Guaranteed Solutions

For Your Gas Processing Needs

Huntsman has been a leader in gas processing technology for more than 60 years. The company offers a wide gas treating portfolio, including DGA® Agent, JEFFTREAT® amines, and additives like JEFFTREAT® AO-832 and AF-61. Huntsman now offers licensed technology packages that can be customized to meet specific acid gas removal needs. This enables our customers to benefit from our reliable and guaranteed technology, while minimizing their risk.

As a leading manufacturer and licensor of multiple gas treating technologies, Huntsman can leverage the technical expertise of its team to deliver our technologies, while minimizing their risk.

Complete Solutions

With proprietary amine and non-amine technologies, Huntsman is one of the few chemical manufacturers that offer a broad portfolio of gas treating products. Coupled with our global manufacturing footprint, our attention to product quality, competent technical support and state-of-the-art analytical service, our licensing team is able to guarantee the reliability of your gas processing facilities.
Guaranteed Solutions for Your Gas Processing Needs

Huntsman has been a leader in gas processing technology for more than 60 years. The company offers a wide gas treating portfolio, including DGA® Agent, JEFFTREAT® solvents, and additives like JEFFTREAT® and DIGLYCOLAMINE® (DGA®) Agent, JEFFTREAT® and JEFFSOL® are registered trademarks of Huntsman Corporation or an affiliate thereof. All rights reserved. Copyright © 2015 Huntsman Corporation or an affiliate thereof in one or more, but not all, countries.

A Track Record of Success

More than 600 of their operating facilities use Huntsman’s proven and reliable technologies today for processing their sour gas. More than 250 companies around the world at over 600 of their operating facilities use Huntsman’s proprietary technologies to add value to their business. Huntsman’s licensing team relies on Huntsman’s proprietary guaranteed solutions. From planning to production, Huntsman can leverage the technical and project management expertise of its team to deliver our guaranteed technology, while minimizing their risk.

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Huntsman offers a comprehensive licensing approach, starting with plant design through start-up, operator training and follow-up. With this approach, Huntsman is able to provide support throughout the licensing lifecycle on specific aspects, including:

- Process assessment, planning and design
- Provision of basic engineering data and relevant technical support
- Process start-up and on-site support

As a leading manufacturer and licensor of multiple gas treating technologies, Huntsman can leverage the technical and project management expertise of its team to deliver our guaranteed licensing solutions. From planning to production, our licensing team relies on Huntsman’s proprietary technologies to add value to our customers’ business.

Innovative Solutions for Your Gas Processing Needs

For Your Gas Processing Needs

Comprehensive Service and Support

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www.huntsman.com/performance_products
Huntsman Solvents for Acid Gas Processing

**Commodity Solvents**

- **DIETHANOLAMINE (DEA)** is used for CO₂ removal from refinery and natural gas streams, as well as from hydrogen gas streams with high CO₂ and low H₂ partial pressures.
- **DIGLYCOLAMINE® (DGA®)** Agent is used for CO₂ removal from refinery and natural gas streams using DGA as a gas treating agent. It is a solvent of choice for a number of difficult low-pressure and high-temperature gas treating applications, as well as LNG pre-treatment and crude sulfur removal.
- **JEFFTREAT® MS-300 Series** is specially formulated for bulk CO₂ removal applications.
- **JEFFTREAT® M** is available within the JEFFTREAT product line. The solvent is formulated to provide deep CO₂ removal from refinery and natural gas streams.
- **Mesoamines** (MDEA) and **Diethanolamine (DEA)** are used extensively as gas-removal agents to remove H₂S and CO₂ from refinery and natural gas streams.

**Customized Process Solutions**

- **AHF-1000** is formulated to provide deep removal of CO₂ from gas processing applications, as well as LNG pre-treatment plants, hydrogen production, ammonia manufacture and crude oil gas processing.

