SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name : Butyl acetate

Product Number : 287725
Brand : Sigma-Aldrich
Index-No. : 607-025-00-1
CAS-No. : 123-86-4

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

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.
3050 SPRUCE ST
ST. LOUIS MO  63103
UNITED STATES

Telephone : +1 314 771-5765
Fax : +1 800 325-5052

1.4 Emergency telephone

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

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable liquids (Category 3), H226
Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336
Short-term (acute) aquatic hazard (Category 3), H402

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

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal Word : Warning

Sigma-Aldrich - 287725
Hazard statement(s)
H226  Flammable liquid and vapor.
H336  May cause drowsiness or dizziness.
H402  Harmful to aquatic life.

Precautionary statement(s)
P210  Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
P233  Keep container tightly closed.
P240  Ground/bond container and receiving equipment.
P241  Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242  Use only non-sparking tools.
P243  Take precautionary measures against static discharge.
P261  Avoid breathing mist or vapors.
P271  Use only outdoors or in a well-ventilated area.
P273  Avoid release to the environment.
P280  Wear protective gloves/ eye protection/ face protection.
P303 + P361 + P353  IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P312  IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
P370 + P378  In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P403 + P233  Store in a well-ventilated place. Keep container tightly closed.
P403 + P235  Store in a well-ventilated place. Keep cool.
P405  Store locked up.
P501  Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS
Repeated exposure may cause skin dryness or cracking.

SECTION 3: Composition/information on ingredients

3.1 Substances
Formula       : C₆H₁₂O₂
Molecular weight : 116.16 g/mol
CAS-No.       : 123-86-4
EC-No.        : 204-658-1
Index-No.     : 607-025-00-1

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Butylacetate</td>
<td>Flam. Liq. 3; STOT SE 3;</td>
<td>&lt;= 100 %</td>
</tr>
<tr>
<td></td>
<td>Aquatic Acute 3; H226, H336, H402</td>
<td></td>
</tr>
</tbody>
</table>

For the full text of the H-Statements mentioned in this Section, see Section 16.
SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice
Show this material safety data sheet to the doctor in attendance.

If inhaled
After inhalation: fresh air. Call in physician.

In case of skin contact
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower.

In case of eye contact
After eye contact: rinse out with plenty of water. Remove contact lenses.

If swallowed

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: Firefighting measures

5.1 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.

5.2 Special hazards arising from the substance or mixture
Carbon oxides
Combustible.
Vapors are heavier than air and may spread along floors.
Forms explosive mixtures with air at elevated temperatures.
Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters
In the event of fire, wear self-contained breathing apparatus.

5.4 Further information
Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.
SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

6.2 Environmental precautions
Do not let product enter drains. Risk of explosion.

6.3 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. Chemizorb®). Dispose of properly. Clean up affected area.

6.4 Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Advice on safe handling
Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/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.

Hygiene measures
Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Storage conditions
Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.

Storage class
Storage class (TRGS 510): 3: Flammable liquids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters
Ingredients with workplace control parameters
### Table: Component Data

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Butylacetate</td>
<td>123-86-4</td>
<td>TWA</td>
<td>150 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td>Remarks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Upper Respiratory Tract irritation</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eye irritation</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Adopted values or notations enclosed are those for which changes are proposed in the NIC</td>
<td>See Notice of Intended Changes (NIC)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>200 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
<td>Adopted values or notations enclosed are those for which changes are proposed in the NIC</td>
<td>See Notice of Intended Changes (NIC)</td>
</tr>
<tr>
<td>TWA</td>
<td></td>
<td>150 ppm</td>
<td>710 mg/m³</td>
<td>USA. NIOSH Recommended Exposure Limits</td>
</tr>
<tr>
<td>ST</td>
<td></td>
<td>200 ppm</td>
<td>950 mg/m³</td>
<td>USA. NIOSH Recommended Exposure Limits</td>
</tr>
<tr>
<td>TWA</td>
<td></td>
<td>150 ppm</td>
<td>710 mg/m³</td>
<td>USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants</td>
</tr>
<tr>
<td>PEL</td>
<td></td>
<td>150 ppm</td>
<td>710 mg/m³</td>
<td>California permissible exposure limits for chemical contaminants (Title 8, Article 107)</td>
</tr>
<tr>
<td>STEL</td>
<td></td>
<td>200 ppm</td>
<td>950 mg/m³</td>
<td>California permissible exposure limits for chemical contaminants (Title 8, Article 107)</td>
</tr>
<tr>
<td>TWA</td>
<td></td>
<td>50 ppm</td>
<td></td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td>STEL</td>
<td></td>
<td>150 ppm</td>
<td></td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
</tbody>
</table>

