

PRODUCT NAME: ABRO Foam Insulation Sealant
PRODUCT NUMBER/SIZE: AB-703

Revision Date: 02/05/2015

SECTION 1 Identification of the Substance and of the Company/Undertaking

MANUFACTURER'S NAME: ABRO INDUSTRIES, INC.
ADDRESS: 3580 Blackthorn Court
South Bend, IN 46628
USA
PRODUCT DESCRIPTION: Foam Insulation
COMPANY PHONE: 574-232-8289
EMERGENCY 24-HR TELEPHONE: Chemtrec: US/Canada 1-800-424-9300
International +1-703-527-3887

SECTION 2 Hazards Identification

Classification:

Flammable aerosol – Category 1
Acute Toxicity Inhalation – Category 2
Skin Irritant – Category 2
Eye Irritant – Category 2A
Respiratory Sensitizer – Category 1
Skin Sensitizer – Category 1
Carcinogen – Category 2
STOT Single Exposure – Category 3

Label Pictogram(s):



Signal Word: DANGER

Hazard Phrases: Extremely flammable aerosol. Causes skin irritation. Causes serious eye irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. Suspected of causing cancer. May cause respiratory irritation.

Precautionary Phrases: Keep away from heat/sparks/open flames/hot surfaces. No smoking. Do not spray on an open flame or other ignition source. Pressurized container: Do not pierce or burn, even after use. Protect from sunlight. Do not expose to temperatures exceeding 48.8 °C / 120 °F. Do not breathe dust/fume/gas/mist/vapours/spray. Use only outdoors or in a well-ventilated area. Wear respiratory protection. Wash hands thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. In case of inadequate ventilation wear respiratory protection.

Response: IF INHALED: Remove victim to fresh air and Keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician. Specific treatment is urgent (see First Aid Measures on this label). IF ON SKIN: wash with plenty of soap and water. IF SKIN irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF eye irritation persists: Get medical advice/attention. IF experiencing respiratory symptoms: call a POISON CENTER or doctor/physician. IF exposed or concerned: Get medical advice/attention.

Storage / Disposal: Store in a well-ventilated place. Keep container tightly closed. Store locked up. Dispose of contents/container in accordance with local/regional/national/international regulations.

Other: Keep out of reach of children. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

SECTION 3 Composition/Information on Ingredients

| Chemical Name | CAS # | Weight % |
|--|-------------|----------|
| Flame retardant | Proprietary | 10-30 |
| Polymethylene polyphenylene isocyanate | 9016-87-9 | 10-30 |
| Methylene bisphenyl isocyanate (MDI) | 101-68-8 | 10-30 |
| Polyol blend | Proprietary | 10-30 |
| Isobutane | 75-28-5 | 5-10 |
| Methylenediphenyl diisocyanate | 26447-40-5 | 1-5 |
| Propane | 74-98-6 | 1-5 |
| Dimethyl ether | 115-10-6 | 5-10 |

SECTION 4 First Aid Measures

General Advice
If emergency warrants call 911 or emergency medical service. Show this safety data sheet to the doctor in attendance. Remove and wash soiled clothing before reuse.

Eye Contact
Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. Obtain medical attention, preferably from an ophthalmologist.

Skin Contact
Remove wet material from skin immediately with corn oil or nail polish that contains acetone. If irritation symptoms persist, call a physician. Remove contaminated clothing; wash before reuse. Foam will stick to skin; studies demonstrate that cleaning very soon after exposure is most effective. If foam dries on skin, apply generous amounts of petroleum jelly or lanolin, put on plastic gloves and wait 1 hour. With a clean cloth, firmly wipe off petroleum jelly and repeat process if necessary. Do not attempt to remove dried foam with solvents.

Inhalation

Move victim to fresh air. Apply artificial respiration if victim is not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

Ingestion

Call a physician or Poison Control Center immediately. May produce an allergic reaction. Do not induce vomiting unless directed to do so by medical personnel. Drink plenty of water. Never give anything by mouth to an unconscious person.

