

This safety data sheet was created pursuant to the requirements of:
UK REACH Regulations (SI 2019/758 as amended)

Supersedes date 13-Mar-2018***

Revision date 24-Apr-2024

Revision Number 5.01

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product Code(s)	533***
Safety data sheet number	533***
Product Name	DIETHANOLAMINE
EC No (EU Index No)	203-868-0 (603-071-00-1)***
CAS No	111-42-2***
Synonyms	2,2IMINODIETHANOL, DIHYDROXYETHYLAMINE, DEA, DELA, DIETHANOLAMINE 99%, DIETHANOLAMINE, DEA LFG, CATALYST AMINE 93760, DIETHANOLAMINE PURE***
Pure substance/mixture	Substance***
Contains DIETHANOLAMINE	
Molecular weight	105.14***

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use	Industrial application Chemical intermediate Metal surface treatment Textiles Chemicals used in the synthesis and / or formulation of industrial products Construction materials Additive Leather and paper industry Laboratory reagent***
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1.3. Details of the supplier of the safety data sheet

Supplier

Univar Solutions UK Ltd
Aquarius House
6 Mid Point Business Park
Bradford
GBR

For further information, please contact

E-mail address	SDS.EMEA@univarsolutions.com
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306

1.4. Emergency telephone number

Emergency Telephone	SGS - +32 (0)3 575 55 55 (24h)
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Acute toxicity - Oral	Category 4*** - (H302)***
Skin corrosion/irritation	Category 2*** - (H315)***
Serious eye damage/eye irritation	Category 1*** - (H318)***
Skin sensitisation	Category 1*** - (H317)***
Reproductive toxicity	Category 2*** - (H361)***
Specific target organ toxicity — repeated exposure	Category 2*** - (H373)***

2.2. Label elements

Contains DIETHANOLAMINE



Signal word

Danger***

Hazard statements

H302 - Harmful if swallowed

H315 - Causes skin irritation

H317 - May cause an allergic skin reaction

H318 - Causes serious eye damage

H361 - Suspected of damaging fertility or the unborn child

H373 - May cause damage to organs through prolonged or repeated exposure***

Precautionary statements

P260 - Do not breathe dust/fume/gas/mist/vapours/spray

P280 - Wear protective gloves/protective clothing/eye protection/face protection

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P501 - Dispose of contents/ container to an approved waste disposal plant***

2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients

3.1 Substances***

Chemical name	Weight-%	EC No (EU Index No)	UK REACH registration number	Classification according to GB CLP (SI 2020/1567 as amended)	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)

DIETHANOLAMINE *** 111-42-2	90 - 100%	203-868-0 (603-071-00 -1)***	-	Acute Tox. 4 (H302) Skin Irrit. 2 (H315) Eye Dam. 1 (H318) STOT RE 2 (H373) Repr. 2 (H361fd)***	-	-	-
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Full text of H- and EUH-phrases: see section 16

This product does not contain candidate substances of very high concern at a concentration $\geq 0.1\%$ (UK REACH Article 59)

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.***
Inhalation	Remove to fresh air. Get medical attention immediately if symptoms occur.***
Eye contact	Get immediate medical attention. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area.***
Skin contact	Wash off immediately with soap and plenty of water for at least 15 minutes. May cause an allergic skin reaction. In the case of skin irritation or allergic reactions see a doctor.***
Ingestion	Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Call a doctor.***
Self-protection of the first aider	Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).***

4.2. Most important symptoms and effects, both acute and delayed

Symptoms	Burning sensation. Itching. Rashes. Hives.***
Eyes	Burning sensation. Causes serious eye damage.***
Dermal	Itching. Rashes. Irritating. Erythema (skin redness).***
Ingestion	Harmful if swallowed***

4.3. Indication of any immediate medical attention and special treatment needed

Note to doctors	May cause sensitisation in susceptible persons. Treat symptomatically.***
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable Extinguishing Media	Dry chemical, CO2, alcohol-resistant foam or water spray.***
Large Fire	CAUTION: Use of water spray when fighting fire may be inefficient.
Unsuitable extinguishing media	Do not scatter spilled material with high pressure water streams.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical Product is or contains a sensitiser. May cause sensitisation by skin contact.***

