

# ISO BUTYRALDEHYDE FOR SYNTHESIS MSDS

CAS No: 78-84-2 MSDS

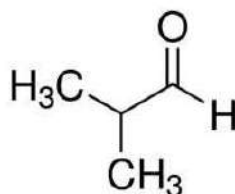


## MATERIAL SAFETY DATA SHEET (MSDS)

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

#### 1.1. Product identifier

Product form : Substance  
:  
EC no : 201-149-6  
CAS No : 78-84-2  
Product code : B-01474  
Chemical structure :



Synonyms : 2-Methylpropionaldehyde

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

##### 1.2.1. Relevant identified uses

Use of the substance/mixture : Laboratory chemicals, Manufacture of substances

##### 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]

Flammable liquids, H225  
Category 2  
Serious eye damage/eye H319  
irritation, Category 2  
Skin corrosion/irritation, H315  
Category 2

Full text of classification categories and H statements : see section 16

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### Classification according to Directive 67/548/EEC or 1999/45/EC

F; R11

Xi; R36/38

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) :



GHS02

GHS07

Signal word (CLP) : Danger

Hazard statements (CLP) : H225 - Highly flammable liquid and vapour  
H315 - Causes skin irritation  
H319 - Causes serious eye irritation

Precautionary statements (CLP) : P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking  
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes.  
Remove contact lenses, if present and easy to do. Continue rinsing

## 2.3. Other hazards

No additional information available

## SECTION 3: Composition/information on ingredients

### 3.1. Substance

Name : ISO BUTYRALDEHYDE FOR SYNTHESIS

CAS No : 78-84-2

EC no : 201-149-6

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

### 3.2. Mixture

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. Give oxygen or artificial respiration if necessary. If you feel unwell, seek medical advice.
- First-aid measures after skin contact : Wash skin with plenty of water. If skin irritation occurs: Get medical advice/attention.
- First-aid measures after eye contact : If eye irritation persists: Get medical advice/attention. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- First-aid measures after ingestion : Rinse mouth out with water. If you feel unwell, seek medical advice.

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

- Symptoms/injuries after skin contact : Causes skin irritation.
- Symptoms/injuries after eye contact : Causes serious eye irritation.

#### 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 a heavy water stream.

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

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

#### 5.3. Advice for firefighters

- Protection during firefighting : Do not attempt to take action without suitable protective equipment.

### SECTION 6: Accidental release measures

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

- General measures : Remove ignition sources. Use special care to avoid static electric charges. No naked lights. No smoking.

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

- Emergency procedures : Evacuate unnecessary personnel.

##### 6.1.2. For emergency responders

- Protective equipment : Use personal protective equipment as required.
- Emergency procedures : Stop release.

#### 6.2. Environmental precautions

Avoid release to the environment.

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

- Methods for cleaning up : Collect spillage. On land, sweep or shovel into suitable containers. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible.

#### 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 naked lights. No smoking. Use only non-sparking tools.
- Hygiene measures : Wash ... thoroughly after handling.

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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. |
| Storage conditions     | : Keep in fireproof place. 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 safety glasses |
| Skin and body protection | : Wear suitable protective clothing  |
| Respiratory protection   | : Wear appropriate mask              |

## SECTION 9: Physical and chemical properties

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

|  |   |
|--|---|
| Physical state                             | : Liquid  |
| Colour                                     | : Clear Colorless.                                |
| Odour                                      | : stench pungent odour.                           |
| Odour threshold                            | : No data available                               |
| pH   | : No data available                               |
| Relative evaporation rate (butylacetate=1) | : No data available                               |
| Melting point                              | : -65 °C  |
| Freezing point                             | : No data available                               |
| Boiling point                              | : 63 °C   |
| Flash point                                | : -19 °C  |
| Auto-ignition temperature                  | : 1900 °C   |
| Decomposition temperature                  | : No data available                               |
| Flammability (solid, gas)                  | : Flammable<br>Highly flammable liquid and vapour |
| Vapour pressure                            | : No data available                               |
| Relative vapour density at 20 °C           | : 2.5   |

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|                      |                          |
|----------------------|--------------------------|
| Relative density     | : No data available      |
| Density              | : 0.79 g/cm <sup>3</sup> |
| Solubility           | : Water: 75 g/l @ 20°C   |
| Log Pow              | : 0.77                   |
| Viscosity, kinematic | : No data available      |
| Viscosity, dynamic   | : No data available      |
| Explosive properties | : No data available      |
| Oxidising properties | : No data available      |
| Explosive limits     | : 0.016 - 0.11 vol %     |

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No additional information available

### 10.2. Chemical stability

Highly 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. Direct sunlight.

