SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product Identifier

<table>
<thead>
<tr>
<th>Product name</th>
<th>ECOFOAM MF1100 ISOCYANATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synonyms</td>
<td>Not Available</td>
</tr>
<tr>
<td>Other means of</td>
<td>Not Available</td>
</tr>
<tr>
<td>identification</td>
<td></td>
</tr>
</tbody>
</table>

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

Relevant identified uses Polyurethane Isocyanate

Details of the supplier of the safety data sheet

Registered company name Era Polymers Pty Ltd

Address 25-27 Green Street 2019 NSW Australia

Telephone +61 (02) 9666 3788

Fax +61 (02) 9666 4805

Website www.erapol.com.au

Email erapol@erapol.com.au

Emergency telephone number

Association / Organisation CHEMWATCH

Emergency telephone numbers Not Available

Other emergency telephone numbers Not Available

CHEMWATCH EMERGENCY RESPONSE

Primary Number     Alternative Number 1     Alternative Number 2
1800 039 008        +612 9186 1132         Not Available

Once connected and if the message is not in your preferred language then please dial 01

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

HAZARDOUS CHEMICAL. NON-DANGEROUS GOODS. According to the WHS Regulations and the ADG Code.

Poisons Schedule S6

GHS Classification [1] Acute Toxicity (Inhalation) Category 4, Skin Corrosion/Irritation Category 2, Eye Irritation Category 2A, Respiratory Sensitizer Category 1, STOT - SE (Resp. Irr.) Category 3, Carcinogen Category 2, STOT - RE Category 2


Label elements

GHS label elements

Continued...
SIGNAL WORD

DANGER

Hazard statement(s)

H332 Harmful if inhaled
H315 Causes skin irritation
H319 Causes serious eye irritation
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled
H335 May cause respiratory irritation
H351 Suspected of causing cancer
H373 May cause damage to organs through prolonged or repeated exposure

Precautionary statement(s) Prevention

P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of reach of children.
P103 Read label before use.
P201 Obtain special instructions before use.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.

Precautionary statement(s) Response

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P306+P313 IF exposed or concerned: Get medical advice/attention.
P342+P311 IF experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
P355+P311+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Precautionary statement(s) Storage

P405 Store locked up.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.

Precautionary statement(s) Disposal

P501 Dispose of contents/container in accordance with local regulations.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

See section below for composition of Mixtures

Mixtures

<table>
<thead>
<tr>
<th>CAS No</th>
<th>%[weight]</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>9016-87-9</td>
<td>&gt;60</td>
<td>polymeric diphenylmethane diisocyanate</td>
</tr>
<tr>
<td>Not Available</td>
<td>to 100</td>
<td>All other substances non hazardous</td>
</tr>
</tbody>
</table>

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye Contact

If this product comes in contact with the eyes:

- Wash out immediately with fresh running water.
- Seek medical attention without delay; if pain persists or recurs seek medical attention.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Skin Contact

If skin contact occurs:

- Immediately remove all contaminated clothing, including footwear.
- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

Inhalation

If fumes or combustion products are inhaled remove from contaminated area.

- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
- Transport to hospital, or doctor, without delay.

Ingestion

- Immediately give a glass of water.
- First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

Continued...
Isocyanates cause airway restriction in naive individuals with the degree of response dependent on the concentration and duration of exposure. They induce smooth muscle contraction.

Touch the spill material, do not handle or work with isocyanates. Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result. Reseal container if contamination is suspected.

Avoid spraying water onto liquid pools. Carbon dioxide (CO2) is effective for small spills of liquid isocyanate. Do not use water unless it is a fine spray to control fire and cool adjacent area. Cool with flooding quantities of water reduces this risk. Large fires should use water spray or fog, but this may cause frothing and should be used in large quantities.

For isocyanate spills of less than 40 litres (2 m²), pressurises containers, possibly to the point of rupture. Release of toxic and/or flammable isocyanate vapours may then occur. Do not pressurise containers using water as this will provide additional heat. Release of isocyanate vapour may also occur from burning organic material.

