

# ISO-BUTYL CHLOROFORMATE FOR SYNTHESIS MSDS

CAS-No.: 543-27-1 MSDS

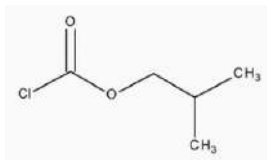


## MATERIAL SAFETY DATA SHEET (MSDS)

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

#### 1.1. Product identifier

Product form : Substance  
:  
EC-No. : 208-840-1  
CAS-No. : 543-27-1  
Product code : B-00573  
Chemical structure :



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

##### 1.2.1. Relevant identified uses

Industrial/Professional use spec : Industrial  
For professional use only

##### 1.2.2. Uses advised against

No additional information available

#### 1.3. Details of the supplier of the safety data sheet

Bio-Chem Chemicals  
5455, Nicholson Road Science Market,  
Ambala Cantt. 133001 Haryana (India)  
+91-82952 41953  
[info@biofinechemical.com](mailto:info@biofinechemical.com) - [www.biofinechemical.com](http://www.biofinechemical.com)

#### 1.4. Emergency telephone number

Emergency number : +91 99921 51495 (10.00am - 06.30pm) (Office Hours)

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute toxicity (inhal.), H331  
Category 3  
Skin corrosion/irritation, H314  
Category 1B  
Flammable liquids, H226  
Category 3  
Acute toxicity (oral), H302  
Category 4

Full text of H statements : see section 16

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### Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

T; R23  
Xn; R22  
C; R34  
R10

Full text of R-phrases: see section 16

### Adverse physicochemical, human health and environmental effects

No additional information available

## 2.2. Label elements

### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS06

GHS05

GHS02

Signal word (CLP) :

Danger

Hazard statements (CLP) :

H226 - Flammable liquid and vapour.  
H302 - Harmful if swallowed.  
H314 - Causes severe skin burns and eye damage.  
H331 - Toxic if inhaled.

Precautionary statements (CLP) :

P260 - Do not breathe dust/fume/gas/mist/vapours/spray.  
P280 - Wear protective gloves/protective clothing/eye protection/face protection.  
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P310 - Immediately call a POISON CENTER/doctor

## 2.3. Other hazards

No additional information available

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Name : iso-BUTYL CHLOROFORMATE For Synthesis  
CAS-No. : 543-27-1  
EC-No. : 208-840-1

Full text of R- and H-statements: see section 16

### 3.2. Mixtures

Not applicable

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### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
- First-aid measures after skin contact : Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER/doctor.
- First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
- First-aid measures after ingestion : Rinse mouth. Call a POISON CENTER/doctor if you feel unwell. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor.

#### 4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/effects : Causes severe skin burns and eye damage.
- Symptoms/effects after inhalation : Toxic if inhaled.
- Symptoms/effects after ingestion : Harmful if swallowed.

#### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

- Suitable extinguishing media : dry chemical powder, alcohol-resistant foam, carbon dioxide (CO<sub>2</sub>).
- Unsuitable extinguishing media : Do not use extinguishing media containing water.

#### 5.2. Special hazards arising from the substance or mixture

- Fire hazard : Flammable liquid and vapour.
- Explosion hazard : May form flammable/explosive vapour-air mixture.

#### 5.3. Advice for firefighters

No additional information available

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

##### 6.1.1. For non-emergency personnel

- Emergency procedures : Avoid contact with skin, eyes and clothing.

##### 6.1.2. For emergency responders

- Protective equipment : Use personal protective equipment as required.

#### 6.2. Environmental precautions

Avoid release to the environment.

#### 6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Clean contaminated surfaces with an excess of water.

#### 6.4. Reference to other sections

No additional information available

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

- Additional hazards when processed : Handle empty containers with care because residual vapours are flammable.
- Precautions for safe handling : No open flames. No smoking. Take precautionary measures against static discharge. Use only non-sparking tools. Do not breathe dust/fume/gas/mist/vapours/spray.
- Hygiene measures : Do not eat, drink or smoke when using this product. Wash hands, forearms and face thoroughly after handling. Wash contaminated clothing before reuse.

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### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures	: Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Comply with applicable regulations.
Storage conditions	: Keep container tightly closed.
Incompatible materials	: Heat sources.

