SAFETY DATA SHEET

Based upon Regulation (EC) No 1907/2006, as amended by Regulation (EU) No 2015/830

monoethylamine, liquefied, under pressure

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name	:	monoethylamine, liquefied, under pressure
Synonyms	:	1-aminoethane; amine C2; aminoethane; EA; ethanamine; ethanamine, anhydrous; ethylamine; ethylamine, anhydrous; ethylamine, liquefied, anhydrous; MEA; monoethylamine, anhydrous; R-631
Registration number REACH	:	01-2119485800-36
Product type REACH	:	Substance/mono-constituent
CAS number	:	75-04-7
EC index number	:	612-002-00-4
EC number	:	200-834-7
RTECS number	:	KH2100000
Molecular mass	:	45.09 g/mol
Formula	:	C2H7N

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

1.2.1 Relevant identified uses

Industrial and professional use. Before use: carry out a risk assessment

1.2.2 Uses advised against

No uses advised against known

1.3. Details of the supplier of the safety data sheet

Supplier of the safety data sheet

BALCHEM NV
Westvaartdijk 85
B-1850 Grimbergen Belgium
☎ +32 2 251 60 87
+32 2 252 17 51
info.grimbergen@balchem.com

Distributor of the product

BALCHEM NV
Westvaartdijk 85
B-1850 Grimbergen Belgium
☎ +32 2 251 60 87
+32 2 252 17 51
info.grimbergen@balchem.com

1.4. Emergency telephone number

24h/24h (Telephone advice: English, French, German, Dutch):

+32 14 58 45 45 (BIG)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classified as dangerous according to the criteria of Regulation (EC) No 1272/2008

Class	Category	Hazard statements
Flam. Gas	category 1	H220: Extremely flammable gas.
Press. Gas	Liquefied gas	H280: Contains gas under pressure; may explode if heated.
Acute Tox.	category 4	H332: Harmful if inhaled.
Eye Irrit.	category 2	H319: Causes serious eye irritation.
STOT SE	category 3	H335: May cause respiratory irritation.

2.2. Label elements

Signal word Danger

H-statements

H220	Extremely flammable gas.
H280	Contains gas under pressure; may explode if heated.
H332	Harmful if inhaled.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.

P-statements

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280	Wear eye protection
P261	Avoid breathing gas.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P377	Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

2.3. Other hazards

May build up electrostatic charges: risk of ignition
May be ignited by sparks
Gas/vapour spreads at floor level: ignition hazard
On contact with water/moisture : corrosive
May cause frostbites
Lachrymatory
Caution! Substance is absorbed through the skin
Harmful to fishes
Toxic to invertebrates (Daphnia)
Toxic to algae

SECTION 3: Composition/information on ingredients

3.1. Substances

Name REACH Registration No	CAS No EC No	Conc. (C)	Classification according to CLP	Note	Remark
ethylamine	75-04-7 200-834-7	C>99 %	Flam. Gas 1; H220 Press. Gas - Liquefied gas; H280 Eye Irrit. 2; H319 STOT SE 3; H335	(1)(2)(10)	Mono-constituent

(1) For H-statements in full: see heading 16
(2) Substance with a Community workplace exposure limit
(6) Enumerated in Annex VI of Regulation (EC) No. 1272/2008 but the classification has been adapted after evaluation of available test data
(10) Subject to restrictions of Annex XVII of Regulation (EC) No. 1907/2006

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

General:

Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.

After inhalation:

Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

After skin contact:

Wash immediately with lots of water. Take victim to a doctor if irritation persists. In case of frostbites: Wash immediately with lots of water (15 minutes) /shower. Remove clothing while washing. Do not remove clothing if it sticks to the skin. Cover wounds with sterile bandage. Consult a doctor/medical service. If burned surface > 10%: take victim to hospital.

After eye contact:

Rinse immediately with plenty of water for 15 minutes. Do not apply neutralizing agents. Take victim to an ophthalmologist.

After ingestion:

Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Immediately consult a doctor/medical service.

4.2. Most important symptoms and effects, both acute and delayed

4.2.1 Acute symptoms

After inhalation:

Dry/sore throat. Coughing. Irritation of the respiratory tract. Irritation of the nasal mucous membranes. Respiratory difficulties. FOLLOWING SYMPTOMS MAY APPEAR LATER: Risk of pneumonia. Risk of lung oedema.

