

Product name: DABCO DMDEE

SAFETY DATA SHEET

Classification (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567

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

1.1 Product identifier

Product name:
DABCO DMDEE

Additional identification

Chemical name: 2,2'-Dimorpholinyl diethyl ether
Chemical formula: C₁₂H₂₄N₂O₃
INDEX No. -
CAS-No. 6425-39-4
EC No. 229-194-7
REACH Registration No.: 01-2119969278-20

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

Identified uses: Industrial use

Uses advised against: None known.

1.3 Details of the supplier of the safety data sheet

Company Name : Evonik Operations GmbH
Rellinghauser Str. 1-11
45128 Essen
Germany

Telephone : +49 201 173 01
Fax : +49 201 173 3000
E-mail : productsafety-cs@evonik.com

1.4 Emergency telephone number:

24-Hour Health Emergency : +49 2365 49 2232
+49 2365 49 4423 (Fax)

National Poison Information Service (NPIS)
England, Scotland and Wales: NHS: 111

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

The product has been classified according to the legislation in force.

Classification (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720,

Product name: DABCO DMDEE

and UK SI 2020/1567

Health Hazards

Serious eye irritation Category 2 H319: Causes serious eye irritation.

2.2 Label Elements

Signal Words: Warning

Hazard Statement(s): H319: Causes serious eye irritation.

Precautionary Statements
Prevention: P264: Wash face, hands and any exposed skin thoroughly after handling.
 P280: Wear protective gloves/protective clothing/eye protection/face protection.

Response: P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P337+P313: If eye irritation persists: Get medical advice/attention.

2.3 Other hazards
PBT/vPvB data

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.

SECTION 3: Composition/information on ingredients
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3.1 Substances
Chemical name: 2,2'-Dimorpholinyl-diethyl ether
INDEX No.:
CAS-No.: 6425-39-4
EC No.: 229-194-7
REACH Registration No.: 01-2119969278-20

Chemical name	Concentration	CAS-No.	EC No.	UK-REACH Registration No.	REACH Registration No.	M-Factor:	Notes
2,2'-Dimorpholinyl-diethyl ether	50 - <100%	6425-39-4	229-194-7		01-2119969278-20	No data available.	

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

This substance has workplace exposure limit(s).

This substance is listed as SVHC.

Product name: DABCO DMDEE

Classification

Chemical name	Classification	Notes
2,2'-Dimorpholinyl-diethyl ether	Classification: Eye Irrit.: 2: H319; Supplemental label information: None known.	None.

SECTION 4: First aid measures
4.1 Description of first aid measures

General information:	Immediately remove contaminated clothing.
Inhalation:	fresh air supply, consult a doctor if feeling unwell.
Skin Contact:	In case of contact with skin wash off with soap and water. In case of discomfort: Supply with medical care.
Eye contact:	In case of contact with eyes rinse thoroughly with plenty of water and seek medical advice
Ingestion:	Immediately rinse mouth and drink plenty of water (200-300 ml). Seek medical attention.
Personal Protection for First-aid Responders:	No data available.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms:	Serious eye irritation
Hazards:	No data available.

4.3 Indication of immediate medical attention and special treatment needed

Treatment:	Treat symptomatically.
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SECTION 5: Firefighting measures

General Fire Hazards:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
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5.1 Extinguishing media

Suitable extinguishing media: foam, carbon dioxide, dry powder, water spray.

Unsuitable extinguishing media: High volume water jet.

5.2 Special hazards arising from the substance or mixture:

In the event of fire the following can be released: - carbon dioxide, carbon monoxide - Nitrogen oxides (NOx) Under certain conditions of combustion traces of other toxic substances cannot be excluded

5.3 Advice for firefighters

Product name: DABCO DMDEE

Special fire fighting procedures: Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges. Vapours may form explosive mixtures with air.

Special protective equipment for fire-fighters: Do not inhale explosion and/or combustion gases. Use self-contained breathing apparatus and wear protective suit

SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures:** Use personal protective equipment. Keep away sources of ignition. Ensure adequate ventilation.
- 6.1.1 For non-emergency personnel:** No data available.
- 6.1.2 For emergency responders:** No data available.
- 6.2 Environmental Precautions:** Do not allow to enter drains or waterways Prevent product from getting into subsoil/soil.
- 6.3 Methods and material for containment and cleaning up:** Pick up with absorbent material (e.g. sand, sawdust, general-purpose binder). Dispose of absorbed material in accordance with the regulations.
- 6.4 Reference to other sections:** For further information on exposure monitoring and disposal see sections 8 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Technical measures:** No data available.
- Local/Total ventilation:** No data available.
- Safe handling advice:** No special measures necessary if stored and handled as prescribed. Avoid contact with skin and eyes. Do not inhale gases/vapours/aerosols.
- Contact avoidance measures:** No data available.

