

GPS Safety Summary

Substance Name:

Diisopropylamine

1. General Statement

Diisopropylamine is a colourless liquid miscible in water. It is an amine commonly called DIPA. It is a highly flammable liquid and a corrosive product.

2. Chemical Identity

Name:	Diisopropylamine
Brand names:	DIPA
Chemical name (IUPAC):	N-isopropylpropan-2-amine
CAS number(s):	108-18-9
EC number:	203-558-5
Molecular formula:	C ₆ H ₁₅ N
Structure:	



3. Use and applications

Diisopropylamine is mainly used as an intermediate for the synthesis of pharmaceuticals and pesticides. Another application is the use as reactive processing aid.

4. Physical / Chemical properties

Diisopropylamine is a highly flammable liquid organic substance having the following characteristics and physical–chemical properties:

Property	Value
Physical state	liquid at 20°C and 1013 hPa
Colour	colourless
Odour	strong, ammoniacal
Molecular weight	101.19 g/mol
Density	0.72 g/cm ³ at 20°C
Vapour pressure	93,33 hPa at 20°C 105,86 hPa at 25°C
Freezing / boiling points	-70°C / 83°C at 1013 hPa

Flammability	Highly flammable liquid and vapour
Flash point	-13.45°C
Self-ignition temperature	295°C at 1013 hPa
Explosive / oxidizing properties	Not relevant based on its structure
Water solubility	10 g/L at 20°C
Dissociation constant (pK _a)	11 at 20°C
Octanol-water partition coefficient (Log K _{ow})	0.4 at 20°C

5. Health Effects

Effect Assessment	Result
Acute Toxicity Oral / inhalation / dermal	Harmful by oral route, toxic by inhalation and of low toxicity by dermal route
Irritation / corrosion Skin / eye/ respiratory tract	Corrosive for the skin and the eyes and irritating for the respiratory tract
Sensitisation	Not a skin sensitizer
Toxicity after repeated exposure Oral / inhalation / dermal	Oral, dermal and inhalation studies did not suggest a significant systemic toxicity following repeated exposure
Genotoxicity / Mutagenicity	No evidence of genetic toxicity
Carcinogenicity	Studies with an analogue substances did not suggest a carcinogenic potential
Reproductive / Developmental Toxicology	Studies with analogue substances, did not suggest toxic effects on the fertility and the development

6. Environmental Effects

The potential of diisopropylamine for bioaccumulation is low. This product will persist in the environment. It is harmful to aquatic organisms with long lasting effects.

Effect Assessment	Result
Aquatic Toxicity	Harmful to aquatic organisms
Chronic Toxicity	Harmful to aquatic organisms with long lasting effects

Fate and behaviour	Result
Biodegradation	Not ready biodegradable
Other degradation (optional)	
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

The major use of diisopropylamine is as an intermediate handled under strictly controlled conditions as described in Article 18(3) of the REACH regulation.

For the other uses of diisopropylamine (not as intermediate handled under strictly controlled conditions), an exposure assessment and risk characterization has been carried out.

The primary routes of industrial exposure of diisopropylamine are skin contact and inhalation, ingestion is not 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 and 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 Safety Data Sheet.

7.2 Environment

Regarding the uses not as intermediate handled under strictly controlled conditions, the assessment of the environmental exposure is made for all the uses and resulted life cycle stage of the substance from the manufacture to the waste stage.

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 applicable regulations to preserve the environment.

Diisopropylamine 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).

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 hygiene. 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:	Polyvinylchloride – neoprene rubber, tested to EN374:1
	Respiratory protection:	Respirator if ventilation insufficient. Low concentrations or short activity: Mask with specific cartridge Recommended Filter type: K 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.		

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 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 2 – Acute toxicity – Oral: Category 4 – Acute toxicity – Inhalation: Category 3 – Skin corrosion: Category 1B – Serious eye damage: Category 1 – Specific target organ toxicity - single exposure (inhalation): Category 3 	
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"> — H225: Highly flammable liquid and vapour. — H302: Harmful if swallowed. — H331: Toxic if inhaled. — H314: Causes severe skin burns and eye damage. — H335: May cause respiratory irritation. 	
Alternative classification according to Globally Harmonized System (GHS)	
<ul style="list-style-type: none"> — Flammable liquids: Category 2, H225: Highly flammable liquid and vapour. — Acute toxicity – Oral: Category 4, H302: Harmful if swallowed. — Acute toxicity – Inhalation: Category 3, H331: Toxic if inhaled. — Acute toxicity – Dermal: Category 5, H313: May be harmful in contact with skin. — Skin corrosion: Category 1A, H314: Causes severe skin burns and eye damage. — Specific target organ toxicity - single exposure (inhalation): Category 3, H335: May cause respiratory irritation. — 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: 2014/07/10
- 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.

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