We create chemistry

Safety data sheet

1. Identification

Product identifier

n-BUTYL ACETATE

Chemical name: n-Butyl acetate
INDEX-Number: 607-025-00-1
CAS Number: 123-86-4

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

Relevant identified uses: solvent(s)

Details of the supplier of the safety data sheet

Company:
BASF SE
67056 Ludwigshafen
GERMANY
Operating Division Petrochemicals

Telephone: +49 621 60-42151
E-mail address: sds-petrochemicals@basf.com

Emergency telephone number

International emergency number:
Telephone: +49 180 2273-112

2. Hazards Identification

Classification of the substance or mixture

According to UN GHS criteria

Flam. Liq. 3
STOT SE 3 (May cause drowsiness and dizziness.)
Aquatic Acute 3

For the classifications not written out in full in this section the full text can be found in section 16.

Label elements

Globally Harmonized System (GHS)

Pictogram:

Signal Word:
Warning

Hazard Statement:

H226	Flammable liquid and vapour.
H336	May cause drowsiness or dizziness.
H402	Harmful to aquatic life.

Precautionary Statements (Prevention):

P271	Use only outdoors or in a well-ventilated area.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280	Wear protective gloves and eye protection or face protection.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P243	Take action to prevent static discharges.
P273	Avoid release to the environment.
P241	Use explosion-proof electrical, ventilating and lighting equipment.
P240	Ground and bond container and receiving equipment.
P242	Use non-sparking tools.

Precautionary Statements (Response):

P312	Call a POISON CENTER or physician if you feel unwell.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P370 + P378	In case of fire: Use alcohol-resistant foam, carbon dioxide, dry powder or water spray for extinction.

Precautionary Statements (Storage):

P233	Keep container tightly closed.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.

Precautionary Statements (Disposal):

P501	Dispose of contents and container to hazardous or special waste collection point.

Labeling of special preparations (GHS):
Repeated exposure may cause skin dryness or cracking.

Other hazards

According to UN GHS criteria

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

See section 12 - Results of PBT and vPvB assessment.

3. Composition/Information on Ingredients

Substances

Chemical nature

n-Butyl acetate (Content (W/W): >= 99,5 %)
CAS Number: 123-86-4
EC-Number: 204-658-1
INDEX-Number: 607-025-00-1

Hazardous ingredients (GHS)
According to UN GHS criteria

Butan-1-ol

Content (W/W): >= 0,1 % - < 0,2 %	Flam. Liq. 3
CAS Number: 71-36-3	Acute Tox. 5 (oral)
EC-Number: 200-751-6	Acute Tox. 5 (dermal)
	Skin Irrit. 2
	Eye Dam. 1
	STOT SE 3 (drowsiness and dizziness)
	STOT SE 3 (irr. to respiratory syst.)
	H226, H318, H315, H336, H335, H303 + H313

For the classifications not written out in full in this section the full text can be found in section 16.

Mixtures

Not applicable

4. First-Aid Measures

Description of first aid measures

First aid personnel should pay attention to their own safety. If the patient is likely to become unconscious, place and transport in stable sideways position (recovery position). Immediately remove contaminated clothing.

If inhaled:
Keep patient calm, remove to fresh air, seek medical attention.

On skin contact:
Wash thoroughly with soap and water

On contact with eyes:
Wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

On ingestion:
Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11.

Hazards: Danger of drowsiness and dizziness.

Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11.
(Further) symptoms and / or effects are not known so far

Indication of any immediate medical attention and special treatment needed

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media:
dry powder, water spray, carbon dioxide, alcohol-resistant foam

Unsuitable extinguishing media for safety reasons:
water jet

Additional information:
Use extinguishing measures to suit surroundings.

Special hazards arising from the substance or mixture

Flammable liquid Cool endangered containers with water-spray. See SDS section 7 - Handling and storage.

Advice for fire-fighters

Special protective equipment:
Wear a self-contained breathing apparatus. Special protective equipment for firefighters

Further information:
Evacuate area of all unnecessary personnel. Fight fire from maximum distance.

Extend fire extinguishing measures to the surroundings. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

6. Accidental Release Measures

High risk of slipping due to leakage/spillage of product.

Release of substance/product can cause fire or explosion. Shut off or stop source of leak. Shut off or stop released substance/product under safe conditions.

