

Safety Data Sheet

Product Identifier: **Andersen Installation Foam**

Product ID: **9181466**

SECTION 1: Identification of the Substance/Mixture and Manufacturer Information

1.1. Product identifier

Product name : Andersen Installation Foam
Product form : Foam
Other means of identification : NA

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Window and door installation foam

1.3. Details of the supplier of the safety data sheet

Andersen Corporation
100 4th Ave. North
Bayport, MN 55003
Corporate Office: 1-651-264-5150
Customer Service: 1-888-888-7020

1.4. Emergency telephone number

Emergency number : ChemTel Inc. 24/7 Emergency Response Domestic: 1-800-255-3924

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture

Hazard classification in accordance with 29CFR 1910.1200

Flammable aerosols: Category 2
Gases under pressure - Liquified gas
Acute toxicity: Category 4 - Inhalation
Skin irritation: Category 2
Eye irritation: Category 2A
Respiratory sensitization: Category 1
Skin sensitization: Category 1
Carcinogenicity: Category 2
Specific target organ toxicity-single exposure: Category 3
Specific target organ toxicity-repeated exposure: Category 2

2.2. Label elements

Hazard pictograms :



Signal word :

Danger

Hazard statements :

Flammable aerosol
Contains gas under pressure; may explode if heated
Causes skin irritation
May cause an allergic skin reaction
Causes serious eye irritation
Harmful if inhaled
May cause allergy or asthma symptoms or breathing difficulties if inhaled
May cause respiratory irritation
May cause damage to organs (Respiratory Tract) through prolonged or repeated exposure if inhaled

Precautionary statements :

Prevention

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.
Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
Wash skin thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves/ eye protection/ face protection.
In case of inadequate ventilation wear respiratory protection.

Response

IF ON SKIN: Wash with plenty of soap and water.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON

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CENTER/doctor if you feel unwell.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If skin irritation or rash occurs: Get medical advice/ attention.

If eye irritation persists: Get medical advice/ attention.

If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

Take off contaminated clothing and wash before reuse.

Storage

Store in a well-ventilated place. Keep container tightly closed.

Store locked up.

Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F.

Disposal

Dispose of contents/container to an approved waste according to local, state & federal regulations.

2.3. Other hazards

Other hazards not contributing to the classification : No data available

2.4. Unknown acute toxicity

: No data available

SECTION 3: Composition/Information on Ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%
Diphenylmethane Diisocyanate, isomers and homologues	9016-87-9	>= 30.0 - <= 60.0 %
Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer	53862-89-8	>= 15.0 - <= 40.0 %
4,4'-Methylenediphenyl diisocyanate	101-68-8	>= 10.0 - <= 30.0 %
Polymethylenepolyphenylisocyanate, propoxylated glycerin polymer	57029-46-6	>= 7.0 - <= 13.0 %
Isobutane	75-28-5	>= 5.0 - <= 10.0 %
Tris(1-chloro-2-propyl) phosphate	13674-84-5	>= 5.0 - <= 10.0 %
Propane	74-98-6	>= 1.0 - <= 5.0 %
Methyl ether	115-10-6	>= 1.0 - <= 5.0 %
N,N'-Dimorpholinodiethylether	6425-39-4	>= 1.0 - <= 5.0 %

SECTION 4: First Aid Measures

4.1. Description of first aid measures

- First-aid measures general : First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.
- First-aid measures after inhalation : Move person to fresh air. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.
- First-aid measures after skin contact : Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation persists. Wash clothing before reuse. An MDI skin decontamination study demonstrated that cleaning very soon after exposure is important, and that a polyglycol-based skin cleanser or corn oil may be more effective than soap and water. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands. Suitable emergency safety shower facility should be available in work area.
- First-aid measures after eye contact : Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist. Suitable emergency eye wash facility should be immediately available.
- First-aid measures after ingestion : If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

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4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects : Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

4.3. Indication of any immediate medical attention and special treatment needed

Maintain adequate ventilation and oxygenation of the patient. May cause respiratory sensitization or asthma-like symptoms. Bronchodilators, expectorants and antitussives may be of help. Treat bronchospasm with inhaled beta2 agonist and oral or parenteral corticosteroids. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. If you are sensitized to diisocyanates, consult your physician regarding working with other respiratory irritants or sensitizers. Exposure may increase "myocardial irritability". Do not administer sympathomimetic drugs such as epinephrine unless absolutely necessary. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Excessive exposure may aggravate pre-existing asthma and other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome).

