

SAFETY DATA SHEET

SU 311-19T



Section 1. Identification

GHS product identifier : SU 311-19T
Product code : Not available.
Other means of identification : Not available.
Product type : Liquid.

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

Identified uses

Thermal Barrier Polymer Part "B".

Supplier's details :

Manufacturer : Azon USA Inc.
2204 Ravine Road
Kalamazoo, MI 49004-3516
U.S.A.
Tel: 269-385-5942

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

Section 2. Hazard(s) identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
RESPIRATORY SENSITIZATION - Category 1
SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 2
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2

GHS label elements

Section 2. Hazard(s) identification

Hazard pictograms :



Signal word : Danger

Hazard statements :

- H315 - Causes skin irritation.
- H317 - May cause an allergic skin reaction.
- H319 - Causes serious eye irritation.
- H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- H351 - Suspected of causing cancer.
- H373 - May cause damage to organs through prolonged or repeated exposure. (respiratory system)

Precautionary statements

Prevention :

- P201 - Obtain special instructions before use.
- P202 - Do not handle until all safety precautions have been read and understood.
- P280 - Wear protective gloves, protective clothing and eye or face protection.
- P284 - Wear respiratory protection.
- P260 - Do not breathe vapor.
- P264 - Wash thoroughly after handling.
- P272 - Contaminated work clothing should not be allowed out of the workplace.

Response :

- P308 + P313 - IF exposed or concerned: Get medical advice or attention.
- P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor.
- P362 + P364 - Take off contaminated clothing and wash it before reuse.
- P302 + P352 - IF ON SKIN: Wash with plenty of water.
- P333 + P313 - If skin irritation or rash occurs: Get medical advice or attention.
- P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P337 + P313 - If eye irritation persists: Get medical advice or attention.

Storage : P405 - Store locked up.

Disposal : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified (US) : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Other means of identification : Not available.

Ingredient name	% (w/w)	CAS number
2,2' -Oxybisethanol	7 - 13	111-46-6
Ethenediol	1 - 5	107-21-1
Isocyanic acid, polymethylenepolyphenylene ester	1 - 5	9016-87-9
4,4'-Methylenediphenyl Diisocyanate	1 - 5	101-68-8
N-[3-(dimethylamino)propyl]-N,N',N'-trimethylpropane-1,3-diamine	0.5 - 1.5	3855-32-1
o-(p-Isocyanatobenzyl)phenyl isocyanate	0.1 - 1	5873-54-1

United States: The exact percentage (concentration) in the composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.

Canada: The exact percentage (concentration) in the composition has been withheld as a trade secret in accordance with the amended HPR as of April 2018.

Section 3. Composition/information on ingredients

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified 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

- 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.
- Inhalation** : 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. Get medical attention. If necessary, call a poison center or physician. 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. In the event of any complaints or symptoms, avoid further exposure.
- Skin contact** : Wash with plenty of soap and water. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 20 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. 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.

Most important symptoms/effects, acute and delayed

Potential acute health effects

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

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
wheezing and breathing difficulties
asthma
- Skin contact** : Adverse symptoms may include the following:
irritation
redness

Section 4. First aid measures

Ingestion : No known significant effects or critical hazards.

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

Notes to physician : 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.

Specific treatments : No specific treatment.

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. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides

Special protective actions 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

For non-emergency personnel : 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 spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled 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 materials for containment and cleaning up

Section 6. Accidental release measures

- 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.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach 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 spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems or 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 handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. 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.

- Advice on general occupational hygiene** : 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. See also Section 8 for additional information on hygiene measures.

- 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. Store locked up. 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 unlabeled 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

United States

Occupational exposure limits

Ingredient name	Exposure limits
2,2' -Oxybisethanol	AIHA WEEL (United States, 7/2020). TWA: 10 mg/m ³ 8 hours.
Ethanediol	ACGIH TLV (United States, 3/2020). STEL: 10 mg/m ³ 15 minutes. Form: Inhalable fraction. Aerosol only. STEL: 50 ppm 15 minutes. Form: Vapor fraction TWA: 25 ppm 8 hours. Form: Vapor fraction
Isocyanic acid, polymethylenepolyphenylene ester 4,4'-Methylenediphenyl Diisocyanate	None. ACGIH TLV (United States, 3/2020).