After skin contact:

Frostbites.

After eye contact:

Irritation of the eye tissue. ON CONTINUOUS EXPOSURE/CONTACT: Permanent eye damage.

After ingestion:

No effects known.

4.2.2 Delayed symptoms

No effects known.

4.3. Indication of any immediate medical attention and special treatment needed

If applicable and available it will be listed below.

SECTION 5: Firefighting measures

5.1. Extinguishing media

5.1.1 Suitable extinguishing media:

Preferably: water spray. Alcohol-resistant foam. BC powder. Carbon dioxide.

5.1.2 Unsuitable extinguishing media:

Solid water jet ineffective as extinguishing medium.

5.2. Special hazards arising from the substance or mixture

On burning: release of toxic and corrosive gases/vapours (nitrous vapours, carbon monoxide - carbon dioxide).

5.3. Advice for firefighters

5.3.1 Instructions:

If no hazard for/from the surroundings: controlled burning. If hazardous substances are nearby: consider extinguishment. Extinguish only if gas supply/leak can be shut afterwards. Cool tanks/drums with water spray/remove them into safety. Physical explosion risk: extinguish/cool from behind cover. Do not move the load if exposed to heat. After cooling: persistant risk of physical explosion. Dilute toxic gases with water spray. Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it.

5.3.2 Special protective equipment for fire-fighters:

Insulating gloves. Protective goggles. Protective clothing. Large spills/in enclosed spaces: compressed air apparatus. Heat/fire exposure: compressed air/oxygen apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Keep upwind. Seal off low-lying areas. Close doors and windows of adjacent premises. Stop engines and no smoking. No naked flames or sparks. Spark- and explosionproof appliances and lighting equipment. Avoid ingress of water in the containers.

6.1.1 Protective equipment for non-emergency personnel

See heading 8.2

6.1.2 Protective equipment for emergency responders

Insulating gloves. Protective goggles. Protective clothing. Large spills/in enclosed spaces: compressed air apparatus.

Suitable protective clothing

See heading 8.2

6.2. Environmental precautions

Contain released substance, pump into suitable containers. Plug the leak, cut off the supply. Dam up the liquid spill. Tip the container on one side to stop the leakage. Try to reduce evaporation. Prevent soil and water pollution. Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up

Take up liquid spill into absorbent material, e.g.: sand, earth, vermiculite. Scoop absorbed substance into closing containers. Carefully collect the spill/leftovers. Damaged/cooled tanks must be emptied. Do not use compressed air for pumping over spills. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

6.4. Reference to other sections

See heading 13.

SECTION 7: Handling and storage

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

7.1. Precautions for safe handling

Use spark-/explosionproof appliances and lighting system. Take precautions against electrostatic charges. Keep away from naked flames/heat. Keep away from ignition sources/sparks. Gas/vapour heavier than air at 20°C. Observe strict hygiene. Remove contaminated clothing immediately.

7.2. Conditions for safe storage, including any incompatibilities

7.2.1 Safe storage requirements:

Storage temperature: <50 °C. Keep out of direct sunlight. Ventilation at floor level. Fireproof storeroom. Keep locked up. Provide for an automatic sprinkler system. Provide for a tub to collect spills. Provide the tank with earthing. Meet the legal requirements.

7.2.2 Keep away from:

Heat sources, ignition sources, oxidizing agents, (strong) acids, highly flammable materials, cellulosic materials, organic materials, metals.

7.2.3 Suitable packaging material:

Steel, stainless steel, iron.

7.2.4 Non suitable packaging material:

Lead, aluminium, copper, tin, zinc, PVC, synthetic material.

7.3. Specific end use(s)

If applicable and available, exposure scenarios are attached in annex. See information supplied by the manufacturer.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 Occupational exposure

a) Occupational exposure limit values

If limit values are applicable and available these will be listed below.

