

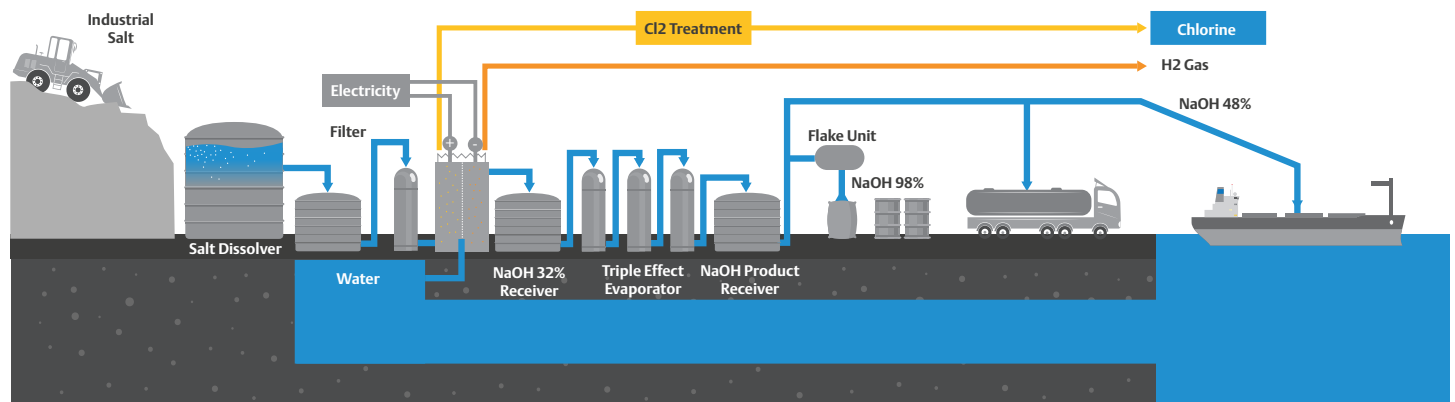
Drive your Chlor-alkali Units to Maximum Capability with Real-time, Non-intrusive Corrosion Monitoring



Digital Transformation Innovations Optimize Production and Improve Safety

The chemical industry contains a wide variety of processes. It is difficult to make a clear definition of the chemical plant. In many cases the dividing line between chemical and other plants is vague. Many of these processes are unique for the industry. Thus, the corrosion challenges are varying depends on the materials being processed.

Chlor-alkali plants use brine to produce chlorine, sodium hydroxide and hydrogen. An electric current is passed through the brine, to form hydrogen gas at one electrode and chlorine gas at the other – leaving a solution of sodium hydroxide. Each ton of chlorine consumes about 2,200–2,600 kWh of electricity, and the global chlor-alkali industry needs to consume over 150 TWh of electricity every year, accounting for about 10% of global electricity. The current chlor-alkali process is one of the industries with high energy consumption, releasing large amounts of pollutants. Therefore, energy savings, emission reductions, and operational safety increase in the chlor-alkali production process are important development directions. Safety is one of the key measures regarding the asset integrity. As the processes across chlor-alkali plants use acids, salts, oxidants and more, corrosion is one of the key measures for assets integrity.



