



SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 04/03/2014

Version 3.1

SECTION 1. Identification

Product identifier

Product number	100867
Product name	Diisopropyl ether for analysis EMSURE® ACS, Reag. Ph Eur
CAS-No.	108-20-3

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

Identified uses	Reagent for analysis, Chemical production
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Details of the supplier of the safety data sheet

Company	EMD Millipore Corporation 290 Concord Road, Billerica, MA 01821, United States of America General Inquiries: +1-978-751-4321 Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)
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Emergency telephone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week
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SECTION 2. Hazards identification

GHS Classification

Flammable liquid, Category 2, H225
Specific target organ systemic toxicity - single exposure, Category 3, H336
For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS-Labeling

Hazard pictograms



Signal Word

Danger

Hazard Statements

H225 Highly flammable liquid and vapor.
H336 May cause drowsiness or dizziness.

Precautionary Statements

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

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P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P403 + P235 Store in a well-ventilated place. Keep cool.

OSHA Hazards

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS and may deviate from the GHS information.

Other hazards

None known.

SECTION 3. Composition/information on ingredients

Formula	$[(\text{CH}_3)_2\text{CH}]_2\text{O}$	$\text{C}_6\text{H}_{14}\text{O}$ (Hill)
Molar mass	102.18 g/mol	

Hazardous ingredients

Chemical Name (Concentration)

CAS-No.

Diisopropyl ether (>= 90 % - <= 100 %)

108-20-3

Exact percentages are being withheld as a trade secret.

SECTION 4. First aid measures

Description of first-aid measures

Inhalation

After inhalation: fresh air. Consult doctor if feeling unwell.

Skin contact

After skin contact: wash off with plenty of water. Remove contaminated clothing.

Eye contact

After eye contact: rinse out with plenty of water.

Ingestion

After swallowing: caution if victim vomits. Risk of aspiration! Keep airways free. Pulmonary failure possible after aspiration of vomit. Call a physician immediately.

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

irritant effects, Cough, Shortness of breath, Drowsiness, narcosis, agitation, spasms, Nausea, Vomiting, Headache, drowsiness, death

Repeated exposure may cause skin dryness or cracking.

Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Fire-fighting measures

Extinguishing media

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Suitable extinguishing media

Carbon dioxide (CO₂), Foam, Dry powder

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture

Combustible.

Vapors are heavier than air and may spread along floors.

Forms explosive mixtures with air at ambient temperatures.

Pay attention to flashback.

Development of hazardous combustion gases or vapors possible in the event of fire.

Advice for firefighters

Special protective equipment for fire-fighters

In the event of fire, wear self-contained breathing apparatus.

Further information

Prevent fire extinguishing water from contaminating surface water or the ground water system.

Remove container from danger zone and cool with water.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid substance contact. Do not breathe vapors, aerosols.

Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

Environmental precautions

Do not let product enter drains. Risk of explosion.

Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.

Observe possible material restrictions (see sections 7 and 10).

Take up with liquid-absorbent material (e.g. Chemisorb®). Dispose of properly. Clean up affected area.

SECTION 7. Handling and storage

Precautions for safe handling

Observe label precautions.

Work under hood. Do not inhale substance/mixture. Avoid generation of vapors/aerosols.

Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Protected from light.

Store at +15°C to +25°C (+59°F to +77°F).

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SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Ingredients

Basis	Value	Threshold limits	Remarks
<i>Diisopropyl ether 108-20-3</i>			
ACGIH	Time Weighted Average (TWA):	250 ppm	
	Short Term Exposure Limit (STEL):	310 ppm	
NIOSH/GUIDE	Recommended exposure limit (REL):	500 ppm	
		2,100 mg/m ³	
OSHA_TRANS	PEL:	500 ppm	
		2,100 mg/m ³	
Z1A	Time Weighted Average (TWA):	500 ppm	
		2,100 mg/m ³	

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

Hygiene measures

Change contaminated clothing. Wash hands after working with substance.

Eye/face protection

Safety glasses

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Other protective equipment:

Flame retardant antistatic protective clothing

Respiratory protection

required when vapors/aerosols are generated.

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

SECTION 9. Physical and chemical properties

Physical state

liquid

Color

colorless

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Odor	ether-like
Odor Threshold	0.02 - 296.6 ppm
pH	at 68 °F (20 °C) neutral
Melting point	-86 °C
Boiling point/boiling range	153 - 158 °F (67 - 70 °C) at 1,013 hPa
Flash point	-18 °F (-28 °C) Method: c.c.
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	1.0 %(V)
Upper explosion limit	21 %(V)
Vapor pressure	175 hPa at 68 °F (20 °C)
Relative vapor density	3.5
Density	0.72 g/cm ³ at 68 °F (20 °C)
Relative density	No information available.
Water solubility	12 g/l at 68 °F (20 °C)
Partition coefficient: n-octanol/water	log Pow: 1.52 (20 °C) (experimental) Bioaccumulation is not expected. (IUCLID)
Autoignition temperature	No information available.
Decomposition temperature	Distillable in an undecomposed state at normal pressure.
Viscosity, dynamic	0.3 mPa.s at 68 °F (20 °C)
Explosive properties	Not classified as explosive.
Oxidizing properties	none

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Ignition temperature 761 °F (405 °C)
Method: DIN 51794

SECTION 10. Stability and reactivity

Reactivity

Vapors may form explosive mixture with air.