Notes to Physician

Maintain adequate ventilation and oxygenation of the patient. May cause asthma-like (reactive airways) symptoms. May cause respiratory sensitization or asthma-like symptoms. Respiratory symptoms, including pulmonary edema, may be delayed. Exposure may increase "myocardial irritability". If you are sensitized to diisocyanates, consult your physician regarding working with other respiratory irritants or sensitizers. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

Protection of First-Aiders

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

SECTION 5 **Fire Fighting Measures**

Flammable Properties

Aerosol cans exposed to fire can rupture and spread fire to other areas. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas.

Flash Point

-104°C / -155°F (based on propellant.)

Suitable Extinguishing Media

Isolate fire and deny unnecessary entry. Use an extinguishing agent suitable for type of fire. Dry chemical, CO₂ water spray, fog or regular foam. Stay upwind. Keep out of low areas where gas fumes can accumulate. Fire damaged cylinders should be handled with extreme caution and only by authorized personnel.

Explosion Data

Sensitivity to mechanical impact

None

Sensitivity to static discharge

Yes

Specific Hazards Arising from the Chemical

Propellant is flammable and will burn. Eliminate ignition sources. Ruptured cylinders may rocket. Chemicals other than propellant may burn but none ignite readily. Flash back possible over considerable distance. Thermal decomposition can lead to release of irritating gases and vapors. In the event of fire and/or explosion do not breathe fumes.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health Hazard 2

Flammability 4

Stability 1

Physical and Chemical Hazards -

HMIS

Health Hazard 2*

Flammability 4

Stability 1

Personal Precautions B

SECTION 6 Accidental Release Measures

Personal Precautions

Do not touch or walk through spilled material. Use appropriate safety equipment. Evacuate area. Keep personnel out of low areas, confined or poorly ventilated areas. Keep upwind of spill. Ensure adequate ventilation. Remove all sources of ignition. No smoking in area. Only trained and properly protected personnel must be involved in clean-up operations.

Methods for Containment

If possible, turn leaking containers so that gas escapes rather than liquid. Allow substance to evaporate. Contain spilled material if possible without risk. Absorb with materials such as: Sawdust. Dirt. Vermiculite. Collect in suitable and properly labeled open containers. Do not place in sealed containers. Curing foam gives off CO₂. Wash what is left of the spill site with large quantities of water.

Methods for Cleaning Up

Attempt to neutralize the spilled material by adding suitable decontaminant solution: Formulation 1: Sodium carbonate 5 – 10%; liquid detergent 0.2 - 2%; water to make up to 100%, OR Formulation 2: concentrated ammonia solution 3 – 8%; liquid detergent 0.2 – 2%; water to make up to 100%. If ammonia formulation is used, use good ventilation to prevent vapor exposure. Sweep up and shovel into suitable containers for disposal.

Other Information

Ventilate the area. Ventilate the area. Curing foam gives off CO₂. Do not put curing foam in a sealed drum.

SECTION 7 Handling and Storage

Handling

Avoid contact with skin, eyes and clothing. Wash thoroughly after handling. Ensure adequate ventilation. Take necessary action to avoid static electricity discharge (which might cause ignition of organic propellant vapors). Keep away from open flames, hot surfaces and sources of ignition. Do not Smoke. Avoid breathing vapors or mists. Contents under pressure. Do not puncture or incinerate cans. Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. Do not stick pin or any other sharp object into opening on top of can.

Storage

Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers. Keep in an area equipped with sprinklers. Keep out of the reach of children. Ideal storage temperature is 16-32 °C / 60 – 90 °F. Storage above 32 °C / 90 °F will reduce its shelf-life. Never keep at temperatures above 48.8 °C / 120 °F.

SECTION 8 Exposure Controls/Personal Protection

| Chemical Name | ACGIH TLV | OSHA PEL | NIOSH IDLH |
|--------------------------------------|---|---|----------------------|
| Methylene bisphenyl isocyanate (MDI) | TWA: 0.005 ppm | Ceiling: 0.02 ppm Ceiling: 0.2 mg/m ³ | 75 mg/m ³ |
| Isobutane | TWA: 1000 ppm | N/A | N/A |
| Propane | TWA: 2,500 ppm STEL 1,000ppm, 3,500 mg/m ³ | TWA: 1000 ppm 8Hr TWA: 1000 ppm 1,800.0 mg/m ³ | 2100 ppm |

NIOSH IDLH: Immediately Dangerous to Life or Health

Engineering Measures

Showers
Eyewash stations
Ventilation systems

Personal Protective Equipment

Eye/Face Protection

Safety glasses with side-shields.

