

# Material Safety Data Sheet

Hazardous Substance, DANGEROUS GOODS



## 1 . Identification of the material and supplier

**Product name** : TUFFLON-D60 Part B

**Other names** : Not available.

**Proper shipping name** : Amines, liquid, corrosive, N.O.S. (contains: polyoxypropylenediamine)

**Recommended use** : Component of a Polyurea System

**Supplier name and address** : Liquimix PtyLtd  
ABN: 32 062 887 585  
1/29 Collinsvale St  
Rocklea  
Queensland 4106 Australia

**Telephone** : + 617 3277 6655

**e-mail address for MSDS information** : [admin@liquimix.com](mailto:admin@liquimix.com)

**Emergency telephone number** : **Australia: 0418 725 785 (ALL HOURS)**  
**International: +61 418 725 785 (ALL HOURS)**

## 2 . Hazards identification

**Hazard classification** : HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

This material is classified as hazardous according to Australian criteria.

Classified as Dangerous Goods for the purpose of transport by road, rail, sea or air. Refer to relevant regulations for storage and transport requirements.

**Class** : Class 8: Corrosive material

Classified as a C1 (COMBUSTIBLE LIQUID) for the purpose of storage and handling, in accordance with the requirements of AS 1940. Refer to State Regulations for storage and transport requirements.

**Risk phrase(s)** : R21/22- Harmful in contact with skin and if swallowed.  
R34- Causes burns.  
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Safety phrase(s)** : S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
S36/37/39- Wear suitable protective clothing, gloves and eye/face protection.  
S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).  
S61- Avoid release to the environment. Refer to special instructions/safety data sheet.

**Poison schedule (Australia)** : None Allocated.

# Material Safety Data Sheet

Hazardous Substance, DANGEROUS GOODS



## 3 . Composition/information on ingredients

**Physical state** : Liquid.  
**Colour / Appearance** : Clear Yellow

Ingredient name	CAS number	Concentration (%)
4,4'-methylenebis (N-sec- butyl aniline)	5285-60-9	30 - 60
POLY(OXYPROPYLENE)DIAMINE (POPDA) (MW 400)	9046-10-0	10 - <30
Poly[oxy(methyl-1,2-ethanediy)], .alpha.-(2-aminomethylethyl)-.omega.-(2-aminomethylethoxy)-	9046-10-0	10 - <30
3,5-Diethyl-2,4-diaminotoluene	2095-02-5	< 10
3,5-Diethyl-2,6-diaminotoluene	2095-01-4	< 10
Other ingredients determined not to be hazardous	-	to 100

## 4 . First-aid measures

### Ingestion

Get medical attention immediately. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

### Eye contact

Get medical attention immediately. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

### Skin contact

Get medical attention immediately. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

### Inhalation

Get medical attention immediately. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

### Medical Attention and Special Treatment

In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

If poisoning occurs, contact a doctor or Poisons Information Centre. Phone Australia 13 1126; New Zealand 0800 764 766.

# Material Safety Data Sheet

## Hazardous Substance, DANGEROUS GOODS



### 5 . Fire-fighting measures

#### Extinguishing media

Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.

#### Hazardous combustion products

Decomposition products may include the following materials:

carbon dioxide  
carbon monoxide  
nitrogen oxides  
metal oxide/oxides

#### Special protective equipment for fire-fighters

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

#### Precautions for fire fighters

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. This material is toxic to aquatic organisms. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

In a fire or if heated, a pressure increase will occur and the container may burst.

Hazchem code : 2X

### 6 . Accidental release measures

#### Emergency procedures

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

#### Methods and materials for containment and clean-up procedures

##### *Large spill*

Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

##### *Small spill*

Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

# Material Safety Data Sheet

## Hazardous Substance, DANGEROUS GOODS



### 7. Handling and storage

#### Precautions for safe handling

Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Avoid release to the environment. Refer to special instructions/safety data sheet. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

#### Precautions for safe storage

Store between the following temperatures: 20 to 25°C (68 to 77°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

Classified as a C1 (COMBUSTIBLE LIQUID) for the purpose of storage and handling, in accordance with the requirements of AS 1940. Refer to State Regulations for storage and transport requirements.

### 8. Exposure controls/personal protection

#### National exposure standards

No value assigned to this material by the Australian regulatory authority.

#### Biological limit values

No biological limit allocated.

#### Engineering controls

If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

#### Personal protective equipment

##### Eyes

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Refer to Australian/New Zealand Standard AS/NZS 1337:1992 for guidance on selection and use of protective eyewear.

##### Hands

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Refer to Australian/New Zealand Standard AS/NZS 2161.1: 2000 for guidance on selection and use of protective gloves.

##### Respiratory

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Refer to Australian/New Zealand Standard AS/NZS 1715 and AS/NZS 1716 for guidance on selection and use of respiratory devices.

##### Skin

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

# Material Safety Data Sheet

Hazardous Substance, DANGEROUS GOODS



## 9 . Physical and chemical properties

**Physical state** : Liquid.  
**Colour / Appearance** : Clear Yellow  
**Solubility** : Not available.

<b>Density</b>	: 1 g/cm <sup>3</sup> [25°C]	<b>Vapour density</b>	: Not available.
<b>Specific gravity</b>	: Not available.	<b>Vapour pressure</b>	: Not available.
<b>Boiling point</b>	: Not available.	<b>Flash point</b>	: Closed cup: >116°C
<b>Melting point</b>	: Not available.	<b>Flammable limits</b>	: Not available.
<b>Viscosity</b>	: Dynamic: 200 to 400 mPa·s	<b>Auto-ignition temperature</b>	: Not available.
<b>pH</b>	: Not available.		

