

GAS/SPEC SS Specialty Amine

GAS/SPEC* SS specialty amine is an INEOS formulated MDEA (methyldiethanolamine) specifically designed for the gas treating industry. It selectively removes H₂S over CO₂ from a gas or liquid stream, which results in greater acid gas removal capacity per volume of circulating solution than amines such as monoethanolamine (MEA), diethanolamine (DEA), and diisopropanolamine (DIPA). GAS/SPEC SS is less corrosive and less prone to degradation than MEA, DEA or DIPA, and it can be used at up to 50 weight % amine strength, which reduces amine circulation rate and energy usage. This translates into lower operating costs and increased capacity for existing equipment and reduced capital for new equipment.

GAS/SPEC SS has tighter sales specifications than generic MDEA and comes with the full range of GAS/SPEC services.

* GAS/SPEC is a trademark and service mark of INEOS LLC.

APPLICATIONS

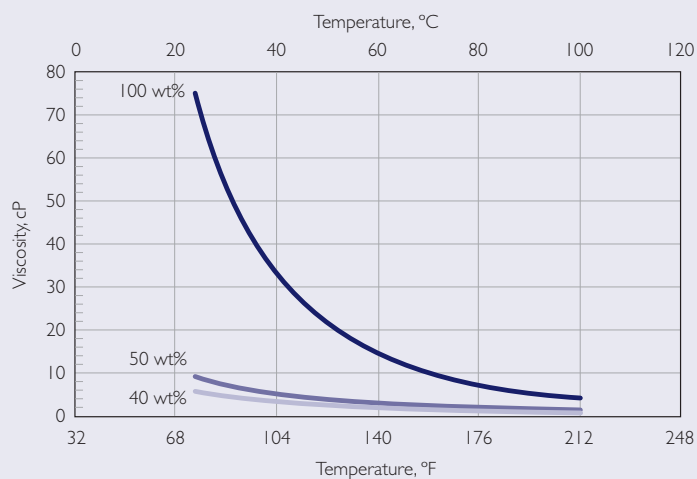
- Natural Gas Treating
- Coal Gasification
- Refinery Systems
- Enhanced Oil Recovery
- Tail Gas Treating
- LPG & NGL Treating

PHYSICAL PROPERTIES ¹

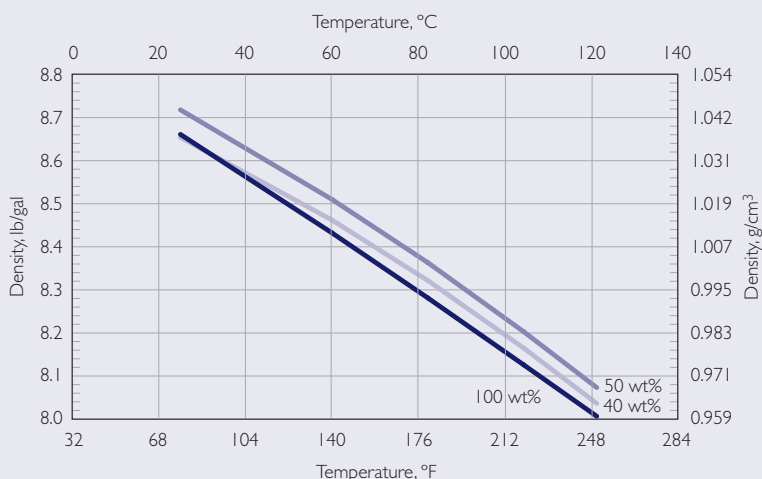
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|--|---------------------------|
| Specific Gravity @ 25/25° C | 1.04 |
| Boiling Point @ 760 mmHg | 247.0 °C |
| | 476.6 °F |
| Freezing Point (100 Wt%) | -22.5 °C |
| | -8.5 °F |
| Latent Heat of Vaporization @ normal boiling point | 200.2 Btu/lb _m |
| | 111.0 Cal/g |
| Flash Point (PMCC) | 127.0 °C |
| | 260.6 °F |

¹GAS/SPEC SS concentrate. Typical properties, not to be construed as specifications

Viscosity



Density



PRODUCT SERVICES

INEOS offers a broad line of services to our specialty amine customers, including:

- superior simulation capabilities
- troubleshooting consultations
- on-site start-up and optimization
- solvent analysis and interpretation
- local stocking & supply

MATERIALS OF CONSTRUCTION

The preferred material for storage of GAS/SPEC SS is 304L or 316L stainless steel. Carbon steel tanks are also satisfactory, although discoloration and iron in the amine may occur. Nitrogen padding of the tanks is recommended to prevent oxidation and discoloration of the amine during extended storage. The amine can also be stored in high-density polyethylene (HDPE) or polypropylene (HDPP).