### Exposure controls

#### Appropriate engineering controls
Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance.

#### Personal protective equipment

**Eye/face protection**
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

**Body Protection**
Flame retardant antistatic protective clothing.

**Respiratory protection**
required when vapours/aerosols are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387
and other accompanying standards relating to the used respiratory protection system.

**Control of environmental exposure**
Do not let product enter drains. Risk of explosion.

### SECTION 9: Physical and chemical properties

#### 9.1 Information on basic physical and chemical properties

- **a)** Appearance  
  Form: liquid  
  Color: colorless, clear
- **b)** Odor  
  fruity
- **c)** Odor Threshold  
  7 ppm
- **d)** pH  
  6.2 at 5.3 g/l at 20 °C (68 °F)
- **e)** Melting point/freezing point  
  Melting point/range: -78 °C (-108 °F) - lit.
- **f)** Initial boiling point and boiling range  
  124 - 126 °C 255 - 259 °F - lit.
- **g)** Flash point  
- **h)** Evaporation rate  
  No data available
- **i)** Flammability (solid, gas)  
  No data available
- **j)** Upper/lower flammability or explosive limits  
  Upper explosion limit: 7.6 %(V)
  Lower explosion limit: 1.7 %(V)
- **k)** Vapor pressure  
  11.2 hPa at 20 °C (68 °F) - Regulation (EC) No. 440/2008, Annex, A.4
- **l)** Vapor density  
  4.01 - (Air = 1.0)
- **m)** Density  
  0.88 g/cm3 at 25 °C (77 °F) - lit.
  Relative density  
  No data available
- **n)** Water solubility  
  5.3 g/l at 20 °C (68 °F) - OECD Test Guideline 105 - soluble
- **o)** Partition coefficient: n-octanol/water  
  log Pow: 2.3 at 25 °C (77 °F) - OECD Test Guideline 117 - Bioaccumulation is not expected.
- **p)** Autoignition temperature  
  415 °C (779 °F) at 1,010 hPa - DIN 51794
- **q)** Decomposition temperature  
  No data available
- **r)** Viscosity  
  0.83 mm2/s at 20 °C (68 °F) - ASTM D 445 - 0.66 mm2/s at 40 °C (104 °F) - ASTM D 445 -
- **s)** Explosive properties  
  No data available
- **t)** Oxidizing properties  
  none
9.2 **Other safety information**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conductivity</td>
<td>&lt; 0.2 $\mu$S/cm</td>
</tr>
<tr>
<td>Surface tension</td>
<td>61.3 mN/m at 1g/l at 20 °C (68 °F) - OECD Test Guideline 115</td>
</tr>
<tr>
<td>Relative vapor density</td>
<td>4.01 - (Air = 1.0)</td>
</tr>
</tbody>
</table>

**SECTION 10: Stability and reactivity**

10.1 **Reactivity**

Vapor/air-mixtures are explosive at intense warming.

10.2 **Chemical stability**

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

10.3 **Possibility of hazardous reactions**

Risk of explosion with:
- Alkali metals
- Alkali hydroxides
- Strong oxidizing agents

10.4 **Conditions to avoid**

Heating.

