

## Chemical Safety Data Sheet MSDS / SDS

## Butyl chloroformate

Revision Date:2026-05-31 Revision Number:1

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

## Product identifier

Product name : Butyl chloroformate  
CBnumber : CB1692042  
CAS : 592-34-7  
EINECS Number : 209-750-5  
Synonyms : butyl chloroformate, butyl carbonochloridate

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

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.  
Uses advised against : none

## Company Identification

Company : Chemicalbook  
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing  
Telephone : 010-86108875

## SECTION 2: Hazards identification

## GHS Label elements, including precautionary statements

Symbol(GHS)



Signal word

Danger

## Precautionary statements

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continuerinsing.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with water/shower.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P233 Keep container tightly closed.

P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

## Hazard statements

H331 Toxic if inhaled

H314 Causes severe skin burns and eye damage

H226 Flammable liquid and vapour

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## SECTION 3: Composition/information on ingredients

### Substance

Product name	: Butyl chloroformate
Synonyms	: butyl chloroformate, butyl carbonochloridate
CAS	: 592-34-7
EC number	: 209-750-5
MF	: C5H9ClO2
MW	: 136.58

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## SECTION 4: First aid measures

### General Advice

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

### Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

### Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

### Inhalation

If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Remove to fresh air. Immediate medical attention is required.

### Ingestion

Do NOT induce vomiting. Call a physician or poison control center immediately.

### Most important symptoms and effects

Causes burns by all exposure routes. Difficulty in breathing. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

### Self-Protection of the First Aider

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

### Notes to Physician

Treat symptomatically.

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## SECTION 5: Firefighting measures

### Suitable Extinguishing Media

Carbon dioxide (CO<sub>2</sub>). Dry chemical. Chemical foam. Do not use a solid water stream as it may scatter and spread fire. Water mist may be used to cool closed containers. CO<sub>2</sub>, dry chemical, dry sand, alcohol-resistant foam.

### Extinguishing media which must not be used for safety reasons

No information available.

### Specific Hazards Arising from the Chemical

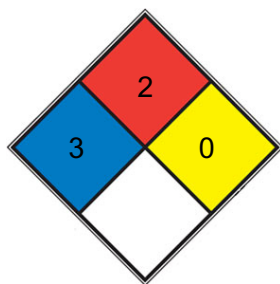
Thermal decomposition can lead to release of irritating gases and vapors. The product causes burns of eyes, skin and mucous membranes.

### Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

Thermal decomposition can lead to release of irritating gases and vapors.

### NFPA 704



HEALTH 3 Short exposure could cause serious temporary or moderate residual injury (e.g. [liquid hydrogen](#), [sulfuric acid](#), [calcium hypochlorite](#), hexafluorosilicic acid)

FIRE 2 Must be moderately heated or exposed to relatively high ambient temperature before ignition can occur and multiple finely divided suspended solids that do not require heating before ignition can occur. Flash point between 37.8 and 93.3 °C (100 and 200 °F). (e.g. diesel fuel, [sulfur](#))

REACT 0 Normally stable, even under fire exposure conditions, and is not reactive with water (e.g. helium, [N<sub>2</sub>](#))

SPEC.

HAZ.

## SECTION 6: Accidental release measures

### Personal Precautions

Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

### Environmental Precautions

Should not be released into the environment. See Section 12 for additional Ecological Information.

### Methods for Containment and Clean Up

Keep in suitable, closed containers for disposal. Soak up with inert absorbent material.

Refer to protective measures listed in Sections 8 and 13.

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## SECTION 7: Handling and storage

### Handling

Do not get in eyes, on skin, or on clothing. Wear personal protective equipment/face protection. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance.

### Storage

Keep away from heat, sparks and flame. Refrigerator/flammables. Keep under nitrogen. Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area.

### Specific Use(s)

Use in laboratories

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## SECTION 8: Exposure controls/personal protection

### Control Parameters

Component	ACGIH TLV	OSHA PEL	NIOSH	The United Kingdom	European Union
Butyl chloroformate				STEL: 3 ppm 15 min STEL: 17.1 mg/m <sup>3</sup> 15 min TWA: 1 ppm 8 hr TWA: 5.7 mg/m <sup>3</sup> 8 hr	

### Monitoring methods

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. MDHS70 General methods for sampling airborne gases and vapours MDHS 88

Volatile organic compounds in air. Laboratory method using diffusive samplers, solvent desorption and gas chromatography MDHS 96 Volatile organic compounds in air - Laboratory method using pumped solid sorbent tubes, solvent desorption and gas chromatography

### Exposure Controls

#### Engineering Measures

Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting equipment. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source.