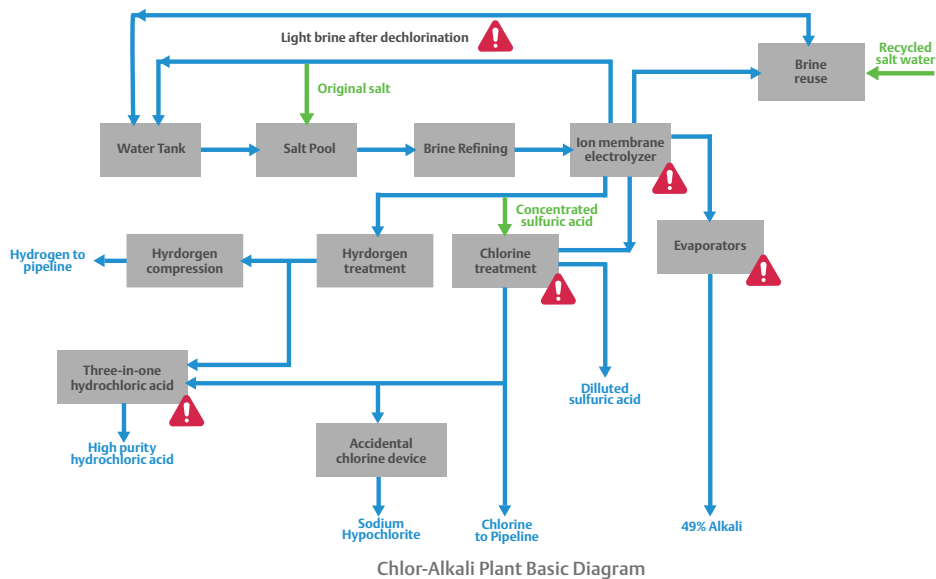
Chlor-Alkali Plant Overview

Chlor-alkali plants include several key areas of concern with high risk of corrosion. That includes, but is not limited to:

- Electrolyzer outlet area
- Wet chlorine treatment
- Caustic product handling area
- Hydrochloric acid area
- Brine storage tanks

For more information, visit [Emerson.com/Permasense](https://www.emerson.com/Permasense) or contact your local Emerson Sales Representative

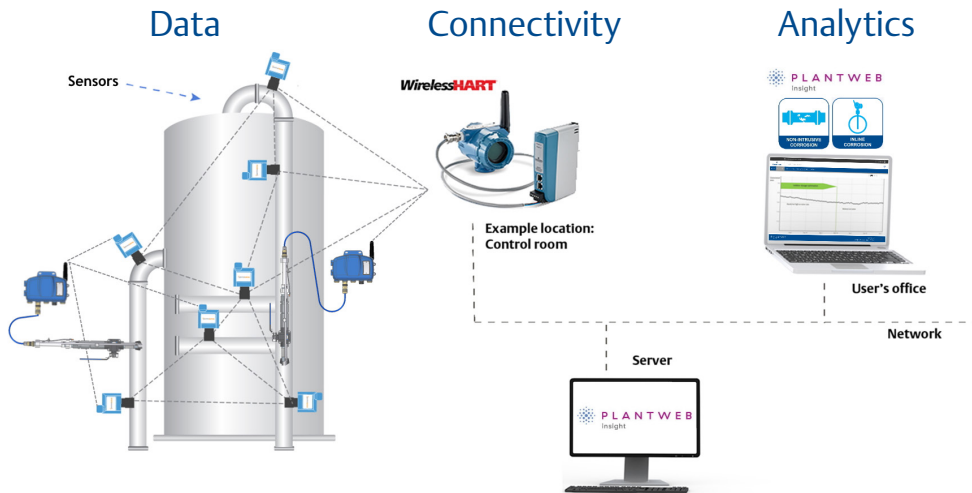




Continuous corrosion monitoring ensures asset integrity and optimization of process conditions. Chlor-alkali process is one of the most basic chemical industries. It is also one of the most corrosive processes in the industry. On-line sensors measure corrosion in a real-time which lowers the risk of missing updates of the increased corrosion rate. Operators are supported to make better decisions with an online analytics packages, trends and data visualization. A combination of in-line probes measuring the risk of corrosion and ultrasonic sensors measuring the impact of corrosion will provide a mix of fast response to corrosivity changes together with wall thickness data.

Rosemount Wireless Permasense Systems Provide Continuous Corrosion Monitoring

Emerson offers continuous corrosion monitoring system, which provides real time corrosion risk and asset health data directly to operator's station. *WirelessHART™* protocol offers flexibility and reduces time required for the system commissioning.



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00807-0300-4210 Rev AA

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