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|  <b>SITARA</b><br>CHEMICAL INDUSTRIES LTD | <b>SAFETY DATA SHEET (SDS)</b> |                              |
|  | <b>CHLORINE</b>                |                              |
|  | Document #: <b>SCIL-SDS-15</b> | Issue Date: <b>01-Jan-23</b> |
|  | Revision: <b>0</b>             | Next Rev: <b>31-Dec.-27</b>  |

## 1. IDENTIFICATION

|  |   |
|--|---|
| <b>1.1 Product identifier:</b>   | <b>Chlorine</b>   |
| <b>Synonym(s):</b>   | Liquefied chlorine, Liquid chlorine   |
| <b>Reach No.</b>   | A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline. |
| <b>CAS No.</b>   | 7782-50-5   |
| <b>1.2 Recommended use:</b>  | Laboratory chemicals, Manufacture of substances   |
| <b>1.3 Details of the supplier of the Safety data sheet Manufacturer</b> |   |
| <b>Company Name</b>  | Sitara Chemical Industries Ltd.   |
| <b>Address:</b>  | 32-K.M, Sheikhpura Road, Faisalabad.  |
| <b>Telephone Number:</b>   | (+92) 041-4689141-5   |
| <b>Emergency Number</b>  | (+92) 041-4689141-5 (Ext.1161)  |
| <b>Website</b>   | <a href="http://www.sitara.com.pk">http://www.sitara.com.pk</a>   |

## 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or Mixture.

|  |                  |      |
|--|------------------|------|
| Oxidizing gases  | (Category 1)     | H270 |
| Gases under pressure   | (Compressed gas) | H280 |
| Acute toxicity, Inhalation   | (Category 1)     | H330 |
| Skin irritation  | (Category 2)     | H315 |
| Eye irritation   | (Category 2)     | H319 |
| Specific target organ toxicity - single exposure (Category 3), Respiratory system, |                  | H335 |
| Short-term (acute) aquatic hazard  | (Category 1)     | H400 |
| Long-term (chronic) aquatic hazard   | (Category 1)     | H410 |

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)**

|      |   |
|------|---|
| P270 | May cause or intensify fire; oxidizer.                |
| H280 | Contains gas under pressure; may explode if heated.   |
| H315 | Causes skin irritation.                               |
| H319 | Causes serious eye irritation.                        |
| H330 | Fatal if inhaled                                      |
| H335 | May cause respiratory irritation.                     |
| H410 | Very toxic to aquatic life with long lasting effects. |

**Precautionary statement(s)**

|           |  |
|-----------|--|
| P273      | Avoid release to the environment       |
| P302+P352 | IF ON SKIN: Wash with plenty of water. |

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P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P410 + P403 Protect from sunlight. Store in a well-ventilated place

#### Supplemental Hazard Statements

Reduced Labeling (<= 125 ml)

#### Pictogram



Signal word

Danger

#### Hazard statement(s)

H330

Fatal if inhaled.

#### Precautionary statement(s)

P304 + P340 + P310

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.

P403 + P233

Store in a well-ventilated place. Keep container tightly closed.

Supplemental Hazard Statements None

#### 2.3 Other hazards:

This substance/mixture contains no components considered to be persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.  
Contact with liquid or refrigerated gas can cause cold burns and frostbite.


### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1 Substances

Formula : Cl<sub>2</sub>  
 Molecular weight : 70.91 g/mol  
 CAS- No. : 7782-50-5  
 EC-No. : 231-959-5  
 Index-No. : 017-001-00-7

| Component   | Classification  | Concentration |
|---|---|---------------|
| Chlorine  |   |               |
| CAS-No. 7782-50-5<br>EC-No. 231-959-5<br>Index-No. 017-001-00-7 | Ox. Gas 1; Press. Gas<br>Compr. Gas; Acute Tox. 1;<br>Skin Irrit. 2; Eye Irrit. 2;<br>STOT SE 3; Aquatic Acute<br>1; Aquatic Chronic 1;<br>H270, H280, H330, H315,<br>H319, H335, H400, H410<br>M-Factor - Aquatic Acute:<br>10 - Aquatic Chronic: 10 | <= 100 %      |

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

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#### 4. FIRST AID MEASURES

##### 4.1 Description of first-aid measures

###### General advice

###### If inhaled:

After inhalation: fresh air. Immediately, call in physician. If breathing stops: immediately apply artificial respiration, if necessary, also oxygen.

###### In case of skin contact:

Take off immediately all contaminated clothing. Rinse skin with water/ shower.

###### In case of eye contact:

After eye contact: rinse out with plenty of water. Remove contact lenses.

