ONE COMPONENT POLYURETHANE FOAM SEALANT (134a)

(Includes Cylinder Foam & Fireblock Cylinder Foam)

MSDS # A16151

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M A T E R I A L S A F E T Y D A T A S H E E T

1. PRODUCT & COMPANY IDENTIFICATION

Chemical Product

One-Component Polyurethane Cylinder Foam (134a)
One-Component Polyurethane Fireblock Cylinder Foam (134a)

Manufacturer

FOMO PRODUCTS, INC.
P. O. Box 1078
Norton, Ohio 44203

Emergency Overview

Product Information: 1-800-321-5585 (Monday-Friday 8:00am- 5:00pm EST). In Ohio and outside the United States call (330) 753-4585

Transportation Emergency: CHEMTREC 1-800-424-9300 (24 hours). One-Component Polyurethane Foam Sealant (134a) Content is registered by the manufacturer, FOMO PRODUCTS, INC.

International Transportation Emergency: CHEMTREC (703) 527-3887

Product is a liquid urethane prepolymer mixture that is packaged under pressure (Compressed Gas). Containers should not be heated above 120°F (49°C) to avoid excessive pressure build-up.

2. HAZARDS IDENTIFICATION

Emergency Overview

> WARNING! May cause eye, skin, nose, throat and respiratory tract irritation. May cause an allergic skin reaction. Harmful if inhaled. Contents under pressure, storage temperature should not exceed 120°F (49°C) in order to avoid excessive pressure build up and possible container rupture. Vapor reduces oxygen available for breathing. May cause lung injury. Respiratory sensitizer. May cause central nervous system effects. May cause liver damage. Toxic gases/fumes may be given off during burning.

Potential Health Effects

The primary adverse health effects of this product are related to the individual components that make-up the mixture; Polymeric isocyanate (pMDI) component and the fluorinated hydrocarbon component. These products should be used in a well ventilated area to avoid exceeding the exposure limits of these components (listed in Section 8 of this MSDS). If used indoors, mechanical ventilation or exhaust should be provided during use and until product is cured (see Section 8).

Entry Route: Effects of Overexposure

Inhalation: Vapors may irritate mucous membranes with tightness in chest, coughing, wheezing, or allergic asthmas-like sensitivity. Extensive overexposure can lead to respiratory symptoms such as asthma and pulmonary edema. These diseases may be aggravated by prolonged exposure. Excessive exposure may cause irritation to upper respiratory tract and lungs. Over exposure to the Fluorocarbon may cause lightheadedness, headaches, or lethargy. Persons with cardiac arrhythmia are more susceptible to increased medical risk from severe exposure. In poorly ventilated areas, vapor can easily accumulate and can cause unconsciousness and death

due to displacement of oxygen. Excessive overexposure may result in these symptoms: salivation, sweating, headache, nausea, muscle twitching, incoordination, diarrhea, blurred vision, abdominal cramps, tears, tremor, and chest discomfort.

Eyes: May cause eye irritation. Foam contact can cause physical damage due to its adhesive characteristics. Vapors may cause slight temporary corneal injury.

Skin: May cause localized irritation, reddening or swelling. Prolonged or repeated exposure may lead to sensitization. May cause an allergic reaction. Prolonged skin exposure is unlikely to result in absorption of harmful amounts. Foam will stick to the skin causing irritation upon removal. (See section 8 for PPE guidelines).

Ingestion: May cause irritation of mucous membranes in the mouth and digestive tract. Small amounts swallowed as a result of normal handling are not likely to cause injury; swallowing large amounts may cause injury.

If accidental contact occurs, follow the appropriate first aid procedure described in Section 4 of this MSDS.