### 7.3. Specific end use(s)

No additional information available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

No additional information available

### 8.2. Exposure controls

Hand protection	: Protective gloves
Eye protection	: Chemical goggles or face shield
Skin and body protection	: Wear suitable protective clothing
Respiratory protection	: Wear respiratory protection.

## SECTION 9: Physical and chemical properties

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

Physical state	: Liquid
Molecular mass	: 136.58 g/mol
Colour	: Clear Colorless.
Odour	: No data available
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Flammable liquid and vapour.
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available

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Relative density	: No data available
Solubility	: No data available
Log Pow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Thermal decomposition generates : Corrosive vapours.

### 10.2. Chemical stability

Flammable liquid and vapour. May form flammable/explosive vapour-air mixture.

### 10.3. Possibility of hazardous reactions

No additional information available

### 10.4. Conditions to avoid

Open flame. Overheating. Direct sunlight. Heat. Sparks.

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

May release flammable gases. Thermal decomposition generates : Corrosive vapours.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Inhalation: Toxic if inhaled. Oral: Harmful if swallowed.

Skin corrosion/irritation : Causes severe skin burns and eye damage.

Serious eye damage/irritation : Serious eye damage, category 1, implicit

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

STOT-single exposure : Not classified

STOT-repeated exposure : Not classified

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Aspiration hazard : Not classified

Potential adverse human health effects and symptoms : Harmful if swallowed.

### SECTION 12: Ecological information

#### 12.1. Toxicity

No additional information available

#### 12.2. Persistence and degradability

No additional information available

#### 12.3. Bioaccumulative potential

No additional information available

#### 12.4. Mobility in soil

No additional information available

#### 12.5. Results of PBT and vPvB assessment

No additional information available

#### 12.6. Other adverse effects

No additional information available

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Product/Packaging disposal recommendations : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

Additional information : Handle empty containers with care because residual vapours are flammable.

### SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

#### 14.1. UN number

UN-No. (ADR) : 2742

UN-No. (IMDG) : 2742

UN-No. (IATA) : 2742

UN-No. (ADN) : 2742

UN-No. (RID) : 2742

#### 14.2. UN proper shipping name

Proper Shipping Name (ADR) : CHLOROFORMATES, TOXIC, CORROSIVE, FLAMMABLE, N.O.S.

Proper Shipping Name (IMDG) : CHLOROFORMATES, TOXIC, CORROSIVE, FLAMMABLE, N.O.S.

Proper Shipping Name (IATA) : Chloroformates, toxic, corrosive, flammable, n.o.s.

Proper Shipping Name (ADN) : CHLOROFORMATES, TOXIC, CORROSIVE, FLAMMABLE, N.O.S.

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Proper Shipping Name (RID)	: CHLOROFORMATES, TOXIC, CORROSIVE, FLAMMABLE, N.O.S.
Transport document description (ADR)	: UN 2742 CHLOROFORMATES, TOXIC, CORROSIVE, FLAMMABLE, N.O.S., 6.1 (3+8), II, (D/E)
Transport document description (IMDG)	: UN 2742 CHLOROFORMATES, TOXIC, CORROSIVE, FLAMMABLE, N.O.S., 6.1 (3+8), II
Transport document description (IATA)	: UN 2742 Chloroformates, toxic, corrosive, flammable, n.o.s., 6.1, II
Transport document description (ADN)	: UN 2742 CHLOROFORMATES, TOXIC, CORROSIVE, FLAMMABLE, N.O.S., 6.1 (3+8), II
Transport document description (RID)	: UN 2742 CHLOROFORMATES, TOXIC, CORROSIVE, FLAMMABLE, N.O.S., 6.1 (3+8), II

### 14.3. Transport hazard class(es)

#### ADR

Transport hazard class(es) (ADR)	: 6.1 (3, 8)
Danger labels (ADR)	: 6.1, 3, 8



#### IMDG

Transport hazard class(es) (IMDG)	: 6.1 (3, 8)
Danger labels (IMDG)	: 6.1, 3, 8



#### IATA

Transport hazard class(es) (IATA)	: 6.1 (3, 8)
Hazard labels (IATA)	: 6.1, 3, 8



#### ADN

Transport hazard class(es) (ADN)	: 6.1 (3, 8)
Danger labels (ADN)	: 6.1, 3, 8



#### RID

Transport hazard class(es) (RID)	: 6.1 (3, 8)
Danger labels (RID)	: 6.1, 3, 8

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### 14.4. Packing group

Packing group (ADR)	: II
Packing group (IMDG)	: II
Packing group (IATA)	: II
Packing group (ADN)	: II
Packing group (RID)	: II

