## CHOICE AND FLEXIBILITY

ATOFINA Chemicals offers a complete line of presulfiding products to meet each situation. DMDS leads the market due to its consistent, low decomposition temperature, low volatility, and high sulfur content. DMS is still used as a low cost alternative. We pioneered the use of an odorless sulfiding agent, TNPS.



# ATOFINA Chemicals Presulfiding Agents




USE PROPERTIES	DMDS	DMS	POLYSULFIDES	EM
Decomposition Temp (°F) in Presence of Catalyst*	390	480	320	390
Heat Release (MM BTU/lb. Mole H <sub>2</sub> S)	18.7	28.6	NE	12.8
H <sub>2</sub> Usage (SCF/lb. Mole H <sub>2</sub> S)	569	758	463	379
Hydrogen Consumption For Presulfiding a typical 100m BPD Hydrotreater (M SCF)	782	1,160	710	580
PHYSICAL PROPERTIES				
% Contained Sulfur (min.)	67.2	51.1	35	51.2
Molecular Wt.	94.2	62.1	414	62.1
Specific Gravity @60°F (68°F)	1.063	0.854	1.026- 1.045	0.847
Flash Point °F	59	<0	250	<0
Vapor Pressure psia @100°F	0.5	14.9	NE	16.2

NE= Not Established

\*In the presence of H<sub>2</sub> and NiMo or CoM catalyst

# ATOFINA Chemicals...The World Leader in Presulfiding Agents



For over 50 years, ATOFINA Chemicals has been the world leader in the field of organosulfur products and technology. Our rich history has its roots as the first company in the U.S. to synthesize mercaptans on a commercial scale. Since then, we've been supplying the refining industry with quality products and service for presulfiding hydroprocessing catalysts.

## **WE OFFER THE BROADEST CHOICE OF PRESULFIDING AGENTS IN THE INDUSTRY:**

Dimethyl Disulfide (DMDS)

Dimethyl Disulfide Evolution (DMDS E)

Dimethyl Sulfide (DMS)

Ethyl Mercaptan (EM)

## **WE OFFER ON-TIME, CLOSED-SYSTEM DELIVERIES**

- On-site assistance with equipment hook-up
- Safety and handling advice
- Specifically designed trailers and equipment with trained drivers
- Personal service from highly trained technicians

## **WE OFFER SUPERIOR TECHNICAL SERVICE**

- Professional advice in selecting a presulfiding agent
- Latest product technology
- Safety and environmental information

# Dimethyl Disulfide (DMDS)... The Industry Standard

## DIMETHYL DISULFIDE (DMDS)...

- ENSURES HIGH CATALYST ACTIVITY
- DECOMPOSES AT LOWER TEMPERATURE THAN MOST PRESULFIDING AGENTS AND RESULTS IN CONVERSION TO  $H_2S$  AT A LOWER TEMPERATURE
- REDUCES THE TIME REQUIRED FOR PRESULFIDING
- HIGH SULFUR CONTENT MEANS YOU WILL USE LESS SULFIDING AGENT
- REDUCES THE RISK OF UNDECOMPOSED SULFIDING AGENT IN DOWNSTREAM PRODUCT
- REDUCES CATALYST COKING
- EASIER TO HANDLE THAN MOST PRESULFIDING AGENTS
- DMDS IS THE PREFERRED PRESULFIDING PRODUCT THROUGHOUT THE WORLD



**FOR CUSTOMER SERVICE OR  
TECHNICAL INFORMATION CALL:**

**1-800-628-4453**

**OR VISIT OUR WEB SITE AT:**

**[www.e-OrganicChemicals.com](http://www.e-OrganicChemicals.com)**

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