



## Safety Data Sheet

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This Safety Data Sheet has been prepared in accordance with the Minister of Industry Decree No. 23/M-IND/PER/4/2013 and GHS Classification 4th Edition.

<b>Document Group:</b>	28-4642-6	<b>Version Number:</b>	1.00
<b>Issue Date:</b>	21/02/2025	<b>Supersedes Date:</b>	Initial Issue

### SECTION 1: Identification

#### 1.1. Product identifier

3M™ Fire Block Foam FB-Foam

#### Product Identification Numbers

98-0400-5614-9      98-0441-1020-7

#### 1.2. Recommended use and restrictions on use

##### Recommended use

Sealant

#### 1.3. Supplier's details

**ADDRESS:** PT 3M Indonesia , Perkantoran Hijau Arkadia, Menara F, Lt. 8. Jl. TB. Simatupang Kav. 88, Jakarta Selatan, 12520, Indonesia

**Telephone:** +6221-29974000

**Website:** [https://www.3m.co.id/3M/en\\_ID/company-id/](https://www.3m.co.id/3M/en_ID/company-id/)

#### 1.4. Emergency telephone number

(021)29974000

### SECTION 2: Hazard identification

#### 2.1. Classification of the substance or mixture

Flammable Aerosol: Category 1.

Acute Toxicity (oral): Category 5.

Acute Toxicity (inhalation): Category 2.

Skin Corrosion/Irritation: Category 2.

Serious Eye Damage/Irritation: Category 2A.

Respiratory Sensitizer: Category 1.

Skin Sensitizer: Category 1.

Specific Target Organ Toxicity (single exposure): Category 1.

Specific Target Organ Toxicity (repeated exposure): Category 1.

Specific Target Organ Toxicity (single exposure): Category 3.

Acute Aquatic Toxicity: Category 3.

#### 2.2. Label elements

**Signal word**

Danger

**Symbols**

Flame |Skull and crossbones |Health Hazard |

**Pictograms**



**HAZARD STATEMENTS:**

- H222 Extremely flammable aerosol.
- H229 Pressurized container: may burst if heated.
- H303 May be harmful if swallowed.
- H330 Fatal if inhaled.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- H317 May cause an allergic skin reaction.
- H336 May cause drowsiness or dizziness.
- H335 May cause respiratory irritation.
  
- H370 Causes damage to organs: cardiovascular system.
  
- H372 Causes damage to organs through prolonged or repeated exposure: respiratory system.
  
- H402 Harmful to aquatic life.

**PRECAUTIONARY STATEMENTS**

**General:**

- P101 If medical advice is needed, have product container or label at hand.
- P102 Keep out of reach of children.

**Prevention:**

- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P211 Do not spray on an open flame or other ignition source.
- P251 Do not pierce or burn, even after use.
- P260 Do not breathe dust/fume/gas/mist/vapors/spray.
- P271 Use only outdoors or in a well-ventilated area.
- P280E Wear protective gloves.

**Response:**

- P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P310 Immediately call a POISON CENTER or doctor.
- P333 + P313 If skin irritation or rash occurs: Get medical attention.
- P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor.

**Storage:**

- P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

## 3M™ Fire Block Foam FB-Foam

P405  
P410 + P412

Store locked up.  
Protect from sunlight. Do not expose to temperatures exceeding 122°F (50°C).

### Disposal:

P501

Dispose of contents and container in accordance with applicable local, regional, national, and international regulations.

### 2.3. Other hazards

Persons previously sensitized to isocyanates may develop a cross-sensitization reaction to other isocyanates.

Intentional misuse by deliberately concentrating and inhaling contents can be harmful or fatal. May displace oxygen and cause rapid suffocation.

## SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	C.A.S. No.	% by Wt
Polyol Blend (NJTS Reg. No. 04499600-7192)	Trade Secret	40 - 70
4,4' Diphenylmethane diisocyanate (MDI)	101-68-8	5 - 10
Dimethyl Ether	115-10-6	5 - 10
Higher Oligomers of MDI (pMDI)	9016-87-9	5 - 10
Isobutane	75-28-5	5 - 10
Propane	74-98-6	1 - 5

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### Inhalation:

Remove person to fresh air. Get immediate medical attention.

#### Skin Contact:

Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, get medical attention.

#### Eye Contact:

Immediately flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. Get medical attention.

#### If Swallowed:

Rinse mouth. If you feel unwell, get medical attention.

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

Fatal if inhaled. Irritating to the respiratory tract (coughing, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain). Allergic respiratory reaction (difficulty breathing, wheezing, cough, and tightness of chest). Allergic skin reaction (redness, swelling, blistering, and itching). Central nervous system depression (headache, dizziness, drowsiness, incoordination, nausea, slurred speech, giddiness, and unconsciousness). Target organ effects. See Section 11 for additional details. Target organ effects following prolonged or repeated exposure. See Section 11 for additional details.

### 4.3. Indication of any immediate medical attention and special treatment required

Exposure may increase myocardial irritability. Do not administer sympathomimetic drugs unless absolutely necessary.

## SECTION 5: Fire-fighting measures

### 5.1. Suitable extinguishing media

Use a fire fighting agent suitable for the surrounding fire.

### 5.2. Special hazards arising from the substance or mixture

Closed containers exposed to heat from fire may build pressure and explode.

### Hazardous Decomposition or By-Products

<u>Substance</u>	<u>Condition</u>
Formaldehyde	During Combustion
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion
Hydrogen Chloride	During Combustion
Hydrogen Cyanide	During Combustion
Oxides of Nitrogen	During Combustion

### 5.3. Special protective actions for fire-fighters

Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment based on the results of an exposure assessment. Refer to Section 8 for PPE recommendations. If anticipated exposure resulting from an accidental release exceeds the protective capabilities of the PPE listed in Section 8, or are unknown, select PPE that offers an appropriate level of protection. Consider the physical and chemical hazards of the material when doing so. Examples of PPE ensembles for emergency response could include wearing bunker gear for a release of flammable material; wearing chemical protective clothing if the spilled material is a corrosive, a sensitizer, a significant dermal irritant, or can be absorbed through the skin; or donning a positive pressure supplied-air respirator for chemicals with inhalation hazards. For information regarding physical and health hazards, refer to sections 2 and 11 of the SDS. Evacuate area. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only non-sparking tools. Ventilate the area with fresh air. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode.

### 6.2. Environmental precautions

For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water.

### 6.3. Methods and material for containment and cleaning up

If possible, seal leaking container. Place leaking containers in a well-ventilated area, preferably an operating exhaust hood, or if necessary outdoors on an impermeable surface until appropriate packaging for the leaking container or its contents is available. Contain spill. Cover spill area with a fire-extinguishing foam. Pour isocyanate decontaminant solution (90% water, 8% concentrated ammonia, 2% detergent) on spill and allow to react for 10 minutes. Or pour water on spill and allow to react for more than 30 minutes. Cover with absorbent material. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible using non-sparking tools. Place in a container approved for transportation by appropriate authorities, but do not seal the container for 48 hours to avoid pressure build-up. Clean up residue with an appropriate solvent selected by a qualified and authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and SDS. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Do not use in a confined area with minimal air exchange. Keep out of reach of children. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not spray on an open flame or other ignition source. Do not pierce or burn, even

after use. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.)