**Effect of JEFFTREAT® AG-802 on Stability of Formulated MDEA Solvents**

- **Effect of JEFFTREAT® AT-51 on MDEA Foam Height and Surface Tension**

**Effect of JEFFTREAT® MS-80 on Stability of Formulated MDEA Solvents**

**Effect of JEFFTREAT® MS-100 on Stability of Formulated MDEA Solvents**

**Effect of JEFFTREAT® M-500 on Stability of Formulated MDEA Solvents**

**Effect of JEFFTREAT® M-200 on Stability of Formulated MDEA Solvents**

**Effect of JEFFTREAT® M-100 on Stability of Formulated MDEA Solvents**

**Effect of JEFFTREAT® M-00 on Stability of Formulated MDEA Solvents**

**Effect of JEFFTREAT® M-0 on Stability of Formulated MDEA Solvents**

**Effect of JEFFTREAT® AO-832 on Stability of Formulated MDEA Solvents**

**Effect of JEFFTREAT® AF-61 on MDEA Foam Height and Surface Tension**

**Huntsman’s Advantage**

- **Huntsman gas treating technology and performance oriented service.**
- **Huntsman provides comprehensive analysis, including corrosion analysis, detrimental attack testing, and contamination analysis.**
- **Huntsman offers tailorable solutions for the removal of H₂S and CO₂ in refinery and produced gas streams, as well as synthesis gas, hydrogen and ammonia applications.**
- **Huntsman provides a range of gas treating chemical worldwide to the gas conditioning industry for the removal of H₂S and CO₂ in refinery and produced gas streams, as well as synthesis gas, hydrogen and ammonia applications.**

**Maximizing Performance with our Additives**

- **JEFFTREAT® MS-300** Solvent is specially designed for bulk and deep CO₂ removal applications.
- **JEFFTREAT® MS-200** Solvent is specially formulated for TGTU applications or other units requiring very low slip is needed. These applications include high-pressure natural gas, refinery gas or Claus off-gas treating (TGTU).
- **JEFFTREAT® M** is especially designed for bulk and deep CO₂ removal applications.
- **JEFFTREAT® MS-200 Series** of MDEA-based solvents is formulated for tailored bulk CO₂ removal applications.
- **JEFFTREAT® MS-300 Series** of MDEA-based solvents is formulated for tailored bulk CO₂ removal applications.
- **JEFFTREAT® MS-100 Series** of MDEA-based solvents is formulated for tailored bulk CO₂ removal applications.
- **JEFFTREAT® MP** solvent is specially formulated to provide deep removal of CO₂ from gas processing applications, as well as LNG pre-treatment plants, hydrogen production, ammonia manufacture and crude oil gas processing.
Huntsman Solvents for Acid Gas Processing

Maximizing Performance with our Additives

**Effect of JEFFTREAT® AO-802 on Stability of Formulated MDEA Solvents**

- **JEFFTREAT® M-500**
- **JEFFTREAT® MS-200 Series**
- **JEFFTREAT® AF-61**

**Commodity Solvents**

- JEFFSOL® Propane Carbonate (PC)
- JEFFSOL® Propylene Carbonate (PC)
- Diethanolamine (DEA)
- Monothanolamine (MEA)

**Specialty Amines**

- DIGLYCOLAMINE® (DGA®) Agent and
- DIGLYCOLAMINE® (DGA®) Agent

**Customized Process Solutions**

- JEFFTREAT® M-500 is specially formulated for tailored bulk CO2 removal applications.
- JEFFTREAT® MS-200 series of formulated solvents is specially designed for bulk and deep CO2 removal applications.
- JEFFTREAT® MS-300 is specially formulated for TGTU applications or other units requiring very low residual H2S and additional CO2 removal.
- JEFFTREAT® MS-300 series of MDEA-based solvents is formulated for tailored bulk CO2 removal applications in the presence of significant amounts of H2S.
- JEFFTREAT® MS-100 series of formulated solvents is specially formulated for selective H2S applications, where appreciable CO2 slip is needed. These applications include high-pressure natural gas, refinery and natural gas streams.

