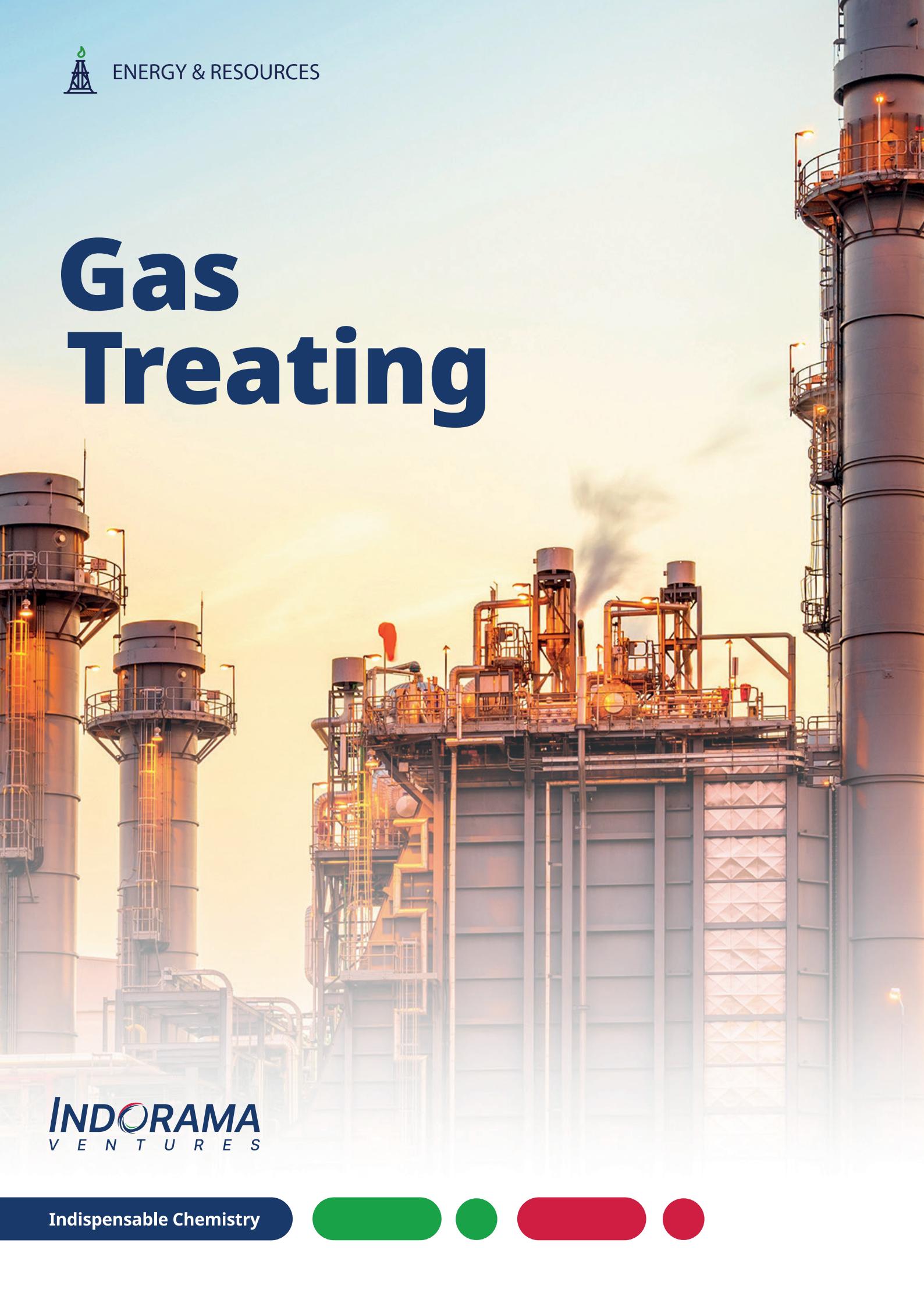




ENERGY & RESOURCES

Gas Treating



INDORAMA
VENTURES

Indispensable Chemistry





Indovinya is the leader in the gas treatment applications. Our solutions are designed to optimize the efficiency and profitability of gas treatment systems, meeting the requirements of a dynamic and demanding market.