## 7.2. Conditions for safe storage including any incompatibilities

Store in a well-ventilated place. Keep container tightly closed. Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. Store away from heat. Store away from acids. Store away from strong bases. Store away from oxidizing agents. Store away from amines.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Occupational exposure limits

If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
4,4' Diphenylmethane diisocyanate (MDI)	101-68-8	ACGIH	TWA:0.005 ppm	
4,4' Diphenylmethane diisocyanate (MDI)	101-68-8	Indonesia OELs	TWA(8 hours):0.005 ppm	
Dimethyl Ether	115-10-6	AIHA	TWA:1880 mg/m <sup>3</sup> (1000 ppm)	
Alkanes, C1-4	74-98-6	Indonesia OELs	TWA(8 hours):1000 ppm	
Propane	74-98-6	ACGIH	Limit value not established:	simple asphyxiant
Alkanes, C1-4	75-28-5	Indonesia OELs	TWA(8 hours):1000 ppm	
Isobutane	75-28-5	ACGIH	STEL:1000 ppm	

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines

Indonesia OELs : Indonesia. Minister of Manpower and Transmigration Decree No. 13/MEN/X/2011 concerning Threshold Values, Chemical and Physical Factors in the Workplace.

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CEIL: Ceiling

### 8.2. Exposure controls

#### 8.2.1. Engineering controls

Do not remain in area where available oxygen may be reduced. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

#### 8.2.2. Personal protective equipment (PPE)

##### Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:

Full Face Shield

Indirect Vented Goggles

##### Skin/hand protection

Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions.

Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing. Note: Nitrile gloves may be worn over polymer laminate gloves to improve dexterity. Gloves made from the following material(s) are recommended: Polymer laminate

If this product is used in a manner that presents a higher potential for exposure (eg. spraying, high splash potential etc.), then use of protective coveralls may be necessary. Select and use body protection to prevent contact based on the results of an exposure assessment. The following protective clothing material(s) are recommended: Apron - polymer laminate

### Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:

Half facepiece or full facepiece air-purifying respirator suitable for organic vapors and particulates

Half facepiece or full facepiece supplied-air respirator

For questions about suitability for a specific application, consult with your respirator manufacturer.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

<b>Physical state</b>	Liquid
<b>Color</b>	Off-White, Yellow
<b>Odor</b>	Slight Hydrocarbon
<b>Odor threshold</b>	<i>No Data Available</i>
<b>pH</b>	<i>No Data Available</i>
<b>Melting point/Freezing point</b>	<i>No Data Available</i>
<b>Boiling point/Initial boiling point/Boiling range</b>	-33.3 - -11.7 °C [ <i>Details:</i> Liquefied petroleum gas (hydrocarbon, HC) components boil between -33.3 to -11.7C. Other components boil at temperatures greater than 93.3C]
<b>Flash Point</b>	-104.4 °C [ <i>Test Method:</i> Estimated]
<b>Evaporation rate</b>	<i>No Data Available</i>
<b>Flammability</b>	Flammable Aerosol: Category 1.
<b>Flammable Limits(LEL)</b>	<i>No Data Available</i>
<b>Flammable Limits(UEL)</b>	<i>No Data Available</i>
<b>Vapor Pressure</b>	>=345 kPa [ <i>Details:</i> Contents under pressure have vapor pressure greater than 345kPa. After release from container, the pressure is very low.]
<b>Relative Vapor Density</b>	<i>Not Applicable</i>
<b>Density</b>	1.1 g/ml
<b>Relative Density</b>	1.1 [ <i>Ref Std:</i> WATER=1]
<b>Water solubility</b>	Nil [ <i>Details:</i> Reacts slowly with water during cure]
<b>Solubility- non-water</b>	<i>No Data Available</i>
<b>Partition coefficient: n-octanol/ water</b>	<i>No Data Available</i>
<b>Autoignition temperature</b>	<i>No Data Available</i>
<b>Decomposition temperature</b>	<i>No Data Available</i>
<b>Kinematic Viscosity</b>	<i>No Data Available</i>
<b>Volatile Organic Compounds</b>	<i>No Data Available</i>
<b>Percent volatile</b>	<i>No Data Available</i>
<b>VOC Less H2O &amp; Exempt Solvents</b>	165 g/l

<b>Particle Characteristics</b>	<i>No Data Available</i>
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## SECTION 10: Stability and reactivity

### 10.1. Reactivity

This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

### 10.2. Chemical stability

Stable. Do not store above 50C

### 10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

### 10.4. Conditions to avoid

Heat

### 10.5. Incompatible materials

Alcohols

Strong bases

Amines

Strong oxidizing agents

### 10.6. Hazardous decomposition products

<u>Substance</u>	<u>Condition</u>
None known.	

