

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: DIETHYLAMINE

CAS Number: 109-89-7

1. IDENTIFICATION:

Product Code : 91516, 96515, 99042, 98721, 98133

Company Name : ADVENT CHEMBIO PRIVATE LIMITED

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

Flammable liquids : Category 2

Health hazards

Acute toxicity : Category 3 (Toxic if swallowed)

Acute toxicity : Category 4 (Harmful if inhaled)

Acute toxicity : Category 3 (Toxic in contact with skin)

Skin corrosion : Sub-category 1A

Serious eye damage : Category 1

**Specific target organ
toxicity - single exposure,
Respiratory system** : Category 3

Labels elements :

Hazard symbol :



Signal word : Danger

Hazard statement : Highly flammable liquid and vapor.
Toxic if swallowed or in contact with skin.
Causes severe skin burns and eye damage.
Harmful if inhaled.
May cause respiratory irritation.

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.

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- 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.
 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
 Use only non-sparking tools. Take precautionary measures against static discharge.
- Response** : 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.
- Storage** : 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.
- Disposal** : 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.

3. COMPOSITION/ INFORMATION ON INGREDIENTS:

Ingredient	CAS Number	Percent	Hazardous
Diethylamine	109-89-7	NLT 99.0%	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.
- Inhalation** : Move to fresh air. Call a physician or poison control center immediately. If breathing stops, provide artificial respiration. If breathing is difficult, give oxygen.
 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. Immediately call in ophthalmologist
- Eye contact** : Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.
- If swallowed** : Give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible. Do not attempt to neutralise.
- 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
special treatment needed : No data available

5. FIRE FIGHTING MEASURES:

General information : Flammable liquid and vapor.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing
media : Carbon dioxide (CO₂), Foam, 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. Pay attention to flashback.
Vapors are heavier than air and may spread along floors.
Development of hazardous combustion gases or vapours possible in the event of fire.
Forms explosive mixtures with air at ambient temperatures.

Special protective equipment and precautions for firefighters

Special firefighting
procedures : Use water spray to keep fire-exposed containers cool. Water may be ineffective in fighting
the fire. 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
electrical/ventilating/lighting/equipment. Use only non-sparking tools. Wear protective

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Conditions for safe storage, including any incompatibilities : 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.

Keep away from food, drink and animal feeding stuffs. Keep container tightly closed in a dry, well-ventilated place. Ground container and transfer equipment to eliminate static electric sparks. Comply with all national, state, and local codes pertaining to the storage, handling, dispensing, and disposal of flammable liquids.

8. EXPOSURE CONTROLS PERSONAL PROTECTION:

Control parameters

Ingredients with workplace control parameters

Derived No Effect Level (DNEL)

Application Area	Routes of exposure	Health effect	Value
Worker DNEL, longterm	inhalation	Local effects	15 mg/m3
Worker DNEL, acute	inhalation	Local effects	30 mg/m3

Predicted No Effect Concentration (PNEC)

Compartment	Value
Fresh water	0.04 mg/l
Sea water	0.004 mg/l
Aquatic intermittent release	0.046 mg/l
Fresh water sediment	0.48 mg/kg
Sea sediment	0.048 mg/kg
Soil	0.0723 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 : Required when vapours/aerosols are generated.
Recommended Filter type: Filter type AX

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 protective equipment to remove contaminants. Provide eyewash station and safety shower.

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Avoid contact with eyes, skin, and clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES:

Appearance	: Clear, colorless liquid
Odor	: Ammonical odor.
Solubility	: Miscible in water.
Formula	: C ₄ H ₁₁ N
Molecular Weight	: 73.14 g/mol
Density	: 0.707 g/cm ³ at 25°C
Relative density	: 0.71 at 20 °C
pH	: No data available
% Volatiles by volume @ 21C (70F)	: No data available
Boiling Point	: 55°C
Melting Point	: -50°C
Flash Point	: -26 °C
Autoignition temperature	: 312 °C at 1.013 hPa
Vapor Pressure (mm Hg)	: 316 @ 25°C
Evaporation Rate (BuAc=1)	: No data available

10. STABILITY AND REACTIVITY:

Reactivity	: Vapors may form explosive mixture with air.
Chemical stability	: Material is stable under ambient conditions..
Possibility of hazardous reactions	: Caution! In contact with nitrites, nitrates, nitrous acid possible liberation of nitrosamines! Exothermic reaction with: nitrites, Strong acids, Acid anhydrides, Alcohols, Aldehydes, Ketones, Esters, Halogenated hydrocarbon, phenols, Mercury, Risk of ignition or formation of inflammable gases or vapours with: Oxidizing agents Violent reactions possible with: Lead, Copper, Copper alloys, Zinc, zinc alloys, Tin, Iron, Mild steel.
Conditions to avoid	: Warming.
Incompatible materials	: Aldehydes, Alcohols, Dicyanofurazan, Ketones, phenols, Acids, Halogenated hydrocarbon, Oxidizing agents, Epoxides.
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): 100 mg/kg
Dermal Product	: LD 50 (Rabbit): 582 mg/kg
Inhalation Product	: LC 50 (Rat): 17.11 mg/l - vapor
Repeated dose toxicity Product	: No data available.
Skin corrosion/irritation Product	: Causes severe burns.
Serious eye damage/eye irritation Product	: Irritating to eyes.
Respiratory or skin sensitization Product	: Causes burns.
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	Test Type: In vitro mammalian cell gene mutation test Test system: mouse lymphoma cells : Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: negative
Reproductive toxicity Product	: No data available.
Specific target organ toxicity - single exposure Product	: Inhalation - May cause respiratory irritation. - Respiratory Tract
Specific target organ toxicity - repeated exposure Product	: No data available.
Aspiration hazard Product	: No data available.
Other effects	: No data available.

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12. ECOLOGICAL INFORMATION:

Ecotoxicity

Acute hazards to the aquatic environment

- Toxicity to fish** : semi-static test LC50 - Oryzias latipes - 27 mg/l - 96 h
- Toxicity to daphnia and other aquatic invertebrates** : semi-static test LC50 - Ceriodaphnia dubia (water flea) - 4,6 mg/l - 48 h
- Toxicity to algae** : static test EC50 - Pseudokirchneriella subcapitata - 54 mg/l - 72 h
- Toxicity to bacteria** : static test EC10 - activated sludge - > 1.000 mg/l - 30 min

Chronic hazards to the aquatic environment

- Toxicity to daphnia and other aquatic invertebrates** : NOEC - Daphnia magna (Water flea) - 4,2 mg/l - 21 d
- LC50 - Daphnia magna (Water flea) - 5,7 mg/l - 21 d
- Persistence and degradability**

- Biodegradation Product** : aerobic - Exposure time 28 d
- Result: 68 - 70 % - Readily biodegradable

- Theoretical oxygen demand** : 3.620 mg/g

Bioaccumulative potential

- Bioconcentration factor (BCF) Product** : No data available on bioaccumulation.

- Partition coefficient n-octanol / water (log Kow) Product** : No data available.

- Mobility in soil** : No data available.

- Other adverse effects** : No data available.

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.

14. TRANSPORT INFORMATION:

	UN No.	UN proper shipping name	Hazard Class(es)	Packaging group	Marine Pollutant
ADR/RID	UN 1154	Diethylamine	3 (8)	II	No
IMDG	UN 1154	Diethylamine	3 (8)	II	No
IATA	UN 1154	Diethylamine	3 (8)	II	No

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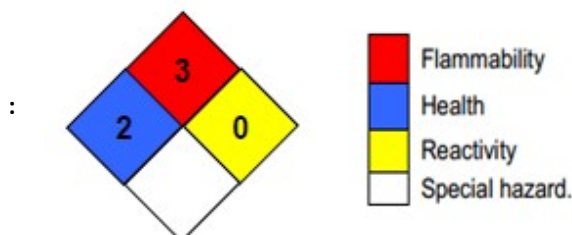
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15. REGULATORY INFORMATION:

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

Issue Date : 06/02/2024

Version : 01

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