



SAFETY DATA SHEET

According to (EC) 1907/2006

MONOETHANOLAMINE 85% (MEA 85%)

Version: 2
Version Date: 28/04/2020

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1. IDENTIFICATION OF THE SUBSTANCE/ PREPARATION AND OF THE COMPANY UNDERTAKING

1.1 Product identifier

Trade name	Allamine MEA 85 LFG
Substance name	Monoethanolamine 85%
Registration number	01-2119486455-28-0004
CAS number	141-43-5
EC number	205-483-5
Product code	540529-85-1000
Synonyms	2-aminoethanol 85%

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

Uses advised against	No information
Applications of the substance	Intermediate in the manufacture of cleaning agents and polymer production. Used in sweetening natural gas and coal gas in the manufacture of ethylene amines.

1.3 Details of the supplier of the safety data sheet

Supplier:
Alliance Chemicals Limited
Old Walls, Chapel Lane, Penselwood, BA9 8LY
United Kingdom
Telephone: +44 (0) 1747841222
Email: si@alliancechemicals.com

1.4 Emergency telephone number


+44 (0) 7802567401 (8.00 AM – 8.00 PM)

2. HAZARDS IDENTIFICATION**2.1 Classification of the substance or mixture**

Classification (regulation (EC) No 1272/2008)	Acute Toxicity, category 4, H332 Acute Toxicity, category 4, H312 Acute Toxicity, category 4, H302 Skin Corrosion, category 1B, H314 Serious Eye Damage, category 1, H318 Skin Sensitisation, category 1B, H317 Specific Target Organ Toxicity – Single Exposure, category 3, H335 Long-term (Chronic) Aquatic Hazard, category 3, H412
Classification (67/548/EEC,1999/45/EC) Hazard category:	Corrosive, C, R34 Harmful, Xn, R20/21/22
Risk advice to man and the environment	Harmful if inhaled. Causes severe burns and eye damage. Harmful in contact with skin and if swallowed. May cause respiratory irritation. Harmful to aquatic life with long lasting effects.

For a full text of H-Statements mentioned in this Section, see Section 16.

2.2 Label elements

Label (regulation (EC) 1272/2008:	
Pictogram	
Signal word	Danger
Hazard statements	H302 + H312 + H332 Harmful if swallowed, in contact with skin or inhaled. H314 Causes severe burns and eye damage. H335 May cause respiratory irritation. H412 Harmful to aquatic life with long lasting effects.
Precautionary statements	Prevention: P261 Avoid breathing mist, vapours, spray. P264 Wash skin thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P271 Use only outdoors in a well-ventilated area. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Precautionary statements	Response: P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303 + P361 + P353 IF ON SKIN (or hair): Take of immediately all contaminated clothing. Rinse skin with water/ shower. P305 + P351 + P338 + P310 IF IN EYES: rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. Immediately call a POISON CENTRE/ doctor. P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTRE/ doctor.
	Storage: P403 + P233 Store in a well-ventilated place. Keep containers tightly closed. P405 Store locked up.
	Disposal: P501 Dispose of contents/ container to hazardous or special waste collection point.

2.3 Other hazards

No further data available	
PBT and vPvB assessment:	This substance/ mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances

Hazardous Substance					
Chemical Name	PBT vPvB -OEL	CAS-No. EC-No. REACH No.	Classification (REGULATION (EC) No 1272/2008)	Classification (67/548/EEC)	Conc %
Monoethanolamine		141-43-5 205-483-3 01-2119486455-28	Acute Tox. 4; H302 Acute Tox. 4; H332 Acute Tox. 4; H312 Skin Corr. 1B; H314 Eye Dam., 1, H318 Skin Sen., 1B, H317 STOT SE, 3 H335 Aquatic (Chronic) 3, H412	C; R20/R21/22 R34	84.5 - 85.5
Non Hazardous Substance:					
Water		7732-18-5			14.5 – 15.5

For the full text of H-Statements mentioned in this Section, see Section 16.

For the full text of R-Phrases mentioned in this Section, see Section 16.

