

## MATERIAL SAFETY DATA SHEET

Date Printed: 02/26/2007

Date Updated: 02/05/2006

Version 1.6

## Section 1 - Product and Company Information

Product Name	BUTYL ACETATE, >=99.5%, A.C.S. REAGENT
Product Number	402842
Brand	SIAL
Company	Sigma-Aldrich
Address	3050 Spruce Street SAINT LOUIS MO 63103 US
Technical Phone:	800-325-5832
Fax:	800-325-5052
Emergency Phone:	314-776-6555

## Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
BUTYL ACETATE	123-86-4	No
Formula	C6H12O2	
Synonyms	Acetate de butyle (French) * Acetic acid n-butyl ester * Butile (acetati di) (Italian) * Butylacetat (German) * Butyl acetate (OSHA) * n-Butyl acetate (ACGIH:OSHA) * 1-Butyl acetate * Butylacetaten (Dutch) * Butyle (acetate de) (French) * Butylester kyseliny octove (Czech) * Butyl ethanoate * Octan n-butylu (Polish)	
RTECS Number:	AF7350000	

## Section 3 - Hazards Identification

## EMERGENCY OVERVIEW

Flammable. Toxic.

Toxic by inhalation. Irritating to respiratory system and skin.

Risk of serious damage to eyes.

Target organ(s): Central nervous system.

## HMIS RATING

HEALTH: 2\*

FLAMMABILITY: 3

REACTIVITY: 0

## NFPA RATING

HEALTH: 2

FLAMMABILITY: 3

REACTIVITY: 0

\*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

## Section 4 - First Aid Measures

## ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately.

#### INHALATION EXPOSURE

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

#### DERMAL EXPOSURE

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

#### EYE EXPOSURE

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

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### Section 5 - Fire Fighting Measures

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#### FLAMMABLE HAZARDS

Flammable Hazards: Yes

#### EXPLOSION HAZARDS

Vapor may travel considerable distance to source of ignition and flash back. Container explosion may occur under fire conditions. Forms explosive mixtures in air.

#### FLASH POINT

74 °F 23 °C Method: closed cup

#### EXPLOSION LIMITS

Lower: 1.7 % Upper: 7.6 %

#### AUTOIGNITION TEMP

421 °C

#### FLAMMABILITY

N/A

#### EXTINGUISHING MEDIA

Suitable: For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

#### FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Specific Hazard(s): Vapor may travel considerable distance to source of ignition and flash back. Flammable liquid. Emits toxic fumes under fire conditions.

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### Section 6 - Accidental Release Measures

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#### PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area. Shut off all sources of ignition. Evacuate area and keep personnel upwind.

#### PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy

rubber gloves.

#### METHODS FOR CLEANING UP

Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

#### ENVIRONMENTAL PRECAUTION(S)

Do not allow material to enter drains or water courses. Avoid contaminating sewers and waterways with this material.

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### Section 7 - Handling and Storage

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#### HANDLING

User Exposure: Do not breathe vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

#### STORAGE

Suitable: Keep container closed. Keep away from heat, sparks, and open flame.

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### Section 8 - Exposure Controls / PPE

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#### ENGINEERING CONTROLS

Safety shower and eye bath. Use nonsparking tools. Use only in a chemical fume hood. Mechanical exhaust. Ground all equipment, vessels, tables, and other metallic objects that may come into contact with the product.

#### PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.  
Hand: Compatible chemical-resistant gloves.  
Eye: Chemical safety goggles.

#### GENERAL HYGIENE MEASURES

Wash thoroughly after handling. Remove and wash contaminated clothing promptly.

#### EXPOSURE LIMITS, RTECS

Country	Source	Type	Value
USA	ACGIH	STEL	200 PPM
USA	ACGIH	TWA	150 PPM
USA	MSHA Standard-air	TWA	150 PPM (700 MG/M3)
USA	OSHA.	PEL	8H TWA 150 PPM (710 MG/M3)
New Zealand OEL			
Remarks: check ACGIH TLV			
USA	NIOSH	TWA	150 PPM
		STEL	200 PPM

#### EXPOSURE LIMITS

Country	Source	Type	Value
USA	ACGIH	TWA STEL	150,200 ppm
USA	OSHA.	TWA STEL	150,200 ppm
USA	NIOSH		10,000 ppm
USA	NIOSH		IDLH-1990

Poland	NDSch	1,700 ppm
Poland	NDS	IDLH-1994
Poland	NDSP	950 MG/M3
		200 MG/M3

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## Section 9 - Physical/Chemical Properties

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Appearance	Physical State: Liquid Color: Colorless	
Property	Value	At Temperature or Pressure
Molecular Weight	116.16 AMU	
pH	N/A	
BP/BP Range	126.0 - 127.0 °C	
MP/MP Range	- 78.0 °C	
Freezing Point	- 78.0 °C	
Vapor Pressure	8 mmHg	20 °C
Vapor Density	4 g/l	
Saturated Vapor Conc.	N/A	
SG/Density	0.881 g/cm3	
Bulk Density	N/A	
Odor Threshold	7.0 - 20.0 ppm	
Volatile%	N/A	
VOC Content	N/A	
Water Content	< 0.1 %	
Solvent Content	N/A	
Evaporation Rate	1	
Viscosity	0.732 Pas	20 °C
Surface Tension	14.5 mN/m	25 °C
Partition Coefficient	Log Kow: 1.82	
Decomposition Temp.	N/A	
Flash Point	74 °F 23 °C	Method: closed cup
Explosion Limits	Lower: 1.7 % Upper: 7.6 %	
Flammability	N/A	
Autoignition Temp	421 °C	
Refractive Index	1.394	
Optical Rotation	N/A	
Miscellaneous Data	N/A	
Solubility	Other Solvents: ACETONE, ETHER, PROPYLENGLYCOL	

N/A = not available

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## Section 10 - Stability and Reactivity

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### STABILITY

Stable: Stable.