Skin and Body protection

Impervious gloves. Lightweight protective clothing.

Respiratory Protection

Atmospheric levels of PMDI should be maintained below the exposure guidelines. If exposure limits are exceeded or irritation is experienced, use a NIOSH/MSHA approved air-purifying respirator equipped with an organic vapor absorbent and a particle filter. For situations where the atmospheric levels exceed the level for which an air-purifying respirator is effective, use a positive-pressure air-supplied respirator. Respiratory protection must be provided in accordance with current local regulations.

Hygiene Measures

When using, do not eat, drink or smoke. Maintain regular cleaning of equipment, work area and clothing.

SECTION 9 Physical and Chemical Properties

| | |
|-----------------------------------|--------------------------|
| Appearance | Amber |
| Odor | Faint Hydrocarbon |
| Odor Threshold | No information available |
| Physical State | Liquid Aerosol |
| pH | No information available |
| Flash Point | -104°C / -155°F |
| Autoignition Temperature | Not applicable |
| Decomposition temperature | No data available |
| Boiling Point/Range | -42°C / -43.6°F |
| Melting Point/Range | Not applicable |
| Flammability Limits in Air | No data available |
| Explosion Limits | No data available |
| Specific Gravity | 1.01 |
| Water Solubility | Not Compatible |
| Solubility | No data available |
| Evaporation Rate | No data available |
| Vapor Pressure | No data available |
| Vapor Density | No data available |

| | |
|--|--------------------------|
| EPA VOC | 1.29 (lb/gal) 155(g/l) |
| Partition Coefficient (n-octanol/water) | Not applicable |
| Viscosity | No information available |

SECTION 10
Stability and Reactivity

Stability

Stable under recommended storage conditions

Conditions to Avoid

Keep away from open flames, hot surfaces and sources of ignition. Temperatures above 48.8 °C / 120 °F. Exposure to elevated temperatures can cause product to decompose.

Incompatible Products

Water. Alcohols. Strong bases. Strong oxidizing agents. Finely powdered metals.

Hazardous Decomposition Products

Carbon monoxide (CO), Carbon dioxide (CO₂), Nitrogen oxides (NO_x), Hydrogen cyanide.

Hazardous Polymerization

Hazardous polymerization does not occur.

SECTION 11
Toxicological Information

Acute Toxicity

Sensitization - Skin

Skin contact may cause an allergic skin reaction. Animal studies have shown that skin contact with isocyanates may play a role in respiratory sensitization.

Sensitization – Respiratory

May cause allergic respiratory response. MDI concentrations below the exposure guidelines may cause allergic respiratory reactions in individuals already sensitized. Asthma-like symptoms may include coughing, difficult breathing and a feeling of tightness in the chest. Occasionally, breathing difficulties may be life threatening.

Product Information

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|--|---------------------|---------------------------|-----------------------------------|
| Flame retardant | 1,250 mg/kg (Rat) | >5,000 mg/kg (Rabbit) * | >4.6 mg/l (Rat) 4 h |
| Polymethylene polyphenylene isocyanate | 49 g/kg (Rat) | 9400 mg/kg (Rabbit) | 490 mg/m ³ (Rat) 4 h |
| Methylene bisphenyl isocyanate (MDI) | 9200 mg/kg (Rat) | 5000 mg/kg (Rat) | |
| Polyol blend | 64 mL/kg (Rat) | 20 mL/kg (Rabbit) | |
| Isobutane | | | 658 mg/L (Rat) 4 h |
| Methylenediphenyl diisocyanate | | 6200 mg/kg (Rabbit) | 0.369 mg/L (Rat) 4 h |
| Propane | | 658 mg/kg (Rat) | |
| Dimethyl ether | | | 308.5 mg/L (Rat) 4 h |

* A single dermal application produced no mortality. The product is a mild irritant to rabbit skin following a 24-hour exposure.