Combustion yields traces of highly toxic hydrogen cyanide (HCN), plus toxic nitrogen oxides (NOx) and carbon monoxide. Combustion products include: carbon dioxide (CO2), isocyanates hydrogen cyanide and minor amounts of nitrogen oxides (NOx). Other pyrolysis products typical of burning organic material may emit corrosive fumes. When heated at high temperatures many isocyanates decompose rapidly generating a vapour which pressurises containers, possibly to the point of rupture. Release of toxic and/or flammable isocyanate vapours may then occur.

Further exposure must be avoided if a sensitivity to isocyanates or polyisocyanates has developed. Personnel who work with isocyanates, isocyanate prepolymers or polyisocyanates should have a pre-placement medical examination and periodic examinations thereafter, including a pulmonary function test. Anyone with a medical history of chronic respiratory disease, asthmatic or bronchial attacks, indications of allergic responses, recurrent eczema or sensitisation conditions of the skin should not handle or work with isocyanates. Anyone who develops chronic respiratory distress when working with isocyanates should be removed from exposure and examined by a physician.

SECTION 5 FIREFIGHTING MEASURES

Extinguishing media

- Small quantities of water in contact with hot liquid may react violently with generation of a large volume of rapidly expanding hot sticky semi-solid foam.
- Presents additional hazard when fire fighting in a confined space.
- Cooling with flooding quantities of water reduces this risk.
- Water spray or fog may cause frothing and should be used in large quantities.
- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.
- Water spray or fog - Large fires only.

Special hazards arising from the substrate or mixture

- Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.

Advice for firefighters

Fire Fighting

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.
- Use water delivered as a fine spray to control fire and cool adjacent area.
- Avoid spraying water onto solid foam.
- Combustible.
- When heated to high temperatures decomposes rapidly generating vapour which pressures and may then rupture containers with release of flammable and highly toxic isocyanate vapour.

Fire/Explosion Hazard

- Burns with acid black smoke and poisonous fumes.
- Combustion yields traces of highly toxic hydrogen cyanide (HCN), plus toxic nitrogen oxides (NOx) and carbon monoxide.
- Combustion products include: carbon dioxide (CO2), isocyanates hydrogen cyanide and minor amounts of nitrogen oxides (NOx). Other pyrolysis products typical of burning organic material may emit corrosive fumes. When heated at high temperatures many isocyanates decompose rapidly generating a vapour which pressurises containers, possibly to the point of rupture. Release of toxic and/or flammable isocyanate vapours may then occur.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Minor Spills

- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact with the substance, by using protective equipment.
- Contain and absorb spill with sand, earth, inert material or vermiculite.

Major Spills

- Liquid isocyanates and high isocyanate vapour concentrations will penetrate seals on self contained breathing apparatus - SCBA should be used inside encapsulating suit where this exposure may occur.
- For isocyanate spills of less than 40 litres (2 m²):
  - Evacuate area from everybody not dealing with the emergency, keep them upwind and prevent further access, remove ignition sources and, if inside building, ventilate area as well as possible.
  - Notify supervision and others as necessary.
  - Put on personal protective equipment (suitable respiratory protection, face and eye protection, protective suit, gloves and impermeable boots).
  - Control source of leakage (where applicable).
  - Dike the spill to prevent spreading and to contain additions of decontaminating solution.
  - Avoid contamination with water, alkalies and detergent solutions.
  - Material reacts with water and generates gas, pressurises containers with even drum rupture resulting.

- Do not reseal container if contamination is suspected.
- Open all containers with care.
- Do not touch the spill material if pressurised.

Moderate hazard.

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.

