

Powers Fasteners, Inc.. • 2 Powers Lane, Brewster • NY, U.S.A. 10509 • Phone (914) 235-6300

MATERIAL SAFETY DATA SHEET

SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

Product identifier: POWERFOAM™ / TRIGGERFOAM™

Product use: Polyurethane filler foam, insulating foam, backing foam, spray foam, acoustical sealant, penetration sealant.

Chemical Family: Mixture of polyurethane, polymeric isocyanate and hydrocarbon propellants.

Supplier's name and address:

Powers Fasteners, Inc.

2 Powers Lane

Brewster, NY, U.S.A.

10509

Phone: 914-235-6300 (8 AM to 8 PM, EST, Monday through Thursday, 8AM to 7PM on Friday)

Emergency Tel. #: CHEMTREC – 800-424-9300

SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

<u>Ingredients</u>	<u>CAS #</u>	<u>% (weight)</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
			<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
Polymethylene polyphenyl isocyanate	9016-87-9	30 - 60	0.005 ppm (as 'MDI')	N/Av	0.02 ppm (Ceiling) (as 'MDI')	N/Av
Dimethyl ether	115-10-6	7 - 13	*1000 ppm	N/Av	N/Av	N/Av
Propane	74-98-6	1 - 5	*1000 ppm	N/Av	1000 ppm	N/Av
Isobutane	75-28-5	1 - 5	*1000 ppm	N/Av	N/Av	N/Av

*Note: The ACGIH TLV listed above for Dimethyl ether, is an AIHA WEEL. The ACGIH TLV's listed above for Propane and Isobutane, are 'As Aliphatic hydrocarbon gases'.

This material is classified as hazardous under OSHA regulations (29CFR 1910.1200).

SECTION 3 — HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Aerosolized yellowish liquid / foam. Mild amine odor, characteristic of polyurethane.

Danger! Flammable aerosol. Contents under pressure. Container will explode if heated. Reacts slowly with water.

May polymerize if heated to high temperatures or if exposed to incompatible materials. Poison. Harmful or fatal if inhaled.

Can cause lung injury. Inhalation could cause headache, nausea, dizziness or other central nervous system. May cause respiratory tract irritation. May cause skin and eye irritation. May cause severe allergic skin and respiratory sensitization.

POTENTIAL HEALTH EFFECTS

Target organs: Eyes, skin, respiratory system, digestive system, central nervous system.

Routes of exposure: Skin contact, skin absorption, eye contact, inhalation, ingestion.

Signs and symptoms of short-term (acute) exposure:

Inhalation: Inhalation may cause irritation to the upper respiratory tract, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects. Symptoms may also include sore throat, shortness of breath, wheezing, coughing and chest pain. These symptoms may be delayed. Inhalation of higher concentrations may cause inflammation of lung tissue, bronchitis, wheezing, pulmonary edema and eventually death. In confined or poorly ventilated areas where the vapor concentration is very high, product may act as an asphyxiant and cause increased breathing and pulse rates, fatigue, nausea and vomiting.

Skin: Direct skin contact may cause mild irritation, skin discolouration (staining) and skin hardening. Symptoms of frostbite may be experienced including numbness, prickling and itching.

Eyes: Direct eye contact may cause mild irritation, tearing and discomfort. If sprayed directly onto eye, product may freeze the eye and cause eye damage.

Ingestion: Ingestion may cause may cause severe irritation and corrosion to the mouth, throat and stomach.

SECTION 3 — HAZARDS IDENTIFICATION Continued

Chronic effects: Prolonged or repeated inhalation may cause severe, permanent respiratory impairment and lung injury.

Repeated or prolonged skin exposure may result in drying, cracking and defatting of the skin (dermatitis).

Conditions aggravated by exposure: Pre-existing skin, eye and respiratory disorders. Persons with asthma-type conditions or other chronic respiratory diseases should be excluded from working with this material.

Carcinogenic status: See TOXICOLOGICAL INFORMATION, Section 11.

Additional health hazards: Potential severe sensitizer. For further information, see TOXICOLOGICAL INFORMATION, Section 11.

Potential environmental effects: See ECOLOGICAL INFORMATION (Section 12).

SECTION 4 — FIRST AID MEASURES

Inhalation: Immediately remove person to fresh air. If breathing is difficult, oxygen may be administered by qualified personnel. Obtain medical attention immediately.

Skin contact: Flush skin thoroughly with running water for at least 20 minutes, while removing contaminated clothing. Obtain medical attention immediately. Launder clothing before reuse.

Eye contact: Immediately flush eyes with running water for a minimum of 20 minutes. Obtain medical attention immediately.

Ingestion: If swallowed, do NOT induce vomiting. Have victim drink one glass of water, to dilute material in stomach. Obtain medical attention immediately. Never give anything by mouth to an unconscious or convulsing person.

