



Gas Treating Products & Services

UCARSOL HS 103 Solvent For Selective H₂S Removal

Introduction

UCARSOL HS 103 solvent, one of Dow's series of high-performance gas treating solvents, is designed specifically for use in tail gas treating processes. UCARSOL HS 103 solvent selectively removes hydrogen sulfide (H₂S) in preference to carbon dioxide (CO₂). This product has been specially formulated to achieve very low levels of H₂S, even in the demanding low pressure conditions found in a tail gas unit, and this can eliminate the incineration operation associated with tail gas units.

Its high selectivity, coupled with the ability to reduce H₂S to the minimal levels dictated by environmental regulations, makes UCARSOL HS 103 solvent particularly well-suited for tail gas units. By eliminating the need to incinerate effluent gas streams, customers can realize significant operating and capital cost savings.

The selectivity of UCARSOL HS 103 solvent is superior to such commonly used selective solvents as diisopropanolamine (DIPA) and methyldiethanolamine (MDEA). However, being an MDEA based solvent, its physical properties are similar to MDEA.

Special Features

UCARSOL solvents offer these important special advantages:

- Significant energy savings through reduced reboiler duty, decreased pumping requirements because of lower solvent circulation, and elimination of solvent reclaiming.
- Reduced solvent loss because of low foaming tendency and lower solvent vapor pressure.
- Increased acid gas processing ability with existing facilities.
- Technical support and complete solvent services to assure on-going trouble-free operation.
- Supported by The Dow Chemical Company, the global leader in providing gas treating processors with specialized technology and services.

Corrosion Effects

The results of various heat transfer and laboratory corrosion tests on stainless steel and mild steels and actual field experience in numerous operating units indicate that solutions of UCARSOL HS solvents, used correctly, exhibit virtually no corrosion when used with stainless steel and other mild steels.

Gas Treating Services

Dow Gas Treating Products & Services is the worldwide leader in providing gas treating processors with technology and specialized services. To aid in both plant design and operation, UCARSOL solvents are supported under the umbrella of Dow's Amine

Management SM program, with advanced computer capabilities, state-of-the art laboratory, field test equipment, and analytical procedures, and an ongoing optimization program. The services we provide encompass preliminary assessments, start-up services, continuous monitoring, and follow-up services. Included in this total support program is training of field personnel, regular sample testing, and performance evaluation. To ensure complete customer protection and satisfaction, Dow is there every step of the way—before, during and after installation.

Computer Capabilities

With information drawn from the actual operating conditions of over 400 plants, Dow has the largest formulated solvents database in the industry. Dow's sophisticated computer programs provide powerful tools for process analysis and design involving tray-by-tray calculations. Hydraulic evaluations can be made of existing trayed or packed towers to ensure that conversion to UCARSOL solvents will be trouble-free.

Field representatives have laptop computers that can be taken into a customer's plant and make it possible, using actual plant conditions, to predict the performance of UCARSOL solvents. In addition to its use as an in-field preliminary design tool, the laptop computer is extremely valuable after conversion to make any adjustments necessary to optimize the process.

Sample Kits

Dow offers a unique sample kit. Completely self-contained, the kit provides everything necessary— from containers to labels—to obtain amine samples, seal them, and safely ship them for routine analysis.

Other Services

Dow's expertise is also available to provide information on process and equipment requirements, and our corrosion group can assist in field inspections or set up corrosion-monitoring programs for customers. Also, we train customer personnel prior to and during conversion and work with them in follow-up to ensure optimum performance.

Environmental Effects

Dow has carried out a series of laboratory studies on the biodegradation and ecological effects of UCARSOL HS 103 solvent. These tests were conducted by procedures which follow the most recent EPA/ASTM/Standard Methods techniques. Table 5 presents a summary of the test results.

Product Safety

When considering the use of any Dow products in a particular application, you should review our latest Material Safety Data Sheets and ensure that the use you intend can be accomplished safely. For Material Safety Data Sheets and other product safety information, contact the nearest Dow Sales office at the numbers listed below. Before handling any other products mentioned in the text, you should obtain available product safety information and take necessary steps to ensure safety of use.

**To Learn More:
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For More Information

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