SAFETY DATA SHEET

Product Name | n-Butyl acetate
MSDS number | 80015
Revision Number | 10.01

1. Identification of the substance/preparation and the company/undertaking

Product Name
n-Butyl acetate

Manufacturer or supplier's details

Celanese (Shanghai) International Trading Co., Ltd.
Room 239, Xinmao Building
South Taizhong Road
Waigaoqiao Free Trade Zone
Shanghai, China

Celanese Pte Ltd
60 Anson Road
Maple Tree Anson #13-02
Singapore 079914

Product Information
HazCom@celanese.com

Emergency telephone number
+(65) 62656917 (Operations Room direct dial)
or fax request to +(65) 62664696 (Facsimile to Operations Room)
or email to posh.er@paccoffshore.com.sg

In China Emergency Number: 86-532-83889090 (NRCC)

Identified uses
Solvent

2. Hazards identification

GHS Classification

<table>
<thead>
<tr>
<th>Hazards</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammable liquid</td>
<td>Category 3</td>
</tr>
<tr>
<td>Specific target organ systemic toxicity (single exposure)</td>
<td>Category 3</td>
</tr>
<tr>
<td>Acute aquatic toxicity</td>
<td>Category 3</td>
</tr>
</tbody>
</table>

Labeling
Signal Word

Hazard Statements
H226 - Flammable liquid and vapor
H336 - May cause drowsiness and dizziness
H402 - Harmful to aquatic life

Precautionary Statements
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P280 - Wear protective gloves/protective clothing/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 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P312 - Call a POISON PHYSICIAN/doctor/physician if you feel unwell.
P273 - Avoid release to the environment

3. Composition/Information on ingredients

Chemical characterization
Acetic acid n-butyl ester

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No</th>
<th>Percent %</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Butyl acetate</td>
<td>123-86-4</td>
<td>min 99.5</td>
</tr>
</tbody>
</table>

4. First aid measures

General Information
Remove contaminated, soaked clothing immediately and dispose of safely. Pay attention to own protection. In any case show the physician the Safety Data Sheet.

Skin
Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If symptoms persist, call a physician.

Eyes
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician immediately.

Inhalation
Keep at rest. Move to fresh air. Call a physician immediately.

Ingestion
Rinse with plenty of water. If swallowed, do not induce vomiting - seek medical advice.
5. Fire-fighting measures

Suitable extinguishing media
Foam, Dry chemical, Carbon dioxide (CO2)

Extinguishing media which must not be used for safety reasons
Do not use a solid water stream as it may scatter and spread fire.

Special exposure hazards arising from the substance or preparation itself, its combustion products, or released gases
Under conditions giving incomplete combustion, hazardous gases produced may consist of
Carbon monoxide
Carbon dioxide (CO2)
Combustion gases of organic materials must in principle be graded as inhalation poisons
Vapors are heavier than air and may spread along floors

Special protective equipment for fire-fighters
self-contained breathing apparatus (EN 133).

Environmental precautions
Water used to fight fire runoff can cause environmental damage. Dike and collect water used to fight fire.

Other Information
Cool containers / tanks with water spray.

6. Accidental release measures

Personal precautions
Avoid contact with the skin and the eyes. Keep away from heat and sources of ignition. Provide adequate ventilation.

Environmental precautions
Prevent further leakage or spillage. Do not discharge into the drains/surface waters/groundwater.

Methods for cleaning up
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal. Dispose of in accordance with local regulations.

7. Handling and storage

Advice on safe handling
Provide sufficient air exchange and/or exhaust in work rooms.

Incompatible products
Keep away from: Strong acids, Peroxides, Oxidizing agents, Amines

Protection - fire and explosion:
Keep away from sources of ignition - No smoking. Take necessary action to avoid static electricity discharge.
Ground and bond containers when transferring material. In case of fire, emergency cooling with water spray should be available.
Material storage
Store locked up. Keep in a dry, cool and well-ventilated place.

Incompatible products
Keep away from: Strong acids, Peroxides, Oxidizing agents, Amines

Technical measures/Storage conditions
Keep tightly closed in a dry, cool and well-ventilated place. Handle an open container with care.