Note to Physicians: Asthmatic-like symptoms, if manifested, may develop immediately, or be delayed for up to several hours. Following severe exposure, medical follow-up should be monitored for at least 48 hours.

SECTION 5 — FIRE FIGHTING MEASURES

Fire hazards/conditions of flammability: Flammable aerosol. Product slowly reacts with water to produce Carbon dioxide. Closed containers are contained under pressure and will explode if exposed to excess heat or flame. Vapors are heavier than air and will collect in low-lying areas. The vapors may travel to a distant source of ignition and flashback.

Flammability classification (OSHA 29 CFR 1910.1200): Flammable aerosol.

Flash point (Method): <-17.8°C / 0°F (propellant)

Auto-ignition temperature: N/Av

Lower flammable limit (% by vol.): N/Av

Upper flammable limit (% by vol.): N/Av

Explosion data: *Sensitivity to mechanical impact / static discharge:* May be sensitive to static discharge.

Oxidizing properties: None known.

Suitable extinguishing media: Use foam, carbon dioxide or dry chemical. Use water with caution, as this material may react with water.

Special fire-fighting procedures/equipment: Do not enter fire area without proper protection. Firefighters should wear proper protective equipment and self-contained breathing apparatus with full facepiece. Shield personnel to protect from venting, rupturing or bursting cans. Move containers from fire area if it can be done without risk. Water spray may be useful in cooling equipment exposed to heat and flame.

Hazardous combustion products: Nitrogen oxides, hydrogen cyanide, hydrogen chloride, carbon oxides and other irritating fumes and smoke.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Personal precautions: Restrict access to area until completion of clean-up. Ensure clean-up is conducted by trained personnel only. All persons dealing with clean-up should wear the appropriate chemically protective equipment. Keep all other personnel upwind and away from the spill/release. Refer to Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION, for additional information on acceptable personal protective equipment.

Environmental precautions: Ensure any spilled liquid or foam portion of the product does not enter drains, sewers, waterways or confined spaces.

Spill response/Cleanup: Eliminate all sources of heat, sparks and flame. Ventilate area of release. Stop leak if you can do so without risk. Cover any spilled liquid or foam material with non-combustible absorbent material, such as vermiculite or sand, then shovel into a container for later disposal (see Section 13). If in solid state, collect and place in an appropriate container for later disposal. Spill area may be cleaned with a suitable solvent, such as Acetone. Follow the appropriate precautions for the solvent being used. Contaminated absorbent material may pose the same hazards as the spilled product. Notify the appropriate authorities as required.

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SECTION 6 — ACCIDENTAL RELEASE MEASURES Continued

Prohibited materials: None known.

Special spill response procedures: In case of a transportation accident, contact CHEMTREC at 1-800-424-9300 or International at 1-703-527-3887. If a spill/release in excess of EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8002).

DOT/CERCLA Reportable quantity (RQ): None reported

SECTION 7 — HANDLING AND STORAGE

Safe handling procedures: This material is a toxic, flammable aerosol. Medical supervision of employees who come into contact with respiratory sensitizers is recommended. Persons with asthmatic-type conditions, chronic bronchitis, other chronic respiratory diseases or recurrent skin eczema or sensitization should be excluded from working with this product. Once a person is sensitized, no further exposure to the material that caused the sensitization should be permitted. Wear protective equipment during handling. Use in a well-ventilated area. Do not inhale vapors or mists. Avoid contact with eyes, skin and clothing. Keep away from heat, sparks, flame and direct sunlight. Keep away from acids and incompatibles. Avoid moist conditions. Do not puncture or incinerate containers. Stand upwind of all opening and spraying operations. Keep container closed when not in use. Assume empty containers contain residues, which are hazardous. Wash hands before eating, drinking, smoking or use of toilet facilities. Launder contaminated clothing before reuse.

Storage requirements: Store in a cool, dry, well-ventilated area away from sources of heat, ignition and sunlight. Ideal storage temperature is 10 – 21.1°C / 50 – 70°F. Keep away from incompatibles. Shelf life of 2 years provided recommended storage requirements are met. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking in the area.

Special packaging materials: Always keep in containers made of the same materials as the supply container.

SECTION 8 — EXPOSURE CONTROLS AND PERSONAL PROTECTION

Ventilation and engineering controls: Use adequate ventilation to maintain air contaminants below exposure limits. Local and/or general exhaust may be required

Respiratory protection: Respiratory protection is required if the airborne concentration exceeds exposure limits. When concentrations exceed the exposure limits specified, use NIOSH/MSHA-approved air-purifying respirators. In poorly ventilated or confined spaces, use a NIOSH/MSHA-approved self-contained breathing apparatus. Advice should be sought from respiratory protection specialists.

