



MATERIAL SAFETY DATA SHEET

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

Revision Date 08/21/2013

Version 1.2

SECTION 1. Identification

Product identifier

Product number	800187
Product name	2-Ethoxyethyl acetate for synthesis

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

Identified uses	Chemical for synthesis
-----------------	------------------------

Details of the supplier of the safety data sheet

Company	EMD Millipore Corporation 290 Concord Road, Billerica, MA 01821, United States of America SDS Phone Support: +1-978-715-1335 General Inquiries: +1-978-715-4321 Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)
---------	---

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

SECTION 2. Hazards identification

GHS Classification

Flammable liquid, Category 3, H226
Reproductive toxicity, Category 1B, H360FD
Acute toxicity, Category 4, Inhalation, H332
Acute toxicity, Category 4, Dermal, H312
Acute toxicity, Category 4, Oral, H302

For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS-Labeling

Hazard pictograms



Signal Word

Danger

Hazard Statements

H226 Flammable liquid and vapor.
H360FD May damage fertility. May damage the unborn child.
H332 Harmful if inhaled.

MATERIAL SAFETY DATA SHEET

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

Product number 800187
Product name 2-Ethoxyethyl acetate for synthesis

Version 1.2

H312 Harmful in contact with skin.
H302 Harmful if swallowed.

Precautionary Statements

P201 Obtain special instructions before use.
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.

Restricted to professional users.

OSHA Hazards

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Other hazards

None known.

SECTION 3. Composition/information on ingredients

Formula	$\text{CH}_3\text{COOCH}_2\text{CH}_2\text{OC}_2\text{H}_5$	$\text{C}_6\text{H}_{12}\text{O}_3$ (Hill)
CAS-No.	111-15-9	
Molar mass	132.15 g/mol	

Hazardous ingredients

Chemical Name (Concentration)

CAS-No.

2-Ethoxyethyl acetate ($\geq 90\%$ - $\leq 100\%$)

111-15-9

SECTION 4. First aid measures

Description of first-aid measures

General advice

First aider needs to protect himself.

Inhalation

After inhalation: fresh air. If breathing stops: mouth-to-mouth breathing or artificial respiration. Oxygen if necessary. Immediately call in physician.

Skin contact

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

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. Subsequently administer: activated charcoal (20 - 40 g in 10% slurry).

Never give anything by mouth to an unconscious person.

MATERIAL SAFETY DATA SHEET

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

Product number 800187
Product name 2-Ethoxyethyl acetate for synthesis

Version 1.2

Most important symptoms and effects, both acute and delayed

irritant effects, Cough, Shortness of breath, narcosis, Diarrhea, Nausea, Vomiting, Headache, CNS disorders

Indication of any immediate medical attention and special treatment needed

Laxative: Sodium sulfate (1 tablespoon/1/4 l water).

SECTION 5. Fire-fighting measures

Extinguishing media

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 material, Vapors are heavier than air and may spread along floors.

Forms explosive mixtures with air at elevated temperatures.

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

Advice for firefighters

Special protective equipment for fire-fighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information

Cool closed containers exposed to fire with water spray. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

Environmental precautions

Do not empty into 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.

MATERIAL SAFETY DATA SHEET

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

Product number 800187
Product name 2-Ethoxyethyl acetate for synthesis

Version 1.2

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. Keep locked up or in an area accessible only to qualified or authorized persons.

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

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Ingredients

Basis	Value	Threshold limits	Remarks
<i>2-Ethoxyethyl acetate 111-15-9</i>			
ACGIH	Time Weighted Average (TWA): Skin designation:	5 ppm	Can be absorbed through the skin.
NIOSH/GUIDE	Recommended exposure limit (REL): Skin designation:	0.5 ppm 2.7 mg/m ³	Can be absorbed through the skin.
OSHA_TRANS	PEL: Skin designation:	100 ppm 540 mg/m ³	Can be absorbed through the skin.
Z1A	Time Weighted Average (TWA): Skin designation (Final Rule Limit applies):	100 ppm 540 mg/m ³	Can be absorbed through the skin.

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

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance. Work under hood. Do not inhale substance/mixture.

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.

MATERIAL SAFETY DATA SHEET

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

Product number 800187
Product name 2-Ethoxyethyl acetate for synthesis

Version 1.2

Other protective equipment:
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
Odor	fruity
Odor Threshold	No information available.
pH	4 - 5 at 68 °F (20 °C) (saturated solution)
Melting point	-62 °C
Boiling point/boiling range	313 °F (156 °C) at 1,013 hPa
Flash point	126 °F (52 °C) Method: c.c.
Evaporation rate	No information available.
Flammability (solid, gas)	not applicable
Lower explosion limit	1.3 %(V)
Upper explosion limit	7.2 %(V)
Vapor pressure	2.67 hPa at 68 °F (20 °C) (calculated)
Relative vapor density	4.72
Relative density	0.97 g/cm ³ at 68 °F (20 °C)
Water solubility	247 g/l at 68 °F (20 °C)

MATERIAL SAFETY DATA SHEET

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

Product number	800187	Version 1.2
Product name	2-Ethoxyethyl acetate for synthesis	

Partition coefficient: n-octanol/water	log Pow: 0.24 OECD Test Guideline 107 Bioaccumulation is not expected (log Pow <1).
Autoignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	1.32 mPa.s at 68 °F (20 °C)
Explosive properties	Not classified as explosive.
Ignition temperature	714 °F (379 °C)

SECTION 10. Stability and reactivity

Reactivity

Vapor/air-mixtures are explosive at intense warming.

Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

Possibility of hazardous reactions

Aluminum

Exothermic reaction with:

Oxidizing agents, Bases, acids

Conditions to avoid

Heating.

A range from approx. 15 Kelvin below the flash point is to be rated as critical.

Incompatible materials

Aluminum

Hazardous decomposition products

Peroxides

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure

Inhalation, Eye contact, Skin contact

Target Organs

Eyes

Respiratory system

gastrointestinal tract

reproductive system

hematopoietic system

MATERIAL SAFETY DATA SHEET

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

Product number 800187
Product name 2-Ethoxyethyl acetate for synthesis

Version 1.2

Acute oral toxicity

LD50 rat: 3,400 mg/kg (Regulation (EC) No 1272/2008, Annex VI) (Lit.)

Symptoms: Nausea, Vomiting, Diarrhea, Risk of aspiration upon vomiting., Aspiration may cause pulmonary edema and pneumonitis.

absorption

Acute inhalation toxicity

LC50 rat: 16.5 mg/l; 4 h (IUCLID)

Symptoms: mucosal irritations, Cough, Shortness of breath

absorption

Acute dermal toxicity

LD50 rabbit: 10,300 mg/kg

(Regulation (EC) No 1272/2008, Annex VI) (IUCLID)

absorption

Skin irritation

slight irritation

Eye irritation

slight irritation

CMR effects

Teratogenicity:

May damage the unborn child.

Reproductive toxicity:

May damage fertility.

Specific target organ systemic toxicity - single exposure

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

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.

MATERIAL SAFETY DATA SHEET

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

Product number 800187
Product name 2-Ethoxyethyl acetate for synthesis

Version 1.2

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:

CNS disorders, Headache

In high doses:

narcosis

In high concentrations:

Damage to:

Kidney

Further data:

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

Ecotoxicity

Toxicity to fish

LC50 Pimephales promelas (fathead minnow): 42 mg/l; 96 h (IUCLID)

Toxicity to daphnia and other aquatic invertebrates

EC50 Daphnia magna (Water flea): 354 mg/l; 24 h

DIN 38412 (IUCLID)

Toxicity to algae

IC50 Desmodesmus subspicatus (green algae): > 1,000 mg/l; 72 h

Toxicity to bacteria

EC10 Pseudomonas putida: 435 mg/l; 16 h

DIN 38412 (IUCLID)

Persistence and degradability

Biodegradability

> 99.9 %; 5 d

OECD Test Guideline 302B

Easily eliminable.

97 %; 14 d

OECD Test Guideline 301E

Readily biodegradable.

Biochemical Oxygen Demand (BOD)

< 440 mg/g (5 d)

(IUCLID)

Bioaccumulative potential

Partition coefficient: n-octanol/water

log Pow: 0.24

OECD Test Guideline 107

Bioaccumulation is not expected (log Pow <1).

Mobility in soil

No information available.

MATERIAL SAFETY DATA SHEET

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

Product number 800187
Product name 2-Ethoxyethyl acetate for synthesis

Version 1.2

Additional ecological information

Discharge into the environment must be avoided.

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.

SECTION 14. Transport information

Land transport (DOT)

UN number	UN 1172
Proper shipping name	ETHYLENE GLYCOL MONOETHYL ETHER ACETATE
Class	3
Packing group	III
Environmentally hazardous	--

Air transport (IATA)

UN number	UN 1172
Proper shipping name	ETHYLENE GLYCOL MONOETHYL ETHER ACETATE
Class	3
Packing group	III
Environmentally hazardous	--
Special precautions for user	no

Sea transport (IMDG)

UN number	UN 1172
Proper shipping name	ETHYLENE GLYCOL MONOETHYL ETHER ACETATE
Class	3
Packing group	III
Environmentally hazardous	--
Special precautions for user	yes
EmS	F-E S-D

SECTION 15. Regulatory information

United States of America

OSHA Hazards

Combustible Liquid

Teratogen

Reproductive hazard

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.

MATERIAL SAFETY DATA SHEET

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

Product number 800187
Product name 2-Ethoxyethyl acetate for synthesis

Version 1.2

SARA 311/312 Hazards

Fire Hazard
Chronic Health Hazard

SARA 313

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

Ingredients

2-Ethoxyethyl acetate 111-15-9

SARA 302

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

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

TSCA 12b

Ingredients

2-Ethoxyethyl acetate 111-15-9

US State Regulations

Massachusetts Right To Know

Ingredients

2-Ethoxyethyl acetate

Pennsylvania Right To Know

Ingredients

2-Ethoxyethyl acetate

New Jersey Right To Know

Ingredients

2-Ethoxyethyl acetate

California Prop 65 Components

WARNING: This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

Ingredients

2-Ethoxyethyl acetate

MATERIAL SAFETY DATA SHEET

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

Product number 800187
Product name 2-Ethoxyethyl acetate for synthesis

Version 1.2

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.

H226	Flammable liquid and vapor.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H332	Harmful if inhaled.
H360FD	May damage fertility. May damage the unborn child.

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.

Revision Date 08/21/2013

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.

All rights reserved. Millipore and the "M" Mark are registered trademarks of Merck KGaA, Darmstadt, Germany.