Pack in tightly closed containers for disposal.

Personal precautions, protective equipment and emergency procedures
Handle in accordance with good industrial hygiene and safety practice.

Avoid all sources of ignition: heat, sparks, open flame. Use antistatic tools.

Environmental precautions
Discharge into the environment must be avoided.

Methods and material for containment and cleaning up
Pick up with suitable appliance and dispose of. Spills should be contained, solidified, and placed in suitable containers for disposal. Dispose of absorbed material in accordance with regulations.

7. Handling and Storage

Precautions for safe handling

Handle in accordance with good industrial hygiene and safety practice.

Protection against fire and explosion:
Avoid all sources of ignition: heat, sparks, open flame. Ground all transfer equipment properly to prevent electrostatic discharge.

Conditions for safe storage, including any incompatibilities

Further information on storage conditions: Keep container tightly closed in a cool, well-ventilated place.

Specific end use(s)

For the relevant identified use(s) listed in Section 1 the advice mentioned in this section 7 is to be observed.

8. Exposure Controls/Personal Protection

Control parameters

Components with occupational exposure limits

71-36-3: Butan-1-ol
123-86-4: n-Butyl acetate

Exposure controls

Personal protective equipment

Respiratory protection:
Wear respiratory protection if ventilation is inadequate. Gas filter for gases/vapours of organic compounds (boiling point >65 °C, e. g. EN 14387 Type A)

Hand protection:
Chemical resistant protective gloves (EN ISO 374-1)
Suitable materials for short-term contact (recommended: At least protective index 2, corresponding > 30 minutes of permeation time according to EN ISO 374-1)
butyl rubber (butyl) - 0.7 mm coating thickness
Manufacturer's directions for use should be observed because of great diversity of types.
Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing.

Eye protection:
Safety glasses with side-shields (frame goggles) (e.g. EN 166)

Body protection:
Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

General safety and hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wearing of closed work clothing is required additionally to the stated personal protection equipment. Avoid inhalation.

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

State of matter:	liquid	
Form:	liquid	
Colour:	colourless	
Odour:	fruity	
Odour threshold:	not determined	
Melting point:	-78 °C Literature data.	
Boiling point:	124 - 126,5 °C (1.013 hPa) Literature data.	
Flammability:	Flammable.	(derived from flash point)
Lower explosion limit:	For liquids not relevant for classification and labelling., The lower explosion point may be 5 - 15 °C below the flash point.	
Upper explosion limit:	For liquids not relevant for classification and labelling.	
Flash point:	27 °C	(Directive 92/69/EEC, A.9, closed cup)
Auto-ignition temperature:	415 °C	(DIN 51794)
Thermal decomposition:	No decomposition if stored and handled as prescribed/indicated.	
pH value:	not applicable	
Viscosity, kinematic:	0,83 mm2/s (20 °C)	(OECD Guideline 114)
Thixotropy:	not thixotropic	
Solubility in water:	pH 6 5,3 g/l (20 °C)	(Directive 92/69/EEC, A.6)
Solubility (qualitative) solvent(s):	organic solvents soluble	
Partitioning coefficient n-octanol/water (log Kow):	2,3 (25 °C; pH value: 7)	(OECD Guideline 117)
Vapour pressure:	15 hPa (20 °C) Extrapolated value, static	(measured)
Relative density:	0,8813 (20 °C) Literature data.	
Density:	0,8812 g/cm3 (20 °C) 0,54 g/cm3 (55 °C)	(DIN 51757)
Relative vapour density (air):	4 (20 °C) Heavier than air.	(calculated)

Particle characteristics

Particle size distribution: The substance / product is marketed or used in a non solid or granular form. -

9.2. Other information

Information with regard to physical hazard classes

Explosives
Explosion hazard: not explosive
Impact sensitivity:
Based on the chemical structure there is no shock-sensitivity.
Oxidizing properties
Fire promoting properties: not fire-propagating
Flammable liquids
Sustained combustibility:
not determined
Pyrophoric properties
Self-ignition temperature: Test type: Spontaneous self-ignition at room-temperature.

Based on its structural properties the product is not classified as self-igniting.
Self-heating substances and mixtures
Self heating ability: It is not a substance capable of spontaneous heating.
Substances and mixtures, which emit flammable gases in contact with water
Formation of flammable gases:
Forms no flammable gases in the presence of water.
Corrosion to metals

No corrosive effect on metal.

