



## Safety Data Sheet

Date of Issue: 01.10.2020

Date of Expiry 01.10.2025

### 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Company Name: : **ECP Limited**  
Address: : PO Box 34125, Birkenhead, Auckland 0746  
Telephone: : +64 9 480 4386  
Facsimile: : +64 9 480 4385  
Emergency phone number: : 0800 243 622 (24 hours)

Product	Diethyl Ether			Code	00104
CAS#	HSNO#	UN #	DG Class/es	Packing group #	
60-29-7	HSR001124	1155	3	I	

**Recommended use** : Laboratory Investigations

### 2. Hazards Identification

#### 2.1 GHS Classification

Flammable Liquids (Category A)  
Acute toxicity, Oral (Category D)  
Acute toxicity, Inhalation (Category E)  
Skin irritation (Category B)  
Eye irritation (Category A)

#### 2.2 GHS Label elements, including precautionary statements

##### Hazard Pictogram



Signal word : **Danger**

##### Hazard statement(s)

H224 Extremely flammable liquid and vapour.  
H302 Harmful if swallowed.  
H316 Causes mild skin irritation.  
H319 Causes serious eye irritation.  
H333 May be harmful if inhaled.

##### Precautionary statement(s)

###### Prevention

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P233 Keep container tightly closed.  
P240 Ground/bond container and receiving equipment.  
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.

P242 Use only non-sparking tools.  
P243 Take precautionary measures against static discharge.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

#### **Response**

P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.  
P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.  
P304 + P312 IF INHALED: Call a POISON CENTER or doctor/ physician if you feel unwell.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P330 Rinse mouth.  
P332 + P313 If skin irritation occurs: Get medical advice/ attention.  
P337 + P313 If eye irritation persists: Get medical advice/ attention.  
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

#### **Storage**

P403 + P235 Store in a well-ventilated place. Keep cool.

#### **Disposal**

P501 Dispose of contents/ container to an approved waste disposal plant.

### **2.3 Other hazards**

May form explosive peroxides., Repeated exposure may cause skin dryness or cracking.

#### **Hazard Classification**

Australia:

Classified as Hazardous, according to criteria of National Occupational Health & Safety Commission, Australia (NOHSC).

Classified as Dangerous Goods, according to the Australian Code for the Transport of Dangerous Goods by Road and Rail.

New Zealand:

Classified as Hazardous according to the Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001, New Zealand.

Classified as Dangerous Goods for transport, according to the NZS 5433:2007 Transport of Dangerous Goods on Land.

HSNO Classification:

3.1A — Flammable liquids: very high hazard

6.1D - Substance that is moderate acutely toxic if swallowed.

6.3B - Substance that is mildly irritating to the skin

6.4A - Substance that is irritating to the eye.

9.3C - Substance that is harmful to terrestrial vertebrates.

Hazard Statement Codes:

H224 Extremely flammable liquid and vapour.

H302 Harmful if swallowed.

H316 Causes mild skin irritation.

H320 Causes eye irritation.

H433 Harmful to terrestrial vertebrates.

Precautionary Statement Codes- Prevention:

P101 If medical advice is needed, have product container or label at hand. – This statement applies only where the substance is available to the general public.

P102 Keep out of reach of children.

P103 Read label before use. – This statement applies only where the substance is available to the general public.

P104 Read Safety Data Sheet before use.

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P233 Keep container tightly closed.

P240 Ground/bond container and receiving equipment.

P241 Use explosion-proof electrical/ventilating/lighting.

P242 Use only non-sparking tools.

P243 Take precautionary measures against static discharge.

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P273 Avoid release to the environment.

P280 Wear protective gloves/eye protection/face protection.

#### **Precautionary Statement Codes- Response:**

##### **INGESTION**

P301+P312 IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell.

P330 Rinse mouth.

P331 Do NOT induce vomiting.

##### **EYE**

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/attention.

##### **SKIN**

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P332+P313 If skin irritation occurs: Get medical advice/ attention.

P362 Take off contaminated clothing and wash before re-use.

#### **Precautionary Statement Codes – Storage:**

P403+P235 Store in a well-ventilated place. Keep cool.

#### **Precautionary Statement Codes – Disposal:**

P501 In the case of a substance that is in compliance with a HSNO approval other than a Part 6A (Group Standards) approval, a label must provide a description of one or more appropriate and achievable methods for the disposal of a substance in accordance with the Hazardous Substances (Disposal) Regulations 2001. This may also include any method of disposal that must be avoided.