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

May release flammable gases.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

Skin corrosion/irritation : Causes skin irritation.

Serious eye damage/irritation : Causes serious eye irritation.

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

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Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

### SECTION 12: Ecological information

#### 12.1. Toxicity

No additional information available

#### 12.2. Persistence and degradability

No additional information available

#### 12.3. Bioaccumulative potential

|  |      |
|--|------|
| <b>ISO BUTYRALDEHYDE FOR SYNTHESIS (78-84-2)</b> |      |
| Log Pow  | 0.77 |

#### 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 ...

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) : 2045

UN-No. (IMDG) : 2045

UN-No.(IATA) : 2045

UN-No.(ADN) : 2045

UN-No. (RID) : 2045

#### 14.2. UN proper shipping name

Proper Shipping Name (ADR) : ISOBUTYRALDEHYDE (ISOBUTYL ALDEHYDE)

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|                                       |  |
|---------------------------------------|--|
| Proper Shipping Name (IMDG)           | : ISOBUTYL ALDEHYDE (ISOBUTYRALDEHYDE)                             |
| Proper Shipping Name (IATA)           | : ISOBUTYL ALDEHYDE  |
| Proper Shipping Name (ADN)            | : ISOBUTYRALDEHYDE (ISOBUTYL ALDEHYDE)                             |
| Proper Shipping Name (RID)            | : ISOBUTYRALDEHYDE (ISOBUTYL ALDEHYDE)                             |
| Transport document description (ADR)  | : UN 2045 ISOBUTYRALDEHYDE (ISOBUTYL ALDEHYDE), 3, II, (D/E)       |
| Transport document description (IMDG) | : UN 2045 ISOBUTYL ALDEHYDE (ISOBUTYRALDEHYDE), 3, II (-24°C c.c.) |
| Transport document description (IATA) | : UN 2045 ISOBUTYL ALDEHYDE, 3, II                                 |
| Transport document description (ADN)  | : UN 2045 ISOBUTYRALDEHYDE (ISOBUTYL ALDEHYDE), 3, II              |
| Transport document description (RID)  | : UN 2045 ISOBUTYRALDEHYDE (ISOBUTYL ALDEHYDE), 3, II              |

### 14.3. Transport hazard class(es)

#### ADR

|                                  |     |
|----------------------------------|-----|
| Transport hazard class(es) (ADR) | : 3 |
| Danger labels (ADR)              | : 3 |



#### IMDG

|                                   |     |
|-----------------------------------|-----|
| Transport hazard class(es) (IMDG) | : 3 |
| Danger labels (IMDG)              | : 3 |



#### IATA

|                                   |     |
|-----------------------------------|-----|
| Transport hazard class(es) (IATA) | : 3 |
| Hazard labels (IATA)              | : 3 |



#### ADN

|                                  |     |
|----------------------------------|-----|
| Transport hazard class(es) (ADN) | : 3 |
| Danger labels (ADN)              | : 3 |



#### RID

|                                  |     |
|----------------------------------|-----|
| Transport hazard class(es) (RID) | : 3 |
| Danger labels (RID)              | : 3 |