Our platforms focus on two main areas: Gas Dehydration and Hydrogen Sulfide (H₂S) Scavengers.

In natural gas systems, removing moisture is essential to prevent pipeline corrosion, eliminate hydrate-induced blockages, and ensure the water dewpoint remains below the lowest pipeline temperature to avoid free-water formation. Gas treated with amines to remove acidic gases becomes water-saturated and must be dehydrated before entering the pipeline. The most common dehydration method uses glycol to absorb water vapor, with level controls managing water-rich glycol removal and safety shutdowns applied to key equipment for efficient operation.

Meanwhile, our H₂S Scavengers play a crucial role in removing these compounds from natural gas and other gas streams, contributing to environmental protection, safety and compliance with strict regulations.



Gas Dehydration



H₂S Scavengers





ULTROIL® SV | TRIAZINE BASED

MEA Triazine is the most widely used non-regenerative chemical for removing toxic and corrosive hydrogen sulfide (H₂S) in the oil and gas industry. It is applied to natural gas, refinery streams, and olefin cracker products, and has been successfully used worldwide. Triazine is also effective in controlling low concentrations of H₂S in other applications such as scale remediation, reservoir stimulation, and sour shale gas production. MEA Triazine products are high-performance H₂S scavengers that ensure personnel safety, protect equipment from corrosion, and meet industry standards.