Materials to Avoid: Strong oxidizing agents, Strong reducing agents, Strong bases.

### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

### HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

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## Section 11 - Toxicological Information

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### ROUTE OF EXPOSURE

Skin Contact: Causes skin irritation.

Skin Absorption: May be harmful if absorbed through the skin.  
Eye Contact: Causes severe eye irritation.  
Inhalation: Toxic if inhaled. Material is irritating to mucous membranes and upper respiratory tract.  
Ingestion: May be harmful if swallowed.

TARGET ORGAN(S) OR SYSTEM(S)

Central nervous system.

SIGNS AND SYMPTOMS OF EXPOSURE

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.  
Drowsiness. Exposure can cause:

TOXICITY DATA

Oral

Rat

\*

LD50

4 HRS

Inhalation

Rat

9.6 MG/L TO >29.2 MG/L

LC50

Skin

Rabbit

17,600 mg/kg

LD50

Oral

Rat

10768 mg/kg

LD50

Remarks: Liver:Other changes. Lungs, Thorax, or Respiration:Other changes. Behavioral:Somnolence (general depressed activity).

Inhalation

Rat

390 ppm

LC50

Remarks: Blood: Hemorrhage. Lungs, Thorax, or Respiration:Acute pulmonary edema. Behavioral:Change in motor activity (specific assay).

Oral

Mouse

6000 mg/kg

LD50

Inhalation

Mouse

6,000 mg/m3

LC50

Intraperitoneal

Mouse

1230 MG/KG

LD50

Oral

Rabbit

3200 mg/kg  
LD50

Skin  
Rabbit  
> 17600 mg/kg  
LD50

Oral  
Guinea pig  
4700 mg/kg  
LD50

Oral  
Mammal  
4300 mg/kg  
LD50

Inhalation  
Mammal  
40,000 mg/m3  
LC50

#### IRRITATION DATA

Eyes  
Rabbit  
Remarks: Moderate irritation effect

Eyes  
Human  
300 ppm

Skin  
Rabbit  
500 mg  
24H  
Remarks: Moderate irritation effect

Eyes  
Rabbit  
100 mg  
Remarks: Moderate irritation effect

#### CHRONIC EXPOSURE - CARCINOGEN

Result: This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

#### CHRONIC EXPOSURE - TERATOGEN

Species: Rat  
Dose: 1500 PPM/7H  
Route of Application: Inhalation  
Exposure Time: (7-16D PREG)  
Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities: Musculoskeletal system.

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#### Section 12 - Ecological Information

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#### ACUTE ECOTOXICITY TESTS

Test Type: EC50 Algae  
Time: 24 h  
Value: 1,200 mg/l

Test Type: EC50 Daphnia  
Species: Daphnia magna  
Time: 24 h  
Value: 72.8 - 205.0 mg/l

Test Type: LC50 Fish  
Species: Lepomis macrochirus (Bluegill)  
Time: 96 h  
Value: 100 mg/l

Test Type: LC50 Fish  
Species: Leuciscus idus  
Time: 48 h  
Value: 64.0 - 121.0 mg/l

Test Type: LC50 Fish  
Species: Pimephales promelas (Fathead minnow)  
Time: 96 h  
Value: 17.0 - 19.0 mg/l

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## Section 13 - Disposal Considerations

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### APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

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## Section 14 - Transport Information

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### DOT

Proper Shipping Name: Butyl acetates  
UN#: 1123  
Class: 3  
Packing Group: Packing Group III  
Hazard Label: Flammable liquid  
PIH: Not PIH

### IATA

Proper Shipping Name: Butyl acetates  
IATA UN Number: 1123  
Hazard Class: 3  
Packing Group: III

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## Section 15 - Regulatory Information

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### EU DIRECTIVES CLASSIFICATION

R: 10-66-67  
Risk Statements: Flammable. Repeated exposure may cause skin dryness or cracking. Vapors may cause drowsiness and dizziness.  
S: 25  
Safety Statements: Avoid contact with eyes.

### US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Flammable. Toxic.  
Risk Statements: Toxic by inhalation. Irritating to respiratory system and skin. Risk of serious damage to eyes.

Safety Statements: Keep away from sources of ignition - no smoking. Take precautionary measures against static discharges. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing. US Statements: Target organ(s): Central nervous system.

#### UNITED STATES REGULATORY INFORMATION

SARA LISTED: No

TSCA INVENTORY ITEM: Yes

#### CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes

NDSL: No

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#### Section 16 - Other Information

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#### DISCLAIMER

For R&D use only. Not for drug, household or other uses.

#### WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2007 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.