



Safety Data Sheet

according to Globally Harmonized System (GHS)

Printing date 15.02.2016

Revision: 15.02.2016

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

- **Product identifier**
- **Trade name:** N-Butyl Acetate (nBAc)
- **Synonyms:** Acetic acid n-Butyl ester; I-Butyl acetate; Butyl acetate; NBAC
- **CAS Number:**
123-86-4
- **Relevant identified uses of the substance or mixture and uses advised against :**
- **Identified/Recommended uses:**
Solvent
Intermediate for organic synthesis
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Chang Chun Petrochemical Co. Ltd.
7th Fl., No. 301, SongJiang Rd.
Taipei City, 10483, TAIWAN
Tel: +886-2-2500-1800 Fax: +886-2-2501-8018
WWW.CCP.COM.TW
- **Further information obtainable from:** SDS-info@ccp.com.tw
- **Emergency telephone number:** During normal opening times: +886 2 2500 - 1800 (8:30-17:30; GMT+8)

2 Hazards identification

- **Classification of the substance or mixture**
 Flam. Liq. 3 H226 Flammable liquid and vapour.
 Acute Tox. 5 H333 May be harmful if inhaled.
 STOT SE 3 H336 May cause drowsiness or dizziness.
 Asp. Tox. 2 H305 May be harmful if swallowed and enters airways.
 Aquatic Acute 3 H402 Harmful to aquatic life.

- **Label elements**
- **GHS label elements**
The substance is classified and labelled according to the Globally Harmonised System (GHS).
- **Hazard pictograms**



GHS02 GHS07 GHS08

- **Signal word** Warning
- **Hazard statements**
 Flammable liquid and vapour.
 May be harmful if inhaled.
 May cause drowsiness or dizziness.
 May be harmful if swallowed and enters airways.
 Harmful to aquatic life.
- **Precautionary statements**
 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 Wear protective gloves/protective clothing/eye protection/face protection.
 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 Store locked up.
 Dispose of contents/container in accordance with local/regional/national/international regulations.



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3 Composition/information on ingredients

- **Chemical characterisation: Substances**
- **CAS No. Description**
123-86-4 n-butyl acetate $\geq 99\%$

4 First aid measures

- **Description of first aid measures**
- **General information:** Personal protection for the First Aider.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
- **After eye contact:**
Rinse opened eye for 15 minutes under running water. If symptom persists consult a doctor.
- **After swallowing:**
Risk of aspiration!
Do not induce vomiting; call for medical help immediately.
If vomiting occurs spontaneously, keep head below hips to prevent aspiration.
- **Most important symptoms and effects, both acute and delayed**
Irritation
Narcosis
Dizziness
Drying-out effect resulting in rough and chapped skin.
High concentration may cause central nervous system depression resulting in headaches, dizziness, and nausea.
CNS disorders
- **Indication of any immediate medical attention and special treatment needed**
If swallowed or in case of vomiting, danger of entering the lungs.
Laxative:
Sodium sulfate (1 tablespoon & 1/4 Lit. water).
Activated Charcoal
Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** CO₂, sand, extinguishing powder. Do not use water.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture**
Combustible.
Vapours are heavier than air and may spread along floors.
Pay attention to flashback.
Forms explosive mixtures with air at elevated temperatures.
Under certain fire conditions, traces of other toxic gases cannot be excluded.
In case of fire, the following can be released:
Carbon monoxide (CO)
Carbon dioxide (CO₂)
- **Advice for firefighters**
- **Protective equipment:**
Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves).

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Additional information

- Cool endangered receptacles with water spray.
- Avoid contact with skin, eye, and clothing.
- Do not inhale explosion gases or combustion gases.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

- Wear protective equipment. Keep unprotected persons away.
- Keep away from ignition sources.
- If possible, stop flow of product.
- Ensure adequate ventilation
- Do not breathe dust/fume/gas/mist/vapours/spray.
- Use respiratory protective device against the effects of fumes/dust/aerosol.

Environmental precautions:

- Do not allow to enter sewers/ surface or ground water.
- Local authorities should be advised if significant spillage cannot be contained.

Methods and material for containment and cleaning up:

- Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- Allow to solidify. Pick up mechanically.
- For large liquid spills (>1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal.
- Do not flush with water or aqueous cleansing agents

Reference to other sections

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for disposal information.