NOTE: Isocyanates cause airway restriction in naive individuals with the degree of response dependent on the concentration and duration of exposure. They induce smooth muscle contraction. Which leads to bronchoconstrictive episodes. Acute changes in lung function, such as decreased PEVI, may not represent sensitivity.
### SECTION 7 HANDLING AND STORAGE

#### Precautions for safe handling

<table>
<thead>
<tr>
<th>Safe handling</th>
</tr>
</thead>
<tbody>
<tr>
<td>▶ Avoid all personal contact, including inhalation.</td>
</tr>
<tr>
<td>▶ Wear protective clothing when risk of exposure occurs.</td>
</tr>
<tr>
<td>▶ Use in a well-ventilated area.</td>
</tr>
<tr>
<td>▶ Prevent concentration in hollows and sumps.</td>
</tr>
<tr>
<td>▶ <strong>DO NOT</strong> enter confined spaces until atmosphere has been checked.</td>
</tr>
<tr>
<td>▶ <strong>DO NOT</strong> allow clothing wet with material to stay in contact with skin.</td>
</tr>
</tbody>
</table>

#### Other information

- Wear breathing apparatus plus protective gloves.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

### SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

#### Control parameters

**OCCUPATIONAL EXPOSURE LIMITS (OEL)**

<table>
<thead>
<tr>
<th>INGREDIENT DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source</td>
</tr>
<tr>
<td>--------</td>
</tr>
<tr>
<td>Australia Exposure Standards</td>
</tr>
</tbody>
</table>

#### EMERGENCY LIMITS

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Material name</th>
<th>TEEL-1</th>
<th>TEEL-2</th>
<th>TEEL-3</th>
</tr>
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<tbody>
<tr>
<td>polymeric diphenylmethane diisocyanate</td>
<td>Polyurethane (Polyisocyanate)</td>
<td>0.15 mg/m³</td>
<td>0.26 mg/m³</td>
<td>22 mg/m³</td>
</tr>
</tbody>
</table>

### Exposure controls

#### Appropriate engineering controls

- All processes in which isocyanates are used should be enclosed wherever possible.
- Total enclosure, accompanied by good general ventilation, should be used to keep atmospheric concentrations below the relevant exposure standards.
- If total enclosure of the process is not feasible, local exhaust ventilation may be necessary. Local exhaust ventilation is essential where lower molecular weight isocyanates (such as TDI or HDI) is used or where isocyanate or polyurethane is sprayed.
- Where other isocyanates or pre-polymers are used and aerosol formation cannot occur, local exhaust ventilation may not be necessary if the atmospheric concentration of isocyanate is kept below the relevant exposure standards. Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are:

- **Safe handling**
- **Other information**
- **Conditions for safe storage, including any incompatibilities**
- **Suitable container**
- **Storage incompatibility**

---

**BREThERICK: Handbook of Reactive Chemical Hazards, 4th Edition**
### Personal protection

- Safety glasses with side shields.
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience.

### Eye and face protection

- Safety glasses with side shields.
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience.

### Skin protection

The selection of suitable gloves does not only depend on the material, but also on other marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application. The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.

Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:
- Frequency and duration of contact,
- Chemical resistance of glove material,
- Glove thickness and
- Dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).
- Do NOT wear natural rubber (latex gloves).
- Isocyanate resistant materials include Teflon, Viton, nitrile rubber and some PVA gloves.
- Protective gloves and overalls should be worn as specified in the appropriate national standard.
- Contaminated garments should be removed promptly and should not be re-used until they have been decontaminated.

**NOTE:** Natural rubber, neoprene, PVC can be affected by isocyanates.
- DO NOT use skin cream unless necessary and then use only minimum amount.
- Isocyanate vapour may be absorbed into skin cream and this increases hazard.

Avoid contact with moisture.

### Hands/feet protection

- Safety glasses with side shields.
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience.

### Body protection

All employees working with isocyanates must be informed of the hazards from exposure to the contaminant and the precautions necessary to prevent damage to their health. They should be made aware of the need to carry out their work so that as little contamination as possible is produced, and of the importance of the proper use of all safeguards against exposure to themselves and their fellow workers. Adequate training, both in the proper execution of the task and in the use of all associated engineering controls, as well as of any personal protective equipment, is essential.