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59)

Status: Not applicable.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General Advice	Immediately seek medical attention. Move out of dangerous area. Show this safety data sheet to the doctor in attendance.
If inhaled	Remove to fresh air immediately. If not breathing give artificial respiration. Get immediate medical advice/ attention.
In case of skin contact	Remove contaminated clothes and shoes. Immediately flush with water for at least 15 minutes. Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty. Seek medical advice.
In case of eye contact	Immediately rinse with water for at least 15 minutes holding the eyelids apart. Get medical attention. Remove contact lenses. Protect unharmed eye. Small amounts splashed into eye can cause irreversible tissue damage and blindness.
If swallowed	Wash mouth out with water and then drink plenty of water. Never give anything by mouth to an unconscious person. Get medical attention immediately. DO NOT induce vomiting! May cause chemical burns in mouth and throat.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms:	The symptoms and effects are expected from the hazards as shown in Section 2. No specific product related symptoms are known.
Risks:	Harmful if swallowed or inhaled. Toxic in contact with skin. Causes serious eye damage. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Causes severe burns.

4.3 Indication of any immediate medical and special treatment needed

Symptomatic treatment. If in doubt get medical attention immediately

5. FIRE FIGHTING MEASURES**5.1 Extinguishing media**

Suitable extinguishing agents	Carbon dioxide (CO ₂), water spray, alcohol-resistant foam, dry chemical powder.
For safety reasons unsuitable extinguishing agents:	High volume water jet.

5.2 Special hazards arising from the substance or mixture

Special hazards during firefighting/ Specific hazards arising from the chemical	Water spray may be ineffective unless used by experienced firefighters. Do not allow run-off from firefighting to enter drains of water courses.
Combustion products	Carbon oxides. Nitrogen oxides (NO _x).

5.3 Advice for firefighters

Special protective equipment for firefighters	Wear self-contained breathing apparatus and protective suit/ eye protection.
Additional information	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. For safety reasons in case of fire cans should be stored separately in closed containments.

6. ACCIDENTAL RELEASE MEASURES**6.1 Personal precautions, protective equipment and emergency procedures**

<p>Ensure adequate ventilation. Wear protective clothing. Use respiratory protective device against the effects of fumes/dust/aerosol. Remove all incompatible materials and sources of ignition.</p>

6.2 Environmental precautions

<p>Do not allow the product to penetrate the ground/soil. Do not allow the product to reach any water course/ sewage systems. If the product contaminates water courses/ sewage systems inform the respective authorities.</p>
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6.3 Methods for cleaning up/ Methods for containment

<p>Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local/national regulations.</p>

6.4 Reference to other sections

<p>For personal protection see section 8. For disposal considerations see section 13.</p>

7. HANDLING AND STORAGE**7.1 Precautions for safe handling**

Advise on safe handling:

For personal protection see Section 8.
 Do not breath vapours or spray mist.
 Avoid contact with skin and eyes.
 Persons with a history of skin sensitisation problems, or asthma, allergies, chronic of recurrent respiratory disease should not be employed in any process in which this mixture is being used.
 Smoking, eating or drinking should be prohibited in the application area.
 Provide sufficient air exchange and/ or exhaust in work rooms.
 Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion:

Avoid formation of aerosol.
 Keep away from sources of ignition – No Smoking.
 Take measures to prevent build-up of electrostatic charge.
 No sparking tools should be used.

7.2 Conditions for safe storage including any incompatibilities

Requirements for storage areas and containers:	No smoking. Storage duration: 12 months Keep contained tightly closed in a dry and well-ventilated place. Reacts with copper, aluminium, zinc and their alloys. Electrical installations/ working materials must comply with the technological safety standards.
Information about storage in one common storage facility:	Store away from feedstuffs or foodstuffs. Avoid incompatible materials and conditions.
Other data:	No decomposition if stored and applied as directed.

7.3 Specific end use(s)

No data available.

From the data on storage duration in this safety data sheet no agreed statement regarding the warrantee of application properties can be deduced.

