

MONOETHANOLAMINE 99%

ENVIRONMENTAL PRECAUTIONS

Prevent entry into drains. Avoid discharge onto the ground. Avoid release to the environment.

SPILL CLEAN UP METHODS

Stop leak if possible without risk. Ventilate well. Dilute with copious amounts of water. Provide ventilation and confine spill. Do not allow runoff to sewer. Collect and reclaim or dispose in sealed containers in licensed waste. Avoid contact with skin or inhalation of spillage, dust or vapour. Clean-up personnel should use respiratory and/or liquid contact protection.

7 HANDLING AND STORAGE

USAGE PRECAUTIONS

Keep away from heat, sparks and open flame. Avoid spilling, skin and eye contact. Ventilate well, avoid breathing vapours. Use approved respirator if air contamination is above accepted level. Avoid acids, moisture, and combustible materials. Wear full protective clothing for prolonged exposure and/or high concentrations.

STORAGE PRECAUTIONS

Flammable/combustible - Keep away from oxidisers, heat and flames. May attack some plastics, rubber and coatings. Store in tightly closed original container in a cool, dry well-ventilated place. Protect from light, including direct sunrays. Unsuitable containers: copper, zinc, aluminium, copper alloy, zinc alloy, aluminium alloy.

STORAGE CLASS

Chemical storage.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Name	Std	LT - ppm	LT - mg/m3	ST - ppm	ST - mg/m3
2-	OES	3 ppm	7.6 mg/m3	6 ppm	15 mg/m3

INGREDIENT COMMENTS

OES = Occupational Exposure Standard.

PROTECTIVE EQUIPMENT



PROCESS CONDITIONS

Use engineering controls to reduce air contamination to permissible exposure level. Provide eyewash station.

ENGINEERING MEASURES

Provide adequate general and local exhaust ventilation.

RESPIRATORY EQUIPMENT

If ventilation is insufficient, suitable respiratory protection must be provided. Chemical respirator with organic vapour cartridge.

HAND PROTECTION

Use suitable protective gloves if risk of skin contact. Use protective gloves made of: Rubber, neoprene or PVC.

EYE PROTECTION

Wear approved, tight fitting safety glasses where splashing is probable.

OTHER PROTECTION

Wear appropriate clothing to prevent any possibility of liquid contact and repeated or prolonged vapour contact.

HYGIENE MEASURES

DO NOT SMOKE IN WORK AREA! Wash at the end of each work shift and before eating, smoking and using the toilet. Wash promptly if skin becomes wet or contaminated. Promptly remove any clothing that becomes contaminated. When using do not eat, drink or smoke.

9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Liquid Clear Hygroscopic Viscous		
COLOUR	Colourless Yellow		
ODOUR	Mild (or faint). Ammonia		
SOLUBILITY	Completely soluble in water Soluble in Benzene. Chloroform		
MOL. WEIGHT	61.10	BOILING POINT (°C)	~ 170 760 mm Hg
MELTING POINT (°C)	~ 10	RELATIVE DENSITY	1.02 20
VAPOUR DENSITY (air=1)	2.11	VAPOUR PRESSURE	0.27 mbar 20
EVAPORATION RATE	0.02 BuAc=1	FLASH POINT (°C)	96 PM Closed cup.

10 STABILITY AND REACTIVITY

STABILITY

Stable under normal temperature conditions and recommended use.

CONDITIONS TO AVOID

Avoid heat, flames and other sources of ignition. Avoid contact with acids and alkalis. Avoid exposure to high temperatures or direct sunlight.

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MATERIALS TO AVOID

Acids, oxidising. Acids, non-oxidising. Strong oxidising substances.

HAZARDOUS DECOMPOSITION PRODUCTS

Toxic gases/vapours/fumes of: Oxides of: Nitrogen. Ammonia or amines.

11 TOXICOLOGICAL INFORMATION

TOXIC DOSE 1 - LD 50 2100 mg/kg (oral rat)

INHALATION

Prolonged inhalation of high concentrations may damage respiratory system. Vapour may irritate respiratory system or lungs.

INGESTION

Swallowing concentrated chemical may cause severe internal injury. May cause chemical burns in mouth and throat. May cause chemical burns in mouth, oesophagus and stomach.