Chemical stability

Sensitivity to light
Sensitive to air.

Stabilizer

butyl hydroxytoluene (BHT)

Possibility of hazardous reactions

Exothermic reaction with:

Risk of explosion with:

Aldehydes, Amines, mineral acids, Oxidizing agents, Zinc

Conditions to avoid

Warming.

Incompatible materials

various plastics

Hazardous decomposition products

Peroxides

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure

Inhalation, Eye contact, Skin contact

Target Organs

Eyes

Skin

Respiratory system

Central nervous system

Acute oral toxicity

LD50 rat: 5,880 mg/kg (RTECS)

Symptoms: Nausea, Vomiting, Risk of aspiration upon vomiting., Aspiration may cause pulmonary edema and pneumonitis., Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

Acute inhalation toxicity

Symptoms: mucosal irritations, Cough, Shortness of breath

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Acute dermal toxicity

LD50 rabbit: > 20,000 mg/kg
(IUCLID)

Skin irritation

slight irritation
Repeated exposure may cause skin dryness or cracking.

Eye irritation

rabbit
Result: No eye irritation
OECD Test Guideline 405
slight irritation

Specific target organ systemic toxicity - single exposure

May cause drowsiness or dizziness.

Specific target organ systemic toxicity - repeated exposure

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

Aspiration hazard

Regarding the available data the classification criteria are not fulfilled.

Carcinogenicity

IARC	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
ACGIH	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Further information

After absorption of large quantities:
Headache, narcosis, agitation, spasms, death
Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

Ecotoxicity

Toxicity to fish

LC50 Pimephales promelas (fathead minnow): 92 mg/l; 96 h (Lit.)

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Toxicity to daphnia and other aquatic invertebrates

EC50 Daphnia magna (Water flea): > 220 mg/l; 48 h

Analytical monitoring: no

OECD Test Guideline 202

EC50 Daphnia magna (Water flea): > 220 mg/l; 48 h

Analytical monitoring: no

OECD Test Guideline 202

EC50 Daphnia magna (Water flea): 190 mg/l; 48 h

OECD Test Guideline 202

Toxicity to algae

NOEC Pseudokirchneriella subcapitata (green algae): > 1,000 mg/l; 96 h

OECD Test Guideline 201

IC50 Pseudokirchneriella subcapitata (green algae): > 100 mg/l; 96 h (External MSDS)

Toxicity to bacteria

EC50 Photobacterium phosphoreum: 500 mg/l; 5 min (Lit.)

Persistence and degradability

Biodegradability

7 %; 5 d

(IUCLID)

Not readily biodegradable.

7 %; 5 d

(IUCLID)

Not readily biodegradable.

Theoretical oxygen demand (ThOD)

2,833 mg/g

(Lit.)

Bioaccumulative potential

Partition coefficient: n-octanol/water

log Pow: 1.52 (20 °C)

(experimental)

Bioaccumulation is not expected. (IUCLID)

Mobility in soil

No information available.

Other adverse effects

Henry constant

259.3 Pa·m³/mol

Distribution preferentially in air. (Lit.)

SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

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SECTION 14. Transport information

Land transport (DOT)

UN number	UN 1159
Proper shipping name	DIISOPROPYL ETHER
Class	3
Packing group	II
Environmentally hazardous	--

Air transport (IATA)

UN number	UN 1159
Proper shipping name	DIISOPROPYL ETHER
Class	3
Packing group	II
Environmentally hazardous	--
Special precautions for user	no

Sea transport (IMDG)

UN number	UN 1159
Proper shipping name	DIISOPROPYL ETHER
Class	3
Packing group	II
Environmentally hazardous	--
Special precautions for user	yes
EmS	F-E S-D

SECTION 15. Regulatory information

United States of America

OSHA Hazards

Flammable Liquid
Target organ effects

This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS, and may deviate from the GHS information on the label and in section 2.

SARA 311/312 Hazards

Fire Hazard
Chronic Health Hazard

SARA 313

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 302

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

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Clean Water Act

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

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

DEA List I

Not listed

DEA List II

Not listed

US State Regulations

Massachusetts Right To Know

Ingredients

Diisopropyl ether

Pennsylvania Right To Know

Ingredients

Diisopropyl ether

New Jersey Right To Know

Ingredients

Diisopropyl ether

California Prop 65 Components

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

Notification status

TSCA: All components of the product are listed in the TSCA-inventory.

DSL: All components of this product are on the Canadian DSL.

SECTION 16. Other information

Training advice

Provide adequate information, instruction and training for operators.

Full text of H-Statements referred to under sections 2 and 3.

H225 Highly flammable liquid and vapor.

H336 May cause drowsiness or dizziness.

Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

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The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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