

Product Safety Summary

HLM 5000[®]

This Product Safety Summary is intended to provide a general overview of the chemical substance. The information on the Summary is basic information and is not intended to provide emergency response information, medical information or treatment information. The summary should not be used to provide in-depth safety and health information. In-depth safety and health information can be found on the Material Safety Data Sheet (MSDS) for the chemical substance.

Chemical Identity

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| Abbreviation : | HLM 5000 |
| CAS Number : | Mixture |
| Common Names : | Masterseal [®] HLM 5000 Sonoshield [®] HLM 5000 |

Product Overview

- HLM 5000[®] is a one-component, moisture-curing, bitumen-modified polyurethane elastomeric waterproofing membrane for exterior below-grade or between-slab applications.
- The product is a mixture containing a polyurethane polymer, asphalt, petroleum distillates, naphtha and about 0.1% toluene diisocyanate.
- It can be applied by trowel, squeegee, roller, and spray.
- HLM 5000 is combustible.
- The primary potential hazards associated with overexposure to this product include eye and skin irritation on contact and respiratory irritation and central nervous system effects following inhalation of the vapors. The Occupational Safety and Health Administration has established a Permissible Exposure Limit of 500 ppm as an 8 hour average for petroleum distillates. The product also contains a small amount of toluene diisocyanate (TDI, CAS No. 26471-62-5), which may cause acute and chronic respiratory effects and pulmonary sensitization. The American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV) for TDI is 0.005 ppm for 8 hours with a 15 minute short-term exposure limit (STEL) of 0.02 ppm. OSHA has established a 0.02 ppm ceiling limit for the 2,4 isomer.
- For further safety and health information, refer to the current Material Safety Data Sheet (MSDS) for HLM 5000 and the BASF Corporation Product Safety Summary for toluene diisocyanate.

Physical/Chemical Properties

- The product is a black paste with solvent odor.
- HLM 5000 has VOC content of 190 g/l or less.
- It is more dense than water, with a specific gravity of 1.3.
- HLM 5000 is combustible, with a flash point of about 120°F.

Health Information

Acute Hazards

HLM 5000 contains asphalt, Stoddard Solvent and petroleum distillates. It is irritating to the eyes and skin on prolonged contact and inhalation of vapors may irritate the mucous membranes of the respiratory tract. Prolonged skin contact can result in defatting, redness and irritation. Ingestion of the product or overexposure to its vapors may result in central nervous system (CNS) effects common to many organic solvents. Symptoms may include headaches, nausea, dizziness, and in cases of extreme overexposure, unconsciousness (narcosis).

Effects on Respiratory System:

Severe overexposures to the vapors may result in CNS effects, such as headaches, nausea and narcosis.

Effects on Eyes:

Contact with the liquid is irritating to the eyes. Exposures to very high vapor concentrations above allowable workplace limits may also cause eye irritation.

Effects on Skin:

Skin contact may cause redness and irritation. Defatting and dermatitis may result from prolonged contact.

Effects on Ingestion:

Ingestion may result in severe irritation of the gastrointestinal tract and central nervous system effects.

Chronic Hazards

Chronic overexposure to Stoddard Solvent and other petroleum distillates may cause central nervous system effects and irritation. Solvents have been reported to cause liver, kidney and CNS injury in animals.

Exposure to toluene diisocyanate above the PEL may result in bronchitis, bronchial spasms and pulmonary edema. Long-term exposure to TDI has been reported to cause lung damage, including reduced lung function that may be permanent.

Some individuals may develop a hypersensitivity to TDI vapors and may experience a severe reaction when exposed to TDI vapors at concentrations below established guidelines. Symptoms of hypersensitivity to TDI may include wheezing, shortness of breath and difficulty in breathing (See Sensitization)

Sensitization

Sensitization is an affect whereby a physiological response is caused by re-exposure to a very low concentration of chemical in an individual following higher, initial acute exposure or following chronic exposures. The response may be immediate, delayed or both.

