

1. Identification

Product identifier	Butyl Acetate	
Other means of identification		
Catalog number	1082606	
Chemical name	Acetic acid, n-butyl ester	
Synonym(s)	Butyl ethanoate	
Recommended use	Specified quality tests and assay use only.	
Recommended restrictions	Not for use as a drug. Not for administration to humans or animals.	
Manufacturer/Importer/Supplier/Distributor information		
Company name	U. S. Pharmacopeia	
Address	12601 Twinbrook Parkway Rockville MD 20852-1790 US	
Telephone	RS Technical Services	301-816-8129
Website	www.usp.org	
E-mail	RSTECH@usp.org	
Emergency phone number	CHEMTREC within US & Canada	1-800-424-9300
	CHEMTREC outside US & Canada	+1 703-527-3887

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 3
Health hazards	Specific target organ toxicity, single exposure	Category 3 narcotic effects
OSHA hazard(s)	Not classified.	

Label elements



Signal word	Warning	
Hazard statement	Flammable liquid and vapor. May cause drowsiness or dizziness.	
Precautionary statement		
Prevention	Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only outdoors or in a well-ventilated area. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting// equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing mist or vapor. Wear protective gloves/eye protection/face protection.	
Response	If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. In case of fire: Use appropriate media for extinction.	
Storage	Store locked up. Store in a well-ventilated place. Keep cool. Keep container tightly closed.	
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.	
Hazard(s) not otherwise classified (HNOC)	Static accumulating flammable liquid	
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 3

Supplemental information

Hazard statement	Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion. Harmful to aquatic life.
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Precautionary statement

Prevention

Keep away from heat/sparks/open flames/hot surfaces. No smoking. Ground/bond container and receiving equipment. These alone may be insufficient to remove static electricity. Avoid release to the environment.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

3. Composition/information on ingredients

Substance

Hazardous components

Chemical name	Common name and synonyms	CAS number	%
Butyl Acetate	Butyl ethanoate	123-86-4	100

4. First-aid measures

Inhalation

Move to fresh air. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin contact

Take off immediately all contaminated clothing. Rinse skin with water/shower. Get medical attention if irritation develops and persists.

Eye contact

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Get medical attention if irritation develops and persists.

Ingestion

Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately.

Most important symptoms/effects, acute and delayed

Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea.

Indication of immediate medical attention and special treatment needed

Treatment for overdose should be symptomatic and supportive and may include the following:

1. Immediately dilute with 4-8 ounces of water or milk.
2. Observe for development of narcosis and respiratory depression.
3. Maintain ventilation and oxygenation, and evaluate with frequent arterial blood gas or pulse oximetry monitoring. Early use of PEEP and mechanical ventilation may be needed.
4. For cerebral edema: Monitor intracranial pressure, cardiovascular function, renal function, and serum electrolytes. Administer endotracheal intubation and mechanical ventilation; elevate head approximately 30 degrees; administer mannitol, unless contraindicated. Use controlled hyperventilation only if there is evidence of herniation and only as a temporizing measure. [Meditext 2005].

General information

Remove from exposure. Remove contaminated clothing. For treatment advice, seek guidance from an occupational health physician or other licensed health-care provider familiar with workplace chemical exposures. In the United States, the national poison control center phone number is 1-800-222-1222. If person is not breathing, give artificial respiration. If breathing is difficult, give oxygen if available. Persons developing serious hypersensitivity (anaphylactic) reactions must receive immediate medical attention.

5. Fire-fighting measures

Suitable extinguishing media

Water fog. Foam. Dry chemical powder. Carbon dioxide (CO₂).

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical

By heating and fire, harmful vapors/gases may be formed. No unusual fire or explosion hazards noted.

Special protective equipment and precautions for firefighters

Wear suitable protective equipment. Use protective equipment appropriate for surrounding materials.

Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep unnecessary personnel away. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Avoid inhalation of vapors. Wear appropriate personal protective equipment.