7.2 Conditions for safe storage, including any incompatibilities

- Safe storage conditions:** Keep containers tightly closed in a dry, cool and well-ventilated place. Keep only in the original container.
- Safe packaging materials:** Suitable materials: Polyethylene. stainless steel: 1.4571 or 1.4541, passivated Unsuitable materials: copper, brass

7.3 Specific end use(s): No further recommendations.

SECTION 8: Exposure controls/personal protection

8.1 Control Parameters

Occupational Exposure Limits

None of the components have assigned exposure limits.

Biological Limit Values

No biological exposure limits noted for the ingredient(s).

Product name: DABCO DMDEE
DNEL-Values

Remarks: DNEL-Values

Critical component	Type	Route of Exposure	Health Warnings	Remarks
2,2'-Dimorpholinyl-diethyl ether	General population	Oral	Systemic, long-term; 0.5 mg/kg	Repeated dose toxicity
	Workers	Inhalation	Systemic, long-term; 7.28 mg/m ³	Repeated dose toxicity
	Workers	Dermal	Systemic, long-term; 1 mg/kg	Repeated dose toxicity
	General population	Inhalation	Systemic, long-term; 1.8 mg/m ³	Repeated dose toxicity
	General population	Dermal	Systemic, long-term; 0.5 mg/kg	Repeated dose toxicity
	Workers	Eyes	Local effect;	Medium hazard (no threshold derived)
	General population	Eyes	Local effect;	Medium hazard (no threshold derived)

PNEC-Values

Remarks: PNEC-Values

Critical component	Environmental compartment	PNEC-Values	Remarks
2,2'-Dimorpholinyl-diethyl ether	Sediment (freshwater)	8.2 mg/kg	
	Aquatic (freshwater)	0.1 mg/l	
	Soil	1.58 mg/kg	
	Predator	10 mg/kg	Oral
	Sediment (marine water)	0.82 mg/kg	
	Aquatic (marine water)	0.01 mg/l	
	Sewage treatment plant	100 mg/l	

8.2 Exposure controls
Appropriate Engineering Controls: No data available.

Individual protection measures, such as personal protective equipment
Eye/face protection: Safety glasses with side shields

Hand Protection: Material: Butyl rubber.
 Break-through time: > 480 min
 Glove thickness: 0.7 mm

Skin and Body Protection: protective clothing

Respiratory Protection: in case of formation of vapours/aerosols: Short term: filter apparatus, combination filter A-P2

Hygiene measures: Wash hands before breaks and at the end of workday.
 When using do not eat, drink or smoke. Remove soiled or soaked clothing immediately.

Environmental Controls: The environmental regulations on the control and monitoring of environmental exposures are to be observed.

SECTION 9: Physical and chemical properties
9.1 Information on basic physical and chemical properties
Appearance
Physical state: liquid
Form: liquid
Color: colorless to yellowish

Product name: DABCO DMDEE

Odor:	amine-like
Odor Threshold:	not measured
Freezing point:	-28 °C
Boiling Point:	309 °C
Flammability:	This product has not been classified as flammable.
Upper/lower limit on flammability or explosive limits	
Explosive limit - upper:	3.3 %(V)
Explosive limit - lower:	0.6 %(V)
Flash Point:	146 °C
Auto-ignition temperature:	210 °C Method: Literature
Decomposition Temperature:	150 °C
pH:	10.4 at 20 °C Concentration: 100 g/l Concentration: 10 %
Viscosity	
Dynamic viscosity:	29 mPa.s at 20 °C
Kinematic viscosity:	216.6 mm ² /s at 20 °C , Method: Measured
Solubility(ies)	
Solubility in Water:	completely miscible
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	0.5 at 25 °C pH: 9 Method: OECD 117
Vapor pressure:	0.66 hPa at 20 °C
Relative density:	not measured
Density:	1.0603 g/cm ³ at 20 °C
Relative vapor density:	not measured

9.2 Other information

Explosive properties:	no danger of explosion
Oxidizing properties:	not oxidizing
Self-ignition:	not spontaneously flammable
Metal Corrosion:	No data available.
Evaporation Rate:	No data available.
Molecular weight:	244.33 g/mol

SECTION 10: Stability and reactivity

10.1 Reactivity:	see section "Possibility of hazardous reactions".
10.2 Chemical Stability:	The product is stable under normal conditions.

