

Safety Data Sheet



1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: **MONOETHANOLAMINE**

Other name(s): MEA, Ethanolamine, 2-Aminoethanol, Ethylolamine, 2-Hydroxyethylamine, Beta-ethanolamine.

Recommended Use of the Chemical and Restrictions on Use Gas treating. Chemical intermediate. Metal complexing agent. Fuel additive. Plastics additive. Wood preservative.

Supplier: Ixom Operations Pty Ltd
ABN: 51 600 546 512
Street Address: Level 8, 1 Nicholson Street
East Melbourne Victoria 3002
Australia

Telephone Number: +61 3 9906 3000
Emergency Telephone: **1 800 033 111 (ALL HOURS)**

Please ensure you refer to the limitations of this Safety Data Sheet as set out in the "Other Information" section at the end of this Data Sheet.

2. HAZARDS IDENTIFICATION

Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for Transport by Road and Rail; DANGEROUS GOODS.

This material is hazardous according to Safe Work Australia; HAZARDOUS CHEMICAL.

Classification of the chemical:

Flammable liquids - Category 4
Acute Oral Toxicity - Category 4
Acute Dermal Toxicity - Category 4
Acute Inhalation Toxicity - Category 4
Skin Corrosion - Sub-category 1B
Eye Damage - Category 1
Specific target organ toxicity (single exposure) - Category 3

SIGNAL WORD: DANGER



Hazard Statement(s):

H227 Combustible liquid.
H302+H312+H332 Harmful if swallowed, in contact with skin or if inhaled.
H314 Causes severe skin burns and eye damage.
H335 May cause respiratory irritation.

Safety Data Sheet



Precautionary Statement(s):

Prevention:

P210 Keep away from heat, sparks, open flames, hot surfaces. No smoking.
P260 Do not breathe mist, vapours, spray.
P264 Wash hands thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves / protective clothing / eye protection / face protection.

Response:

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P321 Specific treatment (see First Aid Measures on Safety Data Sheet).
P322 Specific measures (see First Aid Measures on Safety Data Sheet).
P363 Wash contaminated clothing before re-use.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
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.
P310 Immediately call a POISON CENTER or doctor/physician.
P312 Call a POISON CENTER or doctor/physician if you feel unwell.
P370+P378 In case of fire: Use extinguishing media as outlined in Section 5 of this Safety Data Sheet to extinguish.

Storage:

P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P403+P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.

Disposal:

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

Poisons Schedule (SUSMP): S6 Poison.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Components	CAS Number	Proportion	Hazard Codes
Monoethanolamine	141-43-5	>=99%	H332 H312 H302 H314

4. FIRST AID MEASURES

For advice, contact a Poisons Information Centre (e.g. phone Australia 131 126; New Zealand 0800 764 766) or a doctor.

Inhalation:

Remove victim from area of exposure - avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. If patient finds breathing difficult and develops a bluish discolouration of the skin (which suggests a lack of oxygen in the blood - cyanosis), ensure airways are clear of any obstruction and have a qualified person give oxygen through a face mask. Apply artificial respiration if patient is not breathing. Seek immediate medical advice.

Skin Contact:

If skin or hair contact occurs, immediately remove any contaminated clothing and wash skin and hair thoroughly with running water. If swelling, redness, blistering or irritation occurs seek medical assistance.

Product Name: MONOETHANOLAMINE
Substance No: 000030102001

Issued: 14/02/2020
Version: 5

Safety Data Sheet



Eye Contact:

Immediately wash in and around the eye area with large amounts of water for at least 15 minutes. Eyelids to be held apart. Remove clothing if contaminated and wash skin. Urgently seek medical assistance. Transport promptly to hospital or medical centre.

Ingestion:

Rinse mouth with water. If swallowed, do NOT induce vomiting. Give a glass of water. Never give anything by the mouth to an unconscious patient. Seek immediate medical assistance.

Indication of immediate medical attention and special treatment needed:

Treat symptomatically. Can cause corneal burns. No known specific antidote. Following inhalation of decomposition products in a fire, the patient should be kept under medical supervision for at least 48 hours.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media:

Fine water spray, normal foam, dry agent (carbon dioxide, dry chemical powder).

Unsuitable Extinguishing Media:

Water jet.

Hazchem or Emergency Action Code: 2X

Specific hazards arising from the chemical:

Combustible liquid.

Special protective equipment and precautions for fire-fighters:

On burning will emit toxic fumes, including those of oxides of carbon and oxides of nitrogen. Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to vapour or products of combustion. Keep containers cool with water spray.

6. ACCIDENTAL RELEASE MEASURES

Emergency procedures/Environmental precautions:

Shut off all possible sources of ignition. Clear area of all unprotected personnel. If contamination of sewers or waterways has occurred advise local emergency services.