Employees exposed to contamination hazards should be educated in the need for, and proper use of, facilities, clothing and equipment and thereby maintain a high standard of personal cleanliness. Special attention should be given to ensuring that all personnel understand instructions, especially newly recruited employees and those with local language difficulties, where they are known.

### Other protection

- Inner filters or high efficient filters of Type A-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)
- High efficiency particulate air (HEPA) filters.
- Chemical goggles.
- Safety glasses with side shields.
- Petrolatum ointment.
- Barrier cream.
- P.V.C. apron.
- Overalls.
- Protective gloves and overalls should be worn as specified in the appropriate national standard.
- Hands/feet protection.

### Thermal hazards

- Not Available

### Respiratory protection


### SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

#### Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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<tbody>
<tr>
<td>Physical state</td>
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<tr>
<td>Relative density (Water = 1)</td>
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</tr>
<tr>
<td>Partition coefficient n-octanol / water</td>
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</tr>
<tr>
<td>Odour</td>
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</tr>
<tr>
<td>Auto-ignition temperature (°C)</td>
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</tr>
<tr>
<td>pH (as supplied)</td>
<td>Not Available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
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</tr>
<tr>
<td>Melting point / freezing point (°C)</td>
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</tr>
<tr>
<td>Molecular weight (g/mol)</td>
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<tr>
<td>Flash point (°C)</td>
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</tr>
<tr>
<td>Taste</td>
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<tr>
<td>Evaporation rate</td>
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<tr>
<td>Explosive properties</td>
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<tr>
<td>Flammability</td>
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<tr>
<td>Oxidising properties</td>
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<tr>
<td>Upper Explosive Limit (%)</td>
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<tr>
<td>Surface Tension (dyn/cm or mN/m)</td>
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<tr>
<td>Lower Explosive Limit (%)</td>
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<td>Vapour pressure (kPa)</td>
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<tr>
<td>Volatile Component (%vol)</td>
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<tr>
<td>Solubility in water (g/L)</td>
<td>Reacts</td>
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<tr>
<td>pH as a solution (1%)</td>
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**Continued...**
SECTION 10 STABILITY AND REACTIVITY

<table>
<thead>
<tr>
<th>Reactivity</th>
<th>See section 7</th>
</tr>
</thead>
</table>
| Chemical stability | ▶ Unstable in the presence of incompatible materials.  
▶ Product is considered stable.  
▶ Hazardous polymerisation will not occur.  
▶ Presence of elevated temperatures. |
| Possibility of hazardous reactions | See section 7 |
| Conditions to avoid | See section 7 |
| Incompatible materials | See section 7 |
| Hazardous decomposition products | See section 5 |

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

**Inhaled**
Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be harmful. The material can cause respiratory irritation in some persons. The body’s response to such irritation can cause further lung damage. The vapour/mist may be highly irritating to the upper respiratory tract and lungs; the response may be severe enough to produce bronchitis and pulmonary oedema. Possible neurological symptoms arising from isocyanate exposure include headache, insomnia, euphoria, ataxia, anxiety, depression, and paranoia. Gastrointestinal disturbances are characterised by nausea and vomiting. Pulmonary sensitisation may produce asthmatic reactions ranging from minor breathing difficulties to severe allergic attacks; this may occur following a single acute exposure or may develop without warning for several hours after exposure. Sensitized people can react to very low doses, and should not be allowed to work in situations allowing exposure to this material.

**Ingestion**
The material is not thought to produce adverse health effects following ingestion (as classified by EC Directives using animal models). Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum.

**Skin Contact**
This material can cause inflammation of the skin on contact in some persons. The material may accentuate any pre-existing dermatitis condition. Open cuts, abraded or irritated skin should not be exposed to this material. Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

**Eye**
This material may produce eye irritation in some persons and produce eye damage 24 hours or more after instillation. Moderate inflammation may be expected with redness; conjunctivitis may occur with prolonged exposure.