SECTION 5: Firefighting Measures

5.1. Extinguishing media

Suitable extinguishing media : Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Unsuitable extinguishing media: Do not use direct water stream. Straight or direct water streams may not be effective to extinguish fire.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products : During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Nitrogen oxides. Isocyanates. Hydrogen chloride. Carbon monoxide. Carbon dioxide. Hydrogen cyanide.

Unusual Fire and Explosion Hazards : During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Nitrogen oxides. Isocyanates. Hydrogen chloride. Carbon monoxide. Carbon dioxide. Hydrogen cyanide.

Contains flammable propellant. Aerosol cans exposed to fire can rupture and become flaming projectiles. Propellant release may result in a fireball. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Dense smoke is produced when product burns.

5.3. Advice for firefighters

Firefighting instructions : Keep people away. Isolate fire and deny unnecessary entry. Stay upwind. Keep out of low areas where gases (fumes) can accumulate. Water may not be effective in extinguishing fire. Do not use direct water stream. May spread fire. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Eliminate ignition sources. Move container from fire area if this is possible without hazard. Use water spray to cool fire exposed containers and fire-affected zone until fire is out.

Special protective equipment for firefighters : Wear positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during firefighting operations. If contact is likely, change to full chemical resistant firefighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

SECTION 6: Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Evacuate area. Only trained and properly protected personnel must be involved in clean-up operations. Keep personnel out of low areas. Keep personnel out of confined or poorly ventilated areas. Keep upwind of spill. Ventilate area of leak or spill. No smoking in area. Confined space entry procedures must be followed before entering the area. Spilled material may cause a slipping hazard. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Vapor explosion hazard. Keep out of sewers. See Section 10 for more specific information. Refer to section 7, Handling, for additional precautionary measures. Keep unnecessary and unprotected personnel from entering the area. Check area with combustible gas detector before re-entering area. Ground and bond all containers and handling equipment. For large spills, warn public of downwind explosion hazard. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

6.2. Environmental precautions

Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

6.3. Methods and material for containment and cleaning up

For containment : Contain spilled material if possible.

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Methods for cleaning up

: Contain spilled material if possible. Absorb with materials such as: Dirt. Sand. Sawdust. Collect in suitable and properly labelled containers. Wash the spill site with water. Isolate area until gas has dispersed. Apply vapor suppression foams until spill can be cleaned up. See Section 13, Disposal Considerations, for additional information.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and Storage

7.1. Precautions for safe handling

Precautions for safe handling

: No smoking, open flames or sources of ignition in handling and storage area. 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. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated contact with skin. Avoid breathing vapor. Use only with adequate ventilation. Contents under pressure. Do not puncture or incinerate container. Do not enter confined spaces unless adequately ventilated. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.

7.2. Conditions for safe storage, including any incompatibilities

Conditions for safe storage: Store in a dry place. Avoid prolonged exposure to heat and air. Protect from atmospheric moisture. Blowing agent may migrate from product and accumulate in some storage situations. Elevated temperatures can cause pressure buildup in closed containers due to the release of blowing agents. Store in the following material(s): Carbon steel. Stainless steel. Polypropylene. Polyethylene-lined container. Teflon. Glass-lined container. Aluminum. Plasite 3066 lined container. Plasite 3070 lined container. 316 stainless steel. See Section 10 for more specific information. Minimize sources of ignition, such as static build-up, heat, spark or flame.

