

## Technical Data Sheet (TDS)

### 1. Product Overview

- Product Name: Iron(III) Chloride Hexahydrate
- English Name: Iron(III) Chloride
- CAS Number: 7705-08-0
- Formula:  $\text{FeCl}_3 \cdot 6\text{H}_2\text{O}$
- Molecular Weight: 270.30 g/mol
- Product Characteristics: High-purity inorganic ferric salt with strong flocculation, coagulation, and corrosive properties. Rapidly dissolves in water, forming ferric hydroxide colloids that efficiently adsorb suspended solids. Stable under dry storage conditions, suitable for water treatment, etching, and chemical synthesis.

### 2. Technical Specifications (Industrial Standard)

Item	Specification
Appearance	Dark brown crystalline solid
Assay (as $\text{FeCl}_3 \cdot 6\text{H}_2\text{O}$ )	$\geq 98.0\%$
Total Iron (as Fe)	$\geq 20.0\%$
pH Value (1% Aqueous Solution, 25°C)	1.0-2.5
Insoluble Matter in Water	$\leq 0.1\%$
Heavy Metals (Pb)	$\leq 0.0005\%$
Arsenic (As)	$\leq 0.0001\%$
Mercury (Hg)	$\leq 0.00001\%$
Cadmium (Cd)	$\leq 0.00005\%$
Chloride (as $\text{Cl}^-$ )	45.0-47.0%
Particle Size	80-200 mesh (passing rate $\geq 95\%$ )
Solubility (20°C, water)	$\geq 90$ g/100 mL

### 3. Product Advantages

1. Efficient Flocculation: Forms dense, fast-settling flocs, improving solid-liquid separation efficiency.
2. Strong Coagulation: Effectively removes colloids, SS, COD, and heavy metals from water.
3. Versatile Applications: Suitable for water treatment, industrial etching, and sludge dewatering.
4. Cost-Effective: Low dosage (10-50 mg/L); easy to dissolve and use.
5. Stable Performance: Consistent quality under standard storage and use conditions.

### 4. Application Fields

- Water Treatment: Municipal sewage treatment, industrial wastewater purification (printing, dyeing, electroplating), drinking water pretreatment.
- Industrial Etching: Etching agent for printed circuit boards (PCBs), metal surface treatment.
- Sludge Dewatering: Municipal and industrial sludge dewatering agent, reducing sludge moisture content.
- Chemical Synthesis: Raw material for ferric compounds, catalyst in organic reactions.
- Other Fields: Wastewater neutralization, pigment production, water purification for swimming pools.

## 5. Usage Methods

- Dosage:
  - Municipal Sewage: 15-30 mg/L
  - Industrial Wastewater: 20-50 mg/L
  - PCB Etching: 10-20% aqueous solution (adjust based on etching requirements)
- Usage: Dissolve in water at 1:5-1:10 (product: water) to form uniform solution; add to target system with stirring.
- Optimal Conditions: pH 4.0-9.0, temperature 15-35°C; avoid mixing with strong bases.

## 6. Packaging & Storage

- Packaging Specifications:
  - 25 kg kraft paper bags with PE inner lining (crystalline solid)
  - 200 kg HDPE plastic drums (aqueous solution)
  - 1000 kg FIBC bulk bags (large-scale use)
  - Custom packaging available upon request.
- Storage Conditions: Store in cool, dry, well-ventilated warehouse ( $\leq 30^{\circ}\text{C}$ ); keep tightly closed; avoid moisture, direct sunlight, and high temperature; store separately from strong bases/oxidizing agents.
- Shelf Life: 24 months (unopened, specified conditions).
- Transportation: UN 3260 (Class 8 Corrosive Substance); transport in acid-resistant containers; avoid collision, leakage, and exposure to sunlight/rain.

## 7. Safety & Protection

- Highly corrosive; avoid direct contact with skin, eyes, and clothing.
- Operators must wear chemical safety goggles, nitrile rubber gloves, and acid-resistant protective clothing.
- In case of contact, rinse immediately with plenty of running water for  $\geq 15$  minutes; seek medical attention if necessary.
- Do not ingest; if swallowed, rinse mouth with water and consult a doctor immediately.

## 8. Quality Assurance

- Manufactured in accordance with ISO 9001 quality management system standards.
- Each batch is tested with a Certificate of Analysis (COA) to meet industrial standards.
- Provide technical support: dosage adjustment, application method optimization, and problem-solving.