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### **3. COMPOSITION/INFORMATION ON INGREDIENTS**

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<b>Ingredients</b>	<b>Name</b>	<b>CAS</b>	<b>Proportion</b>
	Diethyl ether	60-29-7	100 %

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### **4. FIRST AID MEASURES**

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**Inhalation** If inhaled, remove affected person from contaminated area. Apply artificial respiration if not

breathing. Seek medical attention.

<b>Ingestion</b>	Do not induce vomiting. Wash out mouth thoroughly with water. Seek immediate medical attention.
<b>Skin</b>	Wash affected area thoroughly with soap and water. Remove contaminated clothing and wash before reuse or discard. Seek medical attention.
<b>Eye</b>	If in eyes, hold eyelids apart and flush the eyes continuously with running water. Continue flushing for several minutes until all contaminants are washed out completely. Seek medical attention.
<b>First Aid Facilities</b>	Eye wash fountains and safety showers should be available for emergency use.
<b>Advice to Doctor</b>	Treat symptomatically.
<b>Other Information</b>	Ether is absorbed and eliminated rapidly. Treatment is directed at decreasing GI irritation if ingested and maintaining respiration regardless of route of administration. Because of the rapid absorption, emesis, activated charcoal and cathartics are likely to be of only limited value unless given immediately. For advice in an emergency, contact a Poisons Information Centre (Phone Australia 13 1126; New Zealand 0800 POISON / 0800 764 766) or a doctor at once.

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## 5. FIRE FIGHTING MEASURES

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<b>Suitable Extinguishing Media</b>	Use dry chemical, carbon dioxide and foam.
<b>Hazards from Combustion Products</b>	In the presence of oxygen, if long standing or exposure to sunlight, unstable peroxides may form which may explode, when heated or spontaneously when concentrated. Danger: tends to form explosive peroxides especially when anhydrous.
<b>Specific Hazards</b>	This product is extremely flammable. Keep containers and fire-exposed surfaces cool with water spray. Shut off any leak if safe to do so and remove sources of re-ignition. Vapour/air mixtures may ignite explosively. Flashback along the vapour trail may occur. Runoff to sewer may create fire or explosion hazard.
<b>Hazchem Code</b>	3YE
<b>Precautions in connection with Fire</b>	Fire fighters should wear Self-Contained Breathing Apparatus (SCBA) operated in positive pressure mode and full protective clothing to prevent exposure to vapours or fumes. Water spray may be used to cool down heat-exposed containers. Fight fire from safe location. This product should be prevented from entering drains and watercourses.

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## 6. ACCIDENTAL RELEASE MEASURES

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<b>Emergency Procedures</b>	Wear appropriate personal protective equipment and clothing to prevent exposure. Extinguish or remove all sources of ignition and stop leak if safe to do so. Increase ventilation. Evacuate all unprotected personnel. If possible, contain the spill. Place inert absorbent, non-combustible material onto spillage. Use clean non-sparking tools to collect
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the material and place into suitable labelled containers for subsequent recycling or disposal. Dispose of waste according to the applicable local and national regulations. If contamination of sewers or waterways occurs inform the local water authorities and EPA in accordance with local regulations.

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## 7. HANDLING AND STORAGE

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<b>Precautions for Safe Handling</b>	Wear appropriate protective clothing and equipment to prevent inhalation, skin and eye exposure. Handle and use the material in a well-ventilated area, away from sparks, flames and other ignition sources. Have emergency equipment (for fires, spills, leaks, etc.) readily available. Work from suitable, labelled, fire-resistant containers. Open containers carefully as they may be under pressure. Keep containers closed when not in use. Flameproof equipment is necessary in areas where the product is being used. Take precautionary measures against static discharges. Earth or bond all equipment. Do not empty into drains. Ensure a high level of personal hygiene is maintained when using this product, that is, always wash hands before eating, drinking, smoking or using the toilet facilities.
<b>Conditions for Safe Storage</b>	Store in a cool, dry, well-ventilated area away from sources of ignition, oxidising agents, strong acids, foodstuffs, and clothing. Keep containers closed when not in use and securely sealed and protected against physical damage. Inspect regularly for deficiencies such as damage or leaks. Have appropriate fire extinguishers available in and near the storage area. Take precautions against static electricity discharges. Use proper grounding procedures. For information on the design of the storeroom, reference should be made to Australian Standard AS1940 - The storage and handling of flammable and combustible liquids. Reference should also be made to all applicable local and national regulations.
<b>Other Information</b>	Inhibited with 0.0001% bht