Refer to section 5.2 for hazardous decomposition products during combustion.

## SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

### 11.1. Information on Toxicological effects

#### Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

#### Inhalation:

Fatal if inhaled. Simple Asphyxiation: Signs/symptoms may include increased heart rate, rapid respirations, drowsiness, headache, incoordination, altered judgement, nausea, vomiting, lethargy, seizures, coma, and may be fatal.

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Allergic Respiratory Reaction: Signs/symptoms may include difficulty breathing, wheezing, cough, and tightness of chest.

May cause additional health effects (see below).

#### Skin Contact:

Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, dryness, cracking, blistering, and pain.

Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

**Eye Contact:**

Severe Eye Irritation: Signs/symptoms may include significant redness, swelling, pain, tearing, cloudy appearance of the cornea, and impaired vision.

**Ingestion:**

May be harmful if swallowed.

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

**Additional Health Effects:****Single exposure may cause target organ effects:**

Central Nervous System (CNS) Depression: Signs/symptoms may include headache, dizziness, drowsiness, incoordination, nausea, slowed reaction time, slurred speech, giddiness, and unconsciousness.

Single exposure, above recommended guidelines, may cause: Cardiac Sensitization: Signs/symptoms may include irregular heartbeat (arrhythmia), faintness, chest pain, and may be fatal.

**Prolonged or repeated exposure may cause target organ effects:**

Respiratory Effects: Signs/symptoms may include cough, shortness of breath, chest tightness, wheezing, increased heart rate, bluish colored skin (cyanosis), sputum production, changes in lung function tests, and/or respiratory failure.

**Additional Information:**

Persons previously sensitized to isocyanates may develop a cross-sensitization reaction to other isocyanates.

**Toxicological Data**

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

**Acute Toxicity**

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE >5,000 mg/kg
Overall product	Inhalation-Dust/Mist(4 hr)		No data available; calculated ATE >0.05 - =0.5 mg/l
Overall product	Ingestion		No data available; calculated ATE >2,000 - =5,000 mg/kg
4,4' Diphenylmethane diisocyanate (MDI)	Dermal	Rabbit	LD50 > 5,000 mg/kg
Higher Oligomers of MDI (pMDI)	Dermal	Rabbit	LD50 > 5,000 mg/kg
Polyol Blend (NJTS Reg. No. 04499600-7192)	Dermal	Rabbit	LD50 > 2,000 mg/kg
4,4' Diphenylmethane diisocyanate (MDI)	Inhalation-Dust/Mist (4 hours)	Rat	LC50 0.368 mg/l
4,4' Diphenylmethane diisocyanate (MDI)	Ingestion	Rat	LD50 31,600 mg/kg
Higher Oligomers of MDI (pMDI)	Inhalation-Dust/Mist (4 hours)	Rat	LC50 0.368 mg/l
Higher Oligomers of MDI (pMDI)	Ingestion	Rat	LD50 31,600 mg/kg
Polyol Blend (NJTS Reg. No. 04499600-7192)	Inhalation-Dust/Mist (4 hours)	Rat	LC50 estimated to be 5 - 12.5 mg/l
Polyol Blend (NJTS Reg. No. 04499600-7192)	Ingestion	Rat	LD50 632 mg/kg
Isobutane	Inhalation-Gas (4 hours)	Rat	LC50 276,000 ppm
Dimethyl Ether	Inhalation-Gas (4 hours)	Rat	LC50 164,000 ppm
Propane	Inhalation-Gas (4 hours)	Rat	LC50 > 200,000 ppm