SKIN CONTACT

Strongly irritating. Prolonged contact may cause burns.

EYE CONTACT

Extreme irritation of eyes and mucous membranes, including burning and tearing. Risk of serious damage to eyes.

HEALTH WARNINGS

Gas or vapour is toxic or extremely irritating even on brief exposure. This chemical may cause skin/eye irritation and burns (corrosive).

Repeated exposure may cause chronic eye irritation. Swallowing concentrated chemical may cause severe internal injury.

ROUTE OF ENTRY

Inhalation. Ingestion. Skin and/or eye contact.

TARGET ORGANS

Eyes. Kidneys. Liver. Respiratory system, lungs. Skin.

MEDICAL SYMPTOMS

Extreme irritation of eyes and mucous membranes, including burning and tearing. Pharyngitis (inflammation of back of mouth). General respiratory distress, unproductive cough. Severe skin irritation.

MEDICAL CONSIDERATIONS

Skin disorders and allergies. Splash in eye requires examination by eye specialist.

12 ECOLOGICAL INFORMATION

LC 50, 96 Hrs, FISH mg/l 150 Rainbow Trout

EC 50, 48 Hrs, DAPHNIA, mg/l 33

MOBILITY

Dissolves in water

BIOACCUMULATION

Does not bioaccumulate significantly

DEGRADABILITY

Readily biodegradable

13 DISPOSAL CONSIDERATIONS

GENERAL INFORMATION

Waste is classified as special waste. Contaminated packages must be completely emptied before sending away for laundering and re-use

DISPOSAL METHODS

Dispose of waste and residues in accordance with local authority requirements. Confirm disposal procedures with environmental engineer and local regulations.

14 TRANSPORT INFORMATION



PROPER SHIPPING NAME	ETHANOLAMINE OR ETHANOLAMINE SOLUTION		
UN NO. ROAD	2491	ADR CLASS NO.	8
ADR	Class 8: Corrosive substances.	ADR PACK GROUP	CLASS
HAZARD NO. (ADR)	80 Corrosive or slightly corrosiv substance.	HAZARD No. (ADR)	80
ADR LABEL NO.	8	HAZCHEM CODE	2X
CEFIC TEC(R) NO.	80G15	RID CLASS NO.	8
RID PACK GROUP	III	UN NO. SEA	2491

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IMDG	8	IMDG PACK GR.	CLASS
EMS	8-05	MARINE POLLUTANT	No.
UN NO. AIR	2491	ICAO CLASS	8
AIR PACK GR.	III		

15 REGULATORY INFORMATION

LABELLING



Corrosive



Harmful

CONTAINS

2-

RISK PHRASES

R34	Causes burns.
R37	Irritating to respiratory system.
R20/21/22	Harmful by inhalation, in contact with skin and if swallowed.

SAFETY PHRASES

S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S45	In case of accident or if you feel unwell, seek medical advice immediately (show label where possible).
S51	Use only in well-ventilated areas.
S24/25	Avoid contact with skin and eyes.
S36/37/39	Wear suitable protective clothing, gloves and eye/face protection.
S60	This material and its container must be disposed of as hazardous waste.

UK REGULATORY REFERENCES

Health and Safety at Work Act 1974. The Control of Substances Hazardous to Health Regulations 1988. Chemicals (Hazard Information & Packaging) Regulations.

ENVIRONMENTAL LISTING

Environmental Protection Act 1990 Special Waste Regulations 1996

EU DIRECTIVES

Dangerous Substance Directive 67/548/EEC. Dangerous Preparations Directive 1999/45/EEC.

APPROVED CODE OF PRACTICE

Safety Data Sheets for Substances and Preparations. Classification and Labelling of Substances and Preparations Dangerous for Supply.

GUIDANCE NOTES

Occupational Exposure Limits EH40.

16 OTHER INFORMATION

REVISION DATE	22/08/2005
REV. NO./REPL. SDS GENERATED	ISSUE NO2
SDS NO.	7050

SAFETY DATA SHEET STATUS

Approved.

RISK PHRASES IN FULL

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R34	Causes burns.
R37	Irritating to respiratory system.

DISCLAIMER

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.