**Chronic**
There has been concern that this material can cause cancer or mutations, but there is not enough data to make an assessment. Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems. Inhalation this product is more likely to cause a sensitisation reaction in some persons compared to the general population. This product contains a polymer with a functional group considered to be of high concern. Isocyanates can cause sensitisation of the airways. Persons with a history of asthma or other respiratory problems or are known to be sensitised, should not be engaged in any work involving the handling of isocyanates. (CCTRADE Bayer, APMF)

**Legend:**
1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.
2. Value obtained from manufacturer’s SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

**ECOFOAM MF1100 ISOCYANATE**

<table>
<thead>
<tr>
<th><strong>TOXICITY</strong></th>
<th><strong>IRRITATION</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Available</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

**polymeric diphenylmethane diisocyanate**

<table>
<thead>
<tr>
<th><strong>TOXICITY</strong></th>
<th><strong>IRRITATION</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dermal (rabbit) LD50: &gt;9400 mg/kg[2]</td>
<td>Eye (rabbit): 100 mg - mild</td>
</tr>
<tr>
<td>Inhalation (rat) LC50: 0.49 mg/L/4h[2]</td>
<td></td>
</tr>
<tr>
<td>Oral (rat) LD50: 43000 mg/kg[2]</td>
<td></td>
</tr>
</tbody>
</table>

Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-asthmatic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance.

Allergic reactions involving the respiratory tract are usually due to interactions between IgE antibodies and allergens and occur rapidly. Allergic potential of the allergen and period of exposure often determine the severity of symptoms. Some people may be genetically more prone than others, and exposure to other irritants may aggravate symptoms. Allergy causing activity is due to interactions with proteins. Attention should be paid to atopic diathesis, characterised by increased susceptibility to nasal inflammation, asthma and eczema.
**ECOFOAM MF1100 ISOCYANATE**

Exogenous allergic alveolitis is induced essentially by allergen specific immune-complexes of the IgE type; cell-mediated reactions (T lymphocytes) may be involved. Such allergy is of the delayed type with onset up to four hours following exposure. No significant acute toxicological data identified in literature search.

Isocyanate vapours are irritating to the airways and can cause their inflammation, with wheezing, gasping, severe distress, even loss of consciousness and fluid in the lungs. Nervous system symptoms that may occur include headache, sleep disturbance, euphoria, inco-ordination, anxiety, depression and paranoia.

**Contact allergies** are quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important.

The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. Aromatic and aliphatic diisocyanates may cause airway toxicity and skin sensitization. Monomers and prepolymers exhibit similar respiratory effect. Of the several members of diisocyanates tested on experimental animals by inhalation and oral exposure, some caused cancer while others produced a harmless outcome. This group of compounds has therefore been classified as cancer-causing.

**STOT - Repeated Exposure**

- Data Not Available to make classification

**STOT - Single Exposure**

- Data Available

**Acute Toxicity**

- Data Available

**Carcinogenicity**

- Data Available

**Reproductivity**

- Data Available

**STOT - Repeated Exposure**

- Data Available

**STOT - Single Exposure**

- Data Available

**Aspiration Hazard**

- Data Available

**Mutagenicity**

- Data Available

**Skin Irritation/Corrosion**

- Data Available

**Respiratory or Skin sensitisation**

- Data Available

**Serious Eye Damage/Irritation**

- Data Available

**Toxicity**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Endpoint</th>
<th>Test Duration (hr)</th>
<th>Species</th>
<th>Value</th>
<th>Source</th>
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<tr>
<td>Not Available</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
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</tbody>
</table>

**Legend:**

- Data available but does not fill the criteria for classification
- Data required to make classification available
- Data Not Available to make classification

**Bioaccumulative potential**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Bioaccumulation</th>
</tr>
</thead>
</table>

- Data Not Available

**SECTION 12 ECOLOGICAL INFORMATION**

**Toxicity**

For Isocyanate Monomers:

Environmental Fate: Isocyanates, (di- and polyfunctional isocyanates), are commonly used to make various polymers, such as polyurethanes. Polyurethanes find significant application in the manufacture of rigid and flexible foams. They are also used in the production of adhesives, elastomers, and coatings.