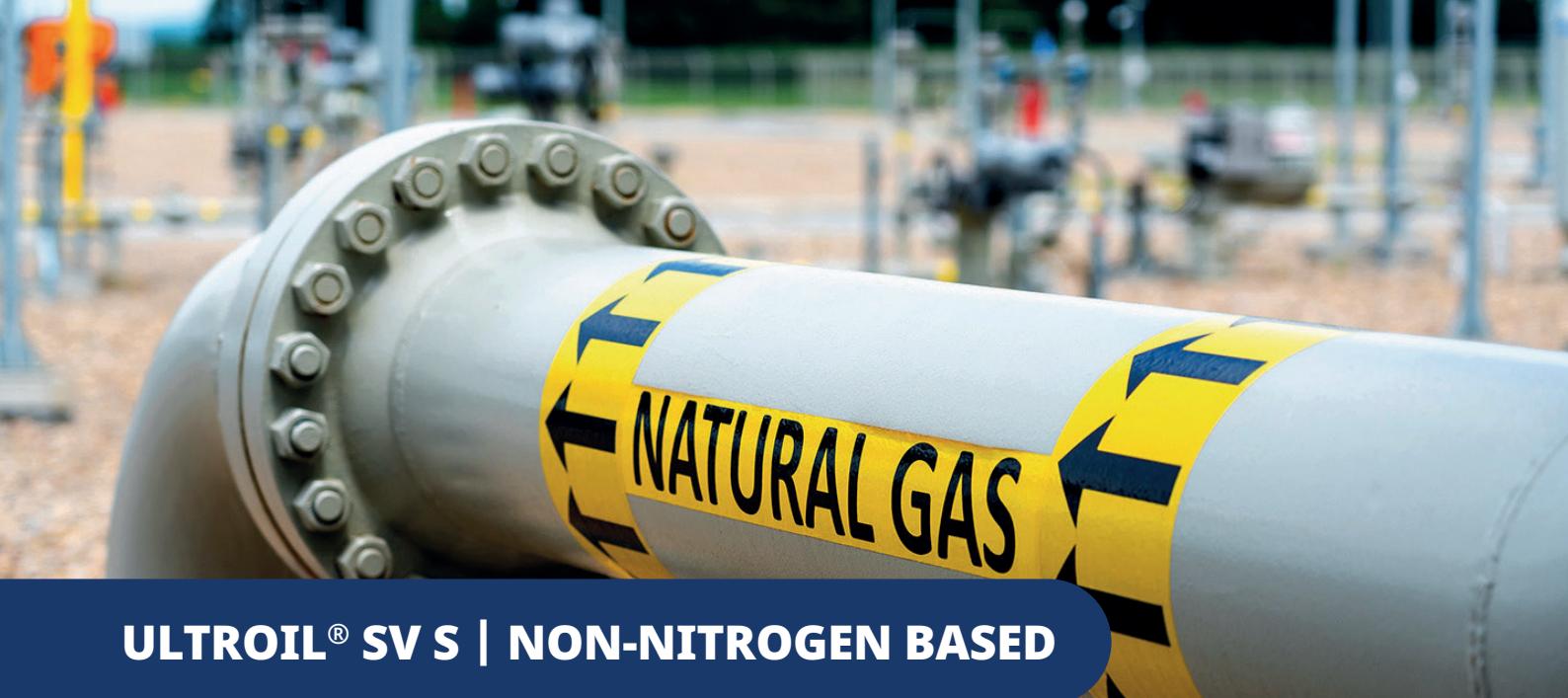
FEATURES & BENEFITS

- Low-cost performance optimization
- Quick scavenging kinetics
- Biodegradable
- Wide Range of concentrations
- Irreversible scavenging reaction



TECHNICAL DATASHEET

PROPERTIES	ULTROIL® SV 050	ULTROIL® SV 060	ULTROIL® SV 070	ULTROIL® SV 078
Description	Low Cost Triazine	Competitive Triazine	Widely Used Triazine	Concentrated Triazine
Appearance	Yellowish Liquid	Yellowish Liquid	Yellowish Liquid	Yellowish Liquid
Active Content (%wt)	49-51	58-62	70-75	74-82
Relative Density (g/cm³) @ 25 °C	1.00-1.14	1.07-1.15	1.07-1.15	1.13-1.16
Flash Point	> 92 °C / > 198 °F	> 92 °C / > 198 °F	> 95 °C / > 203 °F	> 95 °C / > 203 °F
Boiling Point	Approx. 110 °C / 230 °F	Approx. 110 °C / 230 °F	Approx. 110 °C / 230 °F	Approx. 110 °C / 230 °F
pH	10-11 (1% wt aqueous)	9-11 (1 w/w, IPA water 4:1, 25 °C)	10-12 (1 w/w, IPA water 4:1, 25 °C)	10-11 (1% wt aqueous)

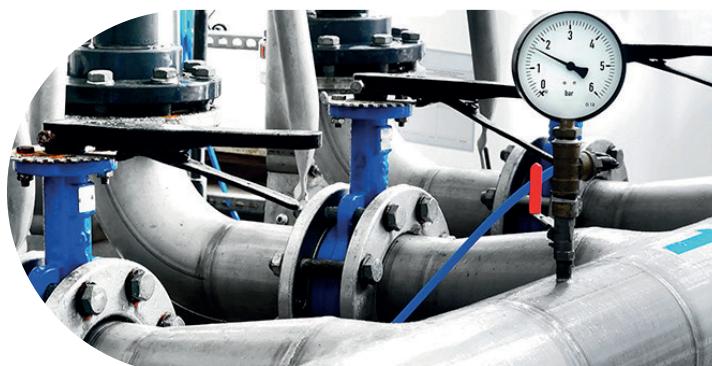


ULTROIL® SV S | NON-NITROGEN BASED

The use of non-triazine based H₂S scavenger is crucial for ensuring the efficiency and safety of gas treatment processes. EthyleneDioxyDiMethanol (EDDM) is one of those non-nitrogen based scavengers that effectively captures and removes hydrogen sulfide (H₂S) from gas and liquid streams. The presence of H₂S can cause severe corrosion in pipelines and equipment, as well as pose health and environmental risks. EDDM is effective in forming stable complexes with H₂S, protecting infrastructure, meeting environmental regulations, and ensuring gas quality for transportation and processing.