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION**8.1 Control parameters**

Hazardous ingredients: 2-aminoethanol

Components with workplace control parameters

Components	CAS-No.	Value	Control Parameters	Update	Basis	Form of Exposure
ethanolamine	141-43-5	TWA	1 ppm 2.5 mg/m ³	2006-02-09	2006/15/EC	
	Further information	:	Indicative skin: Identifies the possibility of significant uptake through the skin.			
		STEL	3 ppm 7.6 mg/m ³	2006-02-09	2006/15/EC	
	Further information	:	Indicative skin: Identifies the possibility of significant uptake through the skin.			
		TWA	1 ppm 2.5 mg/m ³	2007-08-01	GB EH40	
	Further information	:	Sk: Can be absorbed through the skin. The assigned substances are those of which there are concerns that dermal absorption will lead to systemic toxicity.			
		STEL	3 ppm 7.6 mg/m ³	2007-08-01	GB EH40	
	Further information	:	Sk: Can be absorbed through the skin. The assigned substances are those of which there are concerns that dermal absorption will lead to systemic toxicity.			

STEL: Short term exposure limit.

TWA: Time weighted average.

Derived No Effect Level (DNEL) according to regulation (EC) No. 1907/ 2006

Substance Name	End Use	Exposure Routes	Potential Health Effects	Value
ethanolamine	Workers	Skin contact	Long-term systemic effects.	1 mg/kg bw/day
	Workers	Inhalation	Long-term local effects.	3.3 mg/m ³
	Consumers	Skin contact	Long-term systemic effects.	0.24 mg/kg bw/day
	Consumers	Ingestion	Long-term systemic effects.	3.75 mg/kg bw/day
	Consumers	Ingestion	Long-term local effects.	2 mg/m ³

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006

Substance Name	Environmental Compartment	Value
ethanolamine	Fresh water	0.085 mg/l
	Marine water	0.0085 mg/l
	Sediment	0.434 mg/kg dry weight
	Marine sediment	0.0434 mg/kg dry weight
	Soil	0.0367 mg/kg dry weight
	Sewerage treatment plant	100 mg/l
	Intermittent water	0.028 mg/l

8.2 Exposure controls

Engineering controls	Effective exhaust ventilation system. Ensure that eyewash stations and safety showers are close to the workstation location.
Personal Protective equipment	
Respiratory protection:	In case of vapour formation use a respirator with an approved filter. Wear full face mask supplied with Gas/ vapour filter, type K: (ammonia, green).
Hand protection:	Butyl-rubber gloves.
Eye protection:	Tight fitting safety glasses with side-shields conforming to EN166. Face-shield.
Skin and body protection:	Protective suit and footwear.
Hygiene measures:	Avoid contact with skin, eyes and clothing. When using do not eat, drink or smoke. Wash hands before break and end of workday. Wash contaminated clothing before re-use
Environmental exposure controls	
General advice	Prevent product from entering drains and waterways. If contamination occurs inform respective authorities.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance:	Form: Clear liquid Colour: Colourless Odour: Ammonical Odour threshold: No data available
Safety data:	pH: >12 (100 g/l, 20°C). Melting/freezing point: -13.1°C Boiling point: 131°C Flash point: 104°C Ignition temperature: Not determined. Evaporation rate: Not determined. Flammability: Not readily ignited. Lower explosion limit: 3.4 vol. % @ 88.3° Upper explosion limit: No data available Vapour pressure: 0.5 hPa @ 20°C Relative density: 1.025- 1.029 @ 20°C Water solubility: Soluble. Partition coefficient: -2.3 @ 25°C (n-octanol/water) Auto ignition temperature: 425°C Decomposition temperature: Not data available. Viscosity (dynamic): 23.86 mPa.s @ 20°C Explosive properties: Not explosive. Oxidizing properties: Not classified as oxidizing.
This safety data only contains information relating to safety and does not replace any product information or product specification	

9.2 Other information

No further relevant information is available.

10. STABILITY AND REACTIVITY**10.1 Reactivity**

Stable under normal conditions.

10.2 Chemical stability

Stable under recommended storage conditions (see Section 7). Stable under normal temperatures and pressures.
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10.3 Possibility of hazardous reactions

Heating can release hazardous gases. Reacts with oxidizing agents, acids, acid chlorides and halogenated compounds.

10.4 Conditions to avoid

Conditions to avoid:	Heat, flames and sparks. Avoid contact with strong oxidizers. Fire or intense heat may cause violent rupture of package.
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10.5 Incompatible materials

Materials to avoid:	Reacts strongly with concentrated acids and oxidizing agents. Zinc and aluminium. Attacks copper and copper alloys.
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10.6 Hazardous decomposition products

Hazardous decomposition products:	Hazardous decomposition will produce carbon monoxide and/or carbon dioxide. Nitrogen oxides (NOx).
Thermal decomposition:	No data available.