###### If swallowed:

After swallowing: immediately make victim drink water (two glasses at most). 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

#### 5. FIRE FIGHTING MEASURES

##### 5.1 Extinguishing media

###### Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and environment.

**Unsuitable extinguishing media:** For this substance no limitations of extinguishing agents are given.

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

Hydrogen chloride gas.

Not combustible.

Has a fire-promoting effect due to release of oxygen Ambient fire may liberate hazardous vapours.

##### 5.3 Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

##### 5.4 Further information

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

#### 6. ACCIDENTAL RELEASE MEASURES

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

Advice for non-emergency personnel: Do not breathe gas. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.


##### 6.2 Environmental precautions.

Do not let product enter drains.

##### 6.3 Methods and materials for containment and cleaning up

Stop flow of gas, move leaking cylinder to open air if without risk. Cover drains. Observe possible material restrictions. Dispose of properly. Clean up affected area.

##### 6.4 Reference to other sections:

|  |                                |                              |
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For disposal see section 13.

## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapors /aerosols  
 Hygiene measures  
 Immediately change contaminated clothing. Apply preventive skin protection.

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

Tightly closed. Keep locked up or in an area accessible only to qualified or authorized persons. Keep away from combustible materials and sources of ignition.  
 Contents under pressure.

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

Ingredients with workplace control parameters.

### 8.2 Exposure controls

#### Personal protective equipment


**Eye/face protection:** Use equipment for eye protection.  
**Skin protection:** Chemical resistant gloves.  
**Body Protection:** Protective clothing.  
**Respiratory protection:** Recommended Filter type: Filter B-(P3)  
**Other:** Wear suitable protective clothing.  
**Control of environmental exposure:** Do not let product enter drains.

## 9. PHYSICAL & CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

#### Appearance

|  |   |
|--|---|
| <b>Physical state / Form:</b>                                | liquid, Compressed gas                  |
| <b>Color:</b>  | Yellow                                  |
| <b>Odor:</b>   | Pungent                                 |
| <b>pH :</b>  | 1,8 at 6,4 g/l at 20 °C                 |
| <b>Melting point/freezing point:</b>                         | Melting point/range: -101 °C - lit      |
| <b>Initial boiling point and boiling range:</b>              | -34 °C - lit.                           |
| <b>Flash Point:</b>  | Not applicable                          |
| <b>Evaporation rate:</b>                                     | No data available.                      |
| <b>Flammability (solid, gas):</b>                            | No data available                       |
| <b>Upper/lower limit on flammability or explosive limits</b> | No data available.                      |
| <b>Vapor pressure:</b>                                       | 6.399 hPa at 20 °C                      |
| <b>Vapor density:</b>  | 2,44 - (Air = 1.0)                      |
| <b>Relative density:</b>                                     | No data available                       |
| <b>Solubility in water:</b>                                  | 7,41 g/l at 20 °C - soluble             |
| <b>Partition coefficient (n-octanol/water):</b>              | Not applicable for inorganic substances |
| <b>Auto-ignition temperature:</b>                            | No data available                       |

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|  |                                       |
|--|---------------------------------------|
| <b>Decomposition temperature:</b>                | No data available.                    |
| <b>Viscosity:</b> Viscosity, kinematic / dynamic | No data available                     |
| <b>Explosive properties</b>                      | No data available                     |
| <b>Oxidizing properties</b>                      | May cause or intensify fire; oxidizer |
| <b>9.2 Other safety information:</b>             | No data available                     |
| Surface tension                                  | 82,4 mN/m at 20 °C                    |
| Relative vapor density                           | 2,44 - (Air = 1.0)                    |

## 10. Chemical Stability & Reactivity Information

|   |  |
|---|--|
| <b>10.1 Reactivity:</b>                         | No data available  |
| <b>10.2 Chemical Stability:</b>                 | The product is chemically stable under standard ambient conditions.                |
| <b>10.3 Possibility of hazardous reactions:</b> | Risk of ignition or formation of inflammable gases or vapours with: Copper         |
| <b>Risk of explosion with:</b>                  | Hydrogen, Acetylene, Ammonia, Metals, Aluminium, Tin, Mild steel, Iron, phosphorus |
| <b>Violent reactions possible with:</b>         | numerous inorganics and/or organic compounds, Water, Oxygen, acids                 |
| <b>10.4 Conditions to avoid:</b>                | No information available   |
| <b>10.5 Incompatible Materials:</b>             | bronze   |
| <b>10.6 Hazardous Decomposition Products:</b>   | In the event of fire: see section 5  |