Product name: DABCO DMDEE

10.3	Possibility of hazardous reactions:	Exothermic reaction with strong acids. Reactions with oxidizing agents.
10.4	Conditions to avoid:	Heat, sparks, flames.
10.5	Incompatible Materials:	Strong acids. Oxidizing agent Nitrosating agents.
10.6	Hazardous Decomposition Products:	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Information on likely routes of exposure

Inhalation:	If handled correctly, not a relevant route of exposure. Information on effects are given below.
Skin Contact:	Relevant route of exposure. Information on effects are given below.
Eye contact:	Relevant route of exposure. Information on effects are given below.
Ingestion:	If handled correctly, not a relevant route of exposure. Information on effects are given below.

Acute toxicity (list all possible routes of exposure)

Oral

Product:	LD 50, Rat, > 2,000 mg/kg, OECD 423
Components:	
2,2'-Dimorpholinyl diethyl ether	LD 50, Rat, 2,025 mg/kg

Dermal

Product:	LD 50, Rabbit, 3,038 mg/kg
Components:	
2,2'-Dimorpholinyl diethyl ether	LD 50, Rabbit, 3,038 mg/kg

Inhalation

Product:	Not classified for acute toxicity based on available data.
Components:	
2,2'-Dimorpholinyl diethyl ether	Vapour, Not toxic after single exposure, No data available. Dust and mist, Not toxic after single exposure, No data available.

Repeated dose toxicity

Product:	No data available.
Components:	
2,2'-Dimorpholinyl diethyl ether	No data available.

Skin Corrosion/Irritation

Product:	Moderate skin irritation
Components:	
2,2'-Dimorpholinyl diethyl ether	Slightly irritating., OECD 404, Rabbit

Serious Eye Damage/Eye Irritation

Product name: DABCO DMDEE

Product: Irritant, OECD 405, Rabbit, Irritating.**Components:**

2,2'-Dimorpholinyl-diethyl ether Moderately irritating, OECD 405, Rabbit

Respiratory or Skin Sensitization**Product:** OECD 406, Non sensitising**Components:**

2,2'-Dimorpholinyl-diethyl ether OECD 406, Guinea Pig, Not a skin sensitizer.

Carcinogenicity**Product:** No data available. No evidence that cancer may be caused.**Components:**

2,2'-Dimorpholinyl-diethyl ether No data available.

Germ Cell Mutagenicity

No data is available on the product itself.

Contains no ingredient listed as a mutagen

In vitro**Product:** No data available.**Components:**

2,2'-Dimorpholinyl-diethyl ether No data available.

In vivo**Product:** No data available.**Components:**

2,2'-Dimorpholinyl-diethyl ether No data available.

Reproductive toxicity**Product:** No data is available on the product itself. No evidence of effects of reproductive / developmental toxicity.**Components:**

2,2'-Dimorpholinyl-diethyl ether No data available.

Specific Target Organ Toxicity - Single Exposure**Product:** Based on the information available, organ-specific toxicity is not to be expected after one single exposure.**Components:**

2,2'-Dimorpholinyl-diethyl ether No data available.

Specific Target Organ Toxicity - Repeated Exposure**Product:** Based on the information available, organ-specific toxicity is not to be expected after repeated exposure.**Components:**

2,2'-Dimorpholinyl-diethyl ether No data available.

Aspiration Hazard**Product:** Not classified**Components:**

Product name: DABCO DMDEE

2,2'-Dimorpholinyl-diethyl ether Not classified

11.2 Information on other hazards

Other information

Product: Causes eye irritation.;

SECTION 12: Ecological information

12.1 Toxicity:

Acute hazards to the aquatic environment:

Fish

Product: LC 50, Brachydanio rerio (zebrafish), 96 h, > 2,150 mg/l OECD 203, The reported toxic effects relate to the nominal concentration.