Section 8. Exposure controls/personal protection

<p>N-[3-(dimethylamino)propyl]-N,N',N'-trimethylpropane-1,3-diamine o-(p-Isocyanatobenzyl)phenyl isocyanate</p>	<p>TWA: 0.005 ppm 8 hours. NIOSH REL (United States, 10/2016). TWA: 0.05 mg/m³ 10 hours. TWA: 0.005 ppm 10 hours. CEIL: 0.2 mg/m³ 10 minutes. CEIL: 0.02 ppm 10 minutes. OSHA PEL (United States, 5/2018). CEIL: 0.02 ppm CEIL: 0.2 mg/m³</p> <p>None. None.</p>
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Canada

Occupational exposure limits

Ingredient name	Exposure limits
<p>2,2' -Oxybisethanol</p> <p>Ethanediol</p>	<p>AIHA WEEL (United States, 7/2020). TWA: 10 mg/m³ 8 hours. CA British Columbia Provincial (Canada, 1/2020). C: 100 mg/m³ Form: Aerosol TWA: 10 mg/m³ 8 hours. Form: Particulate STEL: 20 mg/m³ 15 minutes. Form: Particulate C: 50 ppm Form: Vapor CA Saskatchewan Provincial (Canada, 7/2013). CEIL: 100 mg/m³ Form: Aerosol CA Ontario Provincial (Canada, 6/2019). Ceiling Limit: 10 mg/m³ Form: Inhalable particulate matter. Aerosol only. STEL: 50 ppm 15 minutes. Form: Vapor fraction TWA: 25 ppm 8 hours. Form: Vapor fraction CA Quebec Provincial (Canada, 7/2019). STEV: 50 ppm 15 minutes. Form: Vapor and mist STEV: 127 mg/m³ 15 minutes. Form: Vapor and mist CA Alberta Provincial (Canada, 6/2018). C: 100 mg/m³</p>
<p>Isocyanic acid, polymethylenepolyphenylene ester</p>	<p>CA Alberta Provincial (Canada, 6/2018). 8 hrs OEL: 0.07 mg/m³ 8 hours. 8 hrs OEL: 0.005 ppm 8 hours. CA British Columbia Provincial (Canada, 1/2020). TWA: 0.005 ppm 8 hours. C: 0.01 ppm CA Ontario Provincial (Canada, 6/2019). Ceiling Limit: 0.02 ppm TWA: 0.005 ppm 8 hours.</p>
<p>4,4'-Methylenediphenyl Diisocyanate</p>	<p>CA Alberta Provincial (Canada, 6/2018). 8 hrs OEL: 0.005 ppm 8 hours. 8 hrs OEL: 0.05 mg/m³ 8 hours. CA British Columbia Provincial (Canada, 1/2020). Inhalation sensitizer.</p>

Section 8. Exposure controls/personal protection

o-(p-Isocyanatobenzyl)phenyl isocyanate

TWA: 0.005 ppm 8 hours.
 C: 0.01 ppm
CA Quebec Provincial (Canada, 7/2019).
Skin sensitizer.
 TWAEV: 0.005 ppm 8 hours.
 TWAEV: 0.051 mg/m³ 8 hours.
CA Saskatchewan Provincial (Canada, 7/2013).
 STEL: 0.015 ppm 15 minutes.
 TWA: 0.005 ppm 8 hours.
CA Ontario Provincial (Canada, 6/2019).
 Ceiling Limit: 0.02 ppm
 TWA: 0.005 ppm 8 hours.

CA British Columbia Provincial (Canada, 1/2020).
 TWA: 0.005 ppm 8 hours.
 C: 0.01 ppm
CA Ontario Provincial (Canada, 6/2019).
 Ceiling Limit: 0.02 ppm
 TWA: 0.005 ppm 8 hours.

- Appropriate engineering controls** : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor 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.
- 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. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face 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**
- 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.
- Body 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 8. Exposure controls/personal protection

- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

- Physical state** : Liquid. [Clear.]
- Color** : Purple to Black.
- Odor** : Slight.
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point/freezing point** : Not available.
- Boiling point, initial boiling point, and boiling range** : Not available.
- Flash point** : Closed cup: >93.3°C (>199.9°F)
- Evaporation rate** : Not available.
- Flammability** : Not available.
- Lower and upper explosion limit/flammability limit** : Not available.
- Vapor pressure** : Not available.
- Relative vapor density** : Not available.
- Relative density** : Not available.
- Solubility** : Slightly soluble in water.
- Solubility in water** : Slightly soluble.
- Miscible with water** : Not available.
- Partition coefficient: n-octanol/water** : Not applicable.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- Viscosity** : Not available.
- Flow time (ISO 2431)** : Not available.
- Particle characteristics**
- Median particle size** : Not applicable.
- VOC content** : Not available.