11. TOXICOLOGICAL INFORMATION**Product Information:**

Hazard Summary	
Inhalation:	Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Inhalation of aerosols may cause irritation to mucous membranes.
Skin:	Symptoms may be delayed. Toxic in contact with skin. May cause an allergic skin reaction. Causes severe skin burns.
Eyes:	Causes serious eye damage.
Ingestion:	Harmful if swallowed. Corrosive to the digestive tract. Causes burns.

Toxicological Assessment

Further information: Solvents may degrease the skin.

11.1 Information on toxicological effects

Toxicological data for the components:

Test result ethanolamine	
Acute oral toxicity:	LD50: 1,089 mg/kg bw (rat).
Acute inhalation toxicity:	LD50: 20 mg/l (rat). Exposure time 4h. Test atmosphere: vapour.
Acute dermal toxicity:	LD50: 2,000 mg/kg.
Skin corrosion/ irritation:	Result: Causes burns (rabbit).
Serious eye damage/ eye irritation.	Result: Risk of serious damage to eyes (rabbit).
Respiratory or skin sensitisation:	Result: Does not cause skin sensitisation (guinea pig).
Germ cell mutagenicity	
Genotoxicity in vitro:	Result: No evidence of genotoxic effects in vitro (Ames test).
Genotoxicity in vivo:	Result: No evidence of genotoxic effect in vivo (mouse).
Carcinogenicity:	Assessment of carcinogenicity: The product is not considered to be carcinogenic.
Reproductive toxicity:	Assessment of reproductive toxicity: Not classified due to data which are conclusive although insufficient for classification.
STOT – single exposure:	Assessment of specific target organ toxicity (single exposure): May cause respiratory irritation.
STOT – repeated exposure:	Assessment of specific target organ toxicity (repeated exposure): Not classified due to data which are conclusive although insufficient for classification
Aspiration hazard:	Aspiration hazard assessment: Not classified due to data which are conclusive although insufficient for classification.

12. ECOLOGICAL INFORMATION

Product Information:

Ecotoxicology Assessment	
Additional ecological information:	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Toxic to aquatic life. Harmful to aquatic life with long lasting effects.

12.1 Toxicity

Ecotoxicology Assessment			
Product/ ingredient name	Result	Species	Exposure
Ethanolamine	LC50: 349 mg/l	Fish (<i>Cyprinus carpio</i>)	96 hours
	EC50: 65 mg/l	Daphnia and other aquatic invertebrates. (<i>Daphnia magna</i>)	48 hours
	EC50: 2.8 mg/l	Algae (<i>Pseudokirchneriella subcapitata</i>)	72 hours
	NOEC: 1.2 mg/l (chronic)	Fish (<i>Oryzias latipes</i>)	30 days
	NOEC: 0.85 mg/l (chronic)	Daphnia and other aquatic invertebrates. (<i>Daphnia magna</i>)	21 days

12.2 Persistence and degradability

Product Information:	
Biodegradability:	Result: Readily biodegradable.
Ethanolamine	
Biodegradability:	Result: Readily biodegradable. OECD test guideline 301E

12.3 Bioaccumulative potential

Product Information:	
Biaccumulation:	Not expected considering the low log Pow value.
Ethylenediamine	
Bioaccumulation:	Not expected considering the low log Pow value.

12.4 Mobility in soil

Product Information:	
Mobility:	The substance will not evaporate into the atmosphere from the water surface. Adsorption to the solid soil phase is not expected.
Ethylenediamine	
Mobility:	Mobile in soils. Transport to air is not expected.

12.5 Results of PBT and vPvB assessment

Product Information:	
PBT and vPvB assessment:	This substance is not considered to be PBT (Persistent, Bioaccumulative, Toxic). This substance is not considered to be vPvB (very Persistent nor very Bioaccumulative).
Ethylenediamine	
PBT and vPvB assessment:	This substance is not considered to be PBT (Persistent, Bioaccumulative, Toxic). This substance is not considered to be vPvB (very Persistent nor very Bioaccumulative).