Storage stability

Storage temperature:
49 °C (120°F)

Storage Period:
12 Month

SECTION 8: Exposure Controls/Personal Protection

8.1. Control parameters

If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Component Regulation Type of listing Value/Notation

4,4'-Methylenediphenyl diisocyanate

ACGIH TWA 0.005 ppm

OSHA Z-1 C 0.2 mg/m3 0.02 ppm

Isobutane

ACGIH STEL 1,000 ppm

Propane

ACGIH Asphyxiant

OSHA Z-1 TWA 1,800 mg/m3 1,000 ppm

CAL PEL PEL 1,800 mg/m3 1,000 ppm

Methyl ether

US WEEL TWA 1,000 ppm

8.2. Exposure controls

Engineering controls: Use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations. Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines. Exhaust systems should be designed to move the air away from the source of vapor/aerosol generation and people working at this point. The odor and irritancy of this material are inadequate to warn of excessive exposure. Lethal concentrations may exist in areas with poor ventilation.

Individual protection measures

Hand protection

: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber. Chlorinated polyethylene. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Eye/face protection

: Use safety glasses (with side shields).

Other protection

: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

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Respiratory protection	: Atmospheric levels should be maintained below the exposure guideline. When atmospheric levels may exceed the exposure guideline, use an approved air purifying respirator equipped with an organic vapor sorbent and a particle filter. For situations where the atmospheric levels may exceed the level for which an air-purifying respirator is effective, use a positive-pressure air-supplying respirator (air line or self-contained breathing apparatus). For emergency response or for situations where the atmospheric level is unknown, use an approved positive-pressure self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply. The following should be effective types of air purifying respirators: Organic vapor cartridge with a particulate pre-filter.
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SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Color	: Yellow
Odor	: Mild
Odor Threshold	: No test data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No test data available
Melting point	: Not applicable
Freezing point	: No test data available
Boiling point	: Not applicable
Flash point	: closed cup -104 °C (-155 °F) <i>Estimated.</i> based on propellant
Auto-ignition temperature	: No test data available
Decomposition temperature	: No test data available
Flammability (solid, gas)	: Not expected to form explosive dust-air mixtures
Vapour pressure	: 1.151 kPa at 55 °C (131 °F) <i>Estimated</i>
Relative vapor density at 20 °C	: No test data available
Relative density	: 1.06 at 25 °C (77 °F) / 25 °C <i>Estimated</i>
Solubility	: Insoluble
Viscosity, kinematic	: No test data available
Viscosity, dynamic	: 1,340-2,480 mPa.s at 25 C ASTM D 445
Explosive properties	: Not explosive
Oxidising properties	: No
Explosive limits	: No data available

NOTE: the physical data presented above are typical values and should not be construed as a specification.

9.2. Other information

No additional information available

SECTION 10: Stability and Reactivity

10.1. Reactivity

No data available

10.2. Chemical stability

Stable under recommended storage conditions. See Storage, Section 7. Unstable at elevated temperatures.

10.3. Possibility of hazardous reactions

Can occur. Exposure to elevated temperatures can cause product to decompose and generate gas. This can cause pressure build-up and/or rupturing of closed containers. Acids.

10.4. Conditions to avoid

Avoid temperatures above 50 °C. Elevated temperatures can cause container to vent and/or rupture. Exposure to elevated temperatures can cause product to decompose.

10.5. Incompatible materials

Avoid contact with: Acids. Alcohols. Amines. Ammonia. Bases. Metal compounds. Strong oxidizers. Products based on diisocyanates like TDI and MDI react with many materials to release heat. The reaction rate increases with temperature as well as with increased contact; these reactions can become violent. Contact is increased by stirring or if the other material acts as a solvent. Products based on diisocyanates such as TDI and MDI are not soluble in water and will sink to the bottom but react slowly at the interface. The reaction forms carbon dioxide gas and a layer of solid polyurea. Reaction with water will generate carbon dioxide and heat.

10.6. Hazardous decomposition products

Decomposition products depend upon temperature, air supply and the presence of other materials. Toxic gases are released during decomposition.

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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

: Acute oral toxicity

Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. Observations in animals include: Gastrointestinal irritation.

As product: Single dose oral LD50 has not been determined.

Based on information for component(s):

LD50, Rat, > 2,000 mg/kg Estimated.

Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

As product: The dermal LD50 has not been determined.

Based on information for component(s):

LD50, Rabbit, > 2,000 mg/kg Estimated.

