



## Material Safety Data Sheet - MSDS

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# NORMAL BUTYRALDEHYDE

### 1) CHEMICAL IDENTIFICATION

Name: n-Butyraldehyde

### 2) COMPOSITION/INFORMATION ON INGREDIENTS

CAS: # 123-72-8;

Molecular Formulae: C<sub>4</sub>H<sub>8</sub>O;

EC no: 204-646-6

SYNONYMS: Butal; Butaldehyde; Butalyde; Butanal; Butanaldehyde; Butyl aldehyde; n-Butyl aldehyde; Butyral; Butyric aldehyde

### 3) HAZARDS IDENTIFICATION

#### SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT

Highly flammable

### 4) FIRST AID MEASURES

#### AFTER INHALATION

If inhaled, remove to fresh air.

If not breathing give artificial respiration.

If breathing is difficult, give oxygen.

#### AFTER SKIN CONTACT

In case of contact, immediately wash skin with soap and copious amounts of water

#### AFTER EYE CONTACT

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes.

#### AFTER INGESTION

If swallowed, wash out mouth with water provided person is conscious; Call a physician.

### 5) FIRE FIGHTING MEASURES

Water spray, Carbon dioxide, dry chemical power or appropriate foam.

#### SPECIAL RISKS

Flammable liquid; Emits toxic fumes under fire conditions.

#### EXPLOSION HAZARDS:

Vapour may travel a considerable distance to the source of ignition and flash back.

Container explosion can occur under fire conditions and forms explosive mixtures in air.

#### SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

#### SPECIFIC METHOD(S) OF FIRE FIGHTING

Use water spray to cool fire-exposed containers.

### 6) ACCIDENTAL RELEASE MEASURES

#### PROCEDURES TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area.

Shut off all sources of ignition.

#### PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots and heavy rubber gloves.

#### METHODS FOR CLEANING UP

Cover with dry-lime, sand or soda ash;



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Place in covered containers using non-sparking tools and transport outdoors.  
Ventilate area and wash spill site after material pickup is complete.

### 7) HANDLING AND STORAGE

#### HANDLING

Avoid breathing vapour;  
Avoid contact with eyes, skin and clothing.  
Avoid prolonged or repeated exposure.

#### STORAGE

Keep container closed; Keep away from heat, sparks, and open flame.

#### SPECIAL REQUIREMENTS

Stench; Do not distil to dryness.

### 8) EXPOSURE CONTROLS/PERSONAL PROTECTION

#### ENGINEERING CONTROLS

Safety shower and eye bath.  
Use non-sparking tools.  
Mechanical exhaust required.

#### GENERAL HYGIENE MEASURES

Wash thoroughly after handling.  
Wash contaminated clothing before reuse.

#### EXPOSURE LIMITS

Germany: OEL 64 gm/m<sup>3</sup>, 20 ppm.

#### PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Government approved  
Protection: respirator  
Hand Protection: Compatible chemical-resistant gloves.  
Eye Protection: Chemical safety goggles.

### 9) PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Clear colourless liquid.  
Odour: Pungent.  
MW: 72.11.  
BP: 75 °C;  
MP: minus 97 °C;  
Flash Point: minus 16 °C; closed cup;  
Autoignition Temp: 191 °C;  
Explosion Limits: Lower: 1.9%, Upper: 12.5%;  
Vapour Pressure: 91.5 mmHg at 20 °C;  
Relative vapour density: 2.5 (air=1);  
Viscosity: 0.43 Pas at 20 °C;  
Surface Tension: 29.9 mN/m at 24 °C;  
Solubility in water: Sparingly Water Soluble.  
Other Solvents: Ethanol, Ether, Ethyl Acetate, Acetone Toluene.

### 10) STABILITY AND REACTIVITY

STABILITY: Unstable to Light

#### CONDITIONS TO AVOID

Normally stable; however, on long-term storage, materials containing similar functional groups form peroxides of unknown stability.

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Heat.
MATERIALS TO AVOID: Oxidizing agents, Strong acids, Strong bases, Strong reducing agents.
REACTIONS TO AVOID: Do not distil to dryness.
HAZARDOUS DECOMPOSITION PRODUCTS Carbon monoxide, Carbon dioxide
HAZARDOUS POLYMERIZATION May undergo auto-polymerization
<b>11) TOXICOLOGICAL INFORMATION</b>
RTECS NUMBER: ES2275000
SIGNS AND SYMPTOMS OF EXPOSURE To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.
ROUTE OF EXPOSURE Skin Contact: Causes skin irritation. Skin Absorption: May be harmful if absorbed through the skin. Eye contact: Causes eye Irritation. Inhalation: May be harmful if inhaled; May be irritating to mucous membranes and upper respiratory tract. Ingestion: Harmful if swallowed.
<b>12) ECOLOGICAL INFORMATION</b>
No data available.
<b>13) DISPOSAL CONSIDERATIONS</b>
SUBSTANCE DISPOSAL Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an after burner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.
<b>14) TRANSPORT INFORMATION</b>
RID/ADR: UN#: 1129, Class: 3, P0:II; Proper Shipping Name: Butyraldehyde
IMDG: UN#: 1129, Class: 3, P0:II; Proper Shipping Name: Butyraldehyde; Marine Pollutant: No; Severe Marine Pollutant: No
IATA: UN#: 1129, Class: 3, PG:II; Proper Shipping Name: Butyraldehyde; Inhalation Packing Group 1 No.
<b>15) REGULATORY INFORMATION</b>
CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES INDICATION OF DANGER.
Indication of Danger: F; Highly Flammable
R-Phrases: 11; Highly flammable
S-Phrases: 9,29,33; Keep container in well-ventilated place; Do not empty into drains; Take precautionary measures against static discharges.
<b>16) Other information</b>
Training advice: For effective first-aid, special training / education is needed.

Disclaimer: For industrial use only. The information contained herein is accurate to the best of our knowledge. We do not suggest or guarantee that any hazards listed herein are the only ones which exist. APL makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other substances. User has the sole responsibility to determine the suitability of the materials for any use and the manner of use contemplated. User must meet all applicable safety and health standards.

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