12.6 Other adverse effects

Product Information:	
Biochemical Oxygen Demand (BOD):	No data available.
Ethylenediamine	
Biochemical Oxygen Demand (BOD):	800 mg/g

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product	This product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Hazardous waste
Contaminated packaging:	Contaminated packaging must not be treated as household waste. Dispose of in accordance with regional or national regulations.

14. TRANSPORT INFORMATION

14.1 UN Number	
ADR:	2491
RID:	2491
IMDG-Code:	2491
IATA-DGR:	2491
14.2 Proper Shipping Name	
ADR:	ETHANOLAMINE
RID:	ETHANOLAMINE
IMDG-Code:	ETHANOLAMINE
IATA-DGR:	Ethanolamine
14.3 Transport Hazard Class	
ADR:	8
RID:	8
IMDG-Code:	8
IATA-DGR:	8
14.4 Packing Group	
ADR:	
Packaging Group:	111
Hazard Identification No:	80
Labels:	8
RID:	
Packaging Group:	111
Hazard Identification No:	80
Labels:	8
IMDG-Code:	
Packaging Group:	111
Labels:	8
EmS Code:	F-A, S-B
IATA:	
Packaging Group:	111
Labels:	8
Packaging Instruction (cargo aircraft)	856
Packaging Instruction (passenger aircraft)	852

14.5 Environmental Hazards	
ADR:	
Environmentally Hazardous:	No.
RID:	
Environmentally Hazardous:	No.
IMDG-Code:	
Marine Pollutant:	No.
IATA-DGR:	
Environmentally Hazardous:	No.

14.6 Special precautions for user:

Not applicable.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:

Not applicable for product as supplied.

15. REGULATORY INFORMATION**15.1 Safety, health and environmental regulations/ legislation specific for the substance or mixture**

Ethanolamine	
Seveso III: Directive 2012/18/EU of the European Parliament and the Council on the control of major-incident hazards involving dangerous substances: Not applicable.	
Notification Status:	
DSL:	YES. On the inventory, or in compliance with the inventory on the Canadian DSL.
AICS:	YES. On the inventory, or in compliance with the inventory.
NZIoC:	YES. On the inventory, or in compliance with the inventory.
ENCS:	YES. On the inventory, or in compliance with the inventory.
ISHL:	YES. On the inventory, or in compliance with the inventory.
KECI:	YES. On the inventory, or in compliance with the inventory.
PICCS:	YES. On the inventory, or in compliance with the inventory.
IECSC:	YES. On the inventory, or in compliance with the inventory.
TCSI:	YES. On the inventory, or in compliance with the inventory.
TSCA:	YES> All chemical substance either listed on the TSCA

15.2 Chemical safety assessment

Ethylenediamine:	A chemical safety assessment has been carried out for this substance.
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16. OTHER INFORMATION

Full Text Of H-Statements Referred To Under Sections 2 And 3	
H302:	Harmful if swallowed.
H312:	Harmful in contact with skin.
H314:	Causes severe burns and eye damage.
H317:	May cause an allergic skin reaction.
H318:	Causes serious eye damage.
H332:	Harmful if inhaled.
H335:	May cause respiratory irritation.
H412:	Harmful to aquatic life with long lasting effects.
Full Text Of R-Phrases Referred To Under Sections 2 And 3	
R20/21/22:	Harmful by inhalation, in contact with skin, or if swallowed.
R34:	Causes burns.
Full Text Of Other Abbreviations	
PBT:	Persistent, bioaccumulative and toxic.
vPvB:	Very persistent and very bioaccumulative.
OEL:	Occupational exposure limit.
2006/15/EC:	Europe, Indicative occupational exposure limit values.
GB EH40:	UK. EH40 WEL – Workplace Exposure Limits.
2006/15/EC/ TWA	Limit value – 8 hours.
2006/15/EC/ STEL:	Short term exposure limit.
GB EH40/ TWA:	Long-term exposure limit (8-hour TWA reference period)
GB EH40/ STEL:	Short-term exposure limit (15-minute reference period)

Further Information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of this publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information related only to the specific material designated and may not be applicable if such a material used in combination with any other materials or in any process, unless otherwise specifically indicated.