Other safety characteristics

pKA:
Study technically not feasible.
Adsorption/water - soil: KOC: 18,54; log KOC: 1,27 (calculated)
Surface tension:
Based on chemical structure, surface activity is not to be expected.
Molar mass: 116,16 g/mol
SAPT-Temperature:
Study scientifically not justified.
Evaporation rate:
Value can be approximated from Henry's Law Constant or vapor pressure.

10. Stability and Reactivity

Reactivity

When heated can give off ignitable vapours.

Corrosion to metals:	No corrosive effect on metal.	
Formation of flammable gases:	Remarks:	Forms no flammable gases in the presence of water.

Chemical stability

The product is stable if stored and handled as prescribed/indicated.

Possibility of hazardous reactions

Reacts with strong oxidizing agents.

Conditions to avoid

Avoid sources of ignition.

Incompatible materials

Substances to avoid:
strong oxidizing agents

Hazardous decomposition products

Hazardous decomposition products:
No hazardous decomposition products if stored and handled as prescribed/indicated.

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Assessment of acute toxicity:
Virtually nontoxic after a single ingestion. Virtually nontoxic by inhalation. Virtually nontoxic after a single skin contact.

Experimental/calculated data:
LD50 rat (oral): 10.736 mg/kg (other)

LC50 rat (by inhalation): > 21,1 mg/l 4 h (OECD Guideline 403)
The vapour was tested.

LC0 rat (by inhalation): > 38,32 mg/l > 8000 ppm 6 h (other)
The vapour was tested.

LD50 rabbit (dermal): > 14.000 mg/kg (other)

Irritation

Assessment of irritating effects:
Not irritating to the skin. Not irritating to the eyes.

Experimental/calculated data:
Skin corrosion/irritation rabbit: non-irritant (OECD Guideline 404)

Serious eye damage/irritation rabbit: non-irritant (OECD Guideline 405)

Respiratory/Skin sensitization

Assessment of sensitization:
Skin sensitizing effects were not observed in animal studies.

Experimental/calculated data:
Guinea pig maximization test guinea pig: Non-sensitizing. (other)

Germ cell mutagenicity

Assessment of mutagenicity:
No mutagenic effect was found in various tests with microorganisms and mammalian cell culture.
The substance was not mutagenic in studies with mammals.

Carcinogenicity

Assessment of carcinogenicity:
Study does not need to be conducted.

Reproductive toxicity

Assessment of reproduction toxicity:
The results of animal studies gave no indication of a fertility impairing effect.

Developmental toxicity

Assessment of teratogenicity:
Animal studies gave no indication of a developmental toxic effect at doses that were not toxic to the parental animals.

Experiences in humans

Experimental/calculated data:
-
High concentrations have a narcotizing effect.

Prolonged contact can result in drying of the skin.

Specific target organ toxicity (single exposure)

Assessment of STOT single:
Possible narcotic effects (drowsiness or dizziness).

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:
After repeated exposure the prominent effect is local irritation.

Aspiration hazard

No aspiration hazard expected.

Other relevant toxicity information

Has a degreasing effect on skin.

12. Ecological Information

Toxicity

Assessment of aquatic toxicity:
Acutely harmful for aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Toxicity to fish:
LC50 (96 h) 18 mg/l, Pimephales promelas (Fish test acute, Flow through.)
The statement of the toxic effect relates to the analytically determined concentration.

Aquatic invertebrates:
EC50 (48 h) 44 mg/l, Daphnia sp. (Daphnia test acute, static)
Nominal concentration.

Aquatic plants:
EC50 (72 h) 397 mg/l (growth rate), Pseudokirchneriella subcapitata (DIN 38412 Part 9)
The statement of the toxic effect relates to the analytically determined concentration. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Microorganisms/Effect on activated sludge:
EC50 (40 h) 356 mg/l, Tetrahymena pyriformis (internal method, aquatic)

Chronic toxicity to fish:
No data available.

Chronic toxicity to aquatic invertebrates:
No observed effect concentration (21 d) 23 mg/l, Daphnia magna (OECD Guideline 211, semistatic)
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Assessment of terrestrial toxicity:
No toxic effects have been observed in studies with terrestric plants.

Soil living organisms:
No data available.