The PEL values and ceiling limits should be sufficiently low to prevent sensitization in most individuals. However, allergic reactions may occur in sensitized individuals at concentrations well below these values. Once sensitized, individuals should be excluded from further exposure. If sensitized individuals continue to work with TDI, the time period between exposure and onset of symptoms may be shortened and the severity of the symptoms may increase.

The determination of what constitutes a significant TDI exposure can be difficult. The minimum concentration of TDI in the atmosphere that will cause subjective symptoms and objective

physical findings in any given individual is unknown. Responses in sensitized individuals vary considerably from one individual to another.

Environmental Information

The toluene diisocyanate present at very low levels in this product has a reportable quantity of 100 lb. Based on a content of 0.1%, a release of about 100,000 lb would have to be reported to the NRC and the local planning commission as outlined under EPCRA regulations.

This product must be disposed of in accordance with national, state and local regulations and must not be released into waterways or sewer systems without proper authorization.

Additional Hazard Information

Because HLM 5000 is combustible, care must be taken when handling it to avoid exposure to flames and other sources of ignition.

The following safety recommendations must be observed:

- Store in an area designed for combustible materials.
- Specify proper electrical equipment and adequate grounding for static electricity.
- Maintain adequate ventilation in all work areas to control to the ACGIH TLVs/OSHA PELs.

Exposure Potential

This product is designed for use by persons experienced in application of similar systems and products. Consumers may potentially be exposed to solvents during the application of this product; however, these potential exposures are expected to be below the allowable and recommended workplace exposure levels. Exposure to the isocyanate component is expected to be extremely low due to the limited amount of toluene diisocyanate present in the product; however, homeowners should be vigilant to ensure that interior work areas are well ventilated during the application and curing of the product.

Vapor exposure to applicators should be limited through the use of engineering controls, such as ventilation. For emergency situations and some specially controlled areas, personal protective equipment, such as respirators, may be employed. In general, skin and eye exposure to organic solvents are prevented through the use of protective eye and face equipment and impermeable gloves and clothing.

The guidelines established by OSHA, ACGIH, NIOSH and others, represent current thinking and are believed to be conservative and protective of occupational workers.

Risk Management

Workers handling HLM 5000 can safely work with this material if adequately instructed and educated regarding proper handling procedures.

Workers should be trained to realize that exposure to a hazardous chemical requires immediate washing of affected areas using large amounts of soap and water, and that immediate attention should be obtained in case of exposure.

Appropriate clothing, gloves, boots and eye protection must be worn when handling this product. Protective clothing should be made of impervious materials and soiled or contaminated clothing should be laundered or destroyed.

Ventilation must be available in work areas to control potential airborne exposures to acceptable levels.

If HLM 5000 is used in applications in the home, all instructions and precautions must be read, understood and followed. It should be used only where adequate ventilation exists and must never be used around open flames or other ignition sources.

Federal/Science Findings

American Conference of Governmental Industrial Hygienists (ACGIH)

<http://www.acgih.org>

National Institute for Occupational Safety and Health (NIOSH)

<http://www.ilo.org/public/english/protection/safework/cis/products/icsc/dtas/ht/icsc03/icsc0361.htm>

<http://www.cdc.gov/niosh/topics/isocyanates>

National Library of medicine/National Institutes of Health

<http://toxnet.nlm.nih.gov/cgi-bin/sis/search/f?./temp/~2pHkQU:1>

<http://toxnet.nlm.nih.gov/cgi-bin/sis/search/f?./temp/~3rcn4N:2>

Center for the Polyurethanes Industry (CPI)

<http://www.polyurethane.org>

Contact Information

<http://www.basf.com>

MSDS

http://www.buildingsystems.basf.com/documets/hlm_tdg.pdf

http://www.buildingsystems.basf.com/documents/hlm_msd.PDF

References

Hazardous Substances Data Bank, national Library of Medicine/National Institutes of Health
Polyurethane TDI Handbook, BASF Corporation, May 2007

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