8. Exposure controls / personal protection

ACGIH Exposure Limits

<table>
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<tr>
<th>Components</th>
<th>TWA</th>
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<tr>
<td>n-Butyl acetate</td>
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<tr>
<th>Components</th>
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<td>n-Butyl acetate</td>
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OSHA Exposure Limits

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Exposure controls

Engineering measures
General or dilution ventilation is frequently insufficient as the sole means of controlling employee exposure. Local ventilation is usually preferred. Explosion-proof equipment (for example fans, switches, and grounded ducts) should be used in mechanical ventilation systems.

Personal protective equipment

General advice
Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Use only in an area equipped with a safety shower. Hold eye wash fountain available.

Hygiene measures
When using, do not eat, drink or smoke. Take off all contaminated clothing immediately. Wash hands before breaks and immediately after handling the product.

Respiratory protection
If aerosols or vapors are present, respiratory protection is required (gas filter A).
Eye protection

Tightly fitting safety goggles. In addition to goggles, wear a face shield if there is a reasonable chance for splash to the face.. Equipment should conform to EN 166.

Skin protection

impervious clothing

Hand protection

Chemicals resistant gloves

Suitable material
Butyl-rubber

Type
Butject (Company KCL) or comparable article;

or refer to glove manufacturer's recommendation

Evaluation
according to EN 374: level 3

Material thickness
Approx. 0.7 mm

Break through time
approx. 60 min

9. Physical and chemical properties

Appearance

Form liquid

Color colourless

Odor fruity

Odor Threshold 7 - 20 ppm (gas in air)

Molecular Weight 116.16 g/mol

Flash point 24°C

Method DIN EN ISO 13736

Ignition temperature 415°C

Method DIN 51794

Decomposition Not determined

Temperature

Lower explosion limit 1.2 Vol. %

Upper explosion limit 7.5 Vol. %

Flammability (solids) not applicable

Melting point/range -78°C

Boiling point/range 126.1°C @ 1013 hPa

Method DIN 53171

Density 0.881 g/ml @ 20°C

pH 6.2 @ 20°C

Concentration @ 5 g/l

Viscosity 0.685 mPa*s @ 25°C

Vapor pressure 15 hPa @ 20°C

63 hPa @ 50°C

Vapor density 4.0 (Air=1)

Evaporation Rate 1.0 (n-Butyl acetate = 1)

Water solubility 5.3 g/l @ 20°C

Solubility in other solvents miscible with, Ethanol, Diethyl ether, soluble in, Acetone, Chloroform

Partition coefficient 2.3 (measured)

(n-octanol/water)

Explosive Properties not applicable based on consideration of the structure

Oxidizing Properties not applicable based on consideration of the structure

Surface Tension 61.3 mN/m @ 20°C

Concentration 1 g/l

Dissociation constant not applicable based on consideration of the structure
10. Stability and reactivity

Reactivity
Stable under normal conditions of handling, use and transportation.

Conditions to avoid
Avoid any source of ignition. Avoid contact with heat, sparks, open flame, and static discharge.

Incompatible Materials
Keep away from: Peroxides, Oxidizing agents, Strong acids, Amines

Hazardous Combustion or Decomposition Products:
Thermal decomposition products may include oxides of carbon.
11. Toxicological information

Potential health effects

Routes of exposure: Skin, eyes, inhalation.

Immediate effects

- **Skin**: Prolonged or repeated contact may dry skin and cause irritation. Symptoms of overexposure include: Drying, cracking or inflammation of skin.
- **Eyes**: Essentially non-irritating.
- **Inhalation**: Vapors may cause drowsiness and dizziness.
- **Ingestion**: Essentially non-toxic.