Methods and materials for containment and cleaning up

Remove sources of ignition. Absorb spillage with suitable absorbent material. For waste disposal, see section 13 of the SDS. Clean surface thoroughly to remove residual contamination. Keep combustibles (wood, paper, oil, etc.) away from spilled material.

7. Handling and storage

Precautions for safe handling

As a general rule, when handling USP Reference Standards, avoid all contact and inhalation of dust, mists, and/or vapors associated with the material. Clean equipment and work surfaces with suitable detergent or solvent after use. After removing gloves, wash hands and other exposed skin thoroughly.

Conditions for safe storage, including any incompatibilities

Store in tight container as defined in the USP-NF. This material should be handled and stored per label instructions to ensure product integrity.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Material	Type	Value
Butyl Acetate (CAS 123-86-4)	PEL	710 mg/m3
		150 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Material	Type	Value
Butyl Acetate (CAS 123-86-4)	REL	710 mg/m3
		150 ppm
	STEL	950 mg/m3 200 ppm

US. ACGIH Threshold Limit Values

Material	Type	Value
Butyl Acetate (CAS 123-86-4)	STEL	200 ppm
	TWA	150 ppm

Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Airborne exposure should be controlled primarily by engineering controls such as general dilution ventilation, local exhaust ventilation, or process enclosure. Local exhaust ventilation is generally preferred to general exhaust because it can control the contaminant at its source, preventing dispersion into the work area. An industrial hygiene survey involving air monitoring may be used to determine the effectiveness of engineering controls. Effectiveness of engineering controls intended for use with highly potent materials should be assessed by use of nontoxic surrogate materials.

Individual protection measures, such as personal protective equipment

Eye/face protection	Safety glasses or goggles
Skin protection	
Hand protection	Chemically compatible gloves. For handling solutions, ensure that the glove material is protective against the solvent being used. Use handling practices that minimize direct hand contact. Employees who are sensitive to natural rubber (latex) should use nitrile or other synthetic nonlatex gloves. Use of powdered latex gloves should be avoided due to the risk of latex allergy.
Other	For handling of laboratory scale quantities, a cloth lab coat is recommended. Where significant quantities are handled, work clothing may be necessary to prevent take-home contamination.
Respiratory protection	Where respirators are deemed necessary to reduce or control occupational exposures, use NIOSH-approved respiratory protection and have an effective respirator program in place (applicable U.S. regulation OSHA 29 CFR 1910.134).
Thermal hazards	Not available.
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Appearance	Clear, colorless liquid.
Physical state	Liquid.
Form	Liquid.
Odor	mild, fruity odor.
Odor threshold	7 ppm
pH	Not available.
Melting point/freezing point	-106.6 °F (-77 °C) / -108.4 °F (-78 °C)
Initial boiling point and boiling range	258.8 °F (126 °C)
Flash point	77.00 °F (25.00 °C) (CC)
Evaporation rate	1 (Butyl acetate=1); 5.8 (carbon tetrachloride=1)
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	1.4

	1.7 %
Flammability limit - upper (%)	7.5
	7.6 %
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	1.53318 kPa at 25 °C 15 mm Hg (at 25 °C)
Vapor density	4 (air=1)
Relative density	Not available.
Solubility in water	10 g/l Slightly soluble.
Partition coefficient (n-octanol/water)	1.78
	1.81 (at 23 °C)
Auto-ignition temperature	797 °F (425 °C)
Viscosity	Not available.
Other information	
Chemical family	Ester.
Dynamic viscosity	0.563 mPa.s
Dynamic viscosity temperature	104 °F (40 °C)
Heat of combustion (NFPA 30B)	27.6 kJ/g
Molecular formula	C6H12O2
Molecular weight	116.16
Percent volatile	100 %
Solubility (other)	Miscible with alcohol, with ether, and with propylene glycol; soluble in acetone and in ethanol.
Specific gravity	0.8826 at 20 °C
VOC (Weight %)	100 %

