

## Technical Data Sheet (TDS)

### 1. Product Overview

- Product Name: Chlorine
- English Name: Chlorine
- CAS Number: 7782-50-5
- Formula: Cl<sub>2</sub>
- Molecular Weight: 70.90 g/mol
- Product Characteristics: High-purity yellowish-green gas with a pungent, irritating odor. Strong oxidizing and corrosive properties. Non-flammable but supports combustion of organic materials.

### 2. Technical Specifications

Item	Specification
Appearance	Yellowish-green gas
Odor	Pungent, irritating
Purity (Cl <sub>2</sub> )	≥ 99.5%
Impurity (Oxygen)	≤ 0.2%
Impurity (Nitrogen)	≤ 0.2%
Moisture Content	≤ 50 ppm
Hydrogen Chloride (HCl)	≤ 0.1%
Boiling Point	-34.6°C
Melting Point	-101°C
Density (25°C)	2.99 g/L (air = 1)
Oxidizing Activity	Strong oxidizer

### 3. Product Advantages

- High purity ensures effective disinfection and reaction performance.
- Strong oxidizing properties for efficient bleaching and synthesis.
- Widely compatible with industrial processes (water treatment, chemical synthesis).

### 4. Application Fields

- Water Disinfection: Municipal drinking water, swimming pools, industrial wastewater treatment.
- Bleaching: Pulp and paper, textiles, flour, and food processing.
- Organic Synthesis: Production of PVC (polyvinyl chloride), chlorinated solvents (methylene chloride, chloroform), and pesticides.
- Chemical Industry: Manufacture of hydrochloric acid, sodium hypochlorite, and other chlorine-containing compounds.
- Other: Metal cleaning, semiconductor manufacturing, water treatment for power plants.

### 5. Usage Methods

- Water Disinfection: Inject 0.5-2 ppm into water, maintain contact time of 30 minutes.



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- Bleaching: Bubble gas through pulp/textile slurry at 20-30°C, control exposure time based on bleaching requirement.
- Organic Synthesis: Use in closed reaction systems with precise flow control (1-10 L/min).
- Optimal Conditions: Use at 0-30°C; avoid contact with reducing agents and organic materials.
- Note: Strictly follow safety protocols; use only with trained personnel and proper equipment.

### 6. Packaging & Storage

- Packaging Specifications: High-pressure steel cylinders (10 L, 40 L, 50 L) with pressure regulators and leak-proof valves.
- Storage Conditions: Store in cool, dry, well-ventilated, corrosion-resistant warehouse. Keep cylinders upright and secured. Temperature  $\leq 30^{\circ}\text{C}$ . Keep away from heat, sunlight, reducing agents, and organic materials.
- Shelf Life: 12 months (cylinder, proper storage).
- Transportation: Handle as UN1017. Transport in approved cylinder trucks. Avoid collision, sunlight, and high temperature.

### 7. Safety & Protection

- Use only in well-ventilated, corrosion-resistant areas with gas detection systems and emergency shutdown devices.
- Wear self-contained breathing apparatus (SCBA), chemical-resistant suit, nitrile gloves, and chemical splash goggles at all times.
- Strictly prohibit contact with reducing agents, organic materials, and ammonia.
- In case of leakage, evacuate immediately, ventilate the area, and use water spray to neutralize gas.

### 8. Quality Assurance

- Manufactured under ISO 9001 quality management system and GB/T 3864 (hazardous gas safety standard).
- Each cylinder is tested for pressure, leakage, and purity before delivery.
- Each batch accompanied by COA.
- Provide technical support for safe handling and application.