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

1.1 Product identifiers
   Product name: N-Butyl Chloride
   CAS-No.: 109-69-3

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-10002
   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
   Flammable liquids (Category 2), H225
   Aspiration hazard (Category 1), H304
   Chronic aquatic toxicity (Category 3), H412

   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):
   H225 Highly flammable liquid and vapour.
   H304 May be fatal if swallowed and enters airways.
   H412 Harmful to aquatic life with long lasting effects.
Precautionary statement(s)
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P273 Avoid release to the environment.
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P331 Do NOT induce vomiting.
P403 + P235 Store in a well-ventilated place. Keep cool.

Supplemental Hazard: none

2.3 Other hazards
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.1 Substances
Synonyms: Butyl chloride

Formula: C4H9Cl
Molecular weight: 92.57 g/mol
CAS-No.: 109-69-3
EC-No.: 203-696-6
Index-No.: 602-059-00-3

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>Butyl chloride</td>
<td>Flam. Liq. 2; Asp. Tox. 1;</td>
<td>&lt;= 100 %</td>
</tr>
<tr>
<td>CAS-No.</td>
<td>109-69-3</td>
<td></td>
</tr>
<tr>
<td>EC-No.</td>
<td>203-696-6</td>
<td>Aquatic Chronic 3; H225,</td>
</tr>
<tr>
<td>Index-No.</td>
<td>602-059-00-3</td>
<td>H304, H412</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
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

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
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

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
Use personal protective equipment. 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).

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 build up 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.
Storage class (TRGS 510): Flammable liquids

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
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
Face shield and safety glasses 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, Flame retardant antistatic protective clothing., 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
   stinging
c) Odour Threshold
   No data available
d) pH
   No data available
e) Melting point/freezing point
   Melting point/range: -123 °C - lit.
f) Initial boiling point and boiling range
   77 - 78 °C - lit.
g) Flash point
   -12 °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: 10.1 %(V)
   Lower explosion limit: 1.8 %(V)
k) Vapour pressure
   80.1 mmHg at 78.4 °C
l) Vapour density
   3.2 - (Air = 1.0)
m) Relative density
   0.886 g/cm3 at 25 °C
n) Water solubility
   ca.0.11 g/l at 20 °C - OECD Test Guideline 105 - partly soluble
o) Partition coefficient: n-octanol/water
   log Pow: 2.66 at 20 °C
p) Auto-ignition temperature
   245 °C at 1 hPa
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
Surface tension 63.2 mN/m at 20 °C
Relative vapour density 3.2 - (Air = 1.0)

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 oxidizing agents, Strong bases

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 - 2,670 mg/kg(Butyl chloride)
LC50 Inhalation - Rat - male and female - 4 h - > 7.74 mg/l(Butyl chloride)
(OECD Test Guideline 403)

Skin corrosion/irritation
Skin - Rabbit(Butyl chloride)
Result: No skin irritation
(OECD Test Guideline 404)

Serious eye damage/eye irritation
Eyes - Rabbit(Butyl chloride)
Result: No eye irritation
(OECD Test Guideline 405)

Respiratory or skin sensitisation
Buehler Test - Guinea pig(Butyl chloride)
Result: negative
(OECD Test Guideline 406)

Germ cell mutagenicity

Chromosome aberration test in vitro(Butyl chloride)
Chinese hamster cells
Result: negative
OECD Test Guideline 474(Butyl chloride)
Mouse - male and female
Result: negative

Carcinogenicity
Animal testing did not show any carcinogenic effects.(Butyl chloride)

Reproductive toxicity
No toxicity to reproduction(Butyl chloride)
No data available (Butyl chloride)

**Specific target organ toxicity - single exposure**
No data available (Butyl chloride)

**Specific target organ toxicity - repeated exposure**
No data available

**Aspiration hazard**
May be fatal if swallowed and enters airways. (Butyl chloride)

**Additional Information**
Repeated dose toxicity - Rat - male and female - Oral - No observed adverse effect level - 120 mg/kg (Butyl chloride)
RTECS: EJ6300000

**SECTION 12: Ecological information**

12.1 **Toxicity**
Toxicity to fish  
semi-static test LC50 - Brachydanio rerio (zebrafish) - ca. 75.6 mg/l - 96 h (Butyl chloride)  
(OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates  
EC50 - Daphnia magna (Water flea) - 3,020 mg/l - 48 h (Butyl chloride)

12.2 **Persistence and degradability**
No data available

12.3 **Bioaccumulative potential**
No data available

12.4 **Mobility in soil**
No data available (Butyl chloride)

12.5 **Results of PBT and vPvB assessment**
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 **Other adverse effects**
Harmful to aquatic life with long lasting effects.
No data available

**SECTION 13: Disposal considerations**

13.1 **Waste treatment methods**

**Product**
Burn in a chemical incinerator equipped with an afterburner and scrubber b highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

**Contaminated packaging**
Dispose of as unused product.
SECTION 14: Transport information

14.1 UN number
ADR/RID: 1127  
IMDG: 1127  
IATA: 1127

14.2 UN proper shipping name
ADR/RID: CHLOROBUTANES  
IMDG: CHLOROBUTANES  
IATA: Chlorobutanes

14.3 Transport hazard class(es)
ADR/RID: 3  
IMDG: 3  
IATA: 3

14.4 Packaging group
ADR/RID: II  
IMDG: II  
IATA: II

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.

H225 Highly flammable liquid and vapour.
H304 May be fatal if swallowed and enters airways.
H412 Harmful to aquatic life with long lasting effects.

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.