

PRODUCT IDENTIFICATION



Product Name: Ferric Chloride 40% Water Treatment Grade

CAS Number: 7705-08-0

Molecular Formula: Cl_3Fe

Molecular Weight: 162.20 g/mol

Grade: Technical Grade

Purity / Concentration: 40%

Synonyms: Iron(III) Chloride, Ferric Chloride Solution

PRODUCT OVERVIEW

Ferric Chloride 40% is a high-performance technical grade coagulant essential for effective water and wastewater treatment. This dark brown liquid solution features a precise 40% assay concentration and a specific gravity of 1.4215, ensuring consistent chemical dosing for industrial and municipal processes.

Grade Significance: Technical grade indicates that this product is optimized for industrial efficiency and cost-effectiveness, providing the necessary purity for large-scale treatment and etching applications.

CERTIFICATE OF ANALYSIS — TYPICAL VALUES

PARAMETER	UNIT	TYPICAL	MIN	MAX	TEST METHOD
Assay	%	40	39.5	40.5	Titration/Gravimetric
pH	—	1	0	2	pH Meter
Specific Gravity (20°C)	g/mL	1.4215	1.38	1.49	Hydrometer @ 20°C
Iron Fe2	%	0.15	—	0.5	Per specification
Chloride Cl	%	0.2	0	0.75	ICP
Free Acid	%	0.4	0	3.5	Titration
Insoluble	%	0.07	—	0.5	Per specification

ND = Not Detected. Values are typical and may vary by lot.

PHYSICAL & CHEMICAL PROPERTIES

Appearance	Dark brown liquid, metallic luster, fuming	Odor	Slightly pungent
Form	Liquid solution	Boiling Point	Not characterized for the 40% solution
Melting / Freezing Point	Not characterized for the 40% solution	Specific Gravity	1.43
Solubility	Highly water soluble, compatible with alcohols	Molecular Formula	Cl_3Fe
Molecular Weight	162.20 g/mol	Density (25°C)	1.19 g/mL

APPLICATIONS

1. **Municipal Water Treatment** — Acts as a primary coagulant to remove suspended solids and impurities, ensuring clean and safe drinking water.
2. **Wastewater Management** — Used to precipitate phosphorus and neutralize odors, effectively clarifying effluent before discharge.
3. **Electronics Manufacturing** — Serves as a reliable etchant for printed circuit boards, providing precision removal of copper from substrates.
4. **Chemical Synthesis** — Functions as a versatile catalyst or precursor in the production of various industrial pigments and specialized chemicals.
5. **Laboratory Research** — Utilized in analytical chemistry and experimental setups for iron-based chemical reactions and testing.

STORAGE & HANDLING

Due to its corrosive nature and low pH of 1, this solution must be stored in specialized, acid-resistant containers to prevent vessel degradation. Proper containment is critical to mitigate the risk of severe skin burns and prevent accidental release into the environment.

- Store in a cool, dry place away from direct sunlight.
- Use HDPE or glass containers for storage to prevent reactions.
- Avoid contact with strong bases and reducing agents.
- Ensure proper ventilation when handling to avoid inhalation of vapors.
- Wear appropriate personal protective equipment (PPE) including gloves and goggles.

AVAILABLE PACKAGING

- 1 Quart
- 1 Gallon
- 5 Gallon
- 15 Gallon
- 55 Gallon
- 275 Gallon
- 330 Gallon

SAFETY SUMMARY (CROSS-REFERENCE TO SDS)

Signal Word: **Danger**



Hazard Statements:

- H290: May be corrosive to metals
- H302: Harmful if swallowed
- H314: Causes severe skin burns and eye damage
- H315: Causes skin irritation
- H318: Causes serious eye damage
- H412: Harmful to aquatic life with long lasting effects

Emergency Contact: CHEMTEL - 800-255-3924 (24 Hours/Day, 7 Days/Week)

For complete safety information, refer to the Safety Data Sheet (SDS) for this product.

Alliance Chemical | 204 South Edmond St, Taylor, Texas 76574 | 512-365-6838 | www.alliancechemical.com

Disclaimer: The information contained herein is believed to be accurate and represents the best information currently available to us. However, Alliance Chemical makes no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.