Material Safety Data Sheet

1986

Stepan

Stepan Company
Northfield, IL 60093

Fiberlay

PLASTIC CENTER
827 N. W. 49th
SEATTLE, WA. 98107

A DIVISION OF NORTHWEST PLASTICS
(206) 782-0660

■ Emergency Telephone: (312) 446-7500
■ Chemtrec: 1-800-424-9300

#0188

SECTION 1: PRODUCT DATA

Product Name: STEPANFOAM HW-8/50C-R (9077) FIBERLAY FIBERFOAM
Product Class: POLYOL

Date: 12/28/89

SECTION 2: HAZARDOUS INGREDIENTS

	%	TLV ppm	TLV mg/m³
N.A.			

SECTION 3: PHYSICAL DATA

Boiling Point:
OVER 230 DEG.F (110 C)

% Volatile by Weight:
NIL

Evaporation Rate
(Ethyl Ether=1) <1

Vapor Density:
(Air=1) <1

Vapor Pressure (mm Hg):

Weight per Gallon:
8.98

SECTION 4: FIRE AND EXPLOSION DATA

DOT Category:
NON HAZARDOUS.

Extinguishing Media:

SEE ATTACHMENT.

Special Fire Fighting Procedures:
SEE ATTACHMENT.

Flash Point:
OVER 230 DEG.F (110 C) PMCC

Unusual Fire and Explosion Hazards:
SEE ATTACHMENT.

LEL: NOT KNOWN

SECTION 5: HEALTH HAZARD DATA

Threshold Limit Value:

Emergency and First Aid Precautions:

Effects of Overexposure:

SEE ATTACHMENT FOR REMAINING SAFETY INFORMATION.

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Stability: STABLE
Hazardous Polymerization:
WILL NOT OCCUR

(Materials to Avoid)

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SECTION 7: SPILL OR LEAK PROCEDURES

Waste Disposal Method:

SECTION 8: SPECIAL PROTECTION INFORMATION

Eye Protection:

Respiratory Protection:

Ventilation:

Protective Gloves:

Other Protective Equipment:

SECTION 9: SPECIAL PRECAUTIONS

Handling and Storage:

Other Precautions:

* Registered Trademark or Application Pending

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SAFETY INFORMATION

Stepan 3486

STEPANFOAM® ISOCYANATE AND RESIN COMPONENTS

Misuse of These Materials Can Be Hazardous! Please Read!

UNDERSTAND THE RISKS • LEARN TO AVOID THEM

KNOW WHAT TO DO IN AN EMERGENCY

Some degree of risk exists in the use—or more specifically, the misuse—of most industrial chemicals. This is true of the chemicals, particularly the isocyanates, used in making polyurethane and/or polyisocyanurate plastic products. However, recognition of potential risks, application of safety precautions, proper conditions of use and application, and good housekeeping practices permit these chemicals to be handled and used with no apparent harmful effects or unreasonable risks.

POTENTIAL RISKS

Potential risks associated with the use of STEPANFOAM components include sensitization, respiratory and eye irritation from vapor, and skin irritation from liquid. These risks arise from inadequate ventilation, spills, improper storage, improper disposal of containers and waste, and poor housekeeping.

RISKS FROM VAPOR AND MIST

The most common risk associated with the use of STEPANFOAM components arises from inhalation of vapors or mist generated during pouring, frothing or spraying operations.

Continued inhalation of isocyanate vapors or sprayfoam mists can cause nausea, headache, coughing, irritation of the nose and throat, shortness of breath and chest discomfort. Massive exposure, as in large spills, can cause severe coughing spasms, bronchitis, bronchial spasm and chemical pneumonitis. Some people can become sensitized to isocyanates and may suffer asthma-like attacks and respiratory distress when subsequently exposed to very low concentrations.

Inhalation of amine catalysts sometimes contained in the polyol resin component can irritate the nose, throat and lungs and can lead to sensitization.

Inhalation of high concentrations of halocarbon blowing agent vapor can cause loss of feeling and unconsciousness. If halocarbon vapors are inhaled through a lit cigarette, severe irritation of the nose, throat and lungs can result.

PRECAUTIONS AGAINST RISKS FROM VAPOR AND MIST

- Do not allow any vapor concentrations to exceed the threshold limit values (TLV) or maximum allowable concentrations (MAC) (0.02 ppm for isocyanates) established by OSHA. If you can smell isocyanate (pungent, irritating odor) or if your nose or eyes are irritated, the MAC has been exceeded and a hazardous condition exists.
- Concentration limits established by OSHA are only guides. You may be exposed to a combination of vapors during pouring, frothing or spraying operations, and such combinations can be more hazardous than the individual vapors alone.
- Measure vapor concentration with equipment designed for the purpose. Do not rely on your sense of smell.
- Conduct indoor casting or foaming operations in mechanically ventilated areas specifically reserved for such operations. If mechanical ventilation is impractical, wear a positive-pressure air-supplied mask or hood. For brief exposure, a chemical cartridge respirator may be satisfactory.
- Wear a positive-pressure air-supplied mask or hood during all sprayfoam applications, either indoors or outdoors. Spraying polyurethane or polyisocyanurate foam can produce hazardous concentrations of vapor and mist. The particulate mist produced can clog chemical cartridge respirators.
- Do not smoke or use open flames or space heaters during or near foaming operations.