ATE = acute toxicity estimate

**Skin Corrosion/Irritation**

Name	Species	Value
4,4' Diphenylmethane diisocyanate (MDI)	official classification	Irritant
Higher Oligomers of MDI (pMDI)	official classification	Irritant
Polyol Blend (NJTS Reg. No. 04499600-7192)	Rabbit	Minimal irritation
Isobutane	Professional judgement	No significant irritation
Propane	Rabbit	Minimal irritation

**Serious Eye Damage/Irritation**

Name	Species	Value
4,4' Diphenylmethane diisocyanate (MDI)	official classification	Severe irritant
Higher Oligomers of MDI (pMDI)	official classification	Severe irritant
Polyol Blend (NJTS Reg. No. 04499600-7192)	Rabbit	No significant irritation
Isobutane	Professional judgement	No significant irritation
Propane	Rabbit	Mild irritant

**Sensitization:****Skin Sensitization**

Name	Species	Value
4,4' Diphenylmethane diisocyanate (MDI)	Mouse	Sensitizing
Higher Oligomers of MDI (pMDI)	Mouse	Sensitizing
Polyol Blend (NJTS Reg. No. 04499600-7192)	Mouse	Not classified

**Respiratory Sensitization**

Name	Species	Value
4,4' Diphenylmethane diisocyanate (MDI)	Human	Sensitizing
Higher Oligomers of MDI (pMDI)	Human	Sensitizing

**Germ Cell Mutagenicity**

Name	Route	Value
4,4' Diphenylmethane diisocyanate (MDI)	In Vitro	Some positive data exist, but the data are not sufficient for classification
Higher Oligomers of MDI (pMDI)	In Vitro	Some positive data exist, but the data are not sufficient for classification
Polyol Blend (NJTS Reg. No. 04499600-7192)	In Vitro	Not mutagenic
Polyol Blend (NJTS Reg. No. 04499600-7192)	In vivo	Some positive data exist, but the data are not sufficient for classification
Isobutane	In Vitro	Not mutagenic
Dimethyl Ether	In Vitro	Not mutagenic
Dimethyl Ether	In vivo	Not mutagenic

Propane	In Vitro	Not mutagenic
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### Carcinogenicity

Name	Route	Species	Value
4,4' Diphenylmethane diisocyanate (MDI)	Inhalation	Rat	Some positive data exist, but the data are not sufficient for classification
Higher Oligomers of MDI (pMDI)	Inhalation	Rat	Some positive data exist, but the data are not sufficient for classification
Polyol Blend (NJTS Reg. No. 04499600-7192)	Ingestion	Multiple animal species	Carcinogenic
Dimethyl Ether	Inhalation	Rat	Not carcinogenic

### Reproductive Toxicity

#### Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
4,4' Diphenylmethane diisocyanate (MDI)	Inhalation	Not classified for development	Rat	NOAEL 0.004 mg/l	during organogenesis
Higher Oligomers of MDI (pMDI)	Inhalation	Not classified for development	Rat	NOAEL 0.004 mg/l	during organogenesis
Polyol Blend (NJTS Reg. No. 04499600-7192)	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	2 generation
Polyol Blend (NJTS Reg. No. 04499600-7192)	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	2 generation
Polyol Blend (NJTS Reg. No. 04499600-7192)	Ingestion	Not classified for development	Rat	LOAEL 99 mg/kg/day	2 generation
Dimethyl Ether	Inhalation	Not classified for development	Rat	NOAEL 40,000 ppm	during organogenesis