The Netherlands

Ethylamine	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	4.8 ppm
	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	9 mg/m³

EU

Ethylamine	Time-weighted average exposure limit 8 h (Indicative occupational exposure limit value)	5 ppm
	Time-weighted average exposure limit 8 h (Indicative occupational exposure limit value)	9.4 mg/m³

Belgium

Ethylamine	Time-weighted average exposure limit 8 h	5 ppm
	Time-weighted average exposure limit 8 h	9.4 mg/m³
	Short time value	15 ppm
	Short time value	28.2 mg/m³

USA (TLV-ACGIH)

Ethylamine	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	5 ppm
	Short time value (TLV - Adopted Value)	15 ppm

Germany

Ethylamin	Time-weighted average exposure limit 8 h (TRGS 900)	5 ppm
	Time-weighted average exposure limit 8 h (TRGS 900)	9.4 mg/m³

France

Ethylamine	Time-weighted average exposure limit 8 h (VRC: Valeur réglementaire contraignante)	5 ppm
	Time-weighted average exposure limit 8 h (VRC: Valeur réglementaire contraignante)	9.4 mg/m³
	Short time value (VRC: Valeur réglementaire contraignante)	15 ppm
	Short time value (VRC: Valeur réglementaire contraignante)	28.2 mg/m³

UK

Ethylamine	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	2 ppm
	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	3.8 mg/m³
	Short time value (Workplace exposure limit (EH40/2005))	6 ppm
	Short time value (Workplace exposure limit (EH40/2005))	11 mg/m³

b) National biological limit values

If limit values are applicable and available these will be listed below.

8.1.2 Sampling methods

Product name	Test	Number
Ethyl Amine	NIOSH	3(S144)
Ethyl Amine	OSHA	36

8.1.3 Applicable limit values when using the substance or mixture as intended

If limit values are applicable and available these will be listed below.

8.1.4 DNEL/PNEC values

DNEL/DMEL - Workers

monoethylamine, liquefied, under pressure

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term local effects inhalation	9 mg/m³	
	Acute local effects inhalation	18 mg/m³	

ethylamine

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term local effects inhalation	9 mg/m³	
	Acute local effects inhalation	18 mg/m³	

DNEL/DMEL - General population

monoethylamine, liquefied, under pressure

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term local effects inhalation	4.5 mg/m³	
	Acute local effects inhalation	9 mg/m³	

ethylamine

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term local effects inhalation	4.5 mg/m³	
	Acute local effects inhalation	9 mg/m³	

PNEC

monoethylamine, liquefied, under pressure

Compartments	Value	Remark
Fresh water	0.046 mg/l	
Marine water	0.0046 mg/l	
Aqua (intermittent releases)	0.023 mg/l	
STP	10.5 mg/l	
Fresh water sediment	0.304 mg/kg sediment dw	
Marine water sediment	0.0304 mg/kg sediment dw	
Soil	0.0336 mg/kg soil dw	

ethylamine

Compartments	Value	Remark
Fresh water	0.046 mg/l	
Marine water	0.0046 mg/l	
Aqua (intermittent releases)	0.023 mg/l	
STP	10.5 mg/l	
Fresh water sediment	0.304 mg/kg sediment dw	
Marine water sediment	0.0304 mg/kg sediment dw	
Soil	0.0336 mg/kg soil dw	

8.1.5 Control banding

If applicable and available it will be listed below.

8.2. Exposure controls

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

8.2.1 Appropriate engineering controls

Use spark-/explosionproof appliances and lighting system. Take precautions against electrostatic charges. Keep away from naked flames/heat. Keep away from ignition sources/sparks. Measure the concentration in the air regularly. Work under local exhaust/ventilation. Exhaust gas must be neutralised.

8.2.2 Individual protection measures, such as personal protective equipment

Observe strict hygiene. Do not eat, drink or smoke during work.

a) Respiratory protection:

High vapour/gas concentration: self-contained respirator.

b) Hand protection:

Insulated gloves.

- materials (good resistance)

Butyl rubber.

- materials (less resistance)

Neoprene.

- materials (poor resistance)

Natural rubber, nitrile rubber, PVA, PVC, viton, polyethylene/ethylenevinylalcohol.

c) Eye protection:

Protective goggles.

d) Skin protection:

Head/neck protection. Protective clothing.