Acute inhalation toxicity

In confined or poorly ventilated areas, vapor can easily accumulate and can cause unconsciousness and death due to displacement of oxygen. Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs. May cause pulmonary edema (fluid in the lungs.) Effects may be delayed. May cause central nervous system depression. Symptoms of excessive exposure may be anesthetic or narcotic effects; dizziness and drowsiness may be observed. Excessive exposure may increase sensitivity to epinephrine and increase myocardial irritability (irregular heartbeats). Decreased lung function has been associated with overexposure to isocyanates.

As product: The LC50 has not been determined

Skin corrosion/irritation

: Prolonged contact may cause moderate skin irritation with local redness. Material may stick to skin causing irritation upon removal. May stain skin.

Serious eye damage/irritation

: May cause eye irritation. May cause slight temporary corneal injury.

Respiratory or skin sensitisation

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

May cause allergic respiratory reaction. 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.

Mutagenicity

: In vitro genetic toxicity studies were negative for component(s) tested. Genetic toxicity data on MDI are inconclusive. MDI was weakly positive in some in vitro studies; other in vitro studies were negative. Animal mutagenicity studies were predominantly negative.

Carcinogenicity

: Lung tumors have been observed in laboratory animals exposed to respirable aerosol droplets of MDI/Polymeric MDI (6 mg/m³) for their lifetime. Tumors occurred concurrently with respiratory irritation and lung injury. Current exposure guidelines are expected to protect against these effects reported for MDI.

Reproductive toxicity

: In laboratory animals, MDI/polymeric MDI did not cause birth defects; other fetal effects occurred only at high doses which were toxic to the mother.

Specific target organ toxicity (single exposure)

: Contains component(s) which are classified as specific target organ toxicant, single exposure, category 3.

Specific target organ toxicity (repeated exposure)

: Tissue injury in the upper respiratory tract and lungs has been observed in laboratory animals after repeated excessive exposures to MDI/polymeric MDI aerosols.

Aspiration hazard

: Based on physical properties, not likely to be an aspiration hazard.

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COMPONENTS INFLUENCING TOXICOLOGY:

Diphenylmethane Diisocyanate, isomers and homologues

Acute inhalation toxicity

LC50, Rat, 4 Hour, dust/mist, 0.49 mg/l

For similar material(s): 4,4'-Methylenediphenyl diisocyanate (CAS 101-68-8). LC50, Rat, 1 Hour, Aerosol, 2.24 mg/l

For similar material(s): 2,4'-Diphenylmethane diisocyanate (CAS 5873-54-1). LC50, Rat, 4 Hour, Aerosol, 0.387 mg/l

Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer

Acute inhalation toxicity

At room temperature, vapors are minimal due to low volatility. However, certain operations may generate vapor or mist concentrations sufficient to cause respiratory irritation and other adverse effects. Such operations include those in which the material is heated, sprayed or otherwise mechanically dispersed such as drumming, venting or pumping. Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs. May cause pulmonary edema (fluid in the lungs.) Effects may be delayed. Decreased lung function has been associated with overexposure to isocyanates.

The LC50 has not been determined.

4,4'-Methylenediphenyl diisocyanate

Acute inhalation toxicity

LC50, Rat, 1 Hour, dust/mist, 2.24 mg/l

Polymethylenepolyphenylisocyanate, propoxylated glycerin polymer

Acute inhalation toxicity

The LC50 has not been determined.

Isobutane

Acute inhalation toxicity

LC50, Mouse, 4 Hour, gas, 260200 ppm

Tris(1-chloro-2-propyl) phosphate

Acute inhalation toxicity

No deaths occurred at this concentration. LC50, Rat, 4 Hour, dust/mist, > 7 mg/l

Propane

Acute inhalation toxicity

LC50, Rat, male and female, 4 Hour, vapour, > 425000 ppm

Methyl ether

Acute inhalation toxicity

LC50, Rat, 4 Hour, gas, 164000 ppm

N,N'-Dimorpholinodiethylether

Acute inhalation toxicity

The LC50 has not been determined.