#### Personal protective equipment

##### Eye Protection

If splashes are likely to occur: Goggles Face protection shield (European standard - EN 166)

## Hand Protection

Protective gloves

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Natural rubber	See manufacturers	-	EN 374	(minimum requirement)
Butyl rubber	recommendations			
Nitrile rubber				
Neoprene				
PVC				

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves.

(Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

### Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure

### Respiratory Protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

### Large scale/emergency use

Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

Recommended Filter type: Particulates filter conforming to EN 143 Acid gases filter Type

E Yellow conforming to EN14387

### Small scale/Laboratory use

Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Recommended half mask:- Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141

When RPE is used a face piece Fit Test should be conducted

## Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

## Environmental exposure controls

No information available.

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## SECTION 9: Physical and chemical properties

### Information on basic physicochemical properties

No information available

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**Physical State**

Liquid

**Odor**

No information available

**Odor Threshold**

No data available

**pH**

No information available

**Melting Point/Range**

< -70 °C / -94 °F

**Softening Point**

No data available

**Boiling Point/Range**

142 °C / 287.6 °F @ 760 mmHg

**Flash Point**

39 °C / 102.2 °F Method - No information available

**Evaporation Rate**

No data available

**Flammability (solid,gas)**

Not applicable Liquid

**Explosion Limits**

No data available

**Vapor Pressure**

7.18 mbar @ 20 °C

**Vapor Density**

4.7 (Air = 1.0)

**Specific Gravity / Density**

1.060

**Bulk Density**

Not applicable Liquid

**Water Solubility**

Decomposes in contact with water

### **Solubility in other solvents**

No information available

### **Partition Coefficient (n-octanol/water)**

No data available

### **Autoignition Temperature**

285 °C / 545 °F

### **Decomposition Temperature**

No data available

### **Viscosity**

0.95 mPa s at 20 °C

### **Explosive Properties**

explosive air/vapour mixtures possible

### **Oxidizing Properties**

No information available

### **Molecular Formula**

C<sub>5</sub> H<sub>9</sub> Cl O<sub>2</sub>

### **Molecular Weight**

136.58

### **Colour**

Clear

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## **SECTION 10: Stability and reactivity**

### **Stability**

Stable under normal conditions. Moisture sensitive.

### **Hazardous Reactions**

None under normal processing.

### **Hazardous Polymerization**

No information available.

### **Conditions to Avoid**

To avoid thermal decomposition, do not overheat. Keep away from open flames, hot surfaces and sources of ignition. Excess heat.

Incompatible products. Exposure to moist air or water.

### Materials to avoid

Strong oxidizing agents. Strong bases. Amines. Strong reducing agents.

### Hazardous Decomposition Products

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Phosgene. Hydrogen chloride gas.

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## SECTION 11: Toxicological information

### Product Information

#### (a) acute toxicity;

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Butyl chloroformate	LD50 = 1325 mg/kg (Rat)		LC50 = 200 ppm (1.12 mg/l) (Rat ) 1 h

#### (b) skin corrosion/irritation;

Category 1 B

#### (c) serious eye damage/irritation;

Category 1

#### (d) respiratory or skin sensitization;

##### Respiratory

No data available

##### Skin

No data available

#### (e) germ cell mutagenicity;

No data available

#### (f) carcinogenicity;

No data available

There are no known carcinogenic chemicals in this product

#### (g) reproductive toxicity;

No data available

#### (h) STOT-single exposure;

No data available

#### (i) STOT-repeated exposure;

No data available

### Target Organs

None known.

**(j) aspiration hazard;**

No data available

**Symptoms / effects, both acute and delayed**

Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting:

Product is a corrosive material. Use of gastric lavage or emesis is contraindicated.

Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

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## SECTION 12: Ecological information

### **Ecotoxicity effects**

Reacts with water so no ecotoxicity data for the substance is available.

### **Persistence and Degradability**

#### **Persistence**

Soluble in water, Persistence is unlikely, based on information available.

#### **Degradability**

Decomposes in contact with water.

#### **Degradation in sewage**

Decomposes in contact with water.