Hazardous combustion products Carbon oxides. Nitrogen oxides (NOx).***

5.3. Advice for firefighters

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Ensure adequate ventilation.***

Other information Refer to protective measures listed in Sections 7 and 8.***

For emergency responders Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so.***

6.3. Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Take up mechanically, placing in appropriate containers for disposal.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Reference to other sections See section 8 for more information. See section 13 for more information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Take off contaminated clothing and wash it before reuse. Remove contaminated clothing and shoes.***

General hygiene considerations Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.***

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed in a dry and well-ventilated place. Avoid contact with: Oxidising agents. Strong acids. alkali. Combustible material.***

Packaging materials Unsuitable container/equipment material. Aluminium. copper. Copper alloys. Zinc.***

7.3. Specific end use(s)**Specific use(s)**

See section 1 for more information.

Risk Management Methods (RMM) The information required is contained in this Safety Data Sheet.**SECTION 8: Exposure controls/personal protection****8.1. Control parameters****Exposure Limits**

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Biological occupational exposure limits

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Derived No Effect Level (DNEL) - Workers ***

Chemical name	Oral	Dermal	Inhalation
DIETHANOLAMINE*** 111-42-2		0.13 mg/kg/day [4] [6] 0.75 mg/m ³ [4] [6]***	0.5 mg/m ³ [4] [5]***

[4] Systemic health effects.***
 [6] Long term.***

Derived No Effect Level (DNEL) - General Public ***

Chemical name	Oral	Dermal	Inhalation
DIETHANOLAMINE*** 111-42-2	0.06 mg/kg/day [4] [6]***	0.07 mg/kg/day [4] [6]***	0.125 mg/m ³ [4] [6] 0.125 mg/m ³ [4] [5]***

[4] Systemic health effects.***
 [6] Long term.***

Predicted No Effect Concentration (PNEC) ***

Chemical name	Freshwater	Freshwater (intermittent release)	Marine water	Marine water (intermittent release)	Air
DIETHANOLAMINE*** 111-42-2	0.02 mg/l***	0.095 mg/L ***	0.002 mg/l***		

Chemical name	Freshwater sediment	Marine sediment	Sewage treatment	Soil	Food chain
DIETHANOLAMINE*** 111-42-2	0.092 mg/kg sediment dw***	0.0092 mg/kg***	100 mg/L ***	1.63 mg/kg***	100 mg/l***

8.2. Exposure controls

Engineering controls No information available.

Personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles). Use eye protection according to EN 166.***

Hand protection Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves. Gloves must conform to standard EN 374.***

Gloves			
Duration of contact	PPE - Glove material	Glove thickness	Break through time
Long term (repeated)***	Polyethylene (PE) Viton™ Chlorinated polyethylene (CPE)***	0.35 mm***	240 minutes***

Skin and body protection Wear suitable protective clothing. Long sleeved clothing.***

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Type AP2.***

General hygiene considerations Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.***

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state Liquid***
Appearance Liquid***
Colour Colourless***
Odour Ammonia.***
Odour threshold No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
Melting point / freezing point	27.4*** °C***	***
Initial boiling point and boiling range	269.9*** °C***	760 mmHg.***
Flammability		No information available.
Flammability Limit in Air		No information available.
Upper flammability or explosive limits		
Lower flammability or explosive limits		
Flash point	191.0*** °C***	Pensky-Martens closed cup.***
Autoignition temperature	355.0*** °C***	***
Decomposition temperature		No information available.
pH		***
pH (as aqueous solution)	11.50***	solution (10.0 %).***
Kinematic viscosity		No information available.
Dynamic viscosity	390.9 mPa s @ 30°C***	No information available.
Water solubility	Soluble in water***	***
Solubility(ies)		No information available.
Partition coefficient	log Kow: -2.18***	OECD 107.***
Vapour pressure	0.028***	@ 25.0 °C.***