8.2.3 Environmental exposure controls:

See headings 6.2, 6.3 and 13

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical form	Liquefied gas
Odour	Irritating/pungent odour
	Ammonia odour
Odour threshold	0.27 - 0.83 ppm
	0.5 - 1.5 mg/m³
Colour	Colourless
Particle size	Not applicable (gas)
Explosion limits	3.5 - 14 vol %
	65 - 266 g/m³
Flammability	Extremely flammable gas.
Log Kow	-0.27 - -0.08
Dynamic viscosity	No data available
Kinematic viscosity	No data available
Melting point	-81 °C
Boiling point	17 °C ; 1013 hPa
Flash point	No data available
Evaporation rate	No data available
Relative vapour density	1.6
Vapour pressure	990 hPa ; 20 °C
	3400 hPa ; 50 °C
Solubility	water ; Hydrolyzes
	ethanol ; Complete
	ether ; Complete
Relative density	0.69 ; 15 °C
Decomposition temperature	No data available
Auto-ignition temperature	385 °C ; 1013 hPa
Explosive properties	No chemical group associated with explosive properties
Oxidising properties	No chemical group associated with oxidising properties
pH	12 ; 4.5 %

9.2. Other information

Minimum ignition energy	2.4 mJ
Specific conductivity	700000 pS/m
Critical temperature	183 °C
Critical pressure	56200 hPa
Absolute density	689 kg/m³ ; 15 °C

SECTION 10: Stability and reactivity

10.1. Reactivity

May build up electrostatic charges: risk of ignition. May be ignited by sparks. Gas/vapour spreads at floor level: ignition hazard. Substance has basic reaction.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Reacts violently with many compounds e.g.: with (strong) oxidizers, with (some) acids and with organic material with (increased) risk of fire/explosion. Reacts violently with (some) metals.

10.4. Conditions to avoid

Use spark-/explosionproof appliances and lighting system. Take precautions against electrostatic charges. Keep away from naked flames/heat. Keep away from ignition sources/sparks.

10.5. Incompatible materials

Oxidizing agents, (strong) acids, highly flammable materials, cellulosic materials, organic materials, metals.

10.6. Hazardous decomposition products

On burning: release of toxic and corrosive gases/vapours (nitrous vapours, carbon monoxide - carbon dioxide).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

11.1.1 Test results

Acute toxicity

monoethylamine, liquefied, under pressure

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50		400 mg/kg bw		Rat (male)	Experimental value	
Dermal	LD50	Equivalent to OECD 402	265 mg/kg bw	24 h	Rabbit (male)	Experimental value	
Inhalation (gases)	LC50	Equivalent to OECD 403	12.6 mg/l	4 h	Rat (male/female)	Experimental value	
Inhalation (gases)	LC50	Equivalent to OECD 403	9.8 mg/l	4 h	Rat (male)	Experimental value	
Inhalation (gases)	LC50	Equivalent to OECD 403	8.1 mg/l	4 h	Rat (female)	Experimental value	

ethylamine

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50		400 mg/kg bw		Rat (male)	Experimental value	
Dermal	LD50	Equivalent to OECD 402	265 mg/kg bw	24 h	Rabbit (male)	Experimental value	
Inhalation (gases)	LC50	Equivalent to OECD 403	12.6 mg/l	4 h	Rat (male/female)	Experimental value	
Inhalation (gases)	LC50	Equivalent to OECD 403	9.8 mg/l	4 h	Rat (male)	Experimental value	
Inhalation (gases)	LC50	Equivalent to OECD 403	8.1 mg/l	4 h	Rat (female)	Experimental value	

As the substance is a gas, inhalation is the most likely route of exposure

Conclusion

Harmful if inhaled.

Not classified as acute toxic in contact with skin

Not classified as acute toxic if swallowed

Corrosion/irritation

monoethylamine, liquefied, under pressure

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Highly irritating	Other			Rabbit	Experimental value	Single treatment
Skin	Highly corrosive			24; 48; 72 hours	Rabbit	Experimental value	Aqueous solution
Inhalation	Irritating; STOT SE cat.3					Annex VI	

ethylamine

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Highly irritating	Other			Rabbit	Experimental value	Single treatment
Skin	Highly corrosive			24; 48; 72 hours	Rabbit	Experimental value	Aqueous solution
Inhalation	Irritating; STOT SE cat.3					Annex VI	

Conclusion

Causes serious eye irritation.

May cause respiratory irritation.