FEATURES & BENEFITS

- Minimal impact mineral scaling and associated with hydrate formation
- Scavenging efficiency comparable/superior to triazine
- Neutral pH
- Minimal water content
- Less downtime due to best-in-class deposit control



TECHNICAL DATASHEET

PROPERTIES	ULTROIL® SV S0	ULTROIL® SV 11	ULTROIL® SV S20
Description	Concentrated Nitrogen Free Scavenger	Diluted Nitrogen Free Scavenger	Innovative Scavenger
Appearance	Colorless to Yellowish Liquid	Colorless to Yellowish Liquid	Colorless to Yellowish Liquid
Active Content (%wt)	100	92	60
Relative Density (g/cm ³) @ 25 °C	1.19	1.15	1.17
Flash Point	83 °C / 181 °F	53 °C / 127 °F	87 °C / 189 °F
Boiling Point	> 118 °C / > 244 °F	Approx. 118 °C / 244 °F	Approx. 106 °C / 222 °F
pH	6-8 (1% wt aqueous)	6-8 (1% wt aqueous)	6-7 (1% wt aqueous)



GLYCOLS & AMINES

Glycols, such as **MonoEthylene Glycol (MEG)** and **DiEthylene Glycol (DEG)**, are essential in natural gas dehydration. They remove moisture from the gas to prevent hydrate formation, which can block pipelines and cause corrosion.

The process involves the glycol absorbing water, which is then removed by heating and regenerating the glycol. Glycol use is efficient and cost-effective, ensuring the quality of natural gas for transportation and processing.

Amines, such as **MonoEthanolamine (MEA)** and **DiEthanolAmine (DEA)**, play a critical role in natural gas treatment. DEA efficiently removes hydrogen sulfide (H_2S), which can lead to pipeline corrosion and degrade gas quality, while MEA primarily removes carbon dioxide (CO_2) and can also serve as a raw material for triazine production. The process involves the amine solution absorbing these impurities from the gas stream, followed by heating to regenerate the amine for reuse. This method is both efficient and cost-effective, ensuring that natural gas meets stringent quality standards for safe transportation and processing.

FEATURES & BENEFITS

- **Efficient water removal**
- **Power saving**
- **Regeneration & reusability**
- **Chemical stability**
- **Versatility**



TECHNICAL DATASHEET

PROPERTIES	MEA	DEA	DEA-W	MEG	DEG	TEG
Description	Monoethanolamine	Diethanolamine	Diethanolamine	Monoethylene glycol	Diethylene Glycol	Triethylene Glycol
Appearance	Liquid Clear	Liquid Clear	Liquid Clear	Liquid Clear	Liquid Clear	Liquid Clear
Active Content (%wt)	99.5	99.0	85.0	99.9	99.5	98.5
Relative Density (g/cm³) @ 25 °C	1.015	1.092	1.093	1.115	1.120	1.125
Flash Point (Open cup)	90 °C / 194 °F	> 93 °C / > 199 °F	> 100 °C / > 212 °F	116 °C / 240 °F	143 °C / 289 °F	165 °C / 329 °F
Boiling Point	170 °C / 338 °F	> 260 °C / > 500 °F	> 260 °C / > 500 °F	198 °C / 388 °F	245 °C / 473 °F	287 °C / 548 °F
pH	12.1 (3% w/w in water)	11.5 (10% w/w in water)	11.4 (10% w/w in water)	7.0 (25% w/w in water)	7.0 (25% w/w in water)	7.0 (50% w/w in water)



DISCLAIMER

This information is provided in good faith, based on Indorama Ventures current knowledge of the subject and is purely indicative. No information, including suggestions for using the products, should preclude experimental testing and verification, which are essential to ensuring the suitability of the products for each specific application. Consult the contact from your region or country regarding the availability of each product. All users must also respect local laws and obtain all the necessary permits. When handling the product, consult the safety data sheet. If you have any questions or additional needs, please contact Indorama Ventures through our customer service channels. September/24.