

• SAFETY DATA SHEET

Version 6.13
Revision Date 09/26/2025
Print Date 09/27/2025

SECTION 1. IDENTIFICATION

1.1 Product identifiers

Product name : 1-Ethyl-3-methylimidazolium ethyl sulfate

Product Number : 51682

Brand : Aldrich

CAS-No. : 342573-75-5

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

Identified uses : Laboratory chemicals, Synthesis of substances

Uses advised against : The product is being supplied under the TSCA R&D Exemption (40 CFR Section 720.36). It is the recipient's responsibility to comply with the requirements of the R&D exemption. The product may not be used for a non-exempt commercial purpose under TSCA unless appropriate consent is granted in writing by MilliporeSigma.

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.
3050 SPRUCE ST
ST. LOUIS MO 63103
UNITED STATES

Telephone : +1 314 771-5765

Fax : +1 800 325-5052

1.4 Emergency telephone number

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Hazards for the product as supplied


Skin irritation : Category 2

Eye irritation : Category 2A
Germ cell mutagenicity : Category 1B
Carcinogenicity : Category 1B
Reproductive toxicity : Category 2

Other hazards

None known.

GHS label elements

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : H315 Causes skin irritation.
H319 Causes serious eye irritation.
H340 May cause genetic defects.
H350 May cause cancer.
H361 Suspected of damaging fertility or the unborn child.

Precautionary statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
P302 + P352 IF ON SKIN: Wash with plenty of water.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
Storage:
P405 Store locked up.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance

Components

Chemical name	CAS No./Unique ID	Concentration (% w/w)	Trade secret
diethyl sulphate	64-67-5*	$\geq 1 - \leq 5$	TSC
1-Methylimidazole	616-47-7*	$\geq 0.1 - \leq 1$	TSC

* Indicates that the identifier is a CAS No.

TSC- the actual concentration or concentration range is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

Most important symptoms and effects, both acute and delayed : The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

Protection of first-aiders : For personal protection see section 8.

Notes to physician : No data available

SECTION 5. FIREFIGHTING MEASURES

Specific hazards during fire fighting : Combustible.

Hazardous combustion products : Carbon oxides

Nitrogen oxides (NO_x)

Sulphur oxides

Specific extinguishing methods : No data available

Further information : No data available

Special protective equipment for fire-fighters : No data available

SECTION 6. ACCIDENTAL RELEASE MEASURES

SECTION 7. HANDLING AND STORAGE

For precautions see section 2.2.

Storage class : 6.1C, Combustible, acute toxic Cat.3 / toxic compounds or compounds which causing chronic effects

Recommended storage temperature : Recommended storage temperature see product label.

Further information on storage stability : Store under inert gas. Hygroscopic.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

Engineering measures : No data available

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : viscous

Color : light yellow

Odor : sweet

Odor Threshold : No data available
pH : 8.2
Concentration: 100 g/l
: < -22 °F / < -30 °C

Boiling point/boiling range : No data available

Flash point : 310.1 °F / 154.5 °C
Method: ISO 2719

Evaporation rate	: No data available
Flammability (solid, gas)	: No data available
Flammability (liquids)	: No data available
Burning rate	: No data available
Upper explosion limit / Upper flammability limit	: No data available
Lower explosion limit / Lower flammability limit	: No data available
Vapor pressure	: No data available
Relative vapour density	: No data available
Relative density	: No data available
Density	: 1.239 g/cm ³ (68 °F / 20 °C) Method: Tested according to Directive 92/69/EEC.
Solubility(ies)	
Water solubility	: completely soluble
Solubility in other solvents	: Solvent: Alcohol
Partition coefficient: n- octanol/water	: log Pow: < 0.3
Autoignition temperature	: 770 °F / 410 °C
Decomposition temperature	: 617 °F / 325 °C Decomposition energy (mass): 270 kJ/kg
Viscosity	
Viscosity, dynamic	: No data available
Viscosity, kinematic	: 98.7 mm ² /s (77 °F / 25 °C)
Flow time	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Surface tension	: 72 mN/m, 68 °F / 20 °C
Molecular weight	: 236.29 g/mol

Particle characteristics
Particle size : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No data available

Chemical stability : No data available

Possibility of hazardous reactions : Violent reactions possible with:
Strong oxidizing agents

Conditions to avoid : No data available

Incompatible materials : Strong oxidizing agents

Hazardous decomposition products : In the event of fire: see section 5

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Acute toxicity estimate Oral - 2,390 mg/kg
(Calculation method)

LD50 Oral - Rat - > 2,000 mg/kg (1-ethyl-3-methylimidazolium ethylsulfate)

Acute toxicity estimate Inhalation - 4 h - > 200 mg/l - vapour (Calculation method)

Acute toxicity estimate Dermal - > 5,000 mg/kg
(Calculation method)

LC50 Dermal - Rat - > 2,000 mg/kg (1-ethyl-3-methylimidazolium ethylsulfate)
No data available

Skin corrosion/irritation

Skin - Rabbit (1-ethyl-3-methylimidazolium ethylsulfate)

Result: No skin irritation
(OECD Test Guideline 404)

Serious eye damage/eye irritation

Eyes - Rabbit (1-ethyl-3-methylimidazolium ethylsulfate)

Result: No eye irritation
(OECD Test Guideline 405)

Respiratory or skin sensitization

- Mouse (1-ethyl-3-methylimidazolium ethylsulfate)

Result: Did not cause sensitisation on laboratory animals.

