



MATERIAL SAFETY DATA SHEET

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

Revision Date 08/20/2013

Version 1.1

SECTION 1. Identification

Product identifier

Product number	801636
Product name	Ethyl bromoacetate for synthesis

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

Identified uses	Chemical for synthesis
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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 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)
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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 3, H226
Acute toxicity, Category 2, Inhalation, H330
Acute toxicity, Category 1, Dermal, H310
Acute toxicity, Category 2, Oral, H300

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.
H300 + H310 + H330 Fatal if swallowed, in contact with skin or if inhaled.

Precautionary Statements

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P210 Keep away from heat.
P280 Wear protective gloves/ protective clothing.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P309 + P310 IF exposed or if you feel unwell: Immediately call a POISON CENTER or doctor/physician.

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	BrCH ₂ COOC ₂ H ₅	C ₄ H ₇ BrO ₂ (Hill)
CAS-No.	105-36-2	
Molar mass	167.00 g/mol	

Hazardous ingredients

Chemical Name (Concentration)

CAS-No.

ethyl bromoacetate (>= 90 % - <= 100 %)

105-36-2

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: immediately apply artificial respiration, if necessary oxygen. Immediately call in physician.

Skin contact

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

Eye contact

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist.

Ingestion

If swallowed: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible.

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

irritant effects, Unconsciousness, Nausea, Vomiting, Headache, Vertigo

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Risk of blindness!

Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO₂), Dry powder

Unsuitable extinguishing media

Water, Foam

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.

Fire may cause evolution of:

hydrogen bromide

Protect against water.

Caution! in contact with water product releases:

hydrogen bromide

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

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

Suppress (knock down) gases/vapors/mists with a water spray jet. 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: 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 carefully with liquid-absorbent material (e.g. Chemisorb®). Dispose of properly. Clean up affected area.

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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.

Keep workplace dry. Do not allow product to come into contact with water.

Conditions for safe storage, including any incompatibilities

Tightly closed. Keep in a well-ventilated place. 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)

Contains no substances with occupational exposure limit values.

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.

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	unpleasant
Odor Threshold	No information available.
pH	No information available.
Melting point	-38 °C
Boiling point/boiling range	316 - 322 °F (158 - 161 °C) at 1,013 hPa
Flash point	122 °F (50 °C)
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapor pressure	4.5 hPa at 68 °F (20 °C)
Relative vapor density	5.8
Relative density	1.50 g/cm ³ at 68 °F (20 °C)
Water solubility	at 68 °F (20 °C) decomposes
Partition coefficient: n-octanol/water	log Pow: 1.12 (experimental) Bioaccumulation is not expected (log Pow <1). (Lit.)
Autoignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	1.7 mPa.s at 68 °F (20 °C)
Explosive properties	No information available.

SECTION 10. Stability and reactivity

Reactivity

Vapor/air-mixtures are explosive at intense warming.

Chemical stability

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heat-sensitive
sensitive to moisture

Possibility of hazardous reactions

Risk of ignition or formation of inflammable gases or vapors with:

Oxidizing agents

Violent reactions possible with:

Reducing agents, acids

A risk of explosion and/or of toxic gas formation exists with the following substances:

Water

Possible formation of:

Bromine

Conditions to avoid

Heating.

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

Incompatible materials

no information available

Hazardous decomposition products

in the event of fire: See section 5.

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure

Inhalation, Eye contact, Skin contact

Acute oral toxicity

Symptoms: Nausea, Vomiting, Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

absorption

Acute toxicity estimate: 5.1 mg/kg

Expert judgment

Acute inhalation toxicity

Symptoms: After a latency period:, Lung edema, Lung irritation

Acute toxicity estimate: 0.051 mg/l

Expert judgment absorption

Acute dermal toxicity

absorption

Acute toxicity estimate : 5.1 mg/kg

Expert judgment

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Skin irritation

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

Eye irritation

Lacrima! irritation due to vapors. Severe eye irritation Risk of blindness! (Regulation (EC) No 1272/2008, Annex VI)

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.
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

Quantitative data on the toxicity of this product are not available.

Decomposition of the substance with tissue moisture.

Further toxicological data:

After absorption:

Dizziness, Headache, Unconsciousness

Further data:

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

Ecotoxicity

No information available.

Persistence and degradability

No information available.

Bioaccumulative potential

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Partition coefficient: n-octanol/water

log Pow: 1.12

(experimental)

Bioaccumulation is not expected (log Pow <1). (Lit.)

Mobility in soil

No information available.

Additional ecological information

Biological effects:

Reacts with water to form toxic decomposition products.

Further information on ecology

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 1603
Proper shipping name	ETHYL BROMOACETATE
Class	6.1 (3)
Packing group	II
Environmentally hazardous	--

Air transport (IATA)

UN number	UN 1603
Proper shipping name	ETHYL BROMOACETATE
Class	6.1 (3)
Packing group	II
Environmentally hazardous	--
Special precautions for user	yes Not permitted for transport

Sea transport (IMDG)

UN number	UN 1603
Proper shipping name	ETHYL BROMOACETATE
Class	6.1 (3)
Packing group	II
Environmentally hazardous	--
Special precautions for user	yes
EmS	F-E S-D

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SECTION 15. Regulatory information

United States of America

OSHA Hazards

Combustible Liquid

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

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.

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

Remarks

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know

Ingredients

ethyl bromoacetate

New Jersey Right To Know

Ingredients

ethyl bromoacetate

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.

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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.
H300	Fatal if swallowed.
H310	Fatal in contact with skin.
H330	Fatal if inhaled.

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 08/20/2013

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.

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