Product Safety Assessment

SELEXOL™ Solvents

Select a Topic:

Product Overview
Manufacture of Product
Product Description
Product Uses
Exposure Potential
Health Information
Environmental Information
Physical Hazard Information
Regulatory Information
Additional Information
References

Product Overview

- SELEXOL™ Solvents are a yellow to light brown liquid with a mild odor. For further details, see Product Description.
- SELEXOL™ Solvents are designed to effectively and economically remove carbon dioxide (CO₂), hydrogen sulfide (H₂S), carbonyl sulfide (COS), and mercaptans from natural and synthetic gas streams. It is used in a variety of gas-treating applications.¹ For further details, see Product Uses.
- Prolonged skin contact may cause slight skin irritation with local redness, but is unlikely to result in absorption of harmful amounts. Prolonged, excessive inhalation exposure to vapor is unlikely given the low vapor pressure of SELEXOL Solvents, although adverse effects may be noted if the material is sprayed as an aerosol. This product has low toxicity if swallowed. Central nervous system effects have been reported at doses many times higher than any dose levels expected from recommended use. In animal testing, effects have been reported on the testes.² For further details, see Health Information.
- SELEXOL Solvents are used in industrial processes. Exposure can occur either in a manufacturing facility or in the various gas-processing facilities that use this product.² For further details, see Exposure Potential.
- SELEXOL Solvents are stable at recommended storage and use temperatures but can decompose at elevated temperatures. Avoid contact with strong acids and strong oxidizers.² For further details, see Physical Hazard Information.
- SELEXOL Solvents are inherently biodegradable, unlikely to accumulate in the food chain, and is practically nontoxic to fish and other aquatic organisms. For further details, see Environmental Information.

Back to top

Manufacture of Product

- Capacity – Dow produces this material at facilities in Texas (USA) and Western Europe.
- Process – SELEXOL™ Solvents are a polyethylene glycol dimethyl ether. It is produced by an etherification reaction using polyethylene glycols.
Product Description

SELEXOL™ Solvents are a yellow to light brown liquid with a mild odor. It is a mixture of relatively low molecular weight dimethyl ethers produced from polyethylene glycol.

Product Uses

SELEXOL™ Solvents are designed to effectively and economically remove carbon dioxide (CO$_2$), hydrogen sulfide (H$_2$S), carbonyl sulfide (COS), and mercaptans from natural and synthetic gas streams. It is used in a variety of gas-treating applications, including:

- Purification of lean natural gas
- Low energy ammonia/urea production
- Coal gasification
- Heavy oil partial oxidation
- Landfill gas purification
- Light hydrocarbon dew point control

SELEXOL solvent is particularly effective in high-pressure, low temperature, high-acid gas systems.

Exposure Potential

SELEXOL™ Solvents are used in industrial processes. Based on the uses for this product, the public could be exposed through:

- **Workplace exposure** – Exposure can occur either in a manufacturing facility for SELEXOL Solvents or in the various gas-processing facilities that use this product. This material is produced, distributed, stored, and consumed in closed systems. Those working with this material in manufacturing operations or gas-processing facilities could be exposed during maintenance, sampling, testing, or other procedures. Each manufacturing or processing facility should have a thorough training program for employees and appropriate work processes, ventilation, and safety equipment in place to limit unnecessary exposure. See [Health Information](#).

- **Consumer exposure to products containing SELEXOL Solvents** – Dow does not sell this product for direct consumer use. Consumer contact is unlikely. See [Health Information](#).

- **Environmental releases** – In the event of a spill, the focus is on containing the spill to prevent contamination of soil, surface or ground water. Respiratory protection is necessary for cleaning up spills and leaks. For small spills, this product should be absorbed with noncombustible materials such as clay, vermiculite, or Zorb-all. Do not use organic absorbents such as corn cobs, peat moss, cellulose, or sawdust. The substance is soluble and once introduced to water, it will tend to remain in water. SELEXOL Solvents are inherently biodegradable and will be removed by sewage treatment plants. See [Environmental and Physical Hazard Information](#).

- **Large release** – Industrial spills or releases are infrequent and generally contained. If a large spill does occur, the material should be captured, collected, and reprocessed or disposed of according to applicable governmental requirements. Keep upwind of the spill and ventilate the area. Positive-pressure, self-contained breathing apparatus (SCBA) with an approved full-face mask is recommended.
face mask is recommended for emergency work. See Health and Physical Hazard Information.