Section 10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** : The product is stable. Reacts with Isocyanates.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** : No specific data.
- Incompatible materials** : Reactive or incompatible with the following materials: oxidizing materials and alkalis.
- Hazardous decomposition products** : Carbon monoxide, carbon dioxide, nitrogen oxides.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
2,2' -Oxybisethanol	LD50 Dermal	Rabbit	11890 mg/kg	-
	LD50 Oral	Rat	12000 mg/kg	-
Ethanediol	LD50 Oral	Rat	4700 mg/kg	-
Isocyanic acid, polymethylenepolyphenylene ester	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	-
Isocyanic acid, polymethylenepolyphenylene ester	Skin - Mild irritant	Rabbit	-	555 mg	-
	Eyes - Mild irritant	Rabbit	-	100 mg	-
4,4'-Methylenediphenyl Diisocyanate	Eyes - Moderate irritant	Rabbit	-	100 mg	-

Sensitization

There is no data available.

Mutagenicity

There is no data available.

Carcinogenicity

Section 11. Toxicological information

Classification United States

Product/ingredient name	OSHA	IARC	NTP
Isocyanic acid, polymethylenepolyphenylene ester	-	3	-
4,4'-Methylenediphenyl Diisocyanate	-	3	-

Classification Canada

Product/ingredient name	IARC	NTP	ACGIH
Ethanediol	-	-	A4
Isocyanic acid, polymethylenepolyphenylene ester	3	-	-
4,4'-Methylenediphenyl Diisocyanate	3	-	-

Reproductive toxicity

There is no data available.

Teratogenicity

There is no data available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Isocyanic acid, polymethylenepolyphenylene ester	Category 3	-	Respiratory tract irritation
4,4'-Methylenediphenyl Diisocyanate	Category 3	-	Respiratory tract irritation
o-(p-Isocyanatobenzyl)phenyl isocyanate	Category 3	-	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Isocyanic acid, polymethylenepolyphenylene ester	Category 2	inhalation	respiratory system
4,4'-Methylenediphenyl Diisocyanate	Category 2	-	-
o-(p-Isocyanatobenzyl)phenyl isocyanate	Category 2	-	-

Aspiration hazard

There is no data available.

Information on the likely routes of exposure : Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

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

Symptoms related to the physical, chemical and toxicological characteristics

Section 11. Toxicological information

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

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

- Potential immediate effects** : No known significant effects or critical hazards.
- Potential delayed effects** : No known significant effects or critical hazards.

Long term exposure

- Potential immediate effects** : No known significant effects or critical hazards.
- Potential delayed effects** : No known significant effects or critical hazards.

Potential chronic health effects

- General** : May cause damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
- Carcinogenicity** : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.
- Mutagenicity** : No known significant effects or critical hazards.
- Reproductive toxicity** : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
2,2' -Oxybisethanol	3194.7	N/A	N/A	570.5	77.8
Ethanediol	500	11890	N/A	N/A	N/A
Isocyanic acid, polymethylenepolyphenylene ester	500	N/A	N/A	N/A	N/A
4,4'-Methylenediphenyl Diisocyanate	49000	N/A	N/A	11	N/A
N-[3-(dimethylamino)propyl]-N,N',N'-trimethylpropane-1,3-diamine	9200	N/A	N/A	N/A	1.5
o-(p-Isocyanatobenzyl)phenyl isocyanate	500	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	1.5

Section 12. Ecological information

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 6900000 µg/L Fresh water	Crustaceans - Ceriodaphnia dubia - Neonate	48 hours
	Acute LC50 41000 mg/L Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 8050000 µg/L Fresh water	Fish - Pimephales promelas	96 hours

Persistence and degradability

There is no data available.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
2,2' -Oxybisethanol	-1.98	100	low
Ethanediol	-1.36	-	low
4,4'-Methylenediphenyl Diisocyanate	4.51	200	low
N-[3-(dimethylamino)propyl]- N,N',N'-trimethylpropane- 1,3-diamine	-	2	low
o-(p-Isocyanatobenzyl)phenyl isocyanate	4.51	200	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : 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 minimized 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 spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-
Transport hazard class(es)	-	-	-	-
Packing group	-	-	-	-
Environmental hazards	No.	No.	No.	No.

