

# ExtrAkali®

**Patented revamping module for  
NaOH & KOH concentration unit by  
Chem-Eng SASU and Wilk Graphite  
GmbH**

*For Internal Use only*



# ExtrAlcali®

ExtrAlcali® is a brand born from fruitfull the collaboration of two internationally renowned companies



# ExtraAlcali®

A brand for process solutions for the chlor-alkali industry such as:

- Caustic evaporation / flaking plant
- Sulfuric acid concentration plant
- HCl synthesis plant
- Calcium chloride production plant



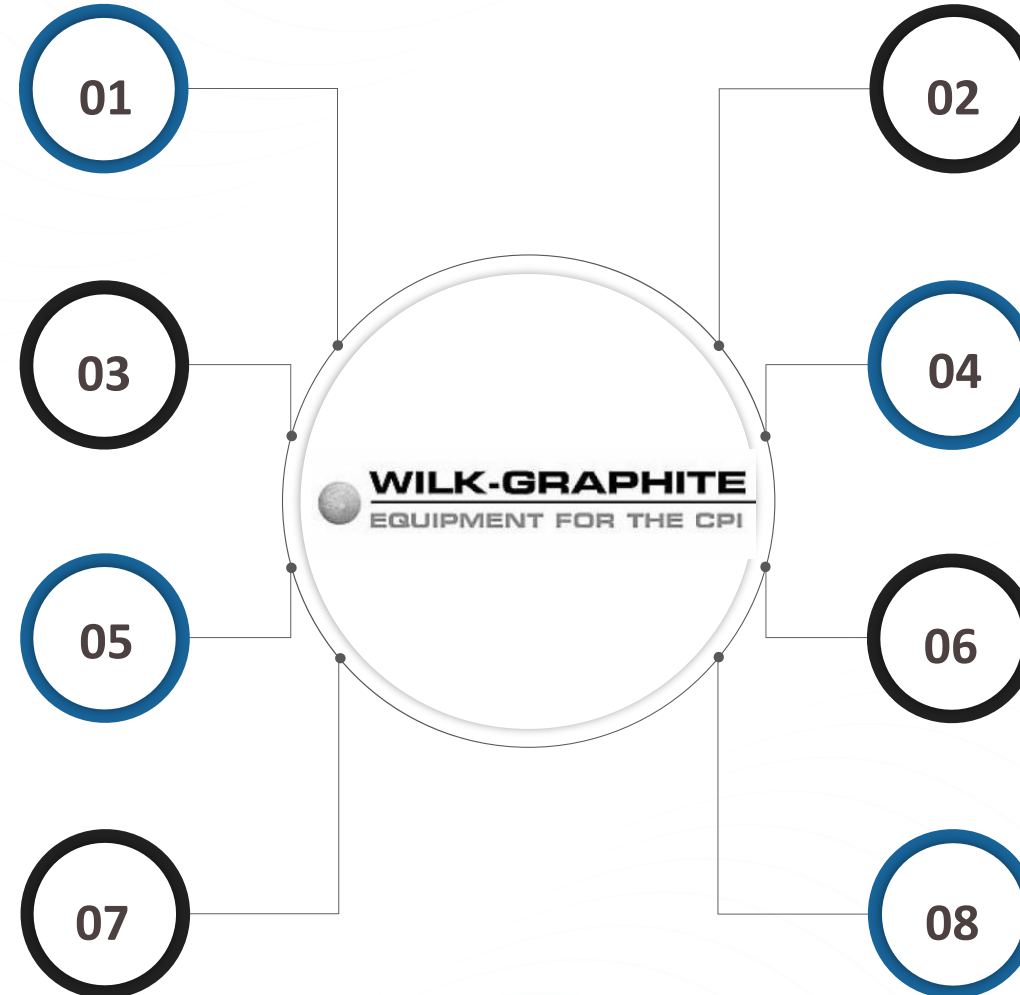
# Presentation of Wilk Graphite.

World leading company for  
NoMoCorr SIC block heat exchanger

Active since 2005 in Graphite  
equipment, SIC and PTFE

German based production,  
engineering and sales

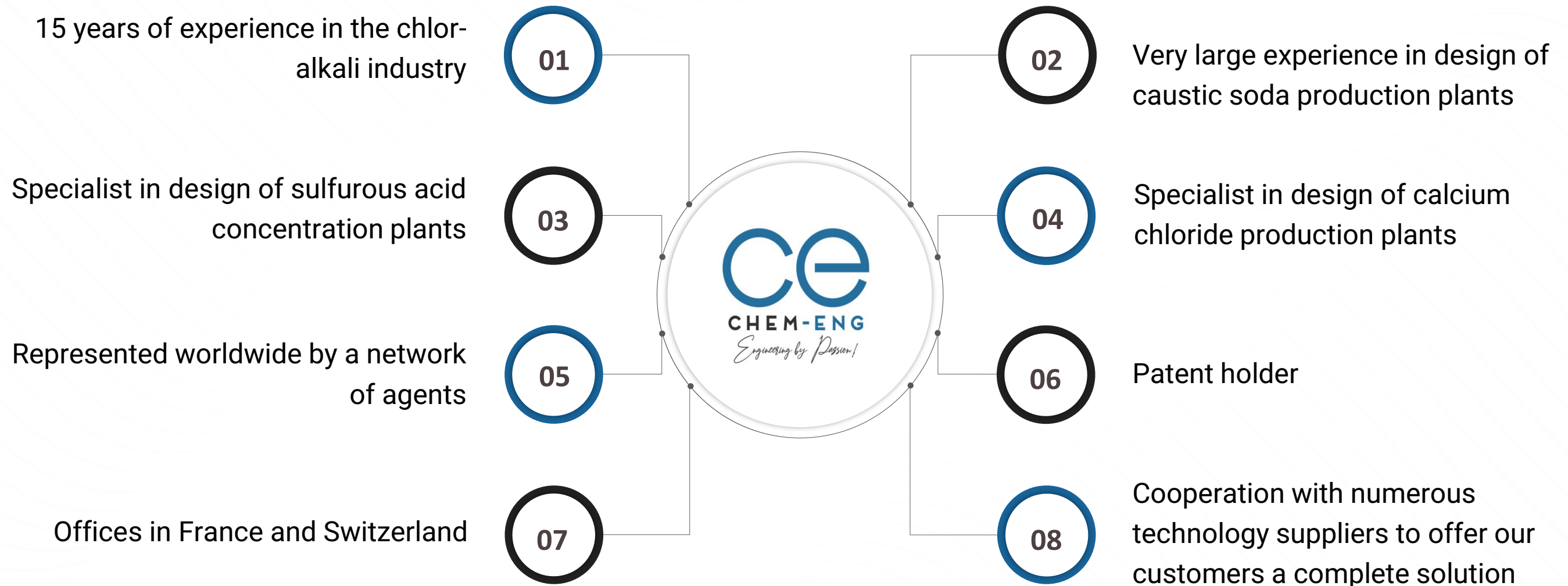
Internationally recognized  
engineering partner



# Presentation of Chem-Eