

GPS Safety Summary

Substance Name:

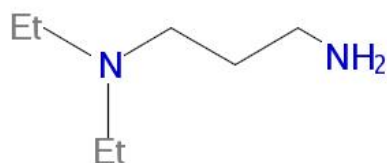
3-aminopropyldiethylamine

1. General Statement

3-aminopropyldiethylamine is a colourless liquid miscible in water. It is an amine commonly called DEAPA. It is a flammable liquid and a corrosive product.

2. Chemical Identity

Name:	3-aminopropyldiethylamine
Brand name:	DEAPA
Chemical name (IUPAC):	N,N-diethylpropane-1,3-diamine
CAS number(s):	104-78-9
EC number:	203-236-4
Molecular formula:	C ₇ H ₁₈ N ₂
Structure:	



3. Use and applications

3-aminopropyldiethylamine is mainly used in the following applications:

- Additive in formulation
- Use as intermediate in chemical synthesis
- Use as co-monomer or crosslinker in polymerisation reactions

4. Physical / Chemical properties

3-aminopropyldiethylamine is a flammable liquid organic substance having the following characteristics and physico-chemical properties:

Property	Value
Physical state	Liquid at 20°C and 1013 hPa
Colour	Colourless
Odour	Ammoniacal
Molecular weight	130.23 g/mol
Density	0.823 at 20°C

Vapour pressure	1.996 hPa at 24.2°C
Freezing / boiling points	-50°C / 170°C at 1013 hPa
Flammability	Flammable liquid and vapour
Flash point	51.5°C (closed cup)
Self-ignition temperature	246°C at 1013 hPa
Explosive / oxidizing properties	Not relevant based on its structure
Water solubility	completely soluble at 20°C
Dissociation constant (pK _a)	ca. 10 at 25°C
Octanol-water partition coefficient (Log K _{ow})	0.36 at 25°C

5. Health Effects

Effect Assessment	Result
Acute Toxicity Oral / inhalation / dermal	Harmful by oral route. Low toxicity by inhalation of an analogue substance at the saturated vapour concentration. Toxic by skin contact
Irritation / corrosion Skin / eye/ respiratory tract	Corrosive to the skin. Severely irritating to the eyes. Irritating to the respiratory tract
Sensitisation	Not a skin sensitizer
Toxicity after repeated exposure Oral / inhalation / dermal	An oral study on an analogue substance did not suggest a specific systemic toxicity following repeated exposure
Genotoxicity / Mutagenicity	No evidence of genetic toxicity
Carcinogenicity	Not anticipated to cause cancer under conditions of normal use
Reproductive / Developmental Toxicology	A study on an analogue substance did not suggest toxic effects on the fertility and the development

6. Environmental Effects

The potential of 3-aminopropyldiethylamine for bioaccumulation is low. This product will not persist in the environment. It is however harmful to aquatic organisms.

Effect Assessment	Result
Aquatic Toxicity	Harmful to aquatic life

Fate and behaviour	Result
Biodegradation	Readily biodegradable
Bioaccumulation potential	Not expected to bioaccumulate
PBT / vPvB conclusion	Not considered as PBT* or vPvB**

*: Persistent, Bioaccumulative and Toxic (PBT)

** : very Persistent and very Bioaccumulative (vPvB)

7. Exposure

7.1 Human health

3-aminopropyldiethylamine is manufactured, used and formulated within industrial settings.

The primary routes of industrial exposure of 3-aminopropyldiethylamine (DEAPA) are skin contact and inhalation, ingestion is not an anticipated route of exposure. Workers may be exposed during cleaning, maintenance, transfer, sampling and analysis.

Based on the risk assessment, the exposure can be kept at a safe level (strictly below occupational exposure limits, when applied) when activities are carried out under conditions recommended in the Extended Safety Data Sheet (see Chap. 8 and Exposure Scenarios).

Procedures, controls, suitable collective and personal risk management measures, good industrial hygiene practices and risk communication through appropriate training of workers should be implemented.

In case of exposure to the undiluted substance, workers should follow the first aid measures recommended in the Safety Data Sheet.

7.2 Environment

The assessment of the environmental exposure was made for all the uses and resulted life cycle stages of the substance from the manufacture to the waste stage.

DEAPA is manufactured and used in continuous or batch processes within industrial settings.

Based on the risk assessment, environmental exposure can be kept at a safe level when activities are carried out under conditions recommended in the extended Safety Data Sheet (see Chap. 6, and Exposure Scenarios).

All industrial aqueous releases that may contain the substance must be treated to avoid any exposure to the environment.

Disposal, treatment or recycling of industrial waste must comply with chap. 13 of the Safety Data Sheet and applicable regulations to preserve the environment.

Procedures, controls and risk management measures should be implemented on industrial manufacturing and application sites; effluents that may contain the substance must be treated to avoid any exposure to the environment.

8. Risk Management recommendations

Human health measures		
Organizational	Collect the latest available Safety Data Sheet. Implement good basic standards of occupational health. Ensure operatives are well informed of the hazards and trained to minimise exposures. Handle and store according to the indications of the Safety Data Sheet.	
Engineering controls	Provide appropriate local exhaust ventilation at points of emission. Ensure that eye- and handwash stations and safety showers are close to workstation locations.	
Protection	Eye/Face protection:	Safety glasses with side-shields
	Skin and body protection:	At the workplace : Protective clothing (cotton) Intervention at incident: Waterproof suit
	Hand protection:	Gloves (PVC, neoprene) According to permeation index EN 374: 1 (time elapsed > 10 mins)

Protection	Respiratory protection:	Low concentrations or short activity: Mask with specific cartridge (Recommended Filter type: A2B2E2K2P3) High concentrations or prolonged activity: Self contained Breathing Apparatus
-------------------	--------------------------------	---

Environment protective measures
Do not release into the environment. Do not let product enter drains. Use waste water treatment systems. Do not spread sludge to soil. Elimination: destroy the product by incineration (in accordance with local and national regulations) (see chap. 13 of the Safety Data Sheet).

9. Regulatory Information / Classification and Labelling



9.1 Regulatory Information


This substance has been registered under:

- EU Regulation EC 1907/2006 (REACH)

9.2 Classification and labelling

Under GHS substances are classified according to their physical, health, and environmental hazards. The hazards are communicated via specific labels and the eSDS. GHS attempts to standardize hazard communication so that the intended audience (workers, consumers, transport workers, and emergency responders) can better understand the hazards of the chemicals in use. Substances registered for REACH are classified according to CLP (EC) 1272/2008, implementation of the GHS in the European Union.

Classification	
According to REGULATION (EC) no 1272/2008:	
<ul style="list-style-type: none"> — Flammable liquids: Category 3 — Acute toxicity – Oral: Category 4 — Acute toxicity – Dermal: Category 3 — Skin corrosion – Category 1B* (1A based on experimental data) — Serious eye damage: Category 1 — Skin sensitisation – Category 1* (not a skin sensitizer based on experimental data) — Specific target organ toxicity - single exposure (inhalation): Category 3 	
* Harmonised classification (Annex VI of CLP)	
Signal word	
Danger	
Pictogram	
— GHS02: flame	
— GHS05: corrosion	

<ul style="list-style-type: none"> — GHS06: skull and crossbones 	
Hazard statement	
<ul style="list-style-type: none"> — H226: Flammable liquid and vapour. — H302: Harmful if swallowed. — H311: Toxic in contact with skin. — H314: Causes severe skin burns and eye damage. — H317: May cause an allergic skin reaction. — H335: May cause respiratory irritation. 	
Additional classification according to Globally Harmonized System (GHS)	
<ul style="list-style-type: none"> — Acute aquatic toxicity, Category 3, H402: Harmful to aquatic life. 	

10. Contact Information within Company

For further information on this substance or product safety summary in general, please contact:

- arkema-thiochem-reach-uses@arkema.com
- **ICCA portal where the GPS Safety Summary is posted:**
<http://www.icca-chem.org/en/Home/ICCA-initiatives/global-product-strategy/>

11. Date of Issues / Revision

- Date of issue: 2014/11/15
- Date of revision:

12. Disclaimer

The information contained in this paper is intended as advice only and whilst the information is provided in utmost good faith and has been based on the best information currently available, is to be relied upon at the user's own risk.

NO WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WARRANTY OF MERCHANTABILITY, OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, IS MADE CONCERNING THE INFORMATION PROVIDED HEREIN.

No liability will be accepted by ARKEMA for damages of any nature whatsoever resulting from the use of or reliance on the information.