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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)                                 | : F1                |
| Limited quantities (ADR)                                  | : 1L                |
| Excepted quantities (ADR)                                 | : E2                |
| Packing instructions (ADR)                                | : P001, IBC02, R001 |
| Mixed packing provisions (ADR)                            | : MP19              |
| Portable tank and bulk container instructions (ADR)       | : T4                |
| Portable tank and bulk container special provisions (ADR) | : TP1               |
| Tank code (ADR)   | : LGBF              |
| Vehicle for tank carriage                                 | : FL                |
| Transport category (ADR)                                  | : 2                 |
| Special provisions for carriage - Operation (ADR)         | : S2, S20           |
| Hazard identification number (Kemler No.)                 | : 33                |
| Orange plates   | :                   |



|                               |        |
|-------------------------------|--------|
| Tunnel restriction code (ADR) | : D/E  |
| EAC code                      | : •2YE |

#### - Transport by sea

|                                 |              |
|---------------------------------|--------------|
| Limited quantities (IMDG)       | : 1 L        |
| Excepted quantities (IMDG)      | : E2         |
| Packing instructions (IMDG)     | : P001       |
| IBC packing instructions (IMDG) | : IBC02      |
| Tank instructions (IMDG)        | : T4         |
| Tank special provisions (IMDG)  | : TP1        |
| EmS-No. (Fire)                  | : F-E        |
| EmS-No. (Spillage)              | : S-D        |
| Stowage category (IMDG)         | : E          |
| Stowage and handling (IMDG)     | : SW2        |
| Flash point (IMDG)              | : -24°C c.c. |
| MFAG-No                         | : 130        |



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### - Air transport

|  |        |
|--|--------|
| PCA Excepted quantities (IATA)               | : E2   |
| PCA Limited quantities (IATA)                | : Y341 |
| PCA limited quantity max net quantity (IATA) | : 1L   |
| PCA packing instructions (IATA)              | : 353  |
| PCA max net quantity (IATA)                  | : 5L   |
| CAO packing instructions (IATA)              | : 364  |
| CAO max net quantity (IATA)                  | : 60L  |
| ERG code (IATA)                              | : 3H   |

### - Inland waterway transport

|                                   |             |
|-----------------------------------|-------------|
| Classification code (ADN)         | : F1        |
| Limited quantities (ADN)          | : 1 L       |
| Excepted quantities (ADN)         | : E2        |
| Carriage permitted (ADN)          | : T         |
| Equipment required (ADN)          | : PP, EX, A |
| Ventilation (ADN)                 | : VE01      |
| Number of blue cones/lights (ADN) | : 1         |

### - Rail transport

|   |                     |
|---|---------------------|
| Classification code (RID)                                 | : F1                |
| Limited quantities (RID)                                  | : 1L                |
| Excepted quantities (RID)                                 | : E2                |
| Packing instructions (RID)                                | : P001, IBC02, R001 |
| Mixed packing provisions (RID)                            | : MP19              |
| Portable tank and bulk container instructions (RID)       | : T4                |
| Portable tank and bulk container special provisions (RID) | : TP1               |
| Tank codes for RID tanks (RID)                            | : LGBF              |
| Transport category (RID)                                  | : 2                 |
| Colis express (express parcels) (RID)                     | : CE7               |
| Hazard identification number (RID)                        | : 33                |

### 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 BUTYRALDEHYDE FOR SYNTHESIS is not on the REACH Candidate List

ISO BUTYRALDEHYDE FOR SYNTHESIS is not on the REACH Annex XIV List

#### 15.1.2. National regulations

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### Germany

AwSV/VwVwS Annex reference : Water hazard class (WGK) 1, slightly hazardous to water (Classification according to VwVwS, Annex 2; WGK No 1136)

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

### Denmark

Classification remarks : Emergency management guidelines for the storage of flammable liquids must be followed

### 15.2. Chemical safety assessment

No additional information available

### SECTION 16: Other information

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

|               |   |
|---------------|---|
| Eye Irrit. 2  | Serious eye damage/eye irritation, Category 2 |
| Flam. Liq. 2  | Flammable liquids, Category 2                 |
| Skin Irrit. 2 | Skin corrosion/irritation, Category 2         |
| H225          | Highly flammable liquid and vapour            |
| H315          | Causes skin irritation                        |
| H319          | Causes serious eye irritation                 |
| R11           | Highly flammable                              |
| R36/38        | Irritating to eyes and skin                   |
| F             | Highly flammable                              |
| Xi            | Irritant                                      |

*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*