3. COMPOSITION

Chemical Name (common names)	CAS Number	Percentage
Urethane Pre-Polymer Blend (Using Non-Hazardous Proprietary Polyol Blend)	Not Available	60 to 100 percent
4,4' Diphenylmethane diisocyanate (MDI)	101-68-8	5 to 10 percent
Higher Oligomers of MDI (pMDI)	9016-87-9	5 to 10 percent
1,1,1,2- Tetrafluoroethane	811-97-2	10 to 30 percent

(NOTE: See Section 8 of this MSDS for Exposure Guidelines)
(NOTE: See Section 11 of this MSDS for Toxicological Information- LC_{50} and LD_{50})

4. FIRST AID

Inhalation: If breathing difficulty is experienced, move to area free of exposure. Provide fresh air. If necessary, provide oxygen or artificial respiration by trained personnel and obtain medical attention. Persons receiving significant exposure should be observed for 24-48 hours for signs of respiratory distress.

Eye Contact: Immediately flush with clean water for at least 15 minutes and obtain medical attention. If the person is wearing contact lenses, flush initially for 5 minutes, remove lenses and then flush for an additional 15 minutes. Contact a physician.

Skin Contact: Use a rag to remove liquid from skin and remove contaminated clothing. May cause mild irritation or temporary darkening of skin. Persistent washing with soap and water will eventually remove all residues. If irritation persists, obtain medical attention.

Ingestion: Drink 1 to 3 glasses of water and seek immediate medical attention. Do not induce vomiting. Never give anything orally to an unconscious person.

5. FIRE FIGHTING MEASURES

Extinguishing Media: Dry Chemical, carbon dioxide, Halon 1211, chemical foams, or water spray (if used in large quantities).

Firefighting Procedures: Isolate area and deny unnecessary entry. Stay upwind. Water is not recommended unless used in large quantities as a fine spray when other extinguishing agents are not available. Water may spread the fire. Protective equipment: Wear self-contained breathing apparatus to protect against toxic decomposition by-products, including Carbon monoxide, Carbon dioxide, Nitrogen oxides, Hydrogen fluoride and traces of Hydrogen cyanide. Wear all turn out gear (boots, trousers, helmet, gloves, and hood).

Unusual Fire/Explosion Hazards: Contains compressed gas. High temperatures will raise the pressure in the containers, which may lead to rupturing. Aerosol cans exposed to fire or high temperature can rupture and rocket. Cured foam is organic and, therefore, will burn in the presence of sufficient heat, oxygen and an ignition source. Main hazards associated with burning foam are similar to burning of other organic materials (wood, paper, cotton, etc.) and precautions against exposure should be taken accordingly. Dense smoke is produced when the product is burned. Avoid welding or other "hot work" in the vicinity of exposed cured foam.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear skin, eye, and respiratory protection and equipment (See section 8). Ventilate the area. Vapors can accumulate in low areas. Read all product instructions before using.

Environmental Precautions: Containment should include preventing the spill from entering drains, sewers, waterways, groundwater, or soil.

Clean Up Procedures/Neutralization: Uncured product is very sticky, so carefully remove the bulk of the foam by scraping it up and then immediately remove the residue with a rag and solvent such as polyurethane cleaner, mineral spirits, acetone (nail polish remover), paint thinner, etc. Once the product is cured; it can only be removed mechanically by scraping, buffing, etc. Dispose as plastic waste (foam plastic) in accordance with all applicable guidelines and regulations.

Before disposing of containers, relieve container of any remaining foam and pressure. Allow product to fully cure before disposing. Never discard in a liquid state.

7. HANDLING AND STORAGE

Handling: Wear protective glasses with side shields or goggles, nitrile gloves, and clothing that protects from dermal exposure. Use only in a well ventilated area. Contents are under pressure. Do not puncture or incinerate

Storage: Store in a dry place. Ideal storage temperature for is 60°F to 80°F (15.5°C to 26.6°C). Do not expose aerosol cans to open flame or temperatures above 120°F (49°C). Excessive heat can cause premature aging of components resulting in a shorter shelf life. Storage below 55°F (12.7°C) may affect foam quality if chemicals are not warmed to room temperature before using. Protect containers from physical abuse. Store Upright. **KEEP AWAY FROM CHILDREN**

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Read all product instructions before using.