### Target Organ(s)

#### Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
4,4' Diphenylmethane diisocyanate (MDI)	Inhalation	respiratory irritation	May cause respiratory irritation	official classification	NOAEL Not available	
Higher Oligomers of MDI (pMDI)	Inhalation	respiratory irritation	May cause respiratory irritation	official classification	NOAEL Not available	
Polyol Blend (NJTS Reg. No. 04499600-7192)	Inhalation	nervous system	Not classified	Rat	NOAEL Not available	4 hours
Polyol Blend (NJTS Reg. No. 04499600-7192)	Ingestion	nervous system	Not classified	Rat	NOAEL Not available	
Isobutane	Inhalation	cardiac sensitization	Causes damage to organs	Multiple animal species	NOAEL Not available	
Isobutane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
Isobutane	Inhalation	respiratory irritation	Not classified	Mouse	NOAEL Not available	
Dimethyl Ether	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Rat	LOAEL 10,000 ppm	30 minutes
Dimethyl Ether	Inhalation	cardiac sensitization	Some positive data exist, but the data are not sufficient for classification	Dog	NOAEL 100,000 ppm	5 minutes
Propane	Inhalation	cardiac sensitization	Causes damage to organs	Human	NOAEL Not available	
Propane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	

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Propane	Inhalation	respiratory irritation	Not classified	Human	NOAEL Not available	
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**Specific Target Organ Toxicity - repeated exposure**

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
4,4' Diphenylmethane diisocyanate (MDI)	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.004 mg/l	13 weeks
Higher Oligomers of MDI (pMDI)	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.004 mg/l	13 weeks
Polyol Blend (NJTS Reg. No. 04499600-7192)	Ingestion	liver   immune system	Not classified	Rat	NOAEL 911 mg/kg/day	3 months
Polyol Blend (NJTS Reg. No. 04499600-7192)	Ingestion	heart   hematopoietic system   kidney and/or bladder	Not classified	Mouse	NOAEL 3,645 mg/kg/day	3 months
Polyol Blend (NJTS Reg. No. 04499600-7192)	Ingestion	skin   endocrine system   gastrointestinal tract   bone, teeth, nails, and/or hair   nervous system   eyes   respiratory system   vascular system	Not classified	Rat	NOAEL 911 mg/kg/day	3 months
Isobutane	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 4,500 ppm	13 weeks
Dimethyl Ether	Inhalation	hematopoietic system	Not classified	Rat	NOAEL 25,000 ppm	2 years
Dimethyl Ether	Inhalation	liver	Not classified	Rat	NOAEL 20,000 ppm	30 weeks

**Aspiration Hazard**

For the component/components, either no data are currently available or the data are not sufficient for classification.

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

**SECTION 12: Ecological information**

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. Additional information leading to material classification in Section 2 is available upon request. In addition, environmental fate and effects data on ingredients may not be reflected in this section because an ingredient is present below the threshold for labeling, an ingredient is not expected to be available for exposure, or the data is considered not relevant to the material as a whole.

**12.1. Toxicity****Acute aquatic hazard:**

GHS Acute 3: Harmful to aquatic life.

**Chronic aquatic hazard:**

Not chronically toxic to aquatic life by GHS criteria.

No product test data available

Material	Cas #	Organism	Type	Exposure	Test Endpoint	Test Result
Polyol Blend (NJTS Reg. No. 04499600-7192)	Trade Secret	Activated sludge	Experimental	3 hours	EC50	784 mg/l
Polyol Blend (NJTS Reg. No. 04499600-7192)	Trade Secret	Fathead Minnow	Experimental	96 hours	LC50	51 mg/l