(Typical values only - consult specification sheet)

## 10 . Stability and reactivity

**Chemical stability** : The product is stable.  
**Conditions to avoid** : No specific data.  
**Materials to avoid** : Reactive or incompatible with the following materials: oxidizing materials, reducing materials, acids and moisture.  
**Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.  
**Hazardous Reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.

## 11 . Toxicological information

### Potential acute health effects

**Ingestion** : Harmful if swallowed. May cause burns to mouth, throat and stomach.  
**Skin contact** : Corrosive to the skin. Causes burns. Harmful in contact with skin.  
**Eye contact** : Corrosive to eyes. Causes burns.  
**Inhalation** : May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

### Acute toxicity

Product/ingredient name	Exposure	Species	Dose	Result
4,4'-methylenebis (N-sec- butyl aniline)	LD50 Dermal	Rabbit	3090 mg/kg	-
	LD50 Oral	Rat	1380 mg/kg	-
Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-(2-aminomethylethyl)-.omega.-(2-aminomethylethoxy)-	LD50 Dermal	Rabbit	2090 mg/kg	-
	LD50 Oral	Rat	480 mg/kg	-
3,5-Diethyl-2,4-diaminotoluene	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	738 mg/kg	-

### Potential chronic health effects

**Chronic effects** : No known significant effects or critical hazards.  
**Carcinogenicity** : No known significant effects or critical hazards.

# Material Safety Data Sheet

Hazardous Substance, DANGEROUS GOODS



## 11 . Toxicological information

**Mutagenicity** : No known significant effects or critical hazards.  
**Teratogenicity** : No known significant effects or critical hazards.  
**Developmental effects** : No known significant effects or critical hazards.  
**Fertility effects** : No known significant effects or critical hazards.

### Over-exposure signs/symptoms

**Inhalation** : No specific data.  
**Ingestion** : Adverse symptoms may include the following:  
stomach pains  
**Skin** : Adverse symptoms may include the following:  
pain or irritation  
redness  
blistering may occur  
**Eyes** : Adverse symptoms may include the following:  
pain  
watering  
redness  
**Target organs** : Contains material which may cause damage to the following organs: blood, kidneys, liver, peripheral nervous system, thyroid.

## 12 . Ecological information

**Environmental effects** : Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Water polluting material. May be harmful to the environment if released in large quantities.

### Aquatic ecotoxicity

Product/ingredient name	Test	Result	Species	Exposure
Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-(2-aminomethylethyl)-.omega.-(2-aminomethylethoxy)-	-	Acute EC50 15 mg/L	Daphnia	48 hours
	-	Acute IC50 135 mg/L	Algae	72 hours
	-	Acute LC50 >100 mg/L	Fish	96 hours

**Conclusion/Summary** : Not available.

### Biodegradability

**Conclusion/Summary** : Not available.

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
4,4'-methylenebis (N-sec- butyl aniline)	6.08	-	high

**Mobility** : Not available.

**Other adverse effects** : No known significant effects or critical hazards.

# Material Safety Data Sheet

## Hazardous Substance, DANGEROUS GOODS



### 13 . Disposal considerations

#### Methods of disposal

The generation of waste should be avoided or minimised wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

### 14 . Transport information

#### Road and rail transport






Classified as dangerous goods by the criteria of the Australian Dangerous Goods (ADG) Code for transport by road and rail.

#### Marine transport

Classified as dangerous goods by the criteria of the International Maritime Dangerous Goods (IMDG) Code for transport by sea.

#### Air transport

Classified as dangerous goods by the criteria of the International Air Transport Association (IATA) Code for transport by air.

Regulation	UN number	Proper shipping name	Classes	PG*	Label	Additional information
ADG	2735	Amines, liquid, corrosive, N.O.S. (contains: polyoxypropylenediamine)	8	II		<b>Hazchem code</b> 2X
IMDG	UN2735	Amines, liquid, corrosive, n.o.s. Polyoxypropylenediamine Marine pollutant	8	II	 	<b>Emergency schedules (EmS)</b> F-A, S-B
IATA	UN2735	Amines, liquid, corrosive, n.o.s. Polyoxypropylenediamine	8	II	 	<b>Passenger and Cargo Aircraft</b> Quantity limitation: 1 L Packaging instructions: 851 <b>Cargo Aircraft Only</b> Quantity limitation: 30 L Packaging instructions: 855

PG\* : Packing group



# Material Safety Data Sheet

Hazardous Substance, DANGEROUS GOODS



## 15 . Regulatory information

### Inventory status

Country	Inventory	Status
Australia	AICS	All components are listed or exempted.
Canada	DSL	All components are listed or exempted.
China	IECSC	All components are listed or exempted.
Europe	EINECS/ELINCS/NLP	All components are listed or exempted.
Japan	ENCS	All components are listed or exempted.
Korea	KECI	All components are listed or exempted.
New Zealand	NZIoC	All components are listed or exempted.
Philippines	PICCS	All components are listed or exempted.
United States	TSCA	All components are listed or exempted.

**Carcinogen schedule (Australia)** : None Allocated.

**Poison schedule (Australia)** : None Allocated.

## 16 . Other information

▣ Indicates information that has changed from previously issued version.

### Disclaimer

While the information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.

IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.

THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.