7 Handling and storage

Handling:

Precautions for safe handling

- Wear protective gloves/protective clothing/eye protection/face protection.
- Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- Take precautionary measures against static discharge.
- Prevent formation of aerosols.
- Avoid breathing vapor.

- Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).
- Do not get in eyes, on skin, or on clothing.

Information about fire - and explosion protection:

- Keep ignition sources away - Do not smoke.
- Protect against electrostatic charges.

Storage:

Requirements to be met by storerooms and receptacles:

- Store in cool, dry place in tightly closed receptacles.

Further information about storage conditions: Store at 10 °C to 30 °C

8 Exposure controls/personal protection

Additional information about design of technical facilities:

- Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines.
- Local exhaust ventilation may be necessary for some operations.

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Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Control parameters
Ingredients with limit values that require monitoring at the workplace:
123-86-4 n-butyl acetate

PEL (USA)	Long-term value: 710 mg/m ³ , 150 ppm
REL (USA)	Short-term value: 950 mg/m ³ , 200 ppm
	Long-term value: 710 mg/m ³ , 150 ppm
TLV (USA)	Short-term value: 950 mg/m ³ , 200 ppm
	Long-term value: 713 mg/m ³ , 150 ppm
TLV (Korea)	Short-term value: 950 mg/m ³ , 200 ppm
	Long-term value: 710 mg/m ³ , 150 ppm

Derived No Effect Levels (DNELs): AF=Assessment Factor

Workers:

- Data for Component: N-Butyl Acetate (CAS No 123-86-4)
- DNEL (inhalation, chronic effects systemic): 480 mg/m³
- DNEL (inhalation, acute effects systemic): 960 mg/m³
- DNEL (oral, chronic effects local): 480 mg/m³
- DNEL (inhalation, acute effects local): 960 mg/m³

Consumers:

- Data for Component: N-Butyl Acetate (CAS No 123-86-4)
- DNEL (inhalation, chronic effects systemic): 102,34 mg/m³
- DNEL (inhalation, acute effects systemic): 859,7 mg/m³
- DNEL (inhalation, chronic effects local): 102,34 mg/m³
- DNEL (inhalation, acute effects local): 859,7 mg/m³

Predicted No Effect Concentrations (PNEC):

AF=Assessment Factor

- Data for Component: N-Butyl Acetate (CAS No 123-86-4)
- PNEC(fresh water): 0,18 mg/l; AF=100
- PNEC (marine water): 0,018 mg/l; AF=1000
- PNEC (intermittent release): 0,36 mg/l; AF=0.50
- PNEC (sewage treatment plant; STP): 35,6 mg/l; AF=10
- PNEC (freshwater sediments): 0,981 mg/kg sediment dw
- PNEC (marine sediments): 0,0981 mg/kg sediment dw
- PNEC (soil): 0,0903 mg/kg soil dw

Exposure controls
Personal protective equipment:
General protective and hygienic measures:

- Wash hands before breaks and at the end of work.
- Be sure to clean skin thoroughly after work and before breaks.
- Ensure that washing facilities are available at the work place.

Respiratory protection:

- Suitable respiratory protective device recommended.
- Short term filter device:
- Filter A/P2
- Organic vapor cartridge

Protection of hands:


Protective gloves

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The selected protective gloves have to satisfy the specifications of standard EN 374 or its equivalent.
Replace gloves immediately when torn or any change in appearance (dimension, colour, flexibility etc) is noticed.

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**

Splash Contact:

PVA gloves

Nitrile rubber, NBR

Full Contact:

Butyl rubber, BR

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

- **Penetration time of glove material**

Splash Contact:

Break through time: > 40 min

Full Contact:

Break through time: > 480 min

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:**



Tightly sealed goggles

Safety glasses with side shields conforming to EN166, ANSI 87.1-2010, or equivalent.

- **Body protection:**

Flame retardant antistatic protective clothing

The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

9 Physical and chemical properties

- **Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

Form:

Liquid

Colour:

Colourless

- **Odour:**

Fruit-like

- **Odour threshold:**

0,4-19,7 ppm

- **pH-value at 20 °C:**

5

- **Change in condition**

Melting point/Melting range:

-76 °C

Boiling point/Boiling range:

124-128 °C

- **Flash point:**

27 °C

- **Flammability (solid, gaseous):**

Not applicable.