n-Butyl acetate

- **Acute oral toxicity**: LD50: 10760 mg/kg
- **Acute dermal toxicity**: LD50: > 14000 mg/kg
- **Skin corrosion/irritation**
  - **Species**: rabbit
  - **Method**: OECD 404
- **Skin Sensitization**
  - **Species**: guinea pig
  - **Method**: OECD 406
- **Serious eye damage/eye irritation**
  - **Species**: rabbit eye
  - **Method**: OECD 405
- **Carcinogenic effects**
  - **in vitro Mutagenicity**: Ames Test: negative - with and without metabolic activation - Method: OECD 471
  - **in vivo Mutagenicity**: Mammalian Erythrocyte Micronucleus Test in mice: negative - Method: OECD 474
- **Reproductive toxicity**
  - **Species**: NOAEC: 9640 mg/m³
- **Developmental effects**
  - **Species**: LOAEC: 7230 mg/m³
- **Neurotoxicity**: No evidence of neurotoxicity
12. Ecological Information

n-Butyl acetate

<table>
<thead>
<tr>
<th>Type of study</th>
<th>6-hour inhalation toxicity study</th>
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<tbody>
<tr>
<td>Routes of exposure</td>
<td>inhalation</td>
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<tr>
<td></td>
<td>NOAEC: 2410 mg/m³</td>
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</table>

13. Disposal considerations

Product information
Disposal required in compliance with all waste management related state and local regulations. The choice of the appropriate method of disposal depends on the product composition by the time of disposal as well as the local statutes and possibilities for disposal.

Uncleaned empty packaging
Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse

14. Transport information

US Department of Transportation

<table>
<thead>
<tr>
<th>UN/NA Number:</th>
<th>UN 1123</th>
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<tbody>
<tr>
<td>Proper Shipping Name</td>
<td>Butyl acetates</td>
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<tr>
<td>Hazard class</td>
<td>3</td>
</tr>
<tr>
<td>Packing Group</td>
<td>III</td>
</tr>
<tr>
<td>Reportable Quantity (RQ)</td>
<td>5000lb/2270kg</td>
</tr>
<tr>
<td>Emergency Resp. Guide</td>
<td>128</td>
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ADR/RID

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<tr>
<td>Packing group</td>
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<td>Environmentally</td>
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### 14. Transport information

<table>
<thead>
<tr>
<th>Description</th>
<th>Information</th>
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<tbody>
<tr>
<td>Tunnel Restriction Code</td>
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<tr>
<td>Hazard Label(s)</td>
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<tr>
<td>Hazard Number</td>
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</tbody>
</table>

**ADN**
- **UN/ID No.**: UN 1123
- **Proper Shipping Name**: Butyl acetates
- **Hazard Class**: 3
- **Classification Code**: F1
- **Packing group**: III
- **Environmentally hazardous**: no
- **Hazard Labels**: 3

**ICAO/IATA**
- **UN-No.**: UN 1123
- **Proper Shipping Name**: Butyl acetates
- **Hazard Class**: 3
- **Packing group**: III
- **Environmentally hazardous**: no
- **Hazard Labels**: 3

**IMDG**
- **UN/ID No.**: UN 1123
- **Proper Shipping Name**: Butyl acetates
- **Hazard Class**: 3
- **Packing group**: III
- **Marine pollutant**: no
- **Hazard Labels**: 3
- **EmS Code**: F-E, S-D

### 15. Regulatory information

**International Inventories**
Listed on the chemical inventories of the following countries or qualifies for an exemption:
- Australia (AICS)
- Canada (DSL)
- China (IECSC)
- Europe (EINECS)
- Japan (ENCS)
- Japan (ISHL)
- Korea (KECI)
- New Zealand (NZIoC)
- Philippines (PICCS)
- United States (TSCA)
16. Other information

HMIS: Health: 2 Flammability: 3 Physical Hazard: 0

Prepared By
Product Stewardship Department
Celanese

Other Information:
Observe national and local legal requirements.

Changes against the previous version are marked by ***

Sources of key data used to compile the datasheet
Information contained in this safety data sheet is based on Celanese owned data and public sources deemed valid or acceptable. The absence of data elements required by ANSI or 1907/2006/EC indicates that no data meeting these requirements is available.

Further information
This information is based on our present state of knowledge. It shall describe our products regarding safety requirements and shall not be construed as a guarantee or statement of condition and/or quality. For more information, other material safety data sheets or technical data sheets please consult the Celanese homepage (www.celanese.com)