Atmospheric Fate: These substances are not expected to be removed from the air via precipitation washout or dry deposition.

Terrestrial Fate: These substances are expected to sorb strongly to soil.

**DO NOT discharge into sewer or waterways.**

**Persistence and degradability**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Persistence: Water/Soil</th>
<th>Persistence: Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Data available for all ingredients</td>
<td>No Data available for all ingredients</td>
<td></td>
</tr>
</tbody>
</table>
SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

- Containers may still present a chemical hazard/danger when empty.
- Return to supplier for reuse/recycling if possible.
- Otherwise:
  - If container cannot be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.
  - Where possible retain label warnings and SDS and observe all notices pertaining to the product.
Legislation addressing waste disposal requirements may differ by country, state and/or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate:
- Reduction
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means.

- DO NOT allow wash water from cleaning or process equipment to enter drains.
- It may be necessary to collect all wash water for treatment before disposal.
- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- Where in doubt contact the responsible authority.

DO NOT recycle spilled material.
Consult State Land Waste Management Authority for disposal.
Neutralise spill material carefully and decontaminate empty containers and spill residues with 10% ammonia solution plus detergent or a proprietary decontaminant prior to disposal.
DO NOT seal or stopper drums being decontaminated as CO2 gas is generated and may pressurise containers.
Puncture containers to prevent re-use.

SECTION 14 TRANSPORT INFORMATION

Labels Required

<table>
<thead>
<tr>
<th>Marine Pollutant</th>
<th>HAZCHEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Transport in bulk according to Annex II of MARPOL 73 / 78 and the IBC code

<table>
<thead>
<tr>
<th>Source</th>
<th>Ingredient</th>
<th>Pollution Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk</td>
<td>polymeric diphenylmethane diisocyanate</td>
<td>Y</td>
</tr>
</tbody>
</table>

SECTION 15 REGULATORY INFORMATION

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

**POLYMERIC DIPHENYL METHANE DIISOCYANATE (9016-87-9) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

<table>
<thead>
<tr>
<th>National Inventory</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia - AICS</td>
<td>Y</td>
</tr>
<tr>
<td>Canada - DSL</td>
<td>Y</td>
</tr>
<tr>
<td>Canada - NDSL</td>
<td>N (polymeric diphenylmethane diisocyanate)</td>
</tr>
<tr>
<td>China - IECSC</td>
<td>Y</td>
</tr>
<tr>
<td>Europe - EINEC / ELINCS / NLP</td>
<td>N (polymeric diphenylmethane diisocyanate)</td>
</tr>
<tr>
<td>Japan - ENCS</td>
<td>Y</td>
</tr>
<tr>
<td>Korea - KECI</td>
<td>Y</td>
</tr>
<tr>
<td>New Zealand - NZIoC</td>
<td>Y</td>
</tr>
<tr>
<td>Philippines - PICCS</td>
<td>Y</td>
</tr>
<tr>
<td>USA - TSCA</td>
<td>Y</td>
</tr>
</tbody>
</table>
SECTION 16 OTHER INFORMATION

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:

www.chemwatch.net

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average
PC—STEL: Permissible Concentration-Short Term Exposure Limit
IARC: International Agency for Research on Cancer
ACGIH: American Conference of Governmental Industrial Hygienists
STEL: Short Term Exposure Limit
TEEL: Temporary Emergency Exposure Limit
IDLH: Immediately Dangerous to Life or Health Concentrations
OSF: Odour Safety Factor
NOAEL: No Observed Adverse Effect Level
LOAEL: Lowest Observed Adverse Effect Level
TLV: Threshold Limit Value
LOD: Limit Of Detection
OTV: Odour Threshold Value
BCF: BioConcentration Factors
BEI: Biological Exposure Index

Legend:
Y = All ingredients are on the inventory
N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing (see specific ingredients in brackets)