10.5 **Incompatible materials**

Rubber, various plastics

10.6 **Hazardous decomposition products**

In the event of fire: see section 5

**SECTION 11: Toxicological information**

11.1 **Information on toxicological effects**

**Acute toxicity**

- LD50 Oral - Rat - female - 10,760 mg/kg (OECD Test Guideline 423)
- Symptoms: Risk of aspiration upon vomiting., Aspiration may cause pulmonary edema and pneumonitis.
- Inhalation: No data available
- LD50 Dermal - Rabbit - male and female - 14,112 mg/kg (OECD Test Guideline 402)
- No data available

**Skin corrosion/irritation**

- Skin - Rabbit
- Result: No skin irritation - 4 h (OECD Test Guideline 404)
- Remarks: Drying-out effect resulting in rough and chapped skin.
**Serious eye damage/eye irritation**  
Eyes - Rabbit  
Result: No eye irritation  
(OECD Test Guideline 405)

**Respiratory or skin sensitization**  
No data available

**Germ cell mutagenicity**  
Test Type: Ames test  
Test system: Escherichia coli/Salmonella typhimurium  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471  
Result: negative

Test Type: Micronucleus test  
Species: Mouse  
Cell type: Red blood cells (erythrocytes)  
Application Route: Oral  
Method: OECD Test Guideline 474  
Result: negative

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

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.

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.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA’s list of regulated carcinogens.

**Reproductive toxicity**  
No data available

**Specific target organ toxicity - single exposure**  
May cause drowsiness or dizziness. - Central nervous system

**Specific target organ toxicity - repeated exposure**  
No data available

**Aspiration hazard**  
No data available

11.2 **Additional Information**

Repeated dose toxicity - Rat - male and female - Oral - 13 Weeks - NOAEL (No observed adverse effect level) - 125 mg/kg - LOAEL (Lowest observed adverse effect level) - 500 mg/kg

RTECS: AF7350000  
Drowsiness  
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

After absorption of large quantities:
SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish
flow-through test LC50 - Pimephales promelas (fathead minnow) - 18 mg/l - 96 h
(OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates
static test EC50 - Daphnia magna (Water flea) - 44 mg/l - 48 h
(OECD Test Guideline 202)

Toxicity to algae
static test ErC50 - Pseudokirchneriella subcapitata (green algae) - 397 mg/l - 72 h
(OECD Test Guideline 201)
Remarks: (in analogy to similar products)
The value is given in analogy to the following substances: Isobutyl acetate

Toxicity to bacteria
static test IC50 - Tetrahymena pyriformis - 356 mg/l - 40 h
Remarks: (ECHA)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)
semi-static test EC50 - Daphnia magna (Water flea) - 34.2 mg/l - 21 d
(OECD Test Guideline 211)
Remarks: (in analogy to similar products)
The value is given in analogy to the following substances: Isobutyl acetate

12.2 Persistence and degradability

Biodegradability
aerobic - Exposure time 28 d
Result: 83 % - Readily biodegradable.
(OECD Test Guideline 301D)

Theoretical oxygen demand
2,207 mg/g
Remarks: (Lit.)

Ratio BOD/ThBOD
7 - 46 %
Remarks: (Lit.)

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

Sigma-Aldrich - 287725
12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Endocrine disrupting properties
No data available

12.7 Other adverse effects
Discharge into the environment must be avoided.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product
Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14: Transport information

DOT (US)
UN number: 1123 Class: 3 Packing group: III
Proper shipping name: Butyl acetates
Reportable Quantity (RQ): 5000 lbs
Poison Inhalation Hazard: No

IMDG
UN number: 1123 Class: 3 Packing group: III EMS-No: F-E, S-D
Proper shipping name: BUTYL ACETATES

IATA
UN number: 1123 Class: 3 Packing group: III
Proper shipping name: Butyl acetates

SECTION 15: Regulatory information

SARA 302 Components
This material does not contain any components with a section 302 EHS TPQ.

SARA 313 Components
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 311/312 Hazards
Fire Hazard

Massachusetts Right To Know Components
SECTION 16: Other information

Further information
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 Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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