Not classified as irritating to the skin

Respiratory or skin sensitisation

monoethylamine, liquefied, under pressure

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin						Data waiving	

ethylamine

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin						Data waiving	

Conclusion

Not classified as sensitizing for skin

Not classified as sensitizing for inhalation

Specific target organ toxicity

monoethylamine, liquefied, under pressure

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination

Inhalation	NOAEL	Subchronic toxicity test	184 mg/m³		No effect	24 weeks (6h/day, 5 days/week)	Rat (male/female)	Experimental value

ethylamine

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Inhalation	NOAEL	Subchronic toxicity test	184 mg/m³		No effect	24 weeks (6h/day, 5 days/week)	Rat (male/female)	Experimental value

Conclusion

Not classified for subchronic toxicity

Mutagenicity (in vitro)

monoethylamine, liquefied, under pressure

Result	Method	Test substrate	Effect	Value determination
Negative	Ames test	Bacteria (S.typhimurium)		Experimental value

ethylamine

Result	Method	Test substrate	Effect	Value determination
Negative	Ames test	Bacteria (S.typhimurium)		Experimental value

Mutagenicity (in vivo)

monoethylamine, liquefied, under pressure

No (test)data available

Carcinogenicity

monoethylamine, liquefied, under pressure

No (test)data available

Reproductive toxicity

monoethylamine, liquefied, under pressure

No (test)data available

Conclusion CMR

Not classified for carcinogenicity

Not classified for mutagenic or genotoxic toxicity

Not classified for reprotoxic or developmental toxicity

Toxicity other effects

monoethylamine, liquefied, under pressure

No (test)data available

Chronic effects from short and long-term exposure

monoethylamine, liquefied, under pressure

ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Skin rash/inflammation. Respiratory difficulties. Affection/discolouration of the teeth.

SECTION 12: Ecological information

12.1. Toxicity

monoethylamine, liquefied, under pressure

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	DIN 38412-15	46 mg/l	96 h	Leuciscus idus	Static system	Fresh water	Experimental value
Acute toxicity invertebrates	LC50	Other	7.9 mg/l	48 h	Ceriodaphnia dubia	Semi-static system	Fresh water	Experimental value
Toxicity algae and other aquatic plants	EC50	ECOSAR v1.00	2.381 mg/l	96 h	Algae			Calculated value
Long-term toxicity aquatic invertebrates	NOEC	US EPA	3.2 mg/l	7 day(s)	Ceriodaphnia dubia	Semi-static system	Fresh water	Experimental value
Toxicity aquatic micro-organisms	EC20	ISO 8192	240 mg/l	30 minutes	Activated sludge	Static system	Fresh water	Experimental value

ethylamine

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50		240 mg/l	96 h	Leuciscus idus	Static system		
	LC50	DIN 38412-15	46 mg/l	96 h	Leuciscus idus	Static system	Fresh water	Experimental value
Acute toxicity invertebrates	EC50		94 mg/l	24 h	Daphnia magna			
	LC50	Other	7.9 mg/l	48 h	Ceriodaphnia dubia	Semi-static system	Fresh water	Experimental value
Toxicity algae and other aquatic plants	EC0		1.7 mg/l		Scenedesmus quadricauda			pH > 7
	EC50	ECOSAR v1.00	2.381 mg/l	96 h	Algae			Calculated value
Long-term toxicity aquatic invertebrates	NOEC	Other	3.2 mg/l	7 day(s)	Ceriodaphnia dubia	Semi-static system	Fresh water	Experimental value
Toxicity aquatic micro-organisms	EC50		22.9 mg/l		Photobacterium phosphoreum			pH > 7

Conclusion

Harmful to fishes
Toxic to invertebrates (Daphnia)
Toxic to algae
Harmful to bacteria
pH shift
Inhibition of activated sludge
Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008

12.2. Persistence and degradability

monoethylamine, liquefied, under pressure

Biodegradation water

Method	Value	Duration	Value determination
OECD 301C: Modified MITI Test (I)	90 %	14 day(s)	Experimental value

Phototransformation air (DT50 air)

Method	Value	Conc. OH-radicals	Value determination
SRC AOP v1.92	12.9 h	500000 /cm³	Calculated value

Half-life soil (t1/2 soil)

Method	Value	Primary degradation/mineralisation	Value determination
			Not applicable (gas)

ethylamine

Biodegradation water

Method	Value	Duration	Value determination
OECD 301A: DOC Die-Away Test	100 %	14 day(s)	Experimental value

Phototransformation air (DT50 air)

Method	Value	Conc. OH-radicals	Value determination
SRC AOP v1.92	12.9 h	500000 /cm³	Calculated value

Half-life soil (t1/2 soil)

Method	Value	Primary degradation/mineralisation	Value determination
			Not applicable (gas)