### 14.5. Environmental hazards

Dangerous for the environment	: No
Marine pollutant	: No
Other information	: No supplementary information available

### 14.6. Special precautions for user

#### - Overland transport

Classification code (ADR)	: TFC
Special provisions (ADR)	: 274, 561
Limited quantities (ADR)	: 100ml
Excepted quantities (ADR)	: E4
Packing instructions (ADR)	: P001, IBC01
Mixed packing provisions (ADR)	: MP15
Tank code (ADR)	: L4BH
Tank special provisions (ADR)	: TU15, TE19
Vehicle for tank carriage	: FL
Transport category (ADR)	: 2
Special provisions for carriage - Loading, unloading and handling (ADR)	: CV13, CV28
Special provisions for carriage - Operation (ADR)	: S2, S9, S19
Hazard identification number (Kemler No.)	: 638
Orange plates	:



Tunnel restriction code (ADR)	: D/E
EAC code	: •3W
APP code	: A(fl)

#### - Transport by sea

Special provisions (IMDG)	: 274
Packing instructions (IMDG)	: P001
IBC packing instructions (IMDG)	: IBC01
EmS-No. (Fire)	: F-E
EmS-No. (Spillage)	: S-C
Stowage category (IMDG)	: A
Stowage and handling (IMDG)	: SW1, SW2, H1, H2
Segregation (IMDG)	: SG5, SG8



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Properties and observations (IMDG) : A wide range of colourless to yellowish flammable liquids. React and decompose with water or heat, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. Flashpoint: Cyclohexyl Chloroformate: 53°C c.c. Toxic if swallowed, by skin contact or by inhalation. Cause burns to skin, eyes and mucous membranes.

MFAG-No : 155

### - Air transport

PCA Excepted quantities (IATA) : E4  
PCA Limited quantities (IATA) : Y640  
PCA limited quantity max net quantity (IATA) : 0.5L  
PCA packing instructions (IATA) : 653  
PCA max net quantity (IATA) : 1L  
CAO packing instructions (IATA) : 660  
CAO max net quantity (IATA) : 30L  
ERG code (IATA) : 6CF

### - Inland waterway transport

Classification code (ADN) : TFC  
Special provisions (ADN) : 274, 561, 802  
Limited quantities (ADN) : 100 ml  
Excepted quantities (ADN) : E4  
Equipment required (ADN) : PP, EP, EX, TOX, A  
Ventilation (ADN) : VE01, VE02  
Number of blue cones/lights (ADN) : 2

### - Rail transport

Classification code (RID) : TFC  
Special provisions (RID) : 274, 561  
Excepted quantities (RID) : E4  
Packing instructions (RID) : P001, IBC01  
Mixed packing provisions (RID) : MP15  
Tank codes for RID tanks (RID) : L4BH  
Special provisions for RID tanks (RID) : TU15  
Transport category (RID) : 2  
Special provisions for carriage - Loading, unloading and handling (RID) : CW13, CW28, CW31  
Colis express (express parcels) (RID) : CE5  
Hazard identification number (RID) : 638

### 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

## SECTION 15: Regulatory information

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

#### 15.1.1. EU-Regulations

No REACH Annex XVII restrictions

iso-BUTYL CHLOROFORMATE For Synthesis is not on the REACH Candidate List

iso-BUTYL CHLOROFORMATE For Synthesis is not on the REACH Annex XIV List

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### 15.1.2. National regulations

#### Germany

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

#### Netherlands

SZW-lijst van kankerverwekkende stoffen : The substance is not listed

SZW-lijst van mutagene stoffen : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

#### Denmark

Recommendations Danish Regulation : Young people below the age of 18 years are not allowed to use the product

### 15.2. Chemical safety assessment

No additional information available

## SECTION 16: Other information

Full text of R-, H- and EUH-statements:

Acute Tox. 3 (Inhalation)	Acute toxicity (inhal.), Category 3
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Flam. Liq. 3	Flammable liquids, Category 3
Skin Corr. 1B	Skin corrosion/irritation, Category 1B
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H331	Toxic if inhaled.
R10	Flammable
R22	Harmful if swallowed
R23	Toxic by inhalation
R34	Causes burns
C	Corrosive
T	Toxic
Xn	Harmful

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*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product*