SECTION 12: Ecological information

12.1. Toxicity :

Diphenylmethane Diisocyanate, isomers and homologues

Acute toxicity to fish

The measured ecotoxicity is that of the hydrolyzed product, generally under conditions maximizing production of soluble species. Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

Based on information for a similar material:

LC50, Danio rerio (zebra fish), static test, 96 Hour, > 1,000 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates

Based on information for a similar material:

EC50, Daphnia magna (Water flea), static test, 24 Hour, > 1,000 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants

Based on information for a similar material:

NOEC, Desmodesmus subspicatus (green algae), static test, 72 Hour, Growth rate inhibition, 1,640 mg/l, OECD Test Guideline 201 or Equivalent

Toxicity to bacteria

Based on information for a similar material:

EC50, activated sludge, static test, 3 Hour, Respiration rates., > 100 mg/l

Toxicity to soil-dwelling organisms

EC50, Eisenia fetida (earthworms), Based on information for a similar material:, 14 d, > 1,000 mg/kg

Toxicity to terrestrial plants

EC50, Avena sativa (oats), Growth inhibition, 1,000 mg/l

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EC50, Lactuca sativa (lettuce), Growth inhibition, 1,000 mg/l

Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer

Acute toxicity to fish

Not expected to be acutely toxic to aquatic organisms.

4,4'-Methylenediphenyl diisocyanate

Acute toxicity to fish

The measured ecotoxicity is that of the hydrolyzed product, generally under conditions maximizing production of soluble species. Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

Based on information for a similar material:

LC50, Danio rerio (zebra fish), static test, 96 Hour, > 1,000 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates

Based on information for a similar material:

EC50, Daphnia magna (Water flea), static test, 24 Hour, > 1,000 mg/l, OECD Test Guide 202 or Equivalent

Acute toxicity to algae/aquatic plants

Based on information for a similar material:

NOEC, Desmodesmus subspicatus (green algae), static test, 72 Hour, Growth rate inhibition, 1,640 mg/l, OECD Test Guideline 201 or Equivalent

Toxicity to bacteria

Based on information for a similar material:

EC50, activated sludge, static test, 3 Hour, Respiration rates., > 100 mg/l

Toxicity to soil-dwelling organisms

EC50, Eisenia fetida (earthworms), Based on information for a similar material:, 14 d, > 1,000 mg/kg

Toxicity to terrestrial plants

EC50, Avena sativa (oats), Growth inhibition, 1,000 mg/l

EC50, Lactuca sativa (lettuce), Growth inhibition, 1,000 mg/l

Polymethylenepolyphenylisocyanate, propoxylated glycerin polymer

Acute toxicity to fish

For this family of materials:

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

Isobutane

Acute toxicity to fish

No relevant data found.

Tris(1-chloro-2-propyl) phosphate

Acute toxicity to fish

Material is slightly toxic to aquatic organisms on an acute basis (LC50/EC50 between 10 and 100 mg/L in the most sensitive species tested).

LC50, Lepomis macrochirus (Bluegill sunfish), static test, 96 Hour, 84 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates

EC50, Daphnia magna (Water flea), 48 Hour, 131 mg/l

Acute toxicity to algae/aquatic plants

ErC50, Pseudokirchneriella subcapitata (green algae), static test, 96 Hour, Growth rate inhibition, 82 mg/l, OECD Test Guideline 201 or Equivalent

Toxicity to bacteria

EC50, activated sludge, Respiration inhibition, 3 Hour, 784 mg/l, OECD 209 Test

Chronic toxicity to aquatic invertebrates

NOEC, Daphnia magna (Water flea), semi-static test, 21 d, number of offspring, 32 mg/l

Propane

Acute toxicity to fish

No relevant data found.

Methyl ether

Acute toxicity to fish

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

LC50, Poecilia reticulata (guppy), semi-static test, 96 Hour, > 4,000 mg/l

Acute toxicity to aquatic invertebrates

LC50, Daphnia magna (Water flea), 48 Hour, > 4,000 mg/l, OECD Test Guideline 202 or Equivalent

N,N'-Dimorpholinodiethylether

Acute toxicity to fish

Material is practically non-toxic to fish on an acute basis (LC50 > 100 mg/L).