**JEFFTREAT® AO-802** additive is an innovative gas treating additive that hinders the oxidative attack of amine and greatly reduces amine degradation.
- **JEFFTREAT® AF-61** additive hinders foaming in amine solvents.

**Huntsman Line of Gas Treating Solvents**

- JEFFTREAT® M, M-500 and MS-200 series
- JEFFSOL® Propylene Carbonate (PC)
- DIGLYCOLAMINE® (DGA®) Agent
- Specialized Amines

**Huntsman Gas Treating Technology and Performance-Oriented Service**

- Over 4,000 customers in 100+ countries
- Global manufacturing footprint
- Effective cross-market technology
- Ideal Innovation Partner

**Why Choose Huntsman?**

- **Reliable Technical Service and Support**
- Design and operation of gas treating units
- Custom simulations for design parameter estimation
- Start-up and turnaround assistance
- High quality sample analysis
- Process monitoring and optimization
- Operational trouble shooting
- Operator and engineer training

**Comprehensive Analytical Support**

- Huntsman provides comprehensive analyses, including corrosion analyses, antifoam degassing, and contamination analysis. Our world scale lab located at The Woodlands, Texas, offers:
  - Routine analyses including color, metals, water content, and amine strength
  - Periodic analyses including antifoam strength, gas loading, foaming, and heat stable salts

- **When you make Huntsman your supplier of choice for your gas treating chemical requirements, you gain technology, and performance-oriented service.** Since 1950, Huntsman Corporation (formerly Jefferson Chemical Company/ Beaois Chemical Company) has helped our customers find the most effective ways to solve their gas treating problems. Huntsman Corporation supplies a range of gas treating chemicals worldwide to the gas conditioning industry for the removal of H2S and CO2 in refinery and produced gas streams, as well as synthesis gas, hydrogen and ammonia applications.
Huntsman Solvents for Acid Gas Processing

**Commodity Solvents**
- **JEFFSCOL® Propylene Carbonate (PC)** is used for CO2 removal from natural gas, refinery syngas, gas and hydrogen gas streams with high CO2 and low H2S
- **JEFFTREAT® M** is available within the JEFFTREAT® product line. This solvent is for customers who choose to utilize generic methyl diethanolamine (MDEA) either as a formulated MEA solvent.
- **Methoxylaminol (MEA)** is a Diethanolamine (DEA) that is used extensively as gas-removal agents to remove H2S and CO2 from refinery and natural gas streams.

**Specialty Amines**
- **DIG/COCLAMINE® (DGA®) Agent** is included in the Huntsman line of gas treating solvents. Our 2-D (aminoethoxy) ether is widely used as a gas-scrubbing agent. It is a solvent of choice for a number of different low-mo pressure and high-temperature gas treating applications, as well as LNG pre-treatment and flare sulfur removal.
- **JEFFTREAT® M-200 Series** is specially formulated for LNG pre-treatment applications using DGA®.
- **JEFFTREAT® M-300 Series** is specially formulated for TGTU applications or other units requiring very low residual H2S and additional CO2 degradation.
- **JEFFTREAT® MS-200 Series** is formulated for LNG pre-treatment and trace sulfur removal.
- **JEFFTREAT® M-500 Series** is specially formulated to provide deep CO2 removal for liquefied natural gas (LNG) applications.

**Effect of JEFFTREAT® AF-61 on MDEA Foam Height and Surface Tension**

- **Without AO-832**
- **With AO-832**

**Customized Process Solutions**

- **CO2 removal for liquefied natural gas (LNG)** gas treatment plants using JEFFTREAT® Agent and JEFFTREAT® MP solvents.
- **Gas sweetening by H2S and CO2 removal from natural gas streams using JEFFTREAT® Agent and JEFFTREAT® M, M-200 and M-200 series of specialty amines.
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