Materials to avoid include:

- Aluminum
- Copper
- Brass
- Copper alloy

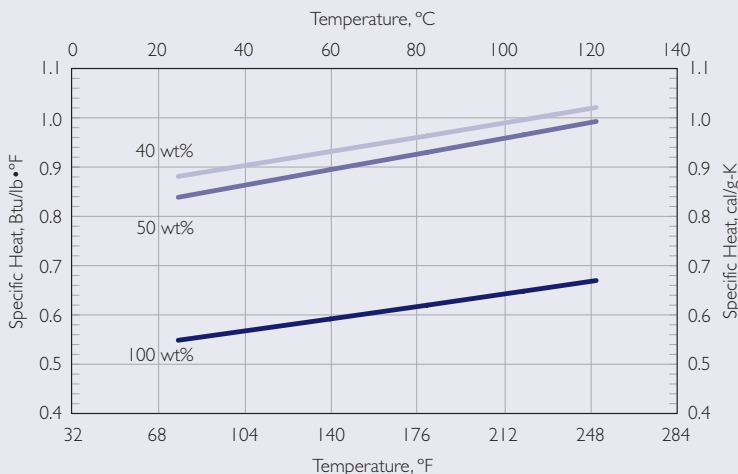
STORAGE TEMPERATURE

- The recommended minimum temperature for storing and pumping 100% GAS/SPEC SS is 20 °F (-7 °C).
- Dilution of GAS/SPEC SS with a small amount of water will depress the freezing point and lower the viscosity for pumping.
- Steam tracing and insulation may be required in cold weather:

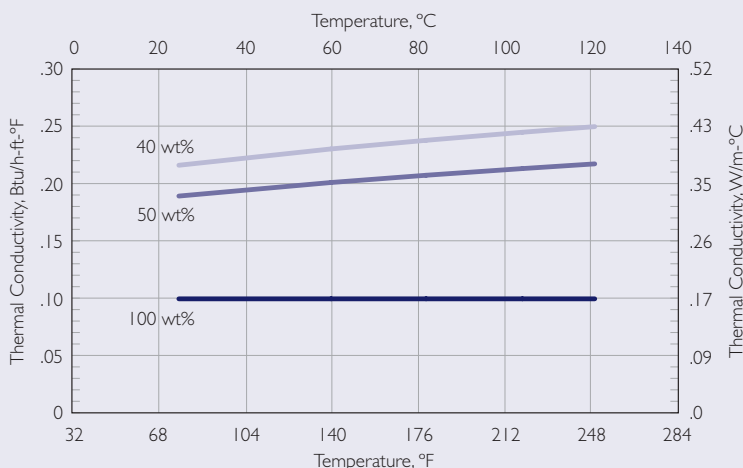
HANDLING AND SAFETY

- GAS/SPEC SS can cause serious injury to the eyes and may result in permanent eye injury. If accidental contact with the eyes occurs, flush them thoroughly with water and seek medical attention.
- Single-dose oral toxicity of GAS/SPEC SS is low.
- Swallowing large amounts of GAS/SPEC SS may cause severe burns to the mouth, throat, and digestive tract. Accidental ingestion of small amounts of GAS/SPEC SS is not expected to cause injury.
- May cause irritation to the skin. Occasional brief contact with the skin should be washed off immediately and should have few adverse effects. If GAS/SPEC SS is heated or a mist produced, concentrations may be sufficient to cause irritation to the upper respiratory tract.
- Consult Product Material Safety Data Sheet for more details.

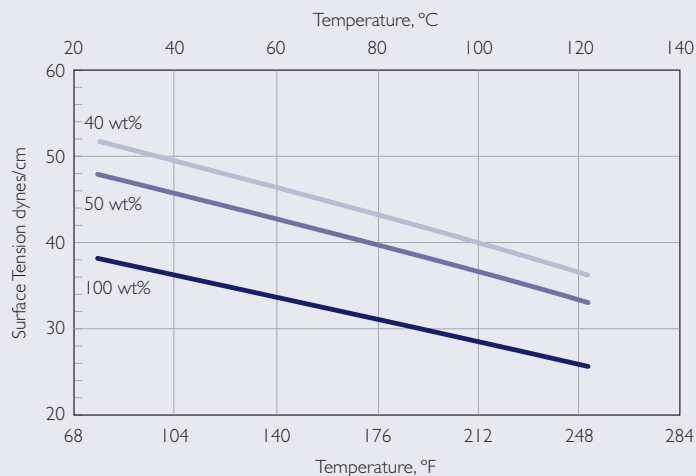
Specific Heat



Thermal Conductivity



Surface Tension



The following precautions should be observed when the possibility of exposure exists:

- A safety shower and eyewash facility located nearby
- Chemical goggles
- Protective clothing, including chemically resistant gloves
- A well-ventilated work area

