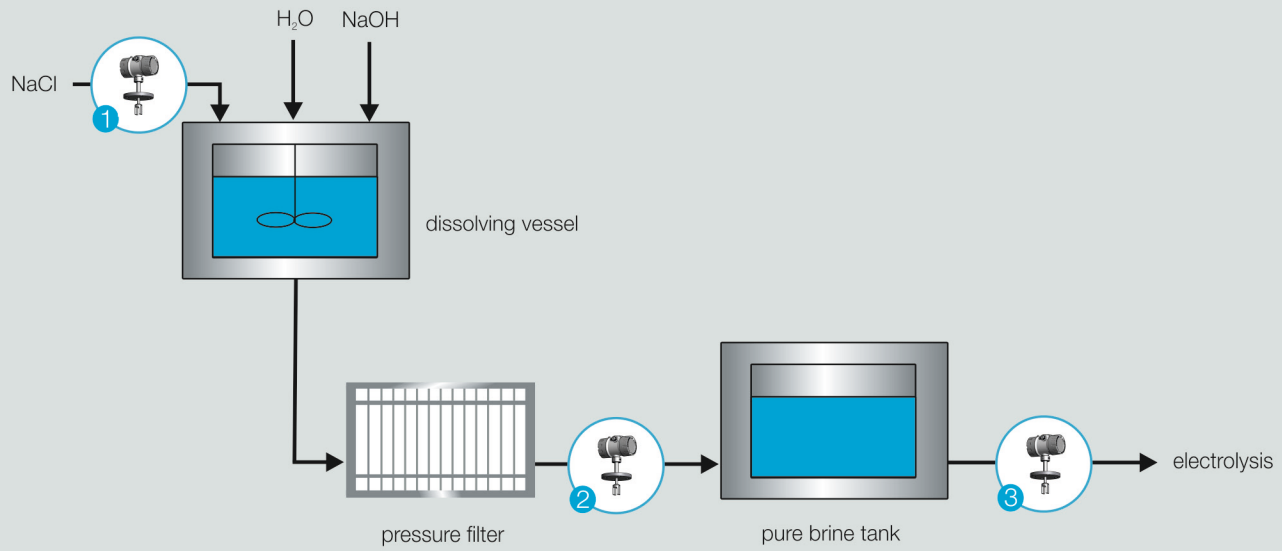
SensoTech
In liquids, we set the measure.



Measuring point	Installation	Measuring task
1	pipeline	monitoring of the incoming brine to check it for the agreed target concentration,
2, 3	pipeline	monitoring the dissolving plant to maximum salt saturation

Brine purification
Chlorine-alkali-electrolysis

Introduction

The chlorine-alkali-electrolysis is one of the most important processes in the chemical industry that leads to the production of two significant basic chemicals: chlorine and caustic soda. The chlorine-alkali-process is carried out industrially in two procedures: the diaphragm and the membrane process.

Sodium chloride (NaCl, brine) is the initial product for the chlorine-alkali-electrolysis. The cheapest method for brine poduction is the leaching of the rock salt storage in mines.

Application

The brine obtained in the mines is transported by ship, rail or special piping to the destination where it is then dissolved with warm water in large vessels. The raw brine contains mechanical impurities and calcium or magnesium salts, which clog the fine pores of the diaphragma or membrane during the electrolysis.

For this reason, these impurities are precipitated in a stirred vessel by addition of sodium hydroxid (NaOH). After precipitation, the impurities are separated by means of a pressure filter.

For the subsequent electrolysis, the purtity of the brine concentration is of particular importance. The LiquiSonic® measuring system guarantees at all time high-precision determination of the brine concentration.

Customer benefits

The inline LiquiSonic® measuring technology enables a reduction of consuming manual laboratory measurements. This leads to cost-savings and personnel savings:

- time saving: 1 h per day
- amortization: below 12 month

Through the exact determination of the brine by LiquiSonic® measuring technology, the following aspects can be optimized:

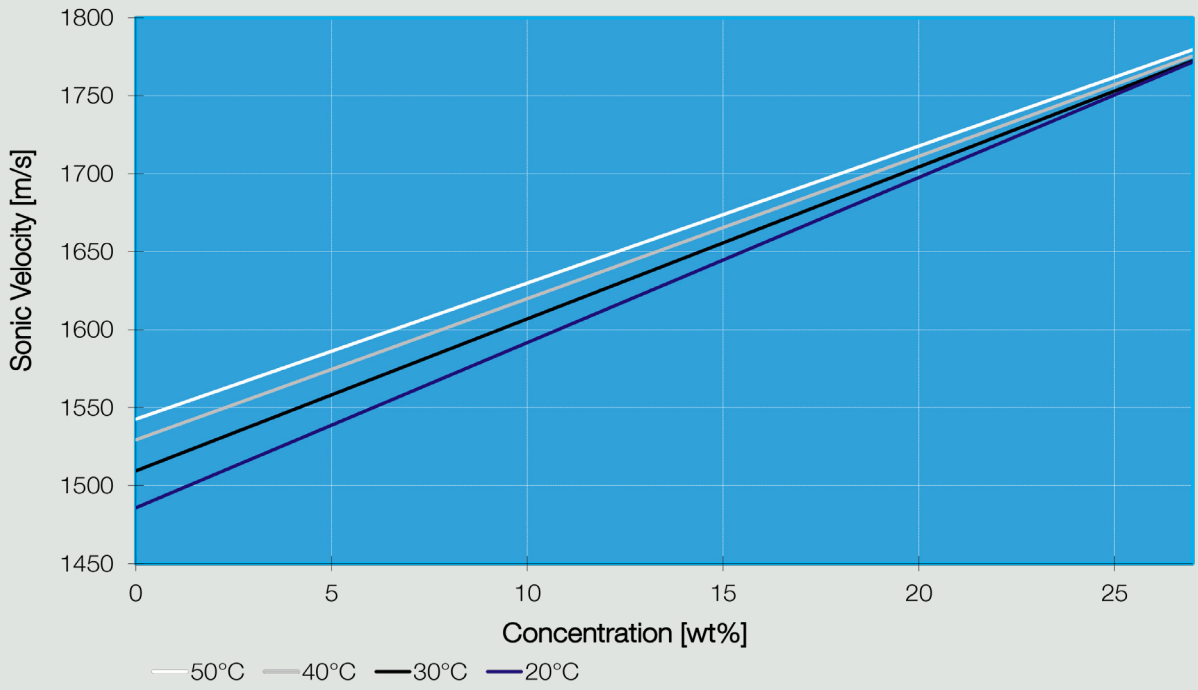
- life of the membrane
- reduction of electrical energy (electrolysis)
- increase the yield of the overall process
- reduction of water or steam consumption (when dissolving the salt)

Installation

The LiquiSonic® sensors are installed in the transport pipeline DN80 after the dissolving vessel and pressure filter.

concentration range from NaCl: 0 to 30 wt%
temperature range: 0 to 100 °C

Dependence of the sonic velocity



Devices

	21001301 Controller 30 V10
BUS	21004435 BUS connection: Profibus DP
	21004804 Immersion sensor 40-14
	21005007 Material extra charge titanium (option)
	21004115 High efficient ultrasonic ceramic
	21004202 Bus cable indoor (100 m)

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