04499600-7192)						
Polyol Blend (NJTS Reg. No. 04499600-7192)	Trade Secret	Green algae	Experimental	72 hours	ErC50	82 mg/l
Polyol Blend (NJTS Reg. No. 04499600-7192)	Trade Secret	Water flea	Experimental	48 hours	EC50	131 mg/l
Polyol Blend (NJTS Reg. No. 04499600-7192)	Trade Secret	Green algae	Experimental	72 hours	NOEC	13 mg/l
Polyol Blend (NJTS Reg. No. 04499600-7192)	Trade Secret	Water flea	Experimental	21 days	NOEC	32 mg/l
4,4' Diphenylmethane diisocyanate (MDI)	101-68-8	Activated sludge	Estimated	3 hours	EC50	>100 mg/l
4,4' Diphenylmethane diisocyanate (MDI)	101-68-8	Green algae	Estimated	72 hours	EC50	>1,640 mg/l
4,4' Diphenylmethane diisocyanate (MDI)	101-68-8	Water flea	Estimated	24 hours	EC50	>1,000 mg/l
4,4' Diphenylmethane diisocyanate (MDI)	101-68-8	Zebra Fish	Estimated	96 hours	LC50	>1,000 mg/l
4,4' Diphenylmethane diisocyanate (MDI)	101-68-8	Green algae	Estimated	72 hours	NOEC	1,640 mg/l
4,4' Diphenylmethane diisocyanate (MDI)	101-68-8	Water flea	Estimated	21 days	NOEC	10 mg/l
Dimethyl Ether	115-10-6	Bacteria	Experimental	N/A	EC10	>1,600 mg/l
Dimethyl Ether	115-10-6	Guppy	Experimental	96 hours	LC50	>4,100 mg/l
Dimethyl Ether	115-10-6	Water flea	Experimental	48 hours	EC50	>4,400 mg/l
Higher Oligomers of MDI (pMDI)	9016-87-9	Green algae	Analogous Compound	72 hours	No tox obs at lmt of water sol	>100 mg/l
Higher Oligomers of MDI (pMDI)	9016-87-9	Water flea	Analogous Compound	24 hours	No tox obs at lmt of water sol	>100 mg/l
Higher Oligomers of MDI (pMDI)	9016-87-9	Green algae	Analogous Compound	72 hours	No tox obs at lmt of water sol	>100 mg/l
Higher Oligomers of MDI (pMDI)	9016-87-9	Activated sludge	Analogous Compound	3 hours	EC50	>100 mg/l
Isobutane	75-28-5	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
Propane	74-98-6	N/A	Data not available or insufficient for classification	N/A	N/A	N/A

## 12.2. Persistence and degradability

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
Polyol Blend (NJTS Reg. No. 04499600-7192)	Trade Secret	Experimental Aquatic Inherent Biodegrad.	50 days	Dissolv. Organic Carbon Deplet	60 %removal of DOC	835.3200 Zhan-Wellens
Polyol Blend (NJTS Reg. No. 04499600-7192)	Trade Secret	Experimental Biodegradation	28 days	Biological Oxygen Demand	0 %BOD/ThOD	OECD 301C - MITI (I)
4,4' Diphenylmethane diisocyanate (MDI)	101-68-8	Estimated Hydrolysis		Hydrolytic half-life	20 hours (t 1/2)	
Dimethyl Ether	115-10-6	Experimental Biodegradation	28 days	Biological Oxygen Demand	5 %BOD/ThOD	OECD 301D - Closed Bottle Test

Dimethyl Ether	115-10-6	Experimental Photolysis		Photolytic half-life (in air)	12.4 days (t 1/2)	
Higher Oligomers of MDI (pMDI)	9016-87-9	Analogous Compound Aquatic Inherent Biodegrad.	28 days	Biological Oxygen Demand	0 %BOD/ThOD	OECD 302C - Modified MITI (II)
Higher Oligomers of MDI (pMDI)	9016-87-9	Analogous Compound Hydrolysis		Hydrolytic half-life	20 hours (t 1/2)	
Isobutane	75-28-5	Experimental Photolysis		Photolytic half-life (in air)	13.4 days (t 1/2)	
Propane	74-98-6	Experimental Photolysis		Photolytic half-life (in air)	27.5 days (t 1/2)	

