



PRODUCTION OF FERRIC CHLORIDE

Solutions for the production of ferric chloride

KERN S&D, S.L. develops facilities for the production of ferric chloride from iron and chlorine gas or from iron oxides, hydrochloric acid and chlorine gas.

Properties

Iron (III) chloride or iron trichloride (traditionally called ferric chloride) is a chemical compound used on an industrial scale belonging to the group of metal halides, whose formula is FeCl₃

Technical specifications

TECHNICAL SPECIFICATIONS	
Appearance	Slightly viscous amber
Melting point	260 °C (533K)
Boiling point	315 °C (588k)
Density	1.4-1.5 g/cm ³
Molar Mass	162.2 anhydrous
Formats	
Tanks, drums, IBC	
Monitoring	
Fully automated and monitored plants	
Output	
According to the needs of the client	

- HIGH RELIABILITY
- EASY TO MAINTAIN
- AUTOMATIC CONTROL
- SAFE OPERATION
- NO ENVIRONMENTAL IMPACT
- MODULAR AND SCALABLE
- ECONOMIC SAVING (low operating & maintenance costs)
- HIGH ENERGY EFFICIENCY
- SIGNIFICANT REDUCTION in the associated risks of storage, handling and road transport

PLANT FEATURES	
Output	adapted to the needs
Flexibility	50-100%
Concentration	38 to 42%
Raw Materials	Chlorine and gas Iron oxides, hydrochloric acid and chlorine gas
Materials	Built with high quality materials



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Ferric chloride production technology

KERN supplies production plants for ferric chloride, from iron and chlorine gas or from iron oxides, hydrochloric acid and chlorine gas.

- Iron and chlorine gas

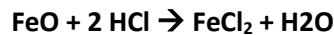
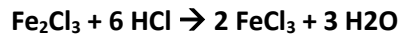
Ferrous chloride, is obtained by reaction of ferric chloride with iron according to the following reaction:



The ferrous chloride solution is filtered and oxidized to ferric chloride with chlorine gas according to the reaction: $3 \text{FeCl}_2 + 1,5 \text{Cl}_2 \rightarrow 3 \text{FeCl}_3$

- Iron oxides

This material is a mixture of ferric and ferrous oxides. A treatment with 32% hydrochloric acid, followed by chlorination with chlorine gas, results in the formation of ferric chloride in accordance with the following reactions:



Uses of ferric chloride

- Water purification
- Industrial and domestic wastewater treatment processes
- Wastewater treatment
- Electronic Industry - printed circuit boards
- Manufacture of dyes, pigments and inks
- Mining Sector – pickling of metals, copper leaching
- Refining of oils and fats
- Metal pickling
- Oxidizing agent in the organic industry