Components:

2,2'-Dimorpholinyl-diethyl ether LC 50, Fish, 96 h, 2,150 mg/l OECD 203

Aquatic Invertebrates

Product: Daphnia magna, 48 h, > 100 mg/l OECD 202, The reported toxic effects relate to the nominal concentration. Only a limit concentration was tested (LIMIT test).

Components:

2,2'-Dimorpholinyl-diethyl ether EC 50, Daphnia magna, 48 h, > 100 mg/l OECD 202

Toxicity to Aquatic Plants

Product: No data available.

Components:

2,2'-Dimorpholinyl-diethyl ether ErC50 (Alga, 72 h): > 100 mg/l (OECD 201)

Toxicity to microorganisms

Product: EC 50, activated sludge, 3 h, > 1,000 mg/l, OECD 209, The details of the toxic effect relate to the nominal concentration.

Components:

2,2'-Dimorpholinyl-diethyl ether EC 50, activated sludge, 3 h, > 1,000 mg/l

Chronic hazards to the aquatic environment:

Fish

Product: Trial not required for scientific reasons.

Components:

2,2'-Dimorpholinyl-diethyl ether No data available.

Aquatic Invertebrates

Product: Trial not required for scientific reasons.

Components:

2,2'-Dimorpholinyl-diethyl ether No data available.

Product name: DABCO DMDEE

Toxicity to Aquatic Plants

Product: NOEC (Algae (*Pseudokirchneriella subcapitata*), 72 h): > 100 mg/l (OECD 201) The reported toxic effects relate to the nominal concentration.

Components:
2,2'-Dimorpholinyl-diethyl ether No data available.

Toxicity to microorganisms

Product: EC 50, activated sludge, 3 h, > 1,000 mg/l, OECD 209, The details of the toxic effect relate to the nominal concentration.

Components:
2,2'-Dimorpholinyl-diethyl ether EC 50, activated sludge, 3 h, > 1,000 mg/l

12.2 Persistence and Degradability**Biodegradation**

Product: No data available.

Components:
2,2'-Dimorpholinyl-diethyl ether 4 %, 28 d, OECD 301 C, The product is not biodegradable.

12.3 Bioaccumulative potential**Bioconcentration Factor (BCF)**

Product: Significant concentrations do not accumulate.

Components:
2,2'-Dimorpholinyl-diethyl ether 3

Partition Coefficient n-octanol / water (log K_{ow})

Product: 0.5, 25 °C, OECD 117

Components:
2,2'-Dimorpholinyl-diethyl ether 0.5

12.4 Mobility in soil:

Product No data available.

Components:
2,2'-Dimorpholinyl-diethyl ether No data available.

12.5 Results of PBT and vPvB assessment:

Product 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.

Components:
2,2'-Dimorpholinyl-diethyl ether Non-classified vPvB substance,
Non-classified PBT substance

12.6 Other adverse effects:**Other hazards**

Product: Do not allow to enter soil, waterways or waste water canal.

Product name: DABCO DMDEE

SECTION 13: Disposal considerations

13.1 Waste treatment methods

General information:	No data available.
Disposal methods:	In accordance with local authority regulations, take to special waste incineration plant
Contaminated Packaging:	If empty contaminated containers are recycled or disposed of, the receiver must be informed about possible hazards.

SECTION 14: Transport information

14.1 UN/ID No.

Not regulated as a dangerous good

14.2 UN proper shipping name

Not regulated as a dangerous good

14.3 Transport hazard class(es)

Not regulated as a dangerous good

14.4 Packing group

Not regulated as a dangerous good

14.5 Environmental hazards

Not regulated as a dangerous good

14.6 Special precautions for user

Not applicable

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:

EU Regulations

EU. Directive 2012/18/EU (SEVESO III) on major accident hazards involving dangerous substances, Annex I: Not applicable

15.2 Chemical safety assessment: No chemical safety assessment was carried out for this product.

International regulations

Montreal protocol

Not applicable

Stockholm convention

Not applicable

Product name: DABCO DMDEE**Rotterdam convention**

Not applicable

Kyoto protocol

Not applicable

SECTION 16: Other information**Abbreviations and acronyms:**

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; EIGA - European Industrial Gases Association; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Key literature references and sources for data: No data available.

Training information: Comply with national laws regulating employee instruction.

Revision Information Changes since the last version are highlighted in the margin. This version replaces all previous versions.

Product name: DABCO DMDEE

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