Conclusion

Readily biodegradable in water

12.3. Bioaccumulative potential

monoethylamine, liquefied, under pressure

BCF other aquatic organisms

Parameter	Method	Value	Duration	Species	Value determination
BCF		< 1			Calculated value

Log Kow

Method	Remark	Value	Temperature	Value determination
		-0.27 - -0.08		

ethylamine

BCF other aquatic organisms

Parameter	Method	Value	Duration	Species	Value determination
BCF		700 - 1039	24 h	Cyclotella	Experimental value

Log Kow

Method	Remark	Value	Temperature	Value determination
		-0.27 - -0.08		

Conclusion

Low potential for bioaccumulation (BCF < 500)

12.4. Mobility in soil

monoethylamine, liquefied, under pressure

(log) Koc

Parameter	Method	Value	Value determination
log Koc		1.25	Calculated value

Volatility (Henry's Law constant H)

Value	Method	Temperature	Remark	Value determination
1.02 Pa.m³/mol	SRC HENRYWIN v3.10			Calculated value

Percent distribution

Method	Fraction air	Fraction biota	Fraction sediment	Fraction soil	Fraction water	Value determination
Mackay level I	68.4 %				31.6 %	Calculated value

ethylamine

(log) Koc

Parameter	Method	Value	Value determination
log Koc		1.25	Calculated value

Volatility (Henry's Law constant H)

Value	Method	Temperature	Remark	Value determination
1.02 Pa.m³/mol	SRC HENRYWIN v3.10			Calculated value

Percent distribution

Method	Fraction air	Fraction biota	Fraction sediment	Fraction soil	Fraction water	Value determination
Mackay level I	68.4 %				31.6 %	Calculated value

Conclusion

Highly mobile in soil

12.5. Results of PBT and vPvB assessment

Substance does not meet the criteria of PBT, nor the criteria of vPvB according to Annex XIII of Regulation (EC) No 1907/2006, so is neither PBT nor vPvB.

12.6. Other adverse effects

monoethylamine, liquefied, under pressure

Global warming potential (GWP)

Not included in the list of fluorinated greenhouse gases (Regulation (EC) No 517/2014)

Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009)

ethylamine

Global warming potential (GWP)

Not included in the list of fluorinated greenhouse gases (Regulation (EC) No 517/2014)

SECTION 13: Disposal considerations

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

13.1. Waste treatment methods

13.1.1 Provisions relating to waste

Waste material code (Directive 2008/98/EC, Decision 2000/0532/EC).
16 05 04* (gases in pressure containers and discarded chemicals: gases in pressure containers (including halons) containing dangerous substances).
Depending on branch of industry and production process, also other waste codes may be applicable. Hazardous waste according to Regulation (EU) No 1357/2014.

13.1.2 Disposal methods

Refer to manufacturer/supplier for information on recovery/ recycling. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals.

13.1.3 Packaging/Container

Waste material code packaging (Directive 2008/98/EC).
15 01 10* (packaging containing residues of or contaminated by dangerous substances).

SECTION 14: Transport information

Road (ADR)

14.1. UN number

UN number	1036

14.2. UN proper shipping name

Proper shipping name	Ethylamine

14.3. Transport hazard class(es)

Hazard identification number	23
Class	2
Classification code	2F

14.4. Packing group

Packing group	
Labels	2.1

14.5. Environmental hazards

Environmentally hazardous substance mark	no

14.6. Special precautions for user

Special provisions	662
Limited quantities	none.

Rail (RID)

14.1. UN number

UN number	1036

14.2. UN proper shipping name

Proper shipping name	Ethylamine

14.3. Transport hazard class(es)

Hazard identification number	23
Class	2
Classification code	2F

14.4. Packing group

Packing group	
Labels	2.1 (+13)

14.5. Environmental hazards

Environmentally hazardous substance mark	no

14.6. Special precautions for user

Special provisions	662
Limited quantities	none.

Inland waterways (ADN)

14.1. UN number

UN number	1036

14.2. UN proper shipping name

Proper shipping name	Ethylamine

14.3. Transport hazard class(es)

Class	2
Classification code	2F

14.4. Packing group

Packing group	
Labels	2.1

14.5. Environmental hazards

Environmentally hazardous substance mark	no

14.6. Special precautions for user

Special provisions	662
Limited quantities	none.