Germ cell mutagenicity

Tests on bacterial or mammalian cell cultures did not show mutagenic effects. (1-ethyl-3-methylimidazolium ethylsulfate)

Carcinogenicity

No data available

IARC: 2A - Group 2A: Probably carcinogenic to humans (diethyl sulphate)

NTP: RAHC - Reasonably anticipated to be a human carcinogen (diethyl sulphate)

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

Reproductive toxicity

No data available

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard

No data available (1-ethyl-3-methylimidazolium ethylsulfate)

11.2 Additional Information

No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

diethyl sulphate:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 20 mg/l
Exposure time: 96 h
Remarks: (IUCLID)

Toxicity to daphnia and : LC50 (Ceriodaphnia dubia (water flea)): 5,012 mg/l
other aquatic
invertebrates End point: mortality
Exposure time: 48 h
Test Type: static test
Remarks: (ECHA)

Toxicity to algae/aquatic : ErC50 (Chlorella vulgaris (Fresh water algae)): 275
plants mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201

Ecotoxicology Assessment

Chronic aquatic toxicity : This product has no known ecotoxicological effects.

1-Methylimidazole:

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Toxicity to fish	: LC50 (Leuciscus idus (Golden orfe)): > 100 - 215 mg/l Exposure time: 96 h Test Type: static test Method: DIN 38412
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): 267.94 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	: EC50 (Desmodesmus subspicatus (green algae)): 180.7 mg/l Exposure time: 72 h Test Type: static test Method: OECD Test Guideline 201
Toxicity to microorganisms	: EC50 (Pseudomonas putida): 1,050 mg/l Exposure time: 17 h Remarks: (External MSDS)

Persistence and degradability

Components:

diethyl sulphate:

Biodegradability : aerobic
Inoculum: activated sludge
Result: Readily biodegradable.
Biodegradation: 89 %
Exposure time: 28 d
Remarks: (ECHA)

Stability in water : Degradation half life: 1.7 h
Remarks: Hydrolysis
Rapid degradation.

1-Methylimidazole:

Biodegradability : aerobic
Inoculum: activated sludge
Concentration: 100 mg/l
Result: Not readily biodegradable.
Biodegradation: 0 - 10 %
Exposure time: 28 d
Method: OECD Test Guideline 301F

Bioaccumulative potential

Components:

diethyl sulphate:

Partition coefficient: n-octanol/water : log Pow: 1.14
Method: (experimental)

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Remarks: Bioaccumulation is not expected.
(Lit.)

1-Methylimidazole:

Bioaccumulation : Remarks: No data available

Partition coefficient: n-octanol/water : log Pow: -0.19 (77 °F / 25 °C)
Method: OECD Test Guideline 107

Mobility in soil

Components:

1-Methylimidazole:

Stability in soil : Remarks: No data available

Other adverse effects

Product:

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Components:

diethyl sulphate:

Additional ecological information : Biological effects:

Possible decomposition products in case of hydrolysis are:

sulfuric acid

ethanol

Discharge into the environment must be avoided.

1-Methylimidazole:

Additional ecological information : May be harmful to aquatic organisms due to the shift of the pH.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to IMO instruments

Not applicable for product as supplied.

National Regulations

49 CFR Road

UN/ID/NA number : UN 3082
Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.
(diethyl sulphate)
Class : 9
Packing group : III
Labels : Class 9 - Miscellaneous dangerous substances and
articles
ERG Code : 171
Marine pollutant : no

Poison Inhalation Hazard : No

Special precautions for user

Remarks : Not classified as dangerous in the meaning of
transport regulations.

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
diethyl sulphate	64-67-5	10	400

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 313

: The following components are subject to reporting levels established by SARA Title III, Section 313:

diethyl sulphate	64-67-5	>= 1 - < 5 %
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Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 112 (40 CFR 61):

diethyl sulphate	64-67-5	>= 1 - < 5 %
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This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCM Intermediate or Final VOC's (40 CFR 60.489):

diethyl sulphate	64-67-5	>= 1 - < 5 %
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Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. Clean Water Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. Clean Water Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

This product does not contain any priority pollutants related to the U.S. Clean Water Act

US State Regulations**Massachusetts Right To Know**

diethyl sulphate	64-67-5
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Pennsylvania Right To Know

diethyl sulphate	64-67-5
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Maine Chemicals of High Concern

Product does not contain any listed chemicals

Vermont Chemicals of High Concern

Product does not contain any listed chemicals

Washington Chemicals of High Concern

Product does not contain any listed chemicals

California Prop. 65

WARNING: This product can expose you to chemicals including diethyl sulphate, which is/are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

The components of this product are reported in the following inventories:

TSCA : All substances listed as active on the TSCA inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; 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; ERG - Emergency Response Guide; GHS - Globally Harmonised System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; 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 Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; 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; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organisation 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; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

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The branding on the header and/or footer of this document may temporarily not visually match the product purchased as we transition our branding. However, all of the information

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in the document regarding the product remains unchanged and matches the product ordered.
For further information please contact mlsbranding@sial.com.

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