Relative density	1.10***	***
Bulk density		No information available
Liquid Density	No information available	No information available
Relative vapour density	3.6***	No information available.
Particle characteristics		No information available.
Particle Size	No information available	
Particle Size Distribution	No information available	
Explosive properties	No information available	
Oxidising properties	Does not meet the criteria for classification as oxidising***	

9.2. Other information

Molecular weight	105.14***
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SECTION 10: Stability and reactivity**10.1. Reactivity**

Reactivity	Stable under recommended storage conditions.***
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10.2. Chemical stability

Stability	Stable under normal conditions.
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Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	None under normal processing.
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10.4. Conditions to avoid

Conditions to avoid	Excessive heat. Protect from frost. Protect from moisture.***
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10.5. Incompatible materials

Incompatible materials	Zinc. Aluminium. Copper. Strong acids. Strong oxidising agents. Nitrite. Hydrocarbons.***
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10.6. Hazardous decomposition products

Hazardous decomposition products	Carbon oxides. Nitrogen oxides (NOx).***
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SECTION 11: Toxicological information**11.1. Information on toxicological effects****Information on likely routes of exposure**

Product Information	***
Inhalation	May cause irritation.***
Eye contact	Causes serious eye damage.***
Skin contact	Causes skin irritation.***
Ingestion	Harmful if swallowed.***

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Redness. Burning. May cause blindness. Itching. Rashes. Hives. May cause redness and tearing of the eyes.***

Acute toxicity**Numerical measures of toxicity**

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
DIETHANOLAMINE***	= 1600 mg/kg (Rat) ***	= 8200 mL/kg (Rabbit)***	3.35 mg/l hr dust/mist***

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Causes skin irritation.***

Serious eye damage/eye irritation Causes serious eye damage.***

Respiratory or skin sensitisation No information available.***

Germ cell mutagenicity No information available.

Carcinogenicity No information available.

Reproductive toxicity Suspected of damaging fertility. Suspected of damaging the unborn child.***

STOT - single exposure No information available.

STOT - repeated exposure May cause damage to organs through prolonged or repeated exposure.***

H373 - May cause damage to the following organs through prolonged or repeated exposure if swallowed: kidneys [oral], Liver, nervous system, Blood.***

Aspiration hazard No information available.

Other adverse effects No information available.

SECTION 12: Ecological information**12.1. Toxicity**

Ecotoxicity Not considered to be harmful to aquatic life.***

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
DIETHANOLAMINE***	EC50: =7.8mg/L (72h,	LC50: 4460 - 4980mg/L	-	EC50: =55mg/L (48h,

	Desmodesmus subspicatus) EC50: 2.1 - 2.3mg/L (96h, Pseudokirchneriella subcapitata)***	(96h, Pimephales promelas) LC50: 1200 - 1580mg/L (96h, Pimephales promelas) LC50: 600 - 1000mg/L (96h, Lepomis macrochirus)***		Daphnia magna)***
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12.2. Persistence and degradability

Persistence and degradability Readily biodegradable.***

Method	Exposure time	Value	Results
OECD Test No. 301F: Ready Biodegradability: Manometric Respirometry Test (TG 301 F)***	28.0 days***	93.0% Biodegradation***	Readily biodegradable***

12.3. Bioaccumulative potential

Bioaccumulation Not likely to bioaccumulate.***

Component Information ***

Chemical name	Partition coefficient
DIETHANOLAMINE***	-2.46***

12.4. Mobility in soil

Mobility in soil Soluble in water.***

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment The product does not contain any substance(s) classified as PBT or vPvB.

Chemical name	PBT and vPvB assessment
DIETHANOLAMINE***	The substance is not PBT / vPvB***

12.6. Other adverse effects

No information available.