- **In case of fire** – Deny any unnecessary entry into the area. Use water fog or fine spray, dry-chemical or carbon-dioxide extinguishers, or foam to fight the fire. Alcohol-resistant foams are preferred. Consider the use of unmanned hose holders or monitor nozzles. Use of a direct water stream may spread fire. Firefighters should wear positive-pressure, self-contained breathing apparatus (SCBA) with an approved full-face mask and protective firefighting clothing. In case of rising sounds from venting safety devices or discoloration of the container, immediately withdraw all personnel from the area. Follow emergency procedures carefully. See Physical Hazard Information.

For more information, see the relevant Safety Data Sheet.

**Health Information**

*Eye and skin contact* – SELEXOL™ Solvents are essentially nonirritating to the eyes. Prolonged skin contact may cause slight skin irritation with local redness, but is unlikely to result in absorption of harmful amounts.

*Inhalation* – Brief inhalation exposure is not likely to cause adverse effects. Prolonged, excessive inhalation exposure may cause adverse effects.

*Ingestion* – This product has low toxicity if swallowed. Small amounts swallowed incidental to normal handling are not likely to cause injury; however, larger amounts may cause injury. Central nervous system and testicular effects have been reported at doses many times higher than any dose levels expected from recommended use.

*Repeated exposure* – In animal testing, effects have been reported on the testes. SELEXOL Solvents may also cause central nervous system effects.

*Other* – In animal testing, this product has been toxic to the fetus at doses toxic to the mother. Excessive exposure may interfere with reproduction.

For more information, see the relevant Safety Data Sheet.

**Environmental Information**

SELEXOL™ Solvents are of low volatility and is miscible in water. Once introduced to water, the chemical will tend to remain in water. It has low potential to bind to soil or sediment.

SELEXOL Solvents are inherently biodegradable under aerobic conditions and will be removed by sewage treatment plants.

SELEXOL Solvents are not likely to accumulate in the food chain (bioconcentration potential is low) and is practically nontoxic to fish and other aquatic organisms on an acute basis.

For more information, see the relevant Safety Data Sheet.
Physical Hazard Information

SELEXOL™ Solvents are stable at recommended storage and use temperatures, but can oxidize or decompose at elevated temperatures. Generation of gas during decomposition can cause pressure build-up in closed systems. Do not distill to dryness. Avoid contact with strong acids and strong oxidizers.

For more information, see the relevant Safety Data Sheet.

Regulatory Information

Regulations may exist that govern the manufacture, sale, transportation, use, and/or disposal of SELEXOL™ Solvents. These regulations may vary by city, state, country, or geographic region. Information may be found by consulting the relevant Safety Data Sheet, Product Information Sheet, or Contact Us.

Additional Information

- Safety Data Sheet (http://www.dow.com/webapps/msds/msdssearch.aspx)
- Contact Us (http://www.dow.com/gastreating/contact/index.htm or http://oilandgas.dow.com/contact/)
- Dow Oil and Gas Business: Gas Treating Products and Services web site (http://www.dow.com/gastreating/ or http://oilandgas.dow.com/)
- Dow Gas Treatment Products and Services, The Dow Chemical Company, Form No.170-00250-018-E-703, July 2003
- For more business information about SELEXOL™ solvent, visit Dow's Oil and Gas web sites at http://www.dow.com/gastreating/ or http://oilandgas.dow.com/.

References

2 SELEXOL™ Solvent Material Safety Data Sheet, The Dow Chemical Company
4 Estimates by The Dow Chemical Company.
NOTICES:

As part of its 2015 Sustainability Goals, Dow has committed to make publicly available safety assessments for its products globally. This product safety assessment is intended to give general information about the chemical (or categories of chemicals) addressed. It is not intended to provide an in-depth discussion of health and safety information. Additional information is available through the relevant Safety Data Sheet, which should be consulted before use of the chemical. This product safety assessment does not replace required communication documents such as the Safety Data Sheet.

The information herein is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will Dow be responsible for damages of any nature whatsoever resulting from the use of or reliance upon the information herein or the product to which that information refers.

Nothing contained herein is to be construed as a recommendation to use any product, process, equipment or formulation in conflict with any patent, and Dow makes no representation or warranty, express or implied, that the use thereof will not infringe any patent.

NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS.

Dow makes no commitment to update or correct any information that appears on the Internet or on its World-Wide Web server. The information contained in this document is supplemental to the Internet Disclaimer, http://www.dow.com/en-us/terms-of-use/.