4-CHLORO BUTYRYL CHLORIDE
CAS NO 4635-59-0

MATERIAL SAFETY DATA SHEET
SDS/MSDS

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

1.1 Product identifiers
Product name : 4-Chloro Butyryl Chloride
CAS-No. : 4635-59-0

1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified uses : Laboratory chemicals, Industrial & for professional use only.

1.3 Details of the supplier of the safety data sheet
Company : Central Drug House (P) Ltd
7/28 Vardaan House
New Delhi -110002
INDIA
Telephone : +91 11 49404040
Email : care@cdhfinechemical.com

1.4 Emergency telephone number
Emergency Phone # : +91 11 49404040 (9:00am - 6:00 pm) [Office hours]

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008
Acute toxicity, Oral (Category 4), H302
Acute toxicity, Inhalation (Category 2), H330
Skin corrosion (Category 1A), H314

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008
Pictogram

Signal word : Danger

Hazard statement(s)
H302 : Harmful if swallowed.
H314 : Causes severe skin burns and eye damage.
H330 : Fatal if inhaled.

Precautionary statement(s)
P260 : Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P280 : Wear protective gloves/ protective clothing/ eye protection/ face protection.
P284 Wear respiratory 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**
Lachrymator.

**SECTION 3: Composition/information on ingredients**

3.1 **Substances**

<table>
<thead>
<tr>
<th>Formula</th>
<th>Cl(CH2)3COCl</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molecular weight</td>
<td>141.00 g/mol</td>
</tr>
<tr>
<td>CAS-No.</td>
<td>4635-59-0</td>
</tr>
<tr>
<td>EC-No.</td>
<td>225-059-1</td>
</tr>
</tbody>
</table>

**Hazardous ingredients according to Regulation (EC) No 1272/2008**

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-Chlorobutyl chloride</td>
<td>Acute Tox. 4; Acute Tox. 2;</td>
<td>&lt;= 100 %</td>
</tr>
<tr>
<td>CAS-No.</td>
<td>Skin Corr. 1A; H302, H330,</td>
<td></td>
</tr>
<tr>
<td>EC-No.</td>
<td>H314</td>
<td></td>
</tr>
</tbody>
</table>

For the full text of the H-Statements mentioned in this Section, see Section 16.

**SECTION 4: First aid measures**

4.1 **Description of first aid measures**

**General advice**
Consult a physician. Show this safety data sheet to the doctor in attendance.

**If inhaled**
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact**
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

**In case of eye contact**
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**If swallowed**
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 **Most important symptoms and effects, both acute and delayed**
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 **Indication of any immediate medical attention and special treatment needed**
No data available

**SECTION 5: Firefighting measures**

5.1 **Extinguishing media**

**Suitable extinguishing media**
For small (incipient) fires, use media such as "alcohol" foam, dry chemica of water applied ineffective. Cool all affected containers with flooding

5.2 **Special hazards arising from the substance or mixture**
Carbon oxides, Hydrogen chloride gas
5.3 **Advice for firefighters**
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 **Further information**
Use water spray to cool unopened containers.

**SECTION 6: Accidental release measures**

6.1 **Personal precautions, protective equipment and emergency procedures**
Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

For personal protection see section 8.

6.2 **Environmental precautions**
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 **Methods and materials for containment and cleaning up**
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.

6.4 **Reference to other sections**
For disposal see section 13.

**SECTION 7: Handling and storage**

7.1 **Precautions for safe handling**
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Keep away from sources of ignition - No smoking. Take measures to prevent the buildup of electrostatic charge.

For precautions see section 2.2.

7.2 **Conditions for safe storage, including any incompatibilities**
Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Moisture sensitive.
Storage class (TRGS 510): Combustible liquids, toxic

7.3 **Specific end use(s)**
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

**SECTION 8: Exposure controls/personal protection**

8.1 **Control parameters**

8.2 **Exposure controls**

- **Appropriate engineering controls**
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

- **Personal protective equipment**

  - **Eye/face protection**
  Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

  - **Skin protection**
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
Body Protection
Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use (US) or type ABEK (EN 14387) respirator cartridges as a backup to enginee protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Appearance Form: liquid
b) Odour unpleasant
c) Odour Threshold No data available
d) pH No data available
e) Melting point/freezing point No data available
f) Initial boiling point and boiling range 173 - 174 °C - lit.
g) Flash point 85 °C - closed cup
h) Evaporation rate No data available
i) Flammability (solid, gas) No data available
j) Upper/lower flammability or explosive limits Upper explosion limit: 11.7 %(V) Lower explosion limit: 5.5 %(V)
k) Vapour pressure No data available
l) Vapour density No data available
m) Relative density 1.26 g/cm3 at 25 °C
n) Water solubility No data available
o) Partition coefficient: n-octanol/water No data available
p) Auto-ignition temperature No data available
q) Decomposition temperature No data available
r) Viscosity No data available
s) Explosive properties No data available
t) Oxidizing properties No data available

9.2 Other safety information
No data available

SECTION 10: Stability and reactivity

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.
10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Strong bases, Alcohols, Oxidizing agents

10.6 Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas
Other decomposition products - No data available
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 1,350 mg/kg(4-Chlorobutyl chloride)
LC50 Inhalation - Rat - 4 h - 650 mg/m3(4-Chlorobutyl chloride)
Remarks: Respiratory disorder Skin and Appendages: Other: Hair. Nutritional and Gross Metabolic:Weight loss or decreased weight gain.

Skin corrosion/irritation
No data available(4-Chlorobutyl chloride)

Serious eye damage/eye irritation
No data available(4-Chlorobutyl chloride)

Respiratory or skin sensitisation
No data available(4-Chlorobutyl chloride)

Germ cell mutagenicity
No data available(4-Chlorobutyl chloride)

Carcinogenicity
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity
No data available(4-Chlorobutyl chloride)

Specific target organ toxicity - single exposure
No data available(4-Chlorobutyl chloride)

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available(4-Chlorobutyl chloride)

Additional Information
RTECS: EM14060000
Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache, Nausea(4-Chlorobutyl chloride)

SECTION 12: Ecological information

12.1 Toxicity
Toxicity to fish LC50 - Leuciscus idus (Golden orfe) - > 46 - < 100 mg/l - 96 h(4-Chlorobutyl chloride)

12.2 Persistence and degradability
Biodegradability

12.3 Bioaccumulative potential
No data available
12.4 Mobility in soil
No data available (4-Chlorobutyril chloride)

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
Harmful to aquatic life.
No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Product
This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number
ADR/RID: 3390 IMDG: 3390 IATA: 3390

14.2 UN proper shipping name
ADR/RID: TOXIC BY INHALATION LIQUID, CORROSIVE, N.O.S. (4-Chlorobutyril chloride)
IMDG: TOXIC BY INHALATION LIQUID, CORROSIVE, N.O.S. (4-Chlorobutyril chloride)
IATA: Toxic by inhalation liquid, corrosive, n.o.s. (4-Chlorobutyril chloride)
Passenger Aircraft: Not permitted for transport
Cargo Aircraft: Not permitted for transport

14.3 Transport hazard class(es)

14.4 Packaging group
ADR/RID: I IMDG: I IATA: -

14.5 Environmental hazards
ADR/RID: no IMDG Marine pollutant: no IATA: no

14.6 Special precautions for user
No data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.2 Chemical safety assessment
For this product a chemical safety assessment was not carried out

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H330 Fatal if inhaled.

Further information
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Central Drug House (P) Ltd and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.cdhfinechemical.com for additional terms and conditions of sale.