Sea (IMDG/IMSBC)

14.1. UN number

UN number	1036

14.2. UN proper shipping name

Proper shipping name	Ethylamine

14.3. Transport hazard class(es)

Class	2.1

14.4. Packing group

Packing group	
Labels	2.1

14.5. Environmental hazards

Marine pollutant	-
Environmentally hazardous substance mark	no

14.6. Special precautions for user

Special provisions	912
Limited quantities	none.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Annex II of MARPOL 73/78	Not applicable

Air (ICAO-TI/IATA-DGR)

14.1. UN number

UN number	1036

14.2. UN proper shipping name

Proper shipping name	Ethylamine

14.3. Transport hazard class(es)

Class	2.1

14.4. Packing group

Packing group	
Labels	2.1

14.5. Environmental hazards

Environmentally hazardous substance mark	no

14.6. Special precautions for user

Special provisions	A1
Passenger and cargo transport: limited quantities: maximum net quantity per packaging	

SECTION 15: Regulatory information

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

European legislation:

VOC content Directive 2010/75/EU

VOC content	Remark
100 %	

REACH Annex XVII - Restriction

Subject to restrictions of Annex XVII of Regulation (EC) No. 1907/2006: restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles.

	Designation of the substance, of the group of substances or of the mixture	Conditions of restriction
· ethylamine · ethylamine	Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to that Regulation or not.	1. Shall not be used, as substance or as mixtures in aerosol dispensers where these aerosol dispensers are intended for supply to the general public for entertainment and decorative purposes such as the following: — metallic glitter intended mainly for decoration, — artificial snow and frost, — “whoopee” cushions, — silly string aerosols, — imitation excrement, — horns for parties, — decorative flakes and foams, — artificial cobwebs, — stink bombs.2. Without prejudice to the application of other Community provisions on the classification, packaging and labelling of substances, suppliers shall ensure before the placing on the market that the packaging of aerosol dispensers referred to above is marked visibly, legibly and indelibly with: “For professional users only”.3. By way of derogation, paragraphs 1 and 2 shall not apply to the aerosol dispensers referred to Article 8 (1a) of Council Directive 75/ 324/EEC.4. The aerosol dispensers referred to in paragraphs 1 and 2 shall not be placed on the market unless they conform to the requirements indicated.

National legislation The Netherlands

Waste identification (the Netherlands)	LWCA (the Netherlands): KGA category 06
Waterbezwaarlijkheid	7

National legislation Germany

Schwangerschaft Gruppe	D
WGK	1; Classification water polluting in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 27 July 2005 (Anhang 2)
TA-Luft	5.2.5; I
	5.2.5

National legislation France

No data available

National legislation Belgium

No data available

Other relevant data

No data available

15.2. Chemical safety assessment

A chemical safety assessment has been performed.

SECTION 16: Other information

Full text of any H-statements referred to under headings 2 and 3:

H220 Extremely flammable gas.
H280 Contains gas under pressure; may explode if heated.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.

(*) = INTERNAL CLASSIFICATION BY BIG

PBT-substances = persistent, bioaccumulative and toxic substances

CLP (EU-GHS) Classification, labelling and packaging (Globally Harmonised System in Europe)

The information in this safety data sheet is based on data and samples provided to BIG. The sheet was written to the best of our ability and according to the state of knowledge at that time. The safety data sheet only constitutes a guideline for the safe handling, use, consumption, storage, transport and disposal of the substances/preparations/mixtures mentioned under point 1. New safety data sheets are written from time to time. Only the most recent versions may be used. Old versions must be destroyed. Unless indicated otherwise word for word on the safety data sheet, the information does not apply to substances/preparations/mixtures in purer form, mixed with other substances or in processes. The safety data sheet offers no quality specification for the substances/preparations/mixtures in question. Compliance with the instructions in this safety data sheet does not release the user from the obligation to take all measures dictated by common sense, regulations and recommendations or which are necessary and/or useful based on the real applicable circumstances. BIG does not guarantee the accuracy or exhaustiveness of the information provided and cannot be held liable for any changes by third parties. This safety data sheet is only to be used within the European Union, Switzerland, Iceland, Norway and Liechtenstein. Any use outside of this area is at your own risk. Use of this safety data sheet is subject to the licence and liability limiting conditions as stated in your BIG licence agreement or when this is failing the general conditions of BIG. All intellectual property rights to this sheet are the property of BIG and its distribution and reproduction are limited. Consult the mentioned agreement/conditions for details.