## 11. TOXICOLOGICAL INFORMATION

|   |                                |
|---|--------------------------------|
| <b>11.1 Information on toxicological effects</b>  |                                |
| <b>Acute toxicity:</b>  |                                |
| Oral: No data available   |                                |
| LC50 Inhalation - Rat - male and female - 4 h - 0,2 mg/l<br>(OECD Test Guideline 403)   |                                |
| Symptoms: damage of respiratory tract, Cough, Shortness of breath                       |                                |
| LD50 Dermal - Rabbit - male and female - > 20.000 mg/kg<br>(OECD Test Guideline 402)    |                                |
| The value is given in analogy to the following substances: sodium hypochlorite solution |                                |
| <b>Skin corrosion/irritation:</b>   | Skin - Rabbit                  |
| <b>Serious eye damage/eye irritation:</b>   | Causes serious eye irritation. |
| <b>Respiratory or skin sensitization:</b>   |                                |
| Buehler Test - Guinea pig   |                                |
| Result: negative<br>(OECD Test Guideline 406)   |                                |
| Remarks: (in analogy to similar products)   |                                |
| The value is given in analogy to the following substances: sodium hypochlorite solution |                                |
| <b>Germ cell mutagenicity:</b>  | No data available              |
| <b>Carcinogenicity:</b>   | No data available              |
| <b>Reproductive toxicity:</b>   | No data available              |
| <b>Specific target organ toxicity - single exposure:</b>                                |                                |
| Inhalation - May cause respiratory irritation. - Respiratory Tract                      |                                |
| <b>Specific target organ toxicity - repeated exposure:</b>                              | No data available              |
| <b>Aspiration hazard:</b>   | No data available              |

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### 11.2 Additional Information

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache, Nausea  
 To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

#### Possible damages:

in case of perspiration/moisture corrosive. After long-term exposure to the chemical:

Cyanosis, Lung edema, Vomiting, Circulatory collapse

The substance has delayed effects. In high concentrations: respiratory arrest.

## 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

Toxicity to fish

Flow-through test LC50 - *Leiostomus xanthurus* - 0,09 mg/l - 96 h

Remarks: (in analogy to similar products)

(ECHA)

Toxicity to daphnia and other aquatic invertebrates

Flow-through test EC50 - *Ceriodaphnia dubia* (water flea) - 0,035 mg/l - 48 h

### 12.2 Persistence and degradability

Methods for determining the biological degradability are not applicable to inorganic substances

**12.3 Bio accumulative potential:** No data available

**12.4 Mobility in soil:** No data available

### 12.5 Results of PBT and vPvB assessment

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

### 12.6 Other adverse effects

Biological effects:

Forms toxic mixtures in water, dilution measures notwithstanding.

Discharge into the environment must be avoided

## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

#### Product

Pressurised gas bottle: dispose of only in empty condition

## 14. TRANSPORT INFORMATION

### 14.1 UN number

ADR/RID: 1017      IMDG: 1017      IATA: 1017

### 14.2 UN proper shipping name


ADR/RID:              CHLORINE

IMDG:                 CHLORINE

IATA:                  CHLORINE

Passenger Aircraft: Not permitted for transport

Cargo Aircraft: Not permitted for transport

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**14.3 Transport hazard class (es)**

ADR/RID: 2.3 (5.1, 8) IMDG: 2.3 (5.1, 8) IATA: 2.3 (5.1)(8)

**14.4 Packaging group**

ADR/RID: - IMDG: - IATA: -

**14.5 Environmental hazards**

ADR/RID: yes IMDG Marine pollutant: yes IATA: No

**14.6 Special precautions for user:** No data available

### 15. REGULATORY INFORMATION

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:**

This material safety data sheet complies with the Regulation (EC) No. 1907/2006.

**Other regulations**

Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

**15.2 Chemical Safety Assessment:** A Chemical Safety Assessment was not carried out for this substance.

### 16. LABELING INFORMATION

**Further information**

Full text of H-Statements referred to under sections 2 and 3.

- H270 May cause or intensify fire; oxidizer.
- H280 Contains gas under pressure; may explode if heated.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H330 Fatal if inhaled.
- H335 May cause respiratory irritation.
- H400 Very toxic to aquatic life.
- H410 Very toxic to aquatic life with long lasting effects.

**Disclaimer:**

All information given in this data sheet by the company's technical staff is compiled based on data available at this time. The company accepts no responsibility whatsoever for its accuracy or for any results which may be obtained by customers. Any customer who relies upon any advice or information given in this data sheet by the company or by its technical staff does so entirely at its own risk and the company will not be liable for any loss or damage thereby suffered notwithstanding any want of care on the part of the company or its staff in compiling or giving the advice or information.