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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<b>National Exposure Standards</b>	<p>No exposure value assigned for this specific material by the National Occupational Health and Safety Commission (NOHSC), Australia or the Occupational Safety and Health Service (OSH) of the New Zealand Department of Labour. However, the available exposure limits for ingredients are listed below:</p> <p>National Occupational Health And Safety Commission (NOHSC), Australia Exposure Standards: Substance TWA STEL NOTICES ppm mg/m<sup>3</sup> ppm mg/m<sup>3</sup> Diethyl ether 400 1210 500 1520 -</p> <p>New Zealand Occupational Safety and Health Service (OSH) Workplace Exposure Standards: Substance TWA STEL NOTICES ppm mg/m<sup>3</sup> ppm mg/m<sup>3</sup> Diethyl ether 400 1210 500 1520 -</p> <p>TWA (Time Weighted Average): The average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five-day week. STEL (Short Term Exposure Limit): The average airborne concentration over a 15 minute period which should not be exceeded at any time during a normal eight-hour workday.</p>
<b>Engineering Controls</b>	Provide sufficient ventilation to keep airborne levels below the exposure limits. Where

vapours or mists are generated, particularly in enclosed areas, and natural ventilation is inadequate, a flameproof exhaust ventilation system is required. Refer to AS 1940 - The storage and handling of flammable and combustible liquids and AS/NZS 2430.3.1:1997 : Classification of hazardous areas - Examples of area classification - General, for further information concerning ventilation requirements.

<b>Respiratory Protection</b>	If engineering controls are not effective in controlling airborne exposure, then an approved respirator with a replaceable organic vapour filter should be used. Reference should be made to Australian/New Zealand Standards AS/NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.
<b>Eye Protection</b>	Safety glasses with side shields or chemical goggles should be worn. Final choice of appropriate eye/face protection will vary according to individual circumstances. Eye protection devices should conform with Australian/New Zealand Standard AS/NZS 1337 - Eye Protectors for Industrial Applications.
<b>Hand Protection</b>	Wear gloves of impervious material. (PVC, neoprene or nitrile rubber gloves.) Final choice of appropriate gloves will vary according to individual circumstances i.e. methods of handling or according to risk assessments undertaken. Reference should be made to AS/NZS 2161.1: Occupational protective gloves - Selection, use and maintenance.
<b>Body Protection</b>	Suitable protective workwear, e.g. cotton overalls buttoned at neck and wrist is recommended. Chemical resistant apron is recommended where large quantities are handled. Industrial clothing should conform to the specifications detailed in AS/NZS 2919: Industrial clothing.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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<b>Appearance</b>	Colourless liquid
<b>Odour</b>	Not available
<b>Melting Point</b>	-116°C
<b>Boiling Point</b>	34.6°C
<b>Solubility in Water</b>	6.9% at 20°C
<b>Specific Gravity</b>	0.706
<b>pH Value</b>	Not applicable
<b>Vapour Pressure</b>	8.56 psi 20°C 28.66 psi 55°C
<b>Vapour Density (Air=1)</b>	2.6
<b>Flash Point</b>	-40°C

**Flammability** Extremely flammable liquid.

**Auto-Ignition Temperature** 160°C

**Flammable Limits - Lower** 1.7%

**Flammable Limits - Upper** 48%

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## 10. STABILITY AND REACTIVITY

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**Chemical Stability** Stable under normal conditions of storage and handling.

**Conditions to Avoid** Heat, direct sunlight, open flames or other sources of ignition.

**Incompatible Materials** Oxidising agents

**Hazardous Decomposition Products** Under fire conditions this product may emit toxic and/or irritating fumes, smoke and gases including carbon monoxide and carbon dioxide.

**Hazardous Polymerization** Will not occur.

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## 11. TOXICOLOGICAL INFORMATION

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**Toxicology Information** Acute toxicity data for Diethyl ether:  
LD50(Rat, Oral): 1215 mg/kg  
LD50(Rabbit, Dermal): >20 mL/kg

**Inhalation** May cause irritation to the respiratory tract. Vapours may cause drowsiness, dizziness, euphoria and CNS depression. Abuse has been reported, repeated exposures producing ether jags. Deaths from acute industrial exposures are rare. Death due to respiratory failure may result from severe and continued exposure.