Chronic Toxicity

Chronic Toxicity

Repeated or prolonged exposure may cause central nervous system damage. Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated excessive exposures to MDI/polymeric MDI aerosols. Intentional misuse by deliberately concentrating and inhaling contents may be harmful or fatal. Chronic hydrocarbon abuse has been associated with irregular heart rhythms and potential cardiac arrest. Repeated or prolonged contact causes sensitization, asthma and eczemas.

Carcinogenicity

There are no known carcinogenic chemicals in this product

Mutagenicity

Contains no known mutagenetic chemicals.

Reproductive Toxicity

This product does not contain any known or suspected reproductive hazards

Target Organ Effects

Contains component(s) that have been reported to cause effects on the following organs in animals: Kidney, Liver, Bone marrow.

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

SECTION 12
Ecological Information

Ecotoxicity

Chemical Fate

Movement & Partitioning:

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

Persistence and Degradability:

In the aquatic and terrestrial environment, PMDI reacts with water forming predominantly insoluble polyureas that appear to be stable. In the atmospheric environment, material is expected to have a short tropospheric half-life, based on calculations and by analogy with related diisocyanates.

Ecotoxicity effects.

| Chemical Name | Toxicity to Algae | Toxicity to Fish | Microtox | Daphnia Magna (Water Flea) |
|--------------------------------|---|------------------------------------|---------------------------|----------------------------|
| Flame retardant | EC50 = 4 mg/L 96 h EC50 = 45 mg/L 72 h | | EC50 = 295 mg/L 30 min | EC50 = 63 mg/L 48 h |
| Methylenediphenyl diisocyanate | EC50 = 3230 mg/L 96 h | | | EC50 > 1000 mg/L 24 h |
| Dimethyl ether | | LC50 (goldfish) 3677 mg/L, 96 h | | LC50 1852 mg/L, 96 h |

| Chemical Name | Log Pow |
|-----------------|---------|
| Flame retardant | 2.59 |
| Isobutane | 2.88 |
| Propane | 2.3 |
| Dimethyl ether | -0.18 |

SECTION 13 Disposal Considerations

Waste Disposal Method

Should not be released into the environment. Dispose of in accordance with local regulations. Allow foam to cure before disposal.

Contaminated Packaging

Dispose of in accordance with local regulations

US EPA Waste Number

D001

SECTION 14 Transport Information

Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (ocean, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport.

DOT

Proper Shipping Name Consumer commodity
Hazard Class ORM-D
Description Consumer commodity, ORM-D

TDG

UN-No UN1950
Proper Shipping Name Aerosols
Hazard Class 2.1
Description UN1950, Aerosols, 2.1

MEX

UN-No UN1950
Proper Shipping Name Aerosols
Hazard Class 2.1
Description UN1950, Aerosols, 2.1

ICAO

UN-No UN1950
Proper Shipping Name Aerosols
Hazard Class 2.1
Description UN1950, Aerosols

IATA

UN-No UN1950
Proper Shipping Name Aerosols, Flammable
Hazard Class 2.1

ERG Code 10L
Description UN1950, Aerosols, Flammable, 2.1

IMDG/IMO

UN-No UN1950
Proper Shipping Name Aerosols
Hazard Class 2.1
EmS No. F-D, S-U
Description UN1950, Aerosols, Flammable, 2.1

RID

UN-No UN1950
Proper Shipping Name Aerosols
Hazard Class 2
Classification Code 5A
Description UN1950 Aerosols, 2, RID
ADR/RID-Labels 2

ADR

UN-No UN1950
Proper Shipping Name Aerosols
Hazard Class 2
Classification Code 5A
ADR/RID-Labels 2

ADN

UN-No UN1950
Proper Shipping Name Aerosols
Hazard Class 2
Classification Code 5A
Special Provisions 63, 190, 191, 277, 913
Description UN1950 Aerosols, 2
Hazard Labels 2
Limited Quantity See SP277

SECTION 15
Regulatory Information

International Inventories

TSCA Complies
DSL Complies
EINECS/ELINCS Complies
ENCS Complies
CHINA Complies
KECL Complies
PICCS Complies
AICS Complies

U.S. Federal Regulations

OSHA Hazard Communication Standard

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29CFR 1910.1200.