Personal precautions/Protective equipment/Methods and materials for containment and cleaning up:

Slippery when spilt. Avoid accidents, clean up immediately. Wear protective equipment to prevent skin and eye contact and breathing in vapours. Work up wind or increase ventilation. Contain - prevent run off into drains and waterways. Use absorbent (soil, sand or other inert material). Collect and seal in properly labelled containers or drums for disposal. Use non-sparking tools.

7. HANDLING AND STORAGE

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

This material is a Scheduled Poison S6 and must be stored, maintained and used in accordance with the relevant regulations.

Precautions for safe handling:

Avoid skin and eye contact and breathing in vapour. Keep out of reach of children. Do not reuse container. When using do not eat, drink or smoke. Wash hands before breaks and at the end of the work day.

Safety Data Sheet



Conditions for safe storage, including any incompatibilities:

Store in a cool, dry, well ventilated place and out of direct sunlight. Store away from sources of heat or ignition. Storage temperature 20°C. Store away from foodstuffs. Store away from incompatible materials described in Section 10. Do not store in aluminium, aluminium alloys, brass, copper, copper alloys, zinc, galvanized iron or carbon steel containers. Keep containers closed when not in use - check regularly for leaks.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ethanolamine: 8hr TWA = 7.5 mg/m³ (3 ppm), 15 min STEL = 15 mg/m³ (6 ppm)

As published by Safe Work Australia Workplace Exposure Standards for Airborne Contaminants.

TWA - The time-weighted average airborne concentration of a particular substance when calculated over an eight-hour working day, for a five-day working week.

STEL (Short Term Exposure Limit) - the airborne concentration of a particular substance calculated as a time-weighted average over 15 minutes, which should not be exceeded at any time during a normal eight hour work day. According to current knowledge this concentration should neither impair the health of, nor cause undue discomfort to, nearly all workers.

These Workplace Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These workplace exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

Appropriate engineering controls:

Ensure ventilation is adequate to maintain air concentrations below Workplace Exposure Standards. Vapour heavier than air - prevent concentration in hollows or sumps. DO NOT enter confined spaces where vapour may have collected. Keep containers closed when not in use.

If in the handling and application of this material, safe exposure levels could be exceeded, the use of engineering controls such as local exhaust ventilation must be considered and the results documented. If achieving safe exposure levels does not require engineering controls, then a detailed and documented risk assessment using the relevant Personal Protective Equipment (PPE) (refer to PPE section below) as a basis must be carried out to determine the minimum PPE requirements.

Individual protection measures, such as Personal Protective Equipment (PPE):

The selection of PPE is dependent on a detailed risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods, and environmental factors.

OVERALLS, CHEMICAL GOGGLES, FACE SHIELD, GLOVES (Long), APRON, RUBBER BOOTS.



Safety Data Sheet



Wear overalls, chemical goggles, face shield, elbow-length impervious gloves, splash apron or equivalent chemical impervious outer garment, and rubber boots. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use.

If determined by a risk assessment an inhalation risk exists, wear an organic vapour respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Clear Liquid
Colour:	Colourless
Odour:	Amine -like
Odour Threshold:	2.6-5 ppm
Molecular Formula:	HO-CH ₂ -CH ₂ -NH ₂
Solubility:	Completely miscible with water.
Specific Gravity:	1.012 @25°C
Relative Vapour Density (air=1):	2.11
Vapour Pressure (20 °C):	0.5 hPa (calculated)
Flash Point (°C):	91 (PMCC)
Flammability Limits (%):	2.5-17% (V)
Autoignition Temperature (°C):	424
% Volatile by Volume:	>=99
Boiling Point/Range (°C):	170 (literature)
pH:	12.1 (100 g/L, 20°C)
Viscosity:	23.5 mm ² /s @20°C
Freezing Point/Range (°C):	10-11 (literature)

10. STABILITY AND REACTIVITY

Reactivity:	Reacts with acids. Hygroscopic: absorbs moisture or water from surrounding air.
Chemical stability:	Stable if stored and handled under recommended conditions. Absorbs carbon dioxide from the air.
Possibility of hazardous reactions:	May decompose on exposure to light. Heating above 60°C in the presence of aluminium can result in corrosion and generation of flammable hydrogen gas. Corrosive to copper, copper alloys, copper compounds. Hazardous polymerisation will not occur.
Conditions to avoid:	Avoid exposure to heat, sources of ignition, and open flame. Avoid contact with foodstuffs. Avoid exposure to moisture. Do not allow vapour to accumulate in low or confined areas. Avoid exposure to air. Avoid exposure to light. Avoid build up of static electricity.
Incompatible materials:	Incompatible with acids , oxidising agents , halogenated organic compounds , halogenated hydrocarbons , iron, copper, brass, rubber .
Hazardous decomposition products:	Oxides of carbon. Oxides of nitrogen. Ammonia.

