kern s&d

Sodium Hypochlorite

PRODUCTION PLANTS

Engineering at service *of sustainability*

Sodium Hypochlorite

PRODUCTION PLANTS

KERN SD

develops on-site sodium hypochlorite production facilities tailored to meet the technical and economic needs of customers.

KERN SD plants are fully customizable in terms of production and concentration.

The overall reaction of the process is:

$$Cl_2 + 2\,NaOH \rightarrow NaClO + NaCl + H_2O$$

- KERN SD has an **innovative technology for the production of sodium hypochlorite** (from 5% to 12.5% active chlorine) ¨in situ¨ consisting of a **bipolar membrane electrolyzer** (no mercury) and/or **diaphragm** (no asbestos).
- Plants designed and developed by KERN SD use safe, environmentally friendly and highly competitive technology due to their low investment and low operating costs (high electrical efficiency and degree of automation).
- Plants are delivered pre-assembled on modular ¨skids¨ and depending on the production the plants are assembled in containers (containerized plants).
- KERN SD technology complies with **the EU Best Available Technologies (BAT) Directives for the production of chlor-alkali (Directive 2010/75/EU).**

TECHNICAL SPECIFICATIONS OF THE PRODUCT (NaClO)	
Appearance	Slightly yellow
Melting point	18 °C
Boiling point	101 ° C
Density	1,25 g/cm^3
Molar Mass	74,44 gr/mol
Water solubility	29,3 gr/100 ml at 0°C

Sodium Hypochlorite **Production Plants**

PLANT FEATURES

Output	From 50 l/day to 250.000 l/day
Flexibility	50-100%
Concentration	From 5% to 15%
Raw materials	Salt, Water and Electricity
Materials	Built with high quality materials
Monitoring	Fully automated and monitored plants

- ☐ **ON-SITE PRODUCTION**
- ☐ **CONTAINERIZED OR FIXED PLANTS**
- ☐ **MODULAR AND SCALABLE**
- ☐ **AUTOMATIC CONTROL**
- ☐ **SAFE OPERATION**
- ☐ **ECONOMIC SAVINGS** (low operating and maintenance costs)
- ☐ **HIGH ENERGY EFFICIENCY**
- ☐ **SIGNIFICANT REDUCTION** of associated storage, handling and road transport risks
- ☐ **HIGH PURITY PRODUCT**
- ☐ **NO ENVIRONMENTAL IMPACT**

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According to the World Health Organization (WHO), "chlorine disinfection is the best guarantee of microbiologically safe water", the best option for water treatment and purification. Sodium hypochlorite is highly effective in combating all types of microbes that may be contained in water, including bacteria, viruses, fungi and yeasts, and the algae and slime that proliferate inside pipes and in tanks.

SOME APPLICATIONS OF SODIUM HYPOCHLORITE

- Swimming pool disinfection
- Drinking water treatment and disinfection
- Food disinfection
- Household disinfection
- Cooling tower disinfection
- Veterinary higiene
- Bleaching in the textile industry
- Algae control in cooling water and water tanks
- Odour control in wastewater treatment

- ❑ Sectores of application:
  - Chemical
  - Industrial
  - Paper
  - Textile
  - Agroindustrial
  - Hotel
  - Hospital
  - Food
  - Agricultural
  - Oil & Gass
  - …