SECTION 13: Disposal considerations**13.1. Waste treatment methods**

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

SECTION 14: Transport information**IATA**

14.1 UN number or ID number Not regulated

14.2

14.3 Transport hazard class(es) Not regulated

14.4 Packing group Not regulated

14.5 Environmental hazards Not applicable

14.6 Special precautions for user

Special Provisions	None
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IMDG

14.1 UN number or ID number	Not regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing group	Not regulated
14.5 Environmental hazards	Not applicable
14.6 Special precautions for user	
Special Provisions	None
14.7 Maritime transport in bulk according to IMO instruments	No information available

RID

14.1 UN number or ID number	Not regulated
14.2 UN proper shipping name	Not regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing group	Not regulated
14.5 Environmental hazards	Not applicable
14.6 Special precautions for user	
Special Provisions	None

ADR

14.1 UN number or ID number	Not regulated
14.2 UN proper shipping name	Not regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing group	Not regulated
14.5 Environmental hazards	Not applicable
14.6 Special precautions for user	
Special Provisions	None

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****National regulations**

Authorisations and/or restrictions on use:

This product does not contain substances subject to authorisation (UK REACH - Annex XIV).
 This product does not contain substances subject to restriction (UK REACH - Annex XVII).

Persistent Organic Pollutants

Not applicable

Export Notification requirements

Not applicable

Named dangerous substances per COMAH Regulations 2015 (as amended)

Not applicable

The Ozone-Depleting Substances Regulations 2015

Not applicable

The Biocidal Products Regulations 2001 (as amended)

Not applicable

The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (as amended)

Not applicable

Poisons Act 1972 (Explosive Precursors) Regulations (as Amended)

Not applicable

International Inventories

TSCA	Contact supplier for inventory compliance status
DSL/NDSL	Contact supplier for inventory compliance status
EINECS/ELINCS	Contact supplier for inventory compliance status
ENCS	Contact supplier for inventory compliance status
IECSC	Contact supplier for inventory compliance status
KECI	Contact supplier for inventory compliance status
PICCS	Contact supplier for inventory compliance status
AIIC	Contact supplier for inventory compliance status
NZIoC	Contact supplier for inventory compliance status

Legend:

TSCA	- United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL	- Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS	- European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS	- Japan Existing and New Chemical Substances
IECSC	- China Inventory of Existing Chemical Substances
KECL	- Korean Existing and Evaluated Chemical Substances
PICCS	- Philippines Inventory of Chemicals and Chemical Substances
AIIC	- Australian Inventory of Industrial Chemicals
NZIoC	- New Zealand Inventory of Chemicals

15.2. Chemical safety assessment**Chemical Safety Report**

A Chemical Safety Assessment has been carried out for this substance***

SECTION 16: Other information**Key or legend to abbreviations and acronyms used in the safety data sheet****Full text of H-Statements referred to under section 3**

H302 - Harmful if swallowed
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H373 - May cause damage to organs through prolonged or repeated exposure***

Legend

SVHC: Substances of Very High Concern for Authorisation:

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
+	Sensitisers		
Revision Note ***Indicates updated data since last publication			

Classification procedure

Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity***	Calculation method***
Acute dermal toxicity***	Calculation method***
Acute inhalation toxicity - gas***	Calculation method***
Acute inhalation toxicity - vapour***	Calculation method***
Acute inhalation toxicity - dust/mist***	Calculation method***
Skin corrosion/irritation***	Calculation method***
Serious eye damage/eye irritation***	Calculation method***

Respiratory sensitisation***	Calculation method***
Skin sensitisation***	Calculation method***
Mutagenicity***	Calculation method***
Carcinogenicity***	Calculation method***
STOT - single exposure***	Calculation method***
STOT - repeated exposure***	Calculation method***
Acute aquatic toxicity***	Calculation method***
Chronic aquatic toxicity***	Calculation method***
Aspiration hazard***	Calculation method***
Ozone***	Calculation method***

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
European Chemicals Agency (ECHA) (ECHA_API)
Environmental Protection Agency
Acute Exposure Guideline Level(s) (AEGl(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
National Institute of Technology and Evaluation (NITE)
Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
U.S. National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications
Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme
Organisation for Economic Co-operation and Development Screening Information Data Set
World Health Organization

Prepared By Jitendra Panchal***

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**This material safety data sheet complies with the requirements of UK REACH Regulations (SI 2019/758 as amended)
Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work**

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The 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, unless specified in the text.

End of Safety Data Sheet