10. Stability and reactivity

Reactivity	No reactivity hazards known.
Chemical stability	Risk of ignition.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Heat, flames, and sparks.
Incompatible materials	Oxidizing agents, strong alkalis, acids, nitrates, and potassium-tert-butoxide
Hazardous decomposition products	Irritating and/or toxic fumes or gases. Emits toxic fumes under fire conditions.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Based on available data, the classification criteria are not met.
Inhalation	Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea.
Skin contact	Due to lack of data the classification is not possible.
Eye contact	Due to lack of data the classification is not possible.
Symptoms related to the physical, chemical, and toxicological characteristics	Coughing. Difficulty breathing. Sore throat. Abdominal pain. Nausea. Vomiting. Diarrhea. Loss of appetite. Skin discoloration. Eye damage. Headache. Dizziness. Loss of coordination. Confusion. Delirium. Weakness. Drowsiness.
Delayed and immediate effects of exposure	Kidney damage. Liver damage. Coma.
Acute toxicity	

Product	Species	Test Results
Butyl Acetate (CAS 123-86-4)		
Acute		
<i>Inhalation</i>		
LC50	Wistar rat	160 mg/l, 4 Hours
<i>Oral</i>		
LD50	Rat	14000 mg/kg
Skin corrosion/irritation	Due to lack of data the classification is not possible.	
Serious eye damage/eye irritation	Due to lack of data the classification is not possible.	
Respiratory sensitization	Due to lack of data the classification is not possible.	
Skin sensitization	Based on available data, the classification criteria are not met.	
Germ cell mutagenicity	Due to lack of data the classification is not possible.	
Carcinogenicity	Due to lack of data the classification is not possible.	
Reproductive toxicity	Based on available data, the classification criteria are not met.	
Specific target organ toxicity - single exposure	May cause drowsiness or dizziness.	
Specific target organ toxicity - repeated exposure	Due to lack of data the classification is not possible.	
Aspiration hazard	Due to lack of data the classification is not possible.	

12. Ecological information

Ecotoxicity	Harmful to aquatic life.		
	Product	Species	Test Results
	Butyl Acetate (CAS 123-86-4)		
	Aquatic		
	Crustacea	LC50	Water flea (Daphnia magna) 205 mg/l, 24 hours
	Fish	LC50	Bluegill (Lepomis macrochirus) 100 mg/l, 96 hours
			Fathead minnow (Pimephales promelas) 17 - 19 mg/l, 96 hours
Persistence and degradability	No data is available on the degradability of this product.		
Bioaccumulative potential	Not available.		
Mobility in soil	Not available.		
Other adverse effects	Not available.		

13. Disposal considerations

Disposal instructions	Dispose in accordance with all applicable regulations. Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste.
Local disposal regulations	Not available.
Hazardous waste code	D001: Waste Flammable material with a flash point <140 F
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT	
UN number	UN1123
UN proper shipping name	Butyl acetates
Transport hazard class(es)	3
Subsidiary class(es)	Not available.
Packing group	III
IATA	
UN number	UN1123
UN proper shipping name	Butyl acetates
Transport hazard class(es)	3
Subsidiary class(es)	-

Packaging group
Transport in bulk according to
Annex II of MARPOL 73/78 and
the IBC Code
DOT

III
No information available.



IATA



15. Regulatory information

US federal regulations CERCLA: Reportable Quantity 5000 lb (2270 kg)
All components are on the U.S. EPA TSCA Inventory List.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance No

SARA 311/312 Hazardous chemical Yes

Other federal regulations

Clean Water Act (CWA) Section 112(r) (40 CFR 68.130) Hazardous substance

Safe Drinking Water Act (SDWA) Not regulated.

Food and Drug Administration (FDA) Not regulated.

US state regulations California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

16. Other information, including date of preparation or last revision

Issue date 10-24-2005

Revision date 01-19-2015

Version # 02

Further information Not available.

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Revision Information This document has undergone significant changes and should be reviewed in its entirety.