**Ingestion** Harmful if swallowed. Ether is a volatile compound which may distend the stomach and compromise breathing if ingested. Ether is irritating to the mucous membranes; vomiting might be expected after ingestion. Vomiting is common (85%) in patients following anaesthesia.

**Skin** May cause irritation in contact with the skin.

**Eye** May cause irritation in contact with the eyes.

**Chronic Effects** Prolonged or repeated direct skin contact can produce defatting dermatitis with dryness and cracking. Other symptoms of chronic exposure include nasal irritation, loss of appetite, headache, sleepiness, dizziness, excitement, personality changes, and excessive sweating .

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## 12. ECOLOGICAL INFORMATION

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<b>Ecotoxicity</b>	Not available
<b>Persistence / Degradability</b>	Not available
<b>Mobility</b>	Not available
<b>Environment Protection</b>	The disposal of the spilled or waste material must be done in accordance with applicable local and national regulations.

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## 13. DISPOSAL CONSIDERATIONS

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<b>Disposal Considerations</b>	Dispose of waste according to applicable local and national regulations. Labels should not be removed from containers until they have been cleaned. Do not cut, puncture or weld on or near containers. Empty containers may contain hazardous residues. Contaminated containers must not be treated as household waste. Containers should be cleaned by appropriate methods and then re-used or disposed of by landfill or incineration as appropriate. Do not incinerate closed containers. Advise flammable nature.
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## 14. TRANSPORT INFORMATION

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### Transport Information Australia:

This material is classified as a Class 3 (Flammable Liquids) Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail.

Class 3 Dangerous Goods are incompatible in a placard load with any of the following:

- Class 1, Explosives
- Class 2.1, Flammable Gases, if both the Class 3 and Class 2.1 dangerous goods are in bulk
- Class 2.3, Toxic Gases
- Class 4.2, Spontaneously Combustible Substances
- Class 5.1, Oxidising Agents
- Class 5.2, Organic Peroxides
- Class 6, Toxic and Infectious Substances, if the Class 3 dangerous goods are nitromethane
- Class 7, Radioactive Substances

### New Zealand:

This material is classified as a Class 3 - Flammable Liquid according to NZS 5433:2007

Transport of Dangerous Goods on Land.

Must not be loaded in the same freight container or on the same vehicle with:

- Class 1, Explosives
- Class 2.1, Flammable gases
- Class 2.3, Toxic gases
- Class 4.2, Spontaneously combustible substances
- Class 5.1, Oxidising substances
- Class 5.2, Organic peroxides or
- Class 7, Radioactive materials unless specifically exempted.

Must not be loaded with in the same freight container; and on the same vehicle must be separated horizontally by at least 3 metres unless all but one are packed in separate freight containers with:

- Class 4.3, Dangerous when wet substances

Goods of packing group II or III may be loaded in the same freight container or on the same



- vehicle if transported in segregation devices with:
- Class 4.2, Spontaneously combustible substances
  - Class 4.3, Dangerous when wet substances
  - Class 5.1, Oxidising substances
  - Class 5.2, Organic peroxides

<b>U.N. Number</b>	1155
<b>Proper Shipping Name</b>	DIETHYL ETHER (ETHYL ETHER)
<b>DG Class</b>	3
<b>Hazchem Code</b>	3YE
<b>Packaging Method</b>	3.8.3RT1
<b>Packing Group</b>	I
<b>EPG Number</b>	3A1
<b>IERG Number</b>	14

15. REGULATORY INFORMATION

<b>Regulatory Information</b>	Australia: Classified as Hazardous according to criteria of National Occupational Health & Safety Commission (NOHSC), Australia. Classified as a Scheduled Poison S6 according to the Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).
<b>Poisons Schedule</b>	S6
<b>National and or International Regulatory Information</b>	New Zealand: Classified as Hazardous according to the New Zealand Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001. HSNO Approval Number: HSR001124
<b>Hazard Category</b>	Harmful, Extremely Flammable

16. Disclaimer

The information above is believed to be accurate and represents the best information currently available to us. However, the information is not a guarantee expressed or implied, with respect to such information, and we assume no liability resulting from its use. Anyone using the chemical described here should ensure that he or she has the appropriate training and has the expertise and any equipment required for safe handling. If clarification or further information is required, please contact ECP Ltd or refer to the official handler of dangerous goods within your own company. The user should also make their own investigations to determine the suitability of the product for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.

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