

# SAFETY DATA SHEET



## Section 1. Identification

**Product name** :  
**Product code** : Not available.  
**Other means of identification** : Not available.  
**Product type** : Liquid.  
**Identified uses** : Thermal Barrier Polymer Part "B".  
**Manufacturer** :

**e-mail address of person responsible for this SDS** : customerservice@azonusa.com

**Emergency telephone number (with hours of operation)** : CHEMTREC, U.S.: 1-800-424-9300 International: +1-703-527-3887 24/7

## Section 2. Hazards identification

**HSNO Classification** : 6.4 - EYE IRRITATION - Category A (Irritant)  
6.5 - SENSITIZATION - Category A (Respiratory)  
6.7 - CARCINOGENICITY - Category B  
6.9 - SPECIFIC TARGET ORGAN TOXICITY (SINGLE OR REPEATED EXPOSURE) - Category B

This material is classified as hazardous according to criteria in the Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001 and has been classified according to the Hazardous Substances (Classifications) Regulations 2001.

This material is not classified as DANGEROUS GOODS according to criteria in New Zealand Standard 5433:2012 Transport of Dangerous Goods on Land.

### GHS label elements

## Section 2. Hazards identification

- Signal word** : Danger
- Hazard statements** : Causes serious eye irritation.  
May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
Suspected of causing cancer.  
May cause damage to organs.
- Precautionary statements**
- Prevention** : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear eye or face protection. In case of inadequate ventilation wear respiratory protection. Do not breathe vapour. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.
- Response** : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. IF exposed or concerned: IF exposed or if you feel unwell: Call a POISON CENTRE or doctor/physician. Get medical advice/attention. If experiencing respiratory symptoms: Call a POISON CENTRE or doctor/physician.
- Storage** : Store locked up.
- Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Symbol** :



**Other hazards which do not result in classification** : None known.

## Section 3. Composition/information on ingredients

- Substance/mixture** : Mixture
- Other means of identification** : Not available.

Ingredient name	% (w/w)	CAS number
Glycerol, propoxylated	10 - 30	25791-96-2
2,2' -Oxybisethanol	10 - 30	111-46-6
Oxydipropanol	5 - 10	25265-71-8
Ethanediol	1 - 5	107-21-1
Isocyanic acid, polymethylenepolyphenylene ester	0.1 - 1	9016-87-9
4,4'-Methylenediphenyl diisocyanate	0.1 - 1	101-68-8

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

## Section 4. First aid measures

### Description of necessary first aid measures

- 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 the event of any

## Section 4. First aid measures

complaints or symptoms, avoid further exposure.

- Ingestion** : 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. Get medical attention. 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.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 20 minutes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Get medical attention.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

- Inhalation** : May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- Ingestion** : No known significant effects or critical hazards.
- Skin contact** : No known significant effects or critical hazards.
- Eye contact** : Causes serious eye irritation.

#### Over-exposure signs/symptoms

- Inhalation** : Adverse symptoms may include the following:  
wheezing and breathing difficulties  
asthma
- Ingestion** : No known significant effects or critical hazards.
- Skin** : No known significant effects or critical hazards.
- Eyes** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness

### Indication of immediate medical attention and special treatment needed, if necessary

- Specific treatments** : Not available.
- Notes to physician** : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

## Section 5. Firefighting measures

### Extinguishing media

- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst.

## Section 5. Firefighting measures

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide
- Hazchem code** : Not available.
- Special 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.
- 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.

## Section 6. Accidental release measures

- Personal precautions, protective equipment and 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. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).
- Environmental precautions** : 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).
- Methods and material for containment and cleaning up**
- 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.

## Section 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. Persons with a history of asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapour or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. 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.
- Conditions for safe storage, including any incompatibilities** : 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. See Section 10 for incompatible materials before handling or use.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
2,2' -Oxybisethanol	<b>NZ HSWA 2015 (New Zealand, 6/2016).</b> WES-TWA: 23 ppm 8 hours. WES-TWA: 101 mg/m <sup>3</sup> 8 hours.
Ethanediol	<b>NZ HSWA 2015 (New Zealand, 6/2016).</b> WES-Ceiling: 50 ppm Form: Vapour and mists WES-Ceiling: 127 mg/m <sup>3</sup> Form: Vapour and mists
Isocyanic acid, polymethylenepolyphenylene ester	<b>NZ HSWA 2015 (New Zealand, 6/2016). Absorbed through skin. Skin sensitiser.</b> WES-TWA: 0.02 mg/m <sup>3</sup> , (measured as -NCO) 8 hours. WES-STEL: 0.07 mg/m <sup>3</sup> , (measured as -NCO) 15 minutes.
4,4'-Methylenediphenyl diisocyanate	<b>NZ HSWA 2015 (New Zealand, 6/2016). Absorbed through skin.</b> WES-TWA: 5 mg/m <sup>3</sup> , (as CN) 8 hours. WES-STEL: 0.07 mg/m <sup>3</sup> , (measured as -NCO) 15 minutes.