LIQUID CONTACT RISKS

Liquid isocyanates splashed in the eye(s) can cause severe irritation, inflammation and/or damage to sensitive eye tissue.

Skin contact with liquid isocyanates can cause reddening, irritation, dermatitis and, in some individuals, sensitization.

Ingestion of isocyanates can cause irritation of and possibly corrosive action on mouth and stomach tissues.

PRECAUTIONS AGAINST LIQUID CONTACT RISKS

- Avoid splashes on skin or in eyes. Wear chemical goggles or a face shield when handling or working with liquid isocyanates in well-ventilated areas where respiratory protection may not be required.
- In addition to positive-pressure air-supplied masks, wear coveralls, gloves and footwear protection when spraying foam.

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FIRST AID

Vapor or Mist Inhalation
Remove persons with exposure symptoms (severe coughing, tightness of chest, labored breathing) from contaminated area immediately. If breathing is labored or difficult, oxygen should be administered by trained personnel. Although highly unlikely even in massive exposures, if breathing has stopped, apply artificial respiration and obtain medical attention immediately.

Liquid Isocyanate Contact
Eyes: Flush eyes with copious quantities of clean water for at least 15 minutes. Obtain medical attention immediately.

Ingestion: Induce vomiting. Call a physician or Poison Control Center.

Skin: If massive contact occurs, as from a major spill, remove contaminated clothing and shoes and flush the body with water from a hose or safety shower. Wipe affected areas with clean cloths saturated with rubbing alcohol. Follow with soap and water washings. For minor contact, wipe off with rubbing alcohol and wash with soap and water. If swelling or reddening occurs, obtain medical attention.

SPILLS:
Spills and vapor from spills can be hazardous. If a major isocyanate spill occurs indoors, evacuate the area immediately. Open doors and windows. Cleanup crews must wear respiratory and eye protection. For any spill:

- Dike spill and cover with oil-absorbent material.
- Neutralize spill with dilute aqueous ammonia detergent solution: (water, 90%/conc. NH_4OH, 8%/liquid detergent, 2%).
- Sweep up and dispose of by any standard method in accordance with good industrial practice and in compliance with environmental protection regulations. (Neutralized material is harmless.) Where permitted, sanitary landfill is recommended.
- Wash down area with aqueous detergent solution.
- For minor spills due to leaking containers, move the leaking containers outdoors and transfer contents to sound containers. Decontaminate spill as above.

DISPOSAL OF EMPTY CONTAINERS AND WASTE
No special precautions are required for disposal of waste polyol resin components or their containers. Waste isocyanate and "empty" isocyanate containers require special handling:

Fill empty drums with water or water-surfactant solution outdoors. DO NOT SEAL OR STOPPER. Sufficient carbon dioxide may be generated to rupture the container. Allow drums to stand outdoors for 48 hours with bung removed. Drain and puncture drum to prevent reuse. Dispose of contents as under SPILLS, above.

Convert waste isocyanate to solids in open containers as SPILLS, above. Do not pour into sewer drains.

Never enter any tank car, tank wagon, holding tank, or any other storage vessel which has contained isocyanate until all safety precautions have been completed. See Upjohn's Technical Bulletin 107, Second Edition, Revised. Appendix E.

FIRE AND EXPLOSION RISKS
In common with all organic substances, isocyanate components will burn if subjected to sufficient heat in the presence of air, but their flash points are so high that they are not considered to be serious fire risks and are classified as Class IIIB Combustible Liquids. However, polyurethanes or polyisocyanurates (particularly foams) can present unreasonable fire risks in certain applications if exposed to a fire source. Once ignited, these foams may burn rapidly and produce intense heat, dense smoke and irritating or toxic gases. Improper mixing of STEPANFOAM components may cause the mixtures to ignite. Some STEPANFOAM components contain volatile blowing agents and excessive heat on closed containers can cause them to rupture, sometimes explosively.

PRECAUTIONS AGAINST FIRE AND EXPLOSION RISKS
- Store STEPANFOAM components indoors in unopened containers at 50 to 85°F (10–29°C) unless otherwise specified. Protect from excessive heat and direct sunlight.
- Calibrate mixing and dispensing equipment to deliver each component within ±2% of the ratio specified for the particular STEPANFOAM system. This accuracy must be maintained for the duration of the run.
- Catch all scrap foam generated during machine start-up in disposable containers and remove to an outside, safe area away from combustible materials.
- Do not smoke or use naked lights, open flames, space heaters or other ignition sources near pouring, frothing or spraying operations.
- Cover polyurethane or polyisocyanurate foam used as wall or ceiling insulation as soon as practicable with a fire-resistive thermal barrier having at least a 15-minute finish rating. If covering is not immediately possible or practicable, post signs that a fire risk exists because of the exposed foam.