Terrestrial plants:
EC50 (14 d) > 1.000 mg/kg > 1.000 mg/kg, Lactuca sativa (OECD Guideline 208)

Other terrestrial non-mammals:
No data available.

Persistence and degradability

Assessment biodegradation and elimination (H2O):
Readily biodegradable (according to OECD criteria).

Elimination information:
80 % BOD of the ThOD (5 d) (OECD 301D; 92/69/EWG, C.4-E) (aerobic, municipal sewage treatment plant effluent)

Assessment of stability in water:
In contact with water the substance will hydrolyse slowly.
Information on Stability in Water (Hydrolysis):
$t_{1/2}$ 782 d, (calculated, pH 7)

Bioaccumulative potential

Assessment bioaccumulation potential:
No significant accumulation in organisms is expected as a result of the distribution coefficient of n-octanol/water (log Pow).

Bioaccumulation potential:
No data available.

Mobility in soil

Assessment transport between environmental compartments:
Volatility: The substance will slowly evaporate into the atmosphere from the water surface.
Adsorption in soil: Adsorption to solid soil phase is not expected.

Results of PBT and vPvB assessment

According to Annex XIII of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not fulfill the criteria for PBT (Persistent/bioaccumulative/toxic) and vPvB (very persistent/very bioaccumulative). Self classification

Additional information

Adsorbable organically-bound halogen (AOX):
This product contains no organically-bound halogen.

13. Disposal Considerations

Waste treatment methods

Must be disposed of or incinerated in accordance with local regulations.

Contaminated packaging:

Contaminated packaging should be emptied as far as possible; then it can be passed on for recycling after being thoroughly cleaned.

14. Transport Information

Land transport

ADR

UN number or ID number:	UN1123
UN proper shipping name:	BUTYL ACETATES
Transport hazard class(es):	3
Packing group:	III
Environmental hazards:	no
Special precautions for user:	Tunnel code: D/E

RID

UN number or ID number:	UN1123
UN proper shipping name:	BUTYL ACETATES
Transport hazard class(es):	3
Packing group:	III
Environmental hazards:	no
Special precautions for user:	None known

Inland waterway transport

ADN

UN number or ID number:	UN1123
UN proper shipping name:	BUTYL ACETATES
Transport hazard class(es):	3
Packing group:	III
Environmental hazards:	no
Special precautions for user:	None known

Transport in inland waterway vessel

UN number or ID number:	UN1123
UN proper shipping name:	BUTYLACETATES (n-BUTYLACETATE)
Transport hazard class(es):	3, N3
Packing group:	III
Environmental hazards:	yes
Type of inland waterway vessel:	N
Cargo tank design:	3
Cargo tank type:	2

Sea transport

IMDG

UN number or ID number:	UN 1123
UN proper shipping name:	BUTYL ACETATES
Transport hazard class(es):	3
Packing group:	III
Environmental hazards:	no Marine pollutant: NO
Special precautions for user:	EmS: F-E; S-D

Air transport

IATA/ICAO

UN number or ID number:	UN 1123
UN proper shipping name:	BUTYL ACETATES
Transport hazard class(es):	3
Packing group:	III
Environmental hazards:	No Mark as dangerous for the environment is needed
Special precautions for user:	None known

Maritime transport in bulk according to IMO instruments

Regulation:	IBC-Code
Product name:	Butyl acetate (all isomers)
Pollution category:	Y
Ship Type:	3

15. Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

16. Other Information

Full text of classifications, hazard symbols and hazard statements, if mentioned in section 2 or 3:

Flam. Liq.	Flammable liquids
STOT SE	Specific target organ toxicity — single exposure
Aquatic Acute	Hazardous to the aquatic environment - acute
Acute Tox.	Acute toxicity
Skin Irrit.	Skin irritation
Eye Dam.	Serious eye damage
H226	Flammable liquid and vapour.
H318	Causes serious eye damage.
H315	Causes skin irritation.
H336	May cause drowsiness or dizziness.
H335	May cause respiratory irritation.
H303 + H313	May be harmful if swallowed or in contact with skin.

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. This safety data sheet is neither a Certificate of Analysis (CoA) nor technical data sheet and shall not be mistaken for a specification agreement. Identified uses in this safety data sheet do neither represent an agreement on the corresponding contractual quality of the substance/mixture nor a contractually designated use. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.