Skin protection and other protective equipment: Protective gloves impervious to the material must be worn during use. Confirmation of what type of material is most suitable for the intended application, should be obtained from glove suppliers. Additional impervious protective clothing is recommended to prevent skin contact. An eyewash station and safety shower should be made available in the immediate working area.

Eye / face protection: Use chemical splash goggles. Contact lenses should not be worn.

General hygiene considerations: Do not inhale vapors and mists. Avoid contact with eyes, skin and clothing. Do not eat, drink or smoke when working. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove soiled clothing and wash it thoroughly before reuse.

Permissible exposure levels: For individual ingredient exposure levels, see Section 2.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Physical state, odor and appearance: Aerosolized yellowish liquid / foam. Mild amine odor, characteristic of polyurethane.

Odor threshold: N/Av.

Specific gravity: 1.1

Vapor pressure: N/Av.

Boiling point: N/Av.

Evaporation rate (n-Butyl acetate = 1): N/Av.

Coefficient of water/oil distribution: N/Av

Solubility in water: Insoluble.

Vapor density (Air = 1): >1

Freezing point: N/Av.

pH: N/Av

Volatiles (% by weight): 20.

SECTION 10 — REACTIVITY AND STABILITY DATA

Stability and reactivity: Stable under the recommended storage and handling conditions. Product reacts with water to produce Carbon dioxide. Reaction is slow at temperatures less than 49°C (120°F).

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SECTION 10 — REACTIVITY AND STABILITY DATA Continued

Hazardous polymerization: Uncontrolled exothermic polymerization may occur on contact with incompatible materials or at elevated temperatures (175 – 204°C / 347 – 399°F).

Conditions to avoid: Avoid heat (>43°C / 110°F), moisture and contact with incompatible materials.

Materials to avoid (incompatibles): Strong oxidizers (e.g. Chlorine, Peroxides, etc.), moisture, strong acids, alcohols, strong bases, metal compounds and amines.

Hazardous decomposition products: May form 4,4'-Methylene dianiline during reaction with water. Refer also to 'Hazardous Combustion products', Section 5.

SECTION 11 — TOXICOLOGICAL INFORMATION

Toxicological data: There is no available data for the product itself, only for the ingredients. See below for individual ingredient acute toxicity data.

Ingredients	LC ₅₀ (4hr) inh, rat	LD ₅₀ (mg/kg)	
		oral, rat	dermal, rabbit
Polymethylene polyphenyl isocyanate	490 mg/m ³	>10,000	>6200
Dimethyl ether	Not available	Not available	Not available
Propane	Not available	Not available	Not available
Isobutane	658 mg/L (As 'Butane')	Not available	Not available

Carcinogenic status: None of the ingredients listed are classified as carcinogenic by IARC, ACGIH, NTP or OSHA.

Reproductive effects, Teratogenicity, Mutagenicity: None known.

Sensitization to material: May cause severe respiratory sensitization with asthmatic symptoms such as wheezing and chest tightness. May cause severe skin sensitization with allergic contact dermatitis symptoms such as swelling, rash and eczema.

Other important hazards: CNS depression may result from exposure.

Synergistic materials: Not available.

SECTION 12 — ECOLOGICAL INFORMATION

Chemical fate information: The ecological characteristics of this product have not been fully investigated. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters. Do not discharge product unmonitored into the environment. Insoluble in water, and will react with water to produce carbon dioxide, and inert, non-biodegradable solids.

Ecotoxicological information: There is no data available on the product itself.

SECTION 13 — DISPOSAL CONSIDERATIONS

Handling for disposal: Empty containers may contain product residue or vapors. Handle according to recommendations listed in Section 7.

Methods of disposal: Dispose in accordance with all applicable federal, state, provincial and/or local regulations. Contact your local, state, provincial and/or federal environmental agency for specific rules.

RCRA: If this product, as supplied, becomes a waste, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. Under the RCRA, it is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

SECTION 14 — TRANSPORTATION INFORMATION

US 49 CFR information:

Proper Shipping Name:	Aerosols	Label Codes:	2.1
Hazard Class - Primary:	2.1	RQ LBS:	None reported.
Identification No.:	UN1950	RQ Components:	Not applicable.
Packing Group:	Not applicable	Marine Pollutant:	None.

Special Transportation Notes: For shipments by ground within the United States, the Limited Quantity or Consumer commodity exceptions may apply. Under the US 49 CFR, refer to Sections 173.306 and 173.307 for additional exception information, if shipping under one of these exceptions.

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SECTION 14 — TRANSPORTATION INFORMATION Continued

Canadian Transportation of Dangerous Goods Regulations (TDGR) information:

Proper Shipping Name: AEROSOLS UN No.: UN1950
Primary Class(es): 2.1 Subsidiary Class(es): None
Packing Group: Not applicable

Other Shipping Information: This product may be shipped by ground within Canada, as a 'Consumer commodity' or a 'Limited Quantity'. Refer to Section 1.17 for Limited Quantity and Consumer Commodity Information, if shipping under this exemption.