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- Do not apply foam to the inside surfaces of any flue-like configuration.
- Do not allow combustible trash or scrap foam to accumulate at the job site. Dispose of scrap foam according to good industrial practice and in compliance with environmental protection regulations. Where permitted, sanitary landfill is recommended.
- Apply foam only after all welding, cutting or other hot work has been completed. If hot work must be done after foam has been applied, warn the hot-work trade to:

  Remove foam from the work area to a sufficient extent that heat transmitted from the torch or through the metal will not ignite the foam. Remove all combustible material from vicinity of and immediately below work area, or cover with non-combustible material.

  Post a fire-watcher equipped with a fire extinguisher during and for 30 minutes after hot operations.

  Stop work immediately if foam begins to smoke and remove more foam from the work area.
- If polyurethane or polyisocyanurate foam should ignite, extinguish fire immediately by drenching with water spray from a fire hose. For small fires, use water spray, foam, carbon dioxide or dry chemical extinguishers.
- When extinguishing large polyurethane or polyisocyanurate fires, firefighters should wear self- contained breathing apparatus in addition to the protective turnout clothing normally worn.
- Be aware that terms like "fire-retardant" and "flame-resistant," sometimes used to describe flammability properties do not mean fire safety under all conditions and that small-scale fire tests are NOT INTENDED TO REFLECT RISKS PRESENTED BY THESE OR ANY OTHER MATERIALS UNDER ACTUAL FIRE CONDITIONS.

GENERAL RECOMMENDATIONS

To minimize the potential risks which may arise from use of STEPANFOAM components, the following precautions are recommended:

- Polyurethanes or polyisocyanurates which are to be foamed on site should be applied only by skilled applicators in strict accordance with the material suppliers' recommendations and Material Safety Data Sheets (OSHA Form 20, or equivalent).
- Persons who will work with polyurethane or polyisocyanurate components should undergo screening physical examinations before initially starting such work in order to eliminate hypersensitive individuals and those who have a history of chronic respiratory illness or allergic response. It may be desirable to periodically check workers exposed to isocyanates for systemic effects. Workers developing asthmatic reaction should be removed from further exposure.
- Workers should be instructed concerning isocyanate risks and the precautions to be followed. They should be trained to report promptly to their supervisors all leaks, suspected equipment failures, exposure to isocyanates or symptoms of exposure. The importance of good housekeeping should be emphasized and the need for immediate removal of isocyanates spilled on the skin should be impressed on all workers.
- Safety showers and eyewash fountains or baths should be available in areas where isocyanates are used. Workers should know their locations and proper use.
- Eye protection must be worn by all workers using isocyanates. The necessity for prompt and thorough flushing of the eyes in the event of contact with liquid isocyanate should be stressed to minimize possible injury, since isocyanates can react with moist eye tissue.
- Isocyanate vapor levels at the breathing zone must be kept below the maximum acceptable concentration by adequate engineering control or by personal respiratory protection.
- Workers engaged in spraying polyurethanes or polyisocyanurates, indoors or outdoors, must wear positive-pressure air-supplied face masks or hoods. Do not spray near air-intake vents until airflow is shut down and blocked off.
- Polyurethane or polyisocyanurate components which contain volatile blowing agents should be stored indoors in closed containers at temperatures between 50 to 85°F (10 to 29°C) and must not be exposed to elevated temperatures. Any evident pressure buildup should be cautiously vented before the container, preferably cooled to below 75°F (24°C), is fully opened.
- Isocyanates in closed containers must be protected from contamination with water, alkali, strong bases or atmospheric moisture (use dry nitrogen or dry air pad, -40°F dew point).
- Polyurethane or polyisocyanurate foam must be protected by an acceptable fire resistive thermal barrier and must not be left as an exposed interior finish on walls or ceilings, in concealed spaces such as plenums, above hung ceilings, in attics or crawl spaces or in any horizontal or vertical flue-like configuration.
- Polyurethane or polyisocyanurate foam must be protected from high intensity heat sources such as welding, cutting or plumber's torches and from heat conducted therefrom.
- Polyurethane or polyisocyanurate foam scrap must be kept to a minimum at the job site.
- Smoking, open flames or other ignition sources must be prohibited at the site of any polyurethane or polyisocyanurate application operation.

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GENERAL RECOMMENDATIONS *(Continued)*

- When in doubt or in need of further information pertaining to the proper use and application of STEPANFOAM components, CONSULT WITH YOUR STEPAN REPRESENTATIVE.

For more detailed information on precautions for the proper usage of isocyanate and resin components, consult the Upjohn Technical Bulletin 107, Second Edition, Revised, and/or Mobay Chemical Corp. Technical Bulletin MDI 83N.

Stepan Company
Urethane Department
Northfield, Illinois 60093

SAFETY INFORMATION

STEPANFOAM—ISOCYANATE AND RESIN COMPONENTS