Exposure Guidelines

4,4 Diphenylmethane diisocyanate	OSHA	.020 ppm ceiling	.200 mg/m³
	ACGIH	.200 mg/m³ ceiling	.051 mg/m³
1,1,1,2 - Tetrafluoroethane	WEEL	1,000 ppm	4,240 mg/m³

Personal Protective Equipment

Respiratory Protection/Ventilation: Use products only in a well ventilated area. If atmospheric levels are expected to exceed the exposure levels, use a NIOSH approved air purifying respirator equipped with an organic vapor cartridge and a

particulate filter (N95). If atmospheric levels exceed 10 times the TLV or PEL level for which an air-purifying respirator is effective, use a powered air purifying respirator (PAPR). The type of respiratory protection selected must comply with the requirements set forth in OSHA's Respiratory Protection Standard (29 CFR 1910.134). Use local and general exhaust ventilation to control levels of exposure. The odor and irritancy of this material are inadequate to warn of excessive exposure.

Hand Protection: Use chemically resistant gloves. Nitrile/butadiene rubber, Butyl Rubber, polyethylene, PVC (vinyl), or neoprene gloves are also effective. Glove selection should take into account potential body reactions to certain materials and manufacturer's instructions for use.

Eye Protection: Use safety glasses with side shields or goggles. An eye wash station should be in the area. The use of contact lenses is discouraged during product application

Skin Protection: Avoid contact with skin. Use clothing that protects against dermal exposure.

General Hygiene: Do not smoke, drink, or eat while handling this product. Always use in a well ventilated area. Wash after handling. Do not breathe vapors. Avoid contact with skin and hands.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Viscous liquid which foams upon release of the container as an off-white to yellowish froth. (Note; Appearance may differ with the introduction of a dye or colorant).
Odor:	Slight fluorocarbon odor.
pH:	No test data available
Melting/Freezing Point:	No test data available
Boiling Point:	1,1,1,2 - Tetrafluoroethane (Non-Flammable Compressed Gas, HFC Fluorinated Hydrocarbon 134a) boils at -15°F (-26°C). Other components boil at temperatures greater than 200°F (93.3°C).
Flash Point:	1,1,1,2 - Tetrafluoroethane (HFC 134a); none. Other components- not determined.
Specific Gravity:	Approximately 1.1 (H_2O = 1)
Solubility in Water:	Insoluble, reacts slowly with water during cure; liberating traces of CO_2
Partition Coefficient N-octanol/water:	No test data available
Auto-ignition Temperature:	No test data available
Decomposition Temperature:	No test data available
Odor Threshold:	No test data available
Evaporation Rate:	No test data available
Flammability Limits:	Not available
Vapor Pressure:	Contents under pressure have vapor pressure greater than 50 psig /345 kPa. After release from container, the vapor pressure is very low (not determined).
Vapor Density:	Not available

10. STABILITY AND REACTIVITY

Stability: This product is considered stable under normal and anticipated storage and handling conditions. Do not store above 120°F (49°C). For longest shelf life, avoid storage above 90°F (32.2°C).

Materials to Avoid: Alcohols, strong bases or amines, metal compounds, ammonia, strong oxidizers.

Conditions to Avoid: High temperatures will raise the pressure in the containers, which may lead to rupturing. Product use is temperature sensitive. Avoid temperatures below 40°F (5°C) or temperatures above 95°F (35°C).

Thermal Decomposition: Toxic decomposition by-products, including Carbon monoxide, Carbon dioxide, Nitrogen oxides, Hydrogen fluoride and traces of Hydrogen cyanide can be released in instances of fire.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity for MDI:
Ingestion: LD50 >5,000 mg/kg (rat, male/female)
Inhalation: LC50 490 mg/m³ (4h, rat)
Skin: LD50 >5,000 mg/kg (rabbit)

Sensitization
Skin: (rabbit, slightly irritating)
Eye: (rabbit, slightly irritating)

Repeated Dose Toxicity: 2 yrs, Inhalation, NOAEL .19 mg/m³, (rat, male/female, 6hrs/day, 5days/week) Irritation to lungs and nasal cavity

Chronic Toxicity/ Carcinogenicity: 6.3 mg/m³ (high level of exposure, 2years, 6hrs/day, 5days/week) Lung tumors observed.

