

**Technical Bulletin****JEFFTREAT<sup>®</sup> MS-100 SOLVENT**

**JEFFTREAT<sup>®</sup> MS-100 solvent** is a clear, water white, hygroscopic liquid with an ammoniacal odor.

**APPLICATIONS**

JEFFTREAT MS-100 gas treating solvent has been developed to selectively remove hydrogen sulfide from gas streams containing hydrogen sulfide and carbon dioxide mixtures. It can also be effectively used in sweet gas treating to meet variable carbon dioxide specifications found in the natural gas industry. Typical applications for JEFFTREAT MS-100 solvent include:

- Claus tail gas treating
- Natural gas treating
- Coal and waste gasification gases treating
- Refinery and petrochemical gas treating

Traditionally, primary and secondary alkanolamines having little or no hydrogen sulfide selectivity, such as monoethanolamine (MEA) and diethanolamine (DEA), have been used for the combined removal of hydrogen sulfide and carbon dioxide from gas streams. However, as energy and capital costs increase, and with the increased use of sour crudes and natural gases, selectively removing hydrogen sulfide from gas streams containing mixtures of hydrogen sulfide and carbon dioxide has become more economically attractive.

**BENEFITS**

JEFFTREAT MS-100 solvent is a specially formulated, methyldiethanolamine (MDEA)-based gas treating amine. Relative to MEA, DEA and diisopropanolamine (DIPA), JEFFTREAT MS-100 solvent exhibits higher hydrogen sulfide selectivity, higher acid gas loading capability, lower corrosion and degradation tendency, generally lower amine makeup, and lower energy to regenerate. In addition, there is no need for a reclaimer. These characteristics can translate into lower operating costs, increased process capacity of existing equipment, and reduced capital costs for new equipment.

Compared to generic MDEA, JEFFTREAT MS-100 solvent will absorb less carbon dioxide, resulting in a higher quality acid gas feed to downstream sulfur plants.

**SALES SPECIFICATIONS**

<b>Property</b>	<b>Specifications</b>	<b>Test Method*</b>
Appearance	Clear to slightly hazy, substantially free of foreign matter	ST-30.1
Color, Pt-Co	150 max.	ST-30.12

\*Methods of Test are available from Huntsman Corporation upon request.

**ADDITIONAL INFORMATION****Regulatory Information**

DOT/TDG Classification	Not regulated
HMIS Code	2-1-0
WHMIS Classification	Class D-2B: Irritant

**Chemical Control Laws**

Australia, AICS	Listed
Canada, DSL	Listed
Europe, EINECS/ELINCS	Listed
Japan, METI	Listed
United States, TSCA	Listed

**Typical Physical Properties**

Flash point, PMCC, °C (°F)	93 (> 200)
Freezing point, °C (°F)	< 21 (< -6)
Specific gravity, 20/20°C	1.04
Viscosity, cSt, 38°C (100°F)	> 25
Water solubility (%)	> 10
Weight per gallon, 20°C, lb	8.7

## USER GUIDELINES

Huntsman Corporation recommends that JEFFTREAT® MS-100 solvent be used in concentrations of 40 to 50 wt. %, depending on operating parameters specific to each individual unit.

## TECHNICAL SERVICES

Additionally, the purchase of JEFFTREAT MS-100 solvent entitles customers to a full line of technical services provided by Huntsman Corporation's gas treating specialists. These services include assistance with initial process design, operator training, start-ups, and trouble-shooting plant operations, as well as solution analyses and interpretation.

## TOXICITY AND SAFETY

On the basis of acute studies with laboratory animals, JEFFTREAT MS-100 solvent is considered slightly toxic by single oral dose and practically nontoxic by single dermal application. JEFFTREAT MS-100 solvent is considered moderately irritating to the eyes, but only slightly irritating to the skin. The product is not corrosive under the conditions of the DOT corrosivity test and is not classified as a hazardous material by DOT definition for transportation purposes.

Chemical-type goggles must be worn when handling JEFFTREAT MS-100 solvent. In addition, exposed employees should exercise reasonable personal cleanliness, including washing exposed skin areas several times daily with soap and water and laundering soiled work clothes at least weekly.

For additional information on the toxicity and safe handling of this product, consult the Material Safety Data Sheet (Safety Data Sheet in Europe) prior to use of this product.

## HANDLING AND STORAGE

The handling and storage of JEFFTREAT solvents present no unusual problems. See the section on toxicity and safety for additional information.

The properties and alkaline nature of JEFFTREAT solvents should be considered when choosing materials of construction. JEFFTREAT solvents should not be stored in tanks made from zinc, galvanized steel, or copper and its alloys since the solvent will react with copper to form complex salts. Also avoid the use of elastomers such as Buna N, Viton®, neoprene, and nitrile as these materials tend to swell when exposed to the amine. Kalrez® 1050 LF performs satisfactorily in amine service as well as materials made from polypropylene and Teflon®.

A carbon steel storage tank, constructed according to a recognized code, is generally satisfactory. Carbon steel transfer lines, joined by welds or flanges, are suitable. Screw joints are subject to failure unless back-welded. Flexitallic® gaskets work well for flanged connections. For pumps, a Durametalllic Type RO-TT mechanical seal or equivalent is suitable.

## AVAILABILITY

JEFFTREAT MS-100 solvent is currently available in 55-gallon drums, tank wagons, and tank cars.

5162-1007

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