- **Ignition temperature:**

370 °C

- **Decomposition temperature:**

Not determined.

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- **Self-igniting:** Not determined.
- **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
- **Explosion limits:**
 - Lower:** 1,2 Vol %
 - Upper:** 7,5 Vol %
- **Vapour pressure at 20 °C:** 10,7 hPa
- **Density at 20 °C:** 0,88 g/cm³
- **Relative density** Not determined.
- **Vapour density** Not determined.
- **Evaporation rate** Not determined.
- **Solubility in / Miscibility with water at 20 °C:** 5 g/l
- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
 - Dynamic at 20 °C:** 0,7 mPas
 - Kinematic:** Not determined.
 - Organic solvents:** 100 %
- **Other information** No further relevant information available.

10 Stability and reactivity

- **Reactivity**
Vapour/air-mixtures are explosive at intense warming.
When properly handled and stored, no dangerous reaction is known.
- **Chemical stability** This product is stable under prescribed use and storage.
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **Possibility of hazardous reactions**
Risk of explosion with:
Alkali metals
Strong oxidizing agents
Alkali hydroxide.
- **Conditions to avoid**
Protect from heat. Keep ignition sources away.
Strong heating.
- **Incompatible materials:**
rubber
various plastics
Strong oxidizing agents
Strong acids
Strong bases
- **Hazardous decomposition products:**
Carbon monoxide (CO) and carbon dioxide (CO₂)
Decomposition products depend upon temperature, air supply and the presence of other materials.

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11 Toxicological information

- **Information on toxicological effects**

- **Acute toxicity**

- **LD/LC50 values relevant for classification:**

123-86-4 n-butyl acetate

Oral	LD50	10760 mg/kg (rat) (OECD 423)
Dermal	LD50	14112 mg/kg (rabbit) (OECD 402)
Inhalative	LC50/4 h	>21,0 mg/l (rat)

- **Skin corrosion/irritation:**

Not classified based on available data.
 Rabbit: not irritating (OECD Test Guideline 404)
 Repeated exposure may cause skin dryness or cracking.

- **Serious eye damage/eye irritation:**

Not classified based on available data.
 Rabbit: not irritating (OECD Test Guideline 405)

- **Respiratory or skin sensitization:** Not classified based on available data.

- **Germ Cell Mutagenicity:**

Not classified based on available data.
 In-vitro genotoxicity (mammalian cells): negative (OECD 473)

- **Carcinogenicity:** Not classified based on available data.

- **Reproductive Toxicity:**

Not classified based on available data.
 In animal studies, did not interfere with fertility.
 Did not cause birth defects in laboratory animals.

- **Specific Target Organ Toxicity - Single Exposure (STOT SE):**

May cause drowsiness or dizziness.
 Affected Organs: :
 Central nervous system
 High concentration may cause central nervous system depression resulting in headaches, dizziness, and nausea.

- **Specific Target Organ Toxicity - Repeated Exposure (STOT RE):**

Not classified based on available data.

- **Aspiration Hazard:**

May be harmful if swallowed and enters airways.
 Aspiration into the lungs may occur during ingestion or vomiting, causing lung damage or even death due to chemical pneumonia.

- **Primary irritant effect:**

- **Skin corrosion/irritation** Repeated exposure may cause skin dryness or cracking.

- **Serious eye damage/irritation** No irritating effect.

- **Respiratory or skin sensitisation** No sensitising effects known.

12 Ecological information

- **Toxicity**

- **Aquatic toxicity:**

Harmful to aquatic life.

123-86-4 n-butyl acetate

EC50/48h	44 mg/l (daphnia)
EC50/72h	648 mg/l (algae)
LC50/96h (dynamic)	18 mg/l (fish) (OECD 203)

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- **Persistence and degradability**

Easily biodegradable

• Data for Component: N-Butyl Acetate (CAS No 123-86-4)

Degradation : 83% (28d, OECD 301)

Easily biodegradable.

- **Bioaccumulative potential**

Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

• Data for Component: N-Butyl Acetate (CAS No 123-86-4)

Bioconcentration Factor (BCF) : 15.3

Partition coefficient, n-octanol/water (log Pow) : 2.3

Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

- **Mobility in soil**

Potential for mobility in soil is very high (Koc between 0 and 50).