International IATA / ICAO information:

Proper Shipping Name: Aerosols, flammable Packing Instruction(s), passenger aircraft: Y203 or 203
UN No.: UN1950 Packing Instruction(s), cargo aircraft only: 203
Primary Class(es): 2.1
Subsidiary Class(es): None
Packing Group: Not applicable

Other Shipping Information: This product may be shipped internationally by air, as a 'Limited Quantity'. Combination packagings must be used and the maximum gross weight of the package must not exceed 30 kg (66 lbs). Refer to Packing Instruction Y203, including all State and operator variations, for additional Limited Quantity information.

SECTION 15 — REGULATORY INFORMATION

US Federal Information:

TSCA information: All ingredients are listed on the TSCA inventory.

CERCLA Reportable Quantity (RQ) (40 CFR 117.302): None reported.

SARA TITLE III:

Sec. 302, Extremely Hazardous Substances, 40 CFR 355: No Extremely Hazardous Substances are present.

Sec. 311 and 312, MSDS Requirements, 40 CFR 370 Hazard Classes: Immediate (Acute); Delayed (Chronic); Fire Hazard; Pressure Hazard. Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds for the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

Sec. 313, Toxic Chemicals Notification, 40 CFR 372: This material may be subject to SARA notification requirements, since it contains Polymethylene polyphenyl isocyanate, a Toxic Chemical constituent above its *de minimus* concentration.

US State Right to Know Laws:

California Proposition 65: To the best of our knowledge, this product does not contain any chemicals known to the State of California to cause cancer or reproductive harm.

New Jersey Labeling Requirements: This product contains the following substances that may be required to be disclosed on product labeling:

Chemical Name	CAS #	% (weight)	New Jersey Hazardous Substance
Polymethylene polyphenyl isocyanate	9016-87-9	30 - 60	Yes
Dimethyl ether	115-10-6	7 - 13	Yes
Propane	74-98-6	1 - 5	Yes
Isobutane	75-28-5	1 - 5	Yes

International Information:

Canadian WHMIS Classification: **Class A** (Compressed gas); **Class B5** (Flammable aerosols); **Class D1A** (Materials Causing Immediate and Serious Toxic Effects, Very Toxic Material), **Class D2A** (Materials Causing Other Toxic Effects, Very Toxic Material), **Class D2B** (Materials Causing Other Toxic Effects, Toxic Material).

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and this MSDS contains all the information required by the CPR.

Canadian CEPA information: All ingredients are present on the DSL.

SECTION 16 — OTHER INFORMATION

NFPA Rating:

0 - Minimal 1 - Slight 2 - Moderate 3 - Serious 4 - Severe

Health: 2 Flammability: 3 Instability: 0 Special Hazard: None

HMIS Rating:

* - Chronic hazard 0 - Minimal 1 - Slight 2 - Moderate 3 - Serious 4 - Severe

Health: *3 Flammability: 3 Reactivity: 1

Prepared by: Powers Fasteners, Inc.

Telephone No.: 914-235-6300

Preparation date: April 12, 2006

- References:**
1. ACGIH, Threshold Limit Values and Biological Exposure Indices for 2005.
 2. International Agency for Research on Cancer Monographs, searched 2006.
 3. Canadian Centre for Occupational Health and Safety, CCInfoWeb databases, 2006 (Chempendium and RTECs).
 4. Material Safety Data Sheet from manufacturer.
 5. US EPA Title III List of Lists – January 27, 2005 version.
 6. California Proposition 65 List – February 3, 2006 version.

Legend:

ACGIH: American Conference of Governmental Industrial Hygienists
AIHA: American Industrial Hygiene Association
CAS: Chemical Abstract Services
CERCLA: US Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR: US Code of Federal Regulations
DOT: US Department of Transportation
DSL: Canadian Domestic Substances List
EPA: US Environmental Protection Agency
HMIS: Hazardous Materials Identification System
IATA: International Air Transport Association
ICAO: International Civil Aviation Organization
IARC: International Agency for Research on Cancer
N/Ap: not applicable
N/Av: not available
NFPA: National Fire Protection Association
NIOSH: National Institute of Occupational Safety and Health
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PEL: Permissible Exposure Limit
RCRA: US Resource Conservation and Recovery Act
SARA: US Superfund Amendments & Reauthorization Act
STEL: Short Term Exposure Limit
TLV: Threshold Limit Values
TWA: Time Weighted Average
TSCA: Toxic Substance Control Act
WEEL: Workplace Environmental Exposure Level
WHMIS: Canadian Workplace Hazardous Materials Identification System

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