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May increase pH of aquatic systems to > pH 10 which may be toxic to aquatic organisms.
LC50, Danio rerio (zebra fish), static test, 96 Hour, > 2,150 mg/l

Acute toxicity to aquatic invertebrates

EC50, Daphnia (water flea), static test, 48 Hour, > 100 mg/l

Acute toxicity to algae/aquatic plants

ErC50, Algae, static test, 72 Hour, > 100 mg/l

Toxicity to bacteria

EC50, Bacteria, static test, 3 Hour, 100 mg/l, activated sludge test (OECD 209)

Persistence and degradability

Diphenylmethane diisocyanate, isomers and homologues

Biodegradability: In the aquatic and terrestrial environment, material reacts with water forming predominantly insoluble polyureas which 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.

10-day Window: Not applicable

Biodegradation: 0 %

Exposure time: 28 d

Method: OECD Test Guideline 302C or Equivalent

Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer

Biodegradability: Expected to degrade slowly in the environment.

4,4'-Methylenediphenyl diisocyanate

Biodegradability: In the aquatic and terrestrial environment, material reacts with water forming predominantly insoluble polyureas which 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.

10-day Window: Not applicable

Biodegradation: 0 %

Exposure time: 28 d

Method: OECD Test Guideline 302C or Equivalent

Polymethylenepolyphenylisocyanate, propoxylated glycerin polymer

Biodegradability: For this family of materials: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

Isobutane

Biodegradability: Biodegradation may occur under aerobic conditions (in the presence of oxygen).

Theoretical Oxygen Demand: 3.58 mg/mg

Photodegradation

Test Type: Half-life (indirect photolysis)

Sensitization: OH radicals

Atmospheric half-life: 4.4 d

Method: Estimated.

Tris(1-chloro-2-propyl) phosphate

Biodegradability: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).

10-day Window: Fail

Biodegradation: 14 %

Exposure time: 28 d

Method: OECD Test Guideline 301E or Equivalent

10-day Window: Not applicable

Biodegradation: 95 %

Exposure time: 64 d

Method: OECD Test Guideline 302A or Equivalent

Theoretical Oxygen Demand: 1.17 mg/mg

Photodegradation

Test Type: Half-life (indirect photolysis)

Sensitization: OH radicals

Atmospheric half-life: 0.24 d

Method: Estimated.

Propane

Biodegradability: No relevant data found.

Theoretical Oxygen Demand: 3.64 mg/mg

Photodegradation

Test Type: Half-life (indirect photolysis)

Sensitization: OH radicals

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Atmospheric half-life: 8.4 d

Method: Estimated.

Methyl ether

Biodegradability: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

10-day Window: Fail

Biodegradation: 5 %

Exposure time: 28 d

Method: OECD Test Guideline 301A or Equivalent

Theoretical Oxygen Demand: 2.08 mg/mg

Photodegradation

Test Type: Half-life (indirect photolysis)

Sensitization: OH radicals

Atmospheric half-life: 6.4 d

Method: Estimated.

N,N'-Dimorpholinodiethylether

Biodegradability: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

10-day Window: Fail

Biodegradation: 0 - 10 %

Exposure time: 28 d

Method: OECD Test Guideline 301A or Equivalent

Theoretical Oxygen Demand: 2.49 mg/mg

Photodegradation

Test Type: Half-life (indirect photolysis)

Sensitization: OH radicals

Atmospheric half-life: 0.03 d

Method: Estimated.

Bioaccumulative potential

Diphenylmethane Diisocyanate, isomers and homologues

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3). Reacts with water. In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Bioconcentration factor (BCF): 92 Cyprinus carpio (Carp) 28 d

Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer

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

4,4'-Methylenediphenyl diisocyanate

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3). Reacts with water. In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Bioconcentration factor (BCF): 92 Cyprinus carpio (Carp) 28 d

Polymethylenepolyphenylisocyanate, propoxylated glycerin polymer

Bioaccumulation: No relevant data found.

Isobutane

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): 2.76 Measured

Tris(1-chloro-2-propyl) phosphate

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): 2.59 Measured

Bioconcentration factor (BCF): 0.8 - 4.6 Cyprinus carpio (Carp) 42 d Measured

Propane

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): 2.36 Measured

Methyl ether

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): 0.10 Measured

N,N'-Dimorpholinodiethylether

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): 0.5 Estimated.