• Data for Component: N-Butyl Acetate (CAS No 123-86-4)

Partition coefficient, soil organic carbon/water (Koc) : 20-63 (Est)

Henry's Law Constant (H) : 41,6 Pa m³/mol @ 25 °C

Potential for mobility in soil is very high (Koc between 0 and 50).

- **Additional ecological information:**

- **General notes:**

Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**

- **Recommendation**

Recover or recycle if possible.

Contact waste processors for recycling information.

After prior treatment product has to be disposed of in an incinerator for hazardous waste adhering to the regulations pertaining to the disposal of particularly hazardous waste.

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Any disposal method should also comply with national, regional, provincial, and local laws.

- **Uncleaned packaging:**

- **Recommendation:**

Empty containers may still contain hazardous residue.

Empty contaminated packagings thoroughly. They may be recycled after thorough and proper cleaning.

Disposal must be made according to official regulations.

14 Transport information

- **UN-Number**

- **ADR, IMDG, IATA**

UN1123

- **UN proper shipping name**

- **ADR**

1123 BUTYL ACETATES

- **IMDG**

BUTYL ACETATES

- **IATA**

Butyl acetates

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· Transport hazard class(es)

· ADR, IMDG, IATA



- Class 3 Flammable liquids.
- Label 3
- Packing group
- ADR, IMDG, IATA III
- Environmental hazards:
- Marine pollutant: No
- Special precautions for user Warning: Flammable liquids.
- Danger code (Kemler): 30
- EMS Number: F-E,S-D
- Stowage Category A

· Transport/Additional information:

· ADR

· Limited quantities (LQ) 5L

· Excepted quantities (EQ) Code: E1
 Maximum net quantity per inner packaging: 30 ml
 Maximum net quantity per outer packaging: 1000 ml

· Transport category 3

· Tunnel restriction code D/E

· IMDG

· Limited quantities (LQ) 5L

· Excepted quantities (EQ) Code: E1
 Maximum net quantity per inner packaging: 30 ml
 Maximum net quantity per outer packaging: 1000 ml

· UN "Model Regulation": UN 1123 BUTYL ACETATES, 3, III

15 Regulatory information

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

· Status of global inventories:

All component(s) within this product is listed or exempted from the following country's chemical inventory:

USA – TSCA

Australia – AICS

Canada – DSL

China – IECSC

EU – EINECS/NLP

Japan – ENCS

Korea – KECI

New Zealand – NZIoC

Philippines – PICCS

Taiwan – TSCI

Mexico - INSQ

· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

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16 Other information

· Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
 IMDG: International Maritime Code for Dangerous Goods
 IATA: International Air Transport Association
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 DNEL: Derived No-Effect Level (REACH)
 PNEC: Predicted No-Effect Concentration (REACH)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 Flam. Liq. 3: Flammable liquids, Hazard Category 3
 Acute Tox. 5: Acute toxicity, Hazard Category 5
 STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3
 Asp. Tox. 2: Aspiration hazard, Hazard Category 2
 Aquatic Acute 3: Hazardous to the aquatic environment - AcuteHazard, Category 3

· Sources

Most toxicological and eco-toxicological data are obtained from European Chemical Agency (ECHA)'s public dissemination website.
http://apps.echa.europa.eu/registered/data/dossiers/DISS-9d933481-e0e5-623f-e044-00144f67d249/DISS-9d933481-e0e5-623f-e044-00144f67d249_DISS-9d933481-e0e5-623f-e044-00144f67d249.html

· General Disclaimers:

CCP Group recommends that all the users/customers/recipients to study this Safety Data Sheet (SDS) carefully and understand all the data or any potential hazards associated with this product. Please consult with appropriate expert if necessary. The information herein is provided in good faith and is believed to be accurate on the date of issue. No warranty, expressed or implied, is given. It is the customer's/user's responsibility to ensure that they are complying with local, regional, state, provincial, and/or national laws in using this product, as regulatory requirement may differ at each level. It is also the customer's/user's responsibility to determine the necessary condition required for using this product safely, as actual operating or usage conditions are beyond CCP Group's control. CCP Group will not be responsible for any SDS obtained from elsewhere other than from CCP Group. If you are unsure whether the SDS you have is current or have obtained the SDS from another source; please contact us to obtain the latest version.

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