



MATERIAL SAFETY DATA SHEET

PRODUCT NAME: DIETHANOLAMINE

CAS Number: 111-42-2

1. IDENTIFICATION:

Product Code : 90390, 96069, 96531, 98011

Company Name : ADVENT CHEMBIO PRIVATE LIMITED

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2. HAZARDS IDENTIFICATION:**Hazard classification****Health hazards**

Acute toxicity, Oral : Category 4

Skin irritation : Category 2

Serious eye damage : Category 1

Reproductive toxicity : Category 1

Specific target organ toxicity - repeated exposure, Oral : Category 2 (Kidney, Liver, Blood)

Labels elements**Hazard symbol****Signal word**

: Danger

Hazard statement

Harmful if swallowed.
Causes skin irritation.
Causes serious eye damage.

: Suspected of damaging fertility. Suspected of damaging the unborn child.
May cause damage to organs (Kidney, Liver, Blood) through prolonged or repeated exposure if swallowed.

Precautionary statement**Prevention**

: Obtain special instructions before use.
Do not breathe dust/ fume/ gas/ mist/ vapors/ spray. Do not handle until all safety precautions have been read and understood.
Wear protective gloves/ protective clothing/ eye protection/ face protection.
Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
Keep container tightly closed. Ground/ bond container and receiving equipment.



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Response	:	Use explosion-proof electrical/ ventilating/ lighting/ equipment.
		Use only non-sparking tools. Take precautionary measures against static discharge.
Storage	:	IF exposed or concerned: Get medical advice/ attention.
		IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
		IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
		IF INHALED: Remove person to fresh air and keep comfortable for breathing.
		IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
Disposal	:	Store in a dry & well-ventilated place. Keep container tightly closed. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
		Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.
Other hazards which do not result in GHS classification	:	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.
		Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.
		Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

3. COMPOSITION/ INFORMATION ON INGREDIENTS:

Ingredient	CAS Number	Percent	Hazardous
Diethanolamine	111-42-2	NLT 98.0%	Yes

4. FIRST AID MEASURES:

General information	:	Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.
Ingestion	:	Call a physician or poison control center immediately. Rinse mouth. Do NOT induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
	:	Move to fresh air. Call a physician or poison control center immediately. If breathing stops, provide artificial respiration. If breathing is difficult, give oxygen.
Inhalation	:	Get medical attention if symptoms persist.
Skin contact	:	Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.
Eye contact	:	Immediately flush with plenty of water for at least 15 minutes. Immediately call in ophthalmologist. If easy to do, remove contact lenses. Get medical attention.
Most important symptoms/effects, acute and delayed	:	The most important known symptoms and effects are described in the labelling.



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Indication of immediate
medical attention and : No data available
special treatment needed

5. FIRE FIGHTING MEASURES:**General information****Suitable (and unsuitable) extinguishing media**

Suitable extinguishing media : Water, Foam, Carbon dioxide (CO₂), Dry powder

Unsuitable extinguishing media : For this substance/mixture no limitations of extinguishing agents are given.

Specific hazards arising from the chemical : Carbon oxides
Nitrogen oxides (NO_x)
Combustible.
Fire may cause evolution of: nitrous gases, nitrogen oxides. Vapors are heavier than air and may spread along floors. Forms explosive mixtures with air on intense heating. Development of hazardous combustion gases or vapours possible in the event of fire.

Special protective equipment and precautions for firefighters

Special firefighting procedures : Fight fire from a protected location. Move containers from fire area if you can do so without risk.

Special protective equipment for fire-fighters : Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. ACCIDENTAL RELEASE MEASURES:

Personal precautions, protective equipment and emergency procedures : ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
Avoid breathing mists or vapors. Keep upwind. Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep unauthorized personnel away.

Methods and material for containment and cleaning up : Eliminate all ignition sources if safe to do so. Use only non-sparking tools. Take precautionary measures against static discharges. Stop leak if possible without any risk.
Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. Dike far ahead of larger spill for later recovery and disposal.

Notification Procedures : Prevent entry into waterways, sewer, basements or confined areas. Inform authorities if large amounts are involved.

Environmental precautions : Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. HANDLING AND STORAGE:

Precautions for safe handling : Do not handle until all safety precautions have been read and understood. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharges. Ground/bond container and receiving equipment. Use explosion-proof



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electrical/ventilating/lighting/equipment. Use only non-sparking tools. Wear protective gloves/protective clothing/eye, protection/ face protection. Avoid contact with eyes, skin, and clothing. Do not breathe mist or vapor. Use only with adequate ventilation. Wash hands thoroughly after handling.

Conditions for safe storage,
including any
incompatibilities

Keep away from food, drink and animal feeding stuffs. Keep container tightly closed in a dry, well-ventilated place.

8. EXPOSURE CONTROLS PERSONAL PROTECTION:**Control parameters**

Application Area	Routes of exposure	Health effect	Value
Worker DNEL, long- term	inhalation	Systemic effects	1 mg/m3
Worker DNEL, long-term	dermal	Systemic effects	NA
Consumer DNEL, long-term	inhalation	Systemic effects	0,25 mg/m3
Consumer DNEL, long-term	dermal	Systemic effects	NA
Consumer DNEL, long-term	oral	Systemic effects	NA

Compartment	Value
Fresh water	0,0022 mg/l
Sea water	0,00022 mg/l
Aquatic intermittent release	0,022 mg/l
Fresh water sediment	0,019 mg/kg
Sea sediment	0,0019 mg/kg
Soil	0,00108 mg/kg
Sewage treatment plant	100 mg/l

Appropriate engineering

controls

: No data available

Individual protection measures, such as personal protective equipment

General information

: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area. Use explosion-proof ventilation equipment.

Eye/face protection

: Wear safety glasses with side shields (or goggles).

Hand protection

: Chemical resistant gloves.

Other

: Wear suitable protective clothing.

Respiratory protection

: In case of inadequate ventilation use suitable respirator. Chemical respirator with organic vapor cartridge.
Recommended Filter type: Filter A-(P2)

Hygiene measures

: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and



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protective equipment to remove contaminants. Provide eyewash station and safety shower.
Avoid contact with eyes, skin, and clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES:

Appearance	: Clear, colourless hygroscopic viscous liquid.
Odor	: Ammoniacal
Solubility	: Completely miscible with water and ethanol. Slightly miscible with ether. Insoluble in benzene.
Formula	: $(\text{HOCH}_2\text{CH}_2)_2\text{NH}$
Molecular Weight	: 105.14 g/mol
Specific Gravity	: 1.080 - 1.100 g/cm ³ at 25°C
pH	: NLT 10
% Volatiles by volume @ 21C (70F)	: No data available
Boiling Point	: 217°C
Melting Point	: 27°C
Flash Point	: 138 °C
Vapor Density (Air=1)	: 3.63
Vapor Pressure (mm Hg)	: 180 °C
Evaporation Rate (BuAc=1)	: No data available

10. STABILITY AND REACTIVITY:

	Forms explosive mixtures with air on intense heating. A range from approx. 15 Kelvin below the flash point is to be rated as critical.
Reactivity	: The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.
Chemical stability	: Material is stable under ambient conditions..
Possibility of hazardous reactions	: Exothermic reaction with: anhydrides, Oxidizing agents, acids, Isocyanates, Halogenated compounds, Peroxides, phenols, acid halides, and strong reducing agents Caution! In contact with nitrites, nitrates, nitrous acid possible liberation of nitrosamines
Conditions to avoid	: Strong heating.
Incompatible materials	: Bronze, Copper, Copper alloys, brass, Zinc, zinc alloys, Strong oxidizing agents
Hazardous decomposition products	: In the event of fire: see section 5



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11. TOXICOLOGICAL INFORMATION:

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral Product	: LD 50 (Rat): 1.600 mg/kg
Dermal Product	: No data available.
Inhalation Product	: No data available.
Repeated dose toxicity Product	: No data available.
Skin corrosion/irritation Product	: irritation
Serious eye damage/eye irritation Product	: Causes serious eye damage.
Respiratory or skin sensitization Product	: Maximization Test - Guinea pig, Result: negative
Carcinogenicity Product	: No data available.
IARC Monographs on the Evaluation of Carcinogenic Risks to Humans	: No data available.
US. National Toxicology Program (NTP) Report on Carcinogens	: No data available.
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	: No data available.
Germ cell mutagenicity	
In vitro Product	: No data available.
Reproductive toxicity Product	: Suspected of damaging the unborn child. Suspected of damaging fertility.
Specific target organ toxicity - single exposure Product	: No data available.
Specific target organ toxicity - repeated exposure Product	: Ingestion - May cause damage to organs through prolonged or repeated exposure. - Kidney, Liver, Blood
Aspiration hazard Product	: No data available.
Other effects	: None known.



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12. ECOLOGICAL INFORMATION:**Ecotoxicity****Acute hazards to the aquatic environment****Fish Product**

: LC 50 Oncorhynchus mykiss (rainbow trout), - 460 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates

: EC 50 - Ceriodaphnia dubia (water flea) - 30,1 mg/l - 48 h

Toxicity to algae

: ErC 50 - Pseudokirchneriella subcapitata (green algae) - 9,5 mg/l - 96 h

Toxicity to bacteria

: EC 10 - activated sludge - > 1.000 mg/l - 30 min

Chronic hazards to the aquatic environment**Toxicity to daphnia and other aquatic invertebrates**

: semi-static test EC10 - Daphnia magna (Water flea) - 1,05 mg/l - 21 d

Toxicity to Aquatic Plants

: No data available.

Product:**Persistence and degradability****Biodegradation Product**

: Readily biodegradable.

BOD/COD ratio Product: Biochemical Oxygen Demand (BOD) - 885 mg/g
Chemical Oxygen Demand (COD) - 1.352 mg/g**Bioaccumulative potential****Bioconcentration factor (BCF) Product**

: No data available on bioaccumulation.

Partition coefficient n-octanol / water (log Kow) Product

: No data available.

Product**Mobility in soil**

: No data available.

Other adverse effects**Additional ecological information Biological effects:** Harmful effect due to pH shift. When discharged properly, no impairments in the function of adapted biological wastewater treatment plants are to be expected. Discharge into the environment must be avoided.**13. DISPOSAL CONSIDERATION:****Disposal instructions**

: Discharge, treatment, or disposal may be subject to national, state, or local laws. Disposal recommendations are based on uncontaminated material.

Contaminated packaging

: Since emptied containers retain product residue, follow label warnings even after container is emptied.



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14. TRANSPORT INFORMATION:

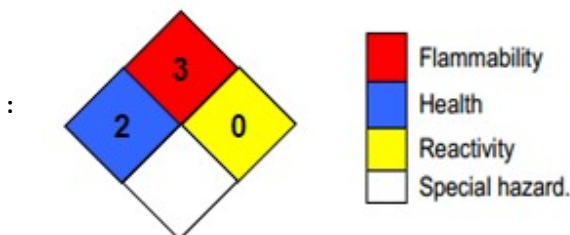
	UN No.	UN proper shipping name	Hazard Class(es)	Packaging group	Marine Pollutant
ADR/RID	NA	Diethanolamine		Not dangerous goods	
IMDG	NA	Diethanolamine		Not dangerous goods	
IATA	NA	Diethanolamine		Not dangerous goods	

15. REGULATORY INFORMATION:

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.
Safety, health and environmental regulations/legislation specific for the substance or mixture
No Data Available.

16. OTHER INFORMATION:

NFPA Hazard ID



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

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