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

| Chemical Name | CAS-No | Weight % | SARA 313 - Threshold Values |
|--|------------|----------|-----------------------------|
| Polymethylene polyphenylene isocyanate | 9016-87-9 | 10-30 | 1.0 |
| Methylene bisphenyl isocyanate (MDI) | 101-68-8 | 10-30 | 1.0 |
| Methylenediphenyl diisocyanate | 26447-40-5 | 1-5 | 1.0 |

SARA 311/312 Hazard Categories

| | |
|-----------------------------------|-----|
| Acute Health Hazard | Yes |
| Chronic Health Hazard | Yes |
| Fire Hazard | Yes |
| Sudden Release of Pressure Hazard | Yes |
| Reactive Hazard | No |

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.).

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

| Chemical Name | Hazardous Substances RQs | Extremely Hazardous Substances RQs |
|--------------------------------------|--------------------------|------------------------------------|
| Methylene bisphenyl isocyanate (MDI) | 5000 lb | |

U.S. State Regulations

California Proposition 65

WARNING! This product contains a chemical(s) known to the State of California to cause cancer, or birth defects or other reproductive harm. (Concentration < 0.1%)

U.S. State Right-to-Know Regulations

| Chemical Name | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|--------------------------------------|---------------|------------|--------------|----------|--------------|
| Methylene bisphenyl isocyanate (MDI) | X | X | X | X | X |
| Propane | X | X | X | | X |
| Isobutane | X | X | X | | |
| Dimethyl ether | X | X | X | | X |

International Regulations

Mexico - Grade

Serious risk, Grade 3

The exposure limits values for 101-68-8 are listed under two synonyms:

Diphenylmethane diisocyanate - 0.02 ppm TWA; 0.2 mg/m³ TWA

Methylene bisphenyl isocyanate - 0.005 ppm TWA; 0.051 mg/m³ TWA

| Chemical Name | Carcinogen Status | Exposure Limits |
|--------------------------------------|-------------------|--|
| Methylene bisphenyl isocyanate (MDI) | | Mexico: TWA= 0.2 mg/m ³ Mexico: TWA= 0.02 ppm |
| Diphenylmethane diisocyanate | | Mexico: TWA= 0.005 ppm Mexico: TWA= 0.051 mg/m ³ |

Canada

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

WHMIS Hazard Class

A Compressed gases
B5 Flammable aerosol
D2B Toxic materials



| Chemical Name | NPRI |
|--------------------------------------|------|
| Methylene bisphenyl isocyanate (MDI) | X |

Legend:

NPRI - National Pollutant Release Inventory
WHMIS – Workplace Hazardous Materials Information System
TSCA – Toxic Substance Control Act
DSL – Domestic Substance List
EINECS – European Inventory of Existing Commercial Chemical Substances
ENCS – Japan, Existing and New Chemical Substances
KECL- Korean Existing Chemical List
PICS – Philippine Inventory of Chemicals and Chemical Substances
AICS – Australian Inventory of Chemical Substances
TDG – Transportation of Dangerous Goods Act
ICAO – International Civil Aviation Organization
IATA – International Maritime Dangerous Goods Code
IMDG – International Maritime Dangerous Goods Code

SECTION 16
Other Information

The supplier disclaims all expressed or implied warranties of merchantability or fitness for a specific use, with respect to the product or the information provided herein, except for conformation to contracted specifications. All information appearing herein is based upon data obtained from manufacturers and/or recognized technical sources. While the information is believed to be accurate, we make no representations as to its accuracy or sufficiency. Conditions of use are beyond our control, and therefore users are responsible for verifying the data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume all risks of their use, handling, and disposal of the product. Users also assume all risks in regards to the publication or use of, or reliance upon, information contained herein.

This information relates only to the product designated herein, and does not relate to its use in combination with any other material or process.

ABBREVIATIONS:

NG="NOT GIVEN"
BT="BETWEEN"
<="LESS THAN"
>="GREATER THAN"
ND = Not Determined
NA = Not Applicable