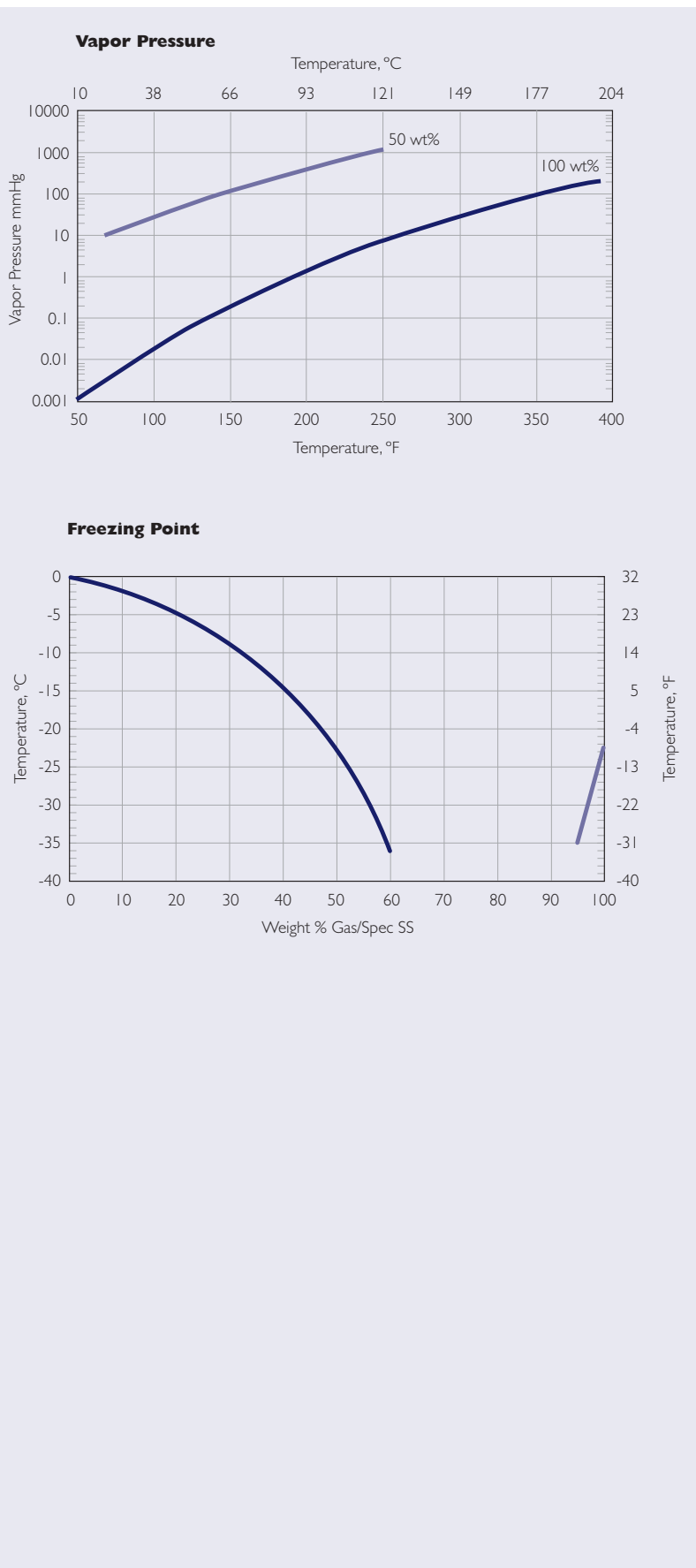
Accidental Release

- Clear non emergency personnel from area.
- PROTECT THE ENVIRONMENT: Keep out of sewers, storm drains, surface waters and soil.
- Contain spill if possible. Clean up with a non-combustible absorbent. Do not use sawdust.

REGULATORY

Regulatory requirements may vary for different locations. Contact your INEOS representative for more information.

- GAS/SPEC SS is not considered hazardous according to the guidelines of the U.S. Department of Transportation (DOT).
- GAS/SPEC SS, as sold, contains no chemical subject to SARA Title III Section 313 supplier notification requirements.
- The export of this product is regulated under the provisions of the Chemical Weapons Convention.



GAS/SPEC

Since 1982, the GAS/SPEC name has represented a special focus on the products, technology and service to chemically remove acid gases from process streams. The GAS/SPEC business unit has been continuously headquartered in Houston, Texas, with its major technical facility in Freeport, Texas.

The family of specialty amines offered by the GAS/SPEC Technology Group, all based on MDEA technology, provides custom H₂S and CO₂ removal in amine treating operations. The GAS/SPEC products and technology are exclusively offered by INEOS LLC and its specialized distributors.

The GAS/SPEC Technology Group is dedicated to achieving the highest degree of customer satisfaction globally through the application of the best available technology through the supply of cost-effective products and services. Other companies offer MDEA based products, some even attempting to emulate GAS/SPEC with similar sounding names... But only products with the GAS/SPEC name bring you the formulations, technology and service you are used to.

INEOS LLC is a part of INEOS Oxide.

INEOS Oxide manufactures a full range of products based on its production of ethylene oxide.

INEOS Oxide

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