**12.3. Bioaccumulative potential**

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
Polyol Blend (NJTS Reg. No. 04499600-7192)	Trade Secret	Experimental BCF - Fish	42 days	Bioaccumulation Factor	4.6	OECD305-Bioconcentration
Polyol Blend (NJTS Reg. No. 04499600-7192)	Trade Secret	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	2.68	
4,4' Diphenylmethane diisocyanate (MDI)	101-68-8	Experimental BCF - Fish	28 days	Bioaccumulation Factor	200	OECD305-Bioconcentration
Dimethyl Ether	115-10-6	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Higher Oligomers of MDI (pMDI)	9016-87-9	Analogous Compound BCF - Fish	28 days	Bioaccumulation Factor	200	OECD305-Bioconcentration
Higher Oligomers of MDI (pMDI)	9016-87-9	Analogous Compound Bioconcentration		Log of Octanol/H2O part. coeff	4.51	
Isobutane	75-28-5	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	2.76	
Propane	74-98-6	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	2.36	

**12.4. Mobility in soil**

Please contact manufacturer for more details

**12.5 Other adverse effects**

No information available

**SECTION 13: Disposal considerations**

**13.1. Disposal methods**

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of waste product in a permitted industrial waste facility. As a disposal alternative, incinerate in a permitted waste incineration facility. Facility must be capable of handling aerosol cans. Combustion products will include halogen acid (HCl/HF/HBr). Facility must be capable of handling halogenated materials. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

## SECTION 14: Transport Information

### Local Regulations

**Land Transport:** In accordance with Director General of Land Transportation Decree No. SK.725/AJ.302/DRJD/2004 which refer to UN Standard.

**Sea Transport:** In accordance with Minister of Transportation Decree No. KM 2/2010 which refer to IMDG Code Standard.

### International Regulations

**UN No.:** Not applicable

**UN Proper Shipping Name:** Not applicable

**Transportation Class (IMO):** Not applicable

**Transportation Class (IATA):** Not applicable

**Packing Group:** Not applicable

**Marine Pollutant:** Not applicable

## SECTION 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### Global inventory status

Contact 3M for more information. The components of this material are in compliance with the provisions of Australia National Industrial Chemical Notification and Assessment Scheme (NICNAS). Certain restrictions may apply. Contact the selling division for additional information. The components of this product are in compliance with the new substance notification requirements of CEPA. The components of this product are in compliance with the chemical notification requirements of TSCA. All required components of this product are listed on the active portion of the TSCA Inventory.

#### Local Inventory Status

##### Addendum I Government Regulation No. 74/2001:

###### List of Hazardous Substances Approved for Use :

Diethylene Glycol is listed as a Hazardous Substance Approved for Use.

Propane is listed as a Hazardous Substance Approved for Use.

##### Addendum II Government Regulation No. 74/2001:

###### Tab.1 List of Prohibited Substances for Use:

None of the substances are listed as a Prohibited Substance for Use.

##### Addendum II Government Regulation No. 74/2001:

###### Tab.2 List of Restricted Substances for Use:

None of the substances are listed as a Restricted Substance for Use.

##### Addendum I Ministry of Health Regulation No. 472/1996:

###### List and Classification of Hazardous Substances for Health:

None of the substances are listed and classified as a Hazardous Substance for Health.

##### Addendum I Act of Minister of Industry and Trade No. 254/MPP/KEP/2000

###### List of Hazardous Substances that are Regulated to Import Trade System:

None of the substances are listed and classified as a Hazardous Substance that is Regulated to Import Trade System.

## SECTION 16: Other information

**Document Group:**

28-4642-6

**Version Number:**

1.00

**Issue Date:**

21/02/2025

**Supersedes Date:**

Initial Issue

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**3M Indonesia SDSs are available at [https://www.3m.co.id/3M/en\\_ID/company-id/](https://www.3m.co.id/3M/en_ID/company-id/)**