Developmental Toxicity: rat, female, 6hrs/day, 12 mg/m³, days 6-15 (gestation period); 4 mg/m³ (maternal/fetotoxicity)

Genetic Toxicity In vitro: Inconclusive, In vitro studies were negative/positive, salmonella typimurium

Acute Toxicity for 1,1,1,2-Tetrafluoroethane:
Inhalation: LC50 >500,000 ppm, rat, 4h

Repeated Dose Toxicity:
1,1,1,2-Tetrafluoroethane: NOEL 40000ppm, rat

12. ECOLOGICAL INFORMATION

Ecological Data for Polymeric MDI:
Biodegradation: Expected to have a short half-life
Bioaccumulation: Oncorhynchus mykiss (rainbow trout), 112 day exposure, <1 BCF. Does not bioaccumulate.
Acute Toxicity to Fish: LC0: >1000mg/l brachydanio rerio (zebra fish), 96 hour exposure
Acute Toxicity to Aquatic Invertebrates: EC50: >1000 mg/l Daphnia magna (water flea), 24h
Toxicity to Microorganisms: EC50: >100 mg/l, activated sludge, 3h

Ecological Data for MDI
Acute Toxicity to Fish: LC50: >500mg/l brachydanio rerio (zebra fish), 24h
Acute Toxicity to Aquatic Invertebrates: EC50: >500 mg/l Daphnia magna (water flea), 24h

In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Ecological Data for 1,1,1,2-Tetrafluoroethane
Accumulation in aquatic organisms is unlikely.

13. DISPOSAL CONSIDERATIONS

Do not dispose product into drains, sewers, waterways, groundwater, or soil.

1. DO NOT INCINERATE CONTAINERS
2. Before disposing of containers, relieve container of any remaining foam and pressure. Allow product to fully cure before disposing. Never discard in a liquid state. Always wear safety glasses with side shields or goggles, nitrile gloves, and clothing that protects against dermal exposure when disposing of product.
3. DISPOSE OF EMPTY CONTAINERS ACCORDING TO APPLICABLE FEDERAL, STATE, PROVINCIAL AND LOCAL REGULATIONS. CHECK WITH YOUR LOCAL WASTE DISPOSAL SERVICE FOR GUIDANCE. Regulations may vary in different locations. The information only pertains to the product as shipped in its intended condition as described in the MSDS section: Composition.

14. TRANSPORTATION

Shipping Information

	Containers Greater Than 1000 cu. cm. (1 liter)
Ground	UN1956 Compressed Gas n.o.s. (Fluorinated Hydrocarbon)
DOT	2.2 (Non-Flammable Gas Label)
Air	UN1956 Compressed Gas n.o.s. (Fluorinated Hydrocarbon)
IATA	2.2 (Non-flammable Gas Label) Packing Instruction (Cargo & Passenger) 200
Water	UN1956 Compressed Gas n.o.s. (Fluorinated Hydrocarbon)
IMDG	2.2 (Non-flammable Gas Label)

15. REGULATORY

OSHA Hazcom Standard Rating:
Hazardous

WHMIS Hazard Class:
A
D2B

Toxic Substances Control Act (TSCA)/Domestic Substances List (DSL):
All ingredients are listed or exempted on the TSCA inventory, as well as the Canadian Domestic Substances List.

SARA Title III: Section 311/312:
Acute Health Hazard, Chronic Health Hazard, Reactive Hazard, Sudden Release of Pressure Hazard

SARA Title III: Section 313
Contains Diphenylmethane diisocyanate (CAS #101-68-8) and Diphenylmethane diisocyante, Isomers and homologues (CAS #9016-87-9) which are subject to the reporting requirements of SARA Title III. Applicability must be determined by end user.

State Right-To Know Information: Massachusetts, New Jersey or Pennsylvania Right to Know Substance Lists:

Chemical Name (common names)	CAS Number	Percentage
Diphenylmethane diisocyanate	101-68-8	5% to 10 %

California Proposition 65:
Based on information currently available, this product is not known to contain detectable amounts of any chemicals currently listed under California Proposition 65.

16. OTHER

NFPA: Health Hazard 2; Flammability 1; Reactivity 1
HMIS III: Health Hazard 2; Flammability 1; Physical Hazard 1

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