#### **treatment plant**

### **Bioaccumulative Potential**

Bioaccumulation is unlikely; Product does not bioaccumulate due to reaction with water

### **Mobility in soil**

The product is water soluble, and may spread in water systems Decomposes in contact with water Will likely be mobile in the environment due to its water solubility Is not likely mobile in the environment Highly mobile in soils

### **Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

### **Persistent Organic Pollutant**

This product does not contain any known or suspected substance

### **Ozone Depletion Potential**

This product does not contain any known or suspected substance

## SECTION 13: Disposal considerations

### Waste from Residues/Unused Products

Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

### Contaminated Packaging

Dispose of this container to hazardous or special waste collection point. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and empty container away from heat and sources of ignition.

### Other Information

Waste codes should be assigned by the user based on the application for which the product was used. Do not flush to sewer. Can be landfilled or incinerated, when in compliance with local regulations. Do not empty into drains. Large amounts will affect pH and harm aquatic organisms.

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## SECTION 14: Transport information

### Road and Rail Transport

**UN-No**

UN2743

**Proper Shipping Name**

n-BUTYL CHLOROFORMATE

**Hazard Class**

6.1

Subsidiary Hazard Class 3, 8

**Packing Group**

II

**IMDG/IMO****UN-No**

UN2743

**Proper Shipping Name**

BUTYL CHLOROFORMATE

**Hazard Class**

6.1

Subsidiary Hazard Class 3, 8

**Packing Group**

II

**IATA FORBIDDEN FOR IATA TRANSPORT****UN-No**

UN2743

## Proper Shipping Name

n-BUTYL CHLOROFORMATE FORBIDDEN FOR IATA TRANSPORT

## Hazard Class

6.1

Subsidiary Hazard Class 3, 8

## Packing Group

II

## Special Precautions for User

No special precautions required

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## SECTION 15: Regulatory information

### International Inventories

X = listed, China (IECSC), Europe (EINECS/ELINCS/NLP), U.S.A. (TSCA), Canada (DSL/NDSL), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), Korea (KECL).

Component	The Inventory of Hazardous Chemicals (2015 Edition)	List of dangerous goods GB 12268 - 2012											
			TCS	IECSC	EINECS	TSCA	DSL	PICCS	ENCS	ISHL	AICS	KECL	
Butyl chloroformate	X	X	X	-	209-750-5	X	-	X	X	X	X	-	

### National Regulations

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## SECTION 16: Other information

### Prepared By

Health, Safety and Environmental Department

### Creation Date

30-Nov-2010

### Revision Date

06-Sep-2025

### Revision Summary

SDS sections updated.

## **Training Advice**

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene. Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

## **Legend**

### **CAS**

Chemical Abstracts Service

### **TSCA**

United States Toxic Substances Control Act Section 8(b)

Inventory

### **EINECS/ELINCS**

European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

### **DSL/NDSL**

Canadian Domestic Substances List/Non-Domestic Substances List

### **PICCS**

Philippines Inventory of Chemicals and Chemical Substances

### **ENCS**

Japanese Existing and New Chemical Substances

### **IECSC**

Chinese Inventory of Existing Chemical Substances

### **AICS**

Australian Inventory of Chemical Substances

### **KECL**

Korean Existing and Evaluated Chemical Substances

### **NZIoC**

New Zealand Inventory of Chemicals

### **WEL**

Workplace Exposure Limit

### **TWA**

Time Weighted Average

### **ACGIH**

American Conference of Governmental Industrial Hygienists

### **IARC**

International Agency for Research on Cancer

### **DNEL**

Derived No Effect Level

### **PNEC**

Predicted No Effect Concentration

### **RPE**

Respiratory Protective Equipment

**LD50**

Lethal Dose 50%

**LC50**

Lethal Concentration 50%

**EC50**

Effective Concentration 50%

**NOEC**

No Observed Effect Concentration

**POW**

Partition coefficient Octanol:Water

**PBT**

Persistent, Bioaccumulative, Toxic

**vPvB**

very Persistent, very Bioaccumulative

**ICAO/IATA**

International Civil Aviation Organization/International Air

Transport Association

**IMO/IMDG**

International Maritime Organization/International Maritime

Dangerous Goods Code

**ADR**

European Agreement Concerning the International Carriage of

Dangerous Goods by Road

**MARPOL**

International Convention for the Prevention of Pollution from

Ships

**OECD**

Organisation for Economic Co-operation and Development

**ATE**

Acute Toxicity Estimate

**BCF**

Bioconcentration factor

**VOC**

(Volatile Organic Compound)

**Key literature references and sources for data**

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

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