AERG : Not applicable

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) PAIR:** 4,4'-Methylenediphenyl Diisocyanate; o-(p-Isocyanatobenzyl)phenyl isocyanate; Phenyl isocyanate; Chlorobenzene
TSCA 8(a) CDR Exempt/Partial exemption: Not determined
TSCA 8(c) calls for record of SAR: Isocyanic acid, polymethylenepolyphenylene ester; 4,4'-Methylenediphenyl Diisocyanate; o-(p-Isocyanatobenzyl)phenyl isocyanate; 2,2'-Methylenediphenyl Diisocyanate
Clean Water Act (CWA) 307: 4,4'-Methylenediphenyl Diisocyanate; Chlorobenzene
Clean Water Act (CWA) 311: Aniline; Chlorobenzene

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

Section 15. Regulatory information

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
Aniline	≤0.0025	Yes.	1000	117.6	5000	587.9

SARA 304 RQ : 333333333.3 lbs / 151333333.3 kg

SARA 311/312

Classification : SKIN CORROSION/IRRITATION - Category 2
 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
 RESPIRATORY SENSITIZATION - Category 1
 SKIN SENSITIZATION - Category 1
 CARCINOGENICITY - Category 2
 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2

Composition/information on ingredients

Name	%	Classification
2,2' -Oxybisethanol	≥10 - ≤18	ACUTE TOXICITY (oral) - Category 4 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2B
Ethanediol	≥1 - ≤3	ACUTE TOXICITY (oral) - Category 4 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
Isocyanic acid, polymethylenepolyphenylene ester	≥1 - ≤3	ACUTE TOXICITY (inhalation) - Category 4 SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A RESPIRATORY SENSITIZATION - Category 1 SKIN SENSITIZATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
4,4'-Methylenediphenyl Diisocyanate	≥1 - ≤3	ACUTE TOXICITY (inhalation) - Category 4 SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A RESPIRATORY SENSITIZATION - Category 1 SKIN SENSITIZATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
N-[3-(dimethylamino)propyl]-N, N',N'-trimethylpropane- 1,3-diamine	≥1 - ≤2	ACUTE TOXICITY (oral) - Category 4 SKIN CORROSION/IRRITATION - Category 1C SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
o-(p-Isocyanatobenzyl)phenyl isocyanate	≤0.3	ACUTE TOXICITY (inhalation) - Category 4 SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A RESPIRATORY SENSITIZATION - Category 1 SKIN SENSITIZATION - Category 1 CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2

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Section 15. Regulatory information

	Product name	CAS number	%
Form R - Reporting requirements	Ethanediol	107-21-1	≥1 - ≤3
	Isocyanic acid, polymethylenepolyphenylene ester	9016-87-9	≥1 - ≤3
	4,4'-Methylenediphenyl Diisocyanate	101-68-8	≥1 - ≤3
Supplier notification	Ethanediol	107-21-1	≥1 - ≤3
	Isocyanic acid, polymethylenepolyphenylene ester	9016-87-9	≥1 - ≤3
	4,4'-Methylenediphenyl Diisocyanate	101-68-8	≥1 - ≤3

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

- Massachusetts** : The following components are listed: Ethanediol; 4,4'-Methylenediphenyl Diisocyanate
- New York** : The following components are listed: Ethanediol; 4,4'-Methylenediphenyl Diisocyanate
- New Jersey** : The following components are listed: Ethanediol; Isocyanic acid, polymethylenepolyphenylene ester; 4,4'-Methylenediphenyl Diisocyanate
- Pennsylvania** : The following components are listed: 2,2' -Oxybisethanol; Oxydipropanol; Ethanediol; 4,4'-Methylenediphenyl Diisocyanate

California Prop. 65

⚠ WARNING: This product can expose you to chemicals including Aniline and 1,4-Dioxane, which are known to the State of California to cause cancer, and Ethanediol, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Ingredient name	No significant risk level	Maximum acceptable dosage level
Ethanediol	-	Yes.
Aniline	Yes.	-
1,4-Dioxane	Yes.	-

Canadian lists

- Canadian NPRI** : The following components are listed: Ethanediol; Isocyanic acid, polymethylenepolyphenylene ester; 4,4'-Methylenediphenyl Diisocyanate
- CEPA Toxic substances** : The following components are listed: Isocyanic acid, polymethylenepolyphenylene ester; 4,4'-Methylenediphenyl Diisocyanate

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Section 15. Regulatory information

- Canada** : All components are listed or exempted.
United States (TSCA 8b) : All components are active or exempted.

Section 16. Other information

Procedure used to derive the classification

Classification	Justification
SKIN CORROSION/IRRITATION - Category 2	Calculation method
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A	Calculation method
RESPIRATORY SENSITIZATION - Category 1	Calculation method
SKIN SENSITIZATION - Category 1	Calculation method
CARCINOGENICITY - Category 2	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2	Calculation method

History

- Date of issue/Date of revision** : 12/15/2021
Date of previous issue : 01/30/2018
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Prepared by : KMK Regulatory Services Inc.
- 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)
N/A = Not available
SGG = Segregation Group
UN = United Nations

Notice to reader

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