Mobility in soil

Diphenylmethane Diisocyanate, isomers and homologues

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

Polymethylenepolyphenyl polyisocyanate, polypropyleneglycol copolymer

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

4,4'-Methylenediphenyl diisocyanate

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

Polymethylenepolyphenylisocyanate, propoxylated glycerin polymer

No relevant data found.

Isobutane

Potential for mobility in soil is very high (Koc between 0 and 50).

Partition coefficient (Koc): 35 Estimated.

Tris(1-chloro-2-propyl) phosphate

Potential for mobility in soil is slight (Koc between 2000 and 5000).

Partition coefficient (Koc): 1300 Estimated.

Propane

Potential for mobility in soil is very high (Koc between 0 and 50).

Partition coefficient (Koc): 24 - 460 Estimated.

Methyl ether

Potential for mobility in soil is very high (Koc between 0 and 50).

Partition coefficient (Koc): 1.29 - 14 Estimated.

N,N'-Dimorpholinodiethylether

Potential for mobility in soil is low (Koc between 500 and 2000).

Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

Partition coefficient (Koc): 784 Estimated.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN SDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Recycler. Reclaimer. Incinerator or other thermal destruction device. For additional information, refer to: Handling & Storage Information, SDS Section 7 Stability & Reactivity Information, SDS Section10 Regulatory Information, SDS Section 15

SECTION 14: Transport information

US DOT

14.1 UN number UN 1950

14.2 UN Proper shipping name Aerosols

14.3 Transportation Class 2.1

14.4 Packing group Not applicable

14.5 Environmental hazards Not considered environmentally hazardous based on available data

14.6 Special precautions for user No data available

Classification for SEA transport (IMO-IMDG):

14.1 UN number UN 1950

14.2 UN Proper shipping name AEROSOLS

14.3 Transportation Class 2.1

14.4 Packing group Not applicable

14.5 Environmental hazards Marine pollutant No

14.6 Special precautions for user Not applicable

14.7 Transport in bulk

of MARPOL 73/78 and the Consult IMO regulations before transporting ocean bulk according to Annex I or II IBC or IGC Code

Classification for AIR transport (IATA/ICAO):

14.1 UN number UN 1950

14.2 UN Proper shipping name Aerosols

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14.3 Transportation Class 2.1

14.4 Packing group Not applicable

14.5 Environmental hazards Not considered environmentally hazardous based on available data

14.6 Special precautions for user No data available

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

SECTION 15: Regulatory information

15.1. US Federal regulations

All chemical substances in this product are listed in the EPA (Environment Protection Agency) TSCA (Toxic Substances Control Act) Inventory	
SARA Section 311/312 Hazard Classes	Flammable – flammable aerosol Gases under pressure Health hazard – Acute toxicity, skin corrosion or irritation, serious eye damage or eye irritation, respiratory or skin sensitization, specific target organ toxicity
	Physical hazard – flammable, gasses under pressure
SARA 313 Reportable Substances	Diphenylmethane Diisocyanate, isomers and homologues CAS# 9016-87-9 4,4'-Methylenediphenyl diisocyanate CAS# 101-68-8
CERCLA 103 Calculated RQ exceeds reasonably attainable upper limit	4,4'-Methylenediphenyl diisocyanate CAS# 101-68-8, RQ 5000 lbs

15.2. International regulations

No additional information available.

15.3. US State regulations

This product does not contain chemicals known to the state of California to cause cancer, birth defects, or other reproductive harm.

All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

Isobutane (75-28-5)

U.S. - Pennsylvania – Worker and community RTK (Right to Know) and/or Pennsylvania Environmental Hazardous Substance List

Propane (74-98-6)

U.S. - Pennsylvania – Worker and community RTK (Right to Know) and/or Pennsylvania Environmental Hazardous Substance List

Methyl Ether (115-10-6)

U.S. - Pennsylvania – Worker and community RTK (Right to Know) and/or Pennsylvania Environmental Hazardous Substance List

SECTION 16: Other information

Indication of changes : Revision 1.0 New SDS

Revision date : 3/11/2020

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product