**Appropriate engineering controls** : Use only with adequate ventilation. 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.

**Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Respiratory protection** : 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.

**Hand protection** : 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. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

**Eye protection** : 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, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

**Skin protection** : 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.

## Section 9. Physical and chemical properties

### Appearance

<b>Physical state</b>	: Liquid. [Clear.]
<b>Colour</b>	: Purple to Black.
<b>Odour</b>	: Slight.
<b>Odour threshold</b>	: Not available.
<b>pH</b>	: Not available.
<b>Melting point</b>	: Not available.
<b>Boiling point</b>	: Not available.
<b>Flash point</b>	: Closed cup: >93.3°C (>199.9°F)
<b>Evaporation rate</b>	: Not available.
<b>Flammability (solid, gas)</b>	: Not available.
<b>Lower and upper explosive (flammable) limits</b>	: Not available.
<b>Vapour pressure</b>	: Not available.
<b>Vapour density</b>	: Not available.
<b>Relative density</b>	: Not available.
<b>Solubility</b>	: Slightly soluble in water.
<b>Solubility in water</b>	: Not available.
<b>Partition coefficient: n-octanol/water</b>	: Not available.
<b>Auto-ignition temperature</b>	: Not available.
<b>Decomposition temperature</b>	: Not available.
<b>Viscosity</b>	: Not available.
<b>Flow time (ISO 2431)</b>	: Not available.
<b><u>Aerosol product</u></b>	
<b>Type of aerosol</b>	: Not applicable.
<b>Heat of combustion</b>	: Not available.
<b>Ignition distance</b>	: Not applicable.
<b>Enclosed space ignition - Time equivalent</b>	: Not applicable.
<b>Enclosed space ignition - Deflagration density</b>	: Not applicable.
<b>Flame height</b>	: Not applicable.
<b>Flame duration</b>	: Not applicable.

## Section 10. Stability and reactivity

<b>Chemical stability</b>	: The product is stable.
<b>Possibility of hazardous reactions</b>	: Under normal conditions of storage and use, hazardous reactions will not occur.
<b>Conditions to avoid</b>	: No specific data.
<b>Incompatible materials</b>	: Reactive or incompatible with the following materials: oxidising materials and alkalis.
<b>Hazardous decomposition products</b>	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### Information on likely routes of exposure

- Inhalation** : May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
**Ingestion** : No known significant effects or critical hazards.  
**Skin contact** : No known significant effects or critical hazards.  
**Eye contact** : Causes serious eye irritation.

### Symptoms related to the physical, chemical and toxicological characteristics

- Inhalation** : Adverse symptoms may include the following:  
wheezing and breathing difficulties  
asthma  
**Ingestion** : No known significant effects or critical hazards.  
**Skin contact** : No known significant effects or critical hazards.  
**Eye contact** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
2,2' -Oxybisethanol	LD50 Dermal	Rabbit	11890 mg/kg	-
	LD50 Oral	Rat	12000 mg/kg	-
Oxydipropanol	LD50 Oral	Rat	14850 mg/kg	-
Ethanediol	LD50 Oral	Rat	4700 mg/kg	-
Isocyanic acid, polymethylenepolyphenylene ester	LC50 Inhalation Vapour	Rat	490 mg/m <sup>3</sup>	4 hours
	LD50 Dermal	Rabbit	>9400 mg/kg	-
	LD50 Oral	Rat	49 g/kg	-
4,4'-Methylenediphenyl diisocyanate	LD50 Oral	Rat	9200 mg/kg	-

#### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
2,2' -Oxybisethanol	Eyes - Mild irritant	Rabbit	-	50 mg	-
	Skin - Mild irritant	Rabbit	-	500 mg	-
Ethanediol	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Eyes - Mild irritant	Rabbit	-	1 hours 100 mg	-
	Eyes - Moderate irritant	Rabbit	-	6 hours 1440 mg	-
	Skin - Mild irritant	Rabbit	-	555 mg	-
Isocyanic acid, polymethylenepolyphenylene ester	Eyes - Mild irritant	Rabbit	-	100 mg	-
4,4'-Methylenediphenyl diisocyanate	Eyes - Moderate irritant	Rabbit	-	100 mg	-

#### Sensitisation

There is no data available.

#### Potential chronic health effects

- General** : No known significant effects or critical hazards.  
**Inhalation** : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.  
**Ingestion** : No known significant effects or critical hazards.  
**Skin contact** : No known significant effects or critical hazards.  
**Eye contact** : No known significant effects or critical hazards.  
**Carcinogenicity** : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.  
**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.

## Section 11. Toxicological information

**Fertility effects** : No known significant effects or critical hazards.

### Chronic toxicity

There is no data available.

### Carcinogenicity

There is no data available.

### Mutagenicity

There is no data available.

### Teratogenicity

There is no data available.

### Reproductive toxicity

There is no data available.

### Specific target organ toxicity

Name	Category	Target organs
2,2' -Oxybisethanol	Category B	Not determined
Ethanediol	Category A	Not determined
Isocyanic acid, polymethylenepolyphenylene ester	Category A	Not determined
4,4'-Methylenediphenyl diisocyanate	Category A	Not determined

### Aspiration hazard

There is no data available.

### Numerical measures of toxicity

#### Acute toxicity estimates

Route	ATE value
Oral	9150.2 mg/kg
Inhalation (dusts and mists)	5.081 mg/L

## Section 12. Ecological information

**Ecotoxicity** : No known significant effects or critical hazards.

### Aquatic and terrestrial toxicity

Product/ingredient name	Result	Species	Exposure
2,2' -Oxybisethanol Ethanediol	Acute LC50 75200000 µg/L Fresh water	Fish - Pimephales promelas	96 hours
	Acute LC50 69000000 µg/L Fresh water	Crustaceans - Ceriodaphnia dubia - Neonate	48 hours
	Acute LC50 41000000 µg/L Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 80500000 µg/L Fresh water	Fish - Pimephales promelas	96 hours

### Persistence/degradability

There is no data available.

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Glycerol, propoxylated	-1.82 to -0.73	-	low
2,2' -Oxybisethanol	-1.98	100	low
Oxydipropanol	-0.462	0.3 to 4.6	low
Ethanediol	-1.36	-	low
4,4'-Methylenediphenyl diisocyanate	4.51	200	low

### Mobility in soil

**Soil/water partition coefficient (K<sub>oc</sub>)** : Not available.

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



## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

	<b>New Zealand Class</b>	<b>IMDG</b>	<b>IATA</b>
<b>UN number</b>	Not regulated.	Not regulated.	Not regulated.
<b>UN proper shipping name</b>	-	-	-
<b>Transport hazard class(es)</b>	-	-	-
<b>Packing group</b>	-	-	-

### Additional information

PG\* : Packing group

## Section 15. Regulatory information

**HSNO Approval Number** : Not available.  
**HSNO Group Standard** : Not available.  
**HSNO Classification** : 6.4 - EYE IRRITATION - Category A (Irritant)  
6.5 - SENSITIZATION - Category A (Respiratory)  
6.7 - CARCINOGENICITY - Category B  
6.9 - SPECIFIC TARGET ORGAN TOXICITY (SINGLE OR REPEATED EXPOSURE) - Category B  
**New Zealand Inventory of Chemicals (NZIoC)** : Not determined.

## Section 16. Other information

### History

**Prepared by** : KMK Regulatory Services Inc.  
**Date of issue** : 15/04/2018  
**Date of previous issue** : Not applicable.  
**Version** : 1  
**Prepared by** : KMK Regulatory Services Inc.

## Section 16. Other information

### Key to abbreviations

: ATE = Acute Toxicity Estimate  
BCF = Bioconcentration Factor  
GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
IATA = International Air Transport Association  
IBC = Intermediate Bulk Container  
IMDG = International Maritime Dangerous Goods  
LogPow = logarithm of the octanol/water partition coefficient  
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail

### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.