11. TOXICOLOGICAL INFORMATION

No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

Product Name: MONOETHANOLAMINE
Substance No: 000030102001

Issued: 14/02/2020
Version: 5

Safety Data Sheet



Ingestion:	Swallowing can result in nausea, vomiting, diarrhoea, abdominal pain and chemical burns to the gastrointestinal tract.
Eye contact:	A severe eye irritant. Corrosive to eyes; contact can cause corneal burns. Contamination of eyes can result in permanent injury.
Skin contact:	Contact with skin will result in severe irritation. Corrosive to skin - may cause skin burns.
Inhalation:	Breathing in vapour will produce respiratory irritation.
Acute toxicity: Oral LD50 (rat): 1089-1720 mg/kg	
Skin corrosion/irritation:	Corrosive (rabbit).
Serious eye damage/irritation:	Corrosive (rabbit).
Respiratory or skin sensitisation:	Not a skin sensitiser (guinea pig).
Chronic effects:	Available evidence from animal studies indicate that repeated or prolonged exposure to this material could result in effects on the liver and kidneys.
Mutagenicity:	Non-mutagenic in AMES test. The chemical was not mutagenic in mammalian cell culture.
Carcinogenicity:	Not listed as carcinogenic according to the International Agency for Research on Cancer (IARC).
Reproductive toxicity:	No information available.
Specific Target Organ Toxicity (STOT) - single exposure:	May cause respiratory irritation.
Specific Target Organ Toxicity (STOT) - repeated exposure:	No information available.
Aspiration hazard:	No information available.

Carcinogenicity studies in mice, dermally administered diethanolamine over a lifetime developed liver and kidney tumours. However, in similarly treated rats there was no evidence of carcinogenicity.

12. ECOLOGICAL INFORMATION

Ecotoxicity	Avoid contaminating waterways.
Persistence/degradability:	The material is readily biodegradable.
Bioaccumulative potential:	Low log P value suggests little potential for bioaccumulation.
Mobility in soil:	No information available.
Aquatic toxicity:	Toxic to aquatic organisms. 72hr EC50 (Algae): 2.8 mg/L
Log Octanol/Water Partition Coefficient:	-2.3 @25°C

13. DISPOSAL CONSIDERATIONS

Disposal methods:

Refer to Waste Management Authority. Dispose of material through a licensed waste contractor.

Product Name: MONOETHANOLAMINE

Substance No: 000030102001

Issued: 14/02/2020

Version: 5

14. TRANSPORT INFORMATION

Road and Rail Transport

Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for Transport by Road and Rail; DANGEROUS GOODS.



UN No: 2491
Transport Hazard Class: 8 Corrosive
Packing Group: III
Proper Shipping Name or Technical Name: ETHANOLAMINE
Hazchem or Emergency Action Code: 2X

Marine Transport

Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; DANGEROUS GOODS.

UN No: 2491
Transport Hazard Class: 8 Corrosive
Packing Group: III
Proper Shipping Name or Technical Name: ETHANOLAMINE

IMDG EMS Fire: F-A
IMDG EMS Spill: S-B

Air Transport

Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air; DANGEROUS GOODS.

UN No: 2491
Transport Hazard Class: 8 Corrosive
Packing Group: III
Proper Shipping Name or Technical Name: ETHANOLAMINE

15. REGULATORY INFORMATION

Classification:

This material is hazardous according to Safe Work Australia; HAZARDOUS CHEMICAL.

Classification of the chemical:

Flammable liquids - Category 4
Acute Oral Toxicity - Category 4
Acute Dermal Toxicity - Category 4
Acute Inhalation Toxicity - Category 4
Skin Corrosion - Sub-category 1B
Eye Damage - Category 1
Specific target organ toxicity (single exposure) - Category 3

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Safety Data Sheet

**Hazard Statement(s):**

H227 Combustible liquid.

H302+H312+H332 Harmful if swallowed, in contact with skin or if inhaled.

H314 Causes severe skin burns and eye damage.

H335 May cause respiratory irritation.

Poisons Schedule (SUSMP): S6 Poison.

This material is listed on the Australian Inventory of Chemical Substances (AICS).

16. OTHER INFORMATION

Supplier Safety Data Sheet; 02/ 2020.

'Registry of Toxic Effects of Chemical Substances'. Ed. D. Sweet, US Dept. of Health & Human Services: Cincinnati, 2019.

Reason(s) for Issue:

5 Yearly Revised Primary SDS

This SDS summarises to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. Since Ixom Operations Pty Ltd cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, assess and control the risks arising from its use of the material.

If clarification or further information is needed, the user should contact their Ixom representative or Ixom Operations Pty Ltd at the contact details on page 1.

Ixom Operations Pty Ltd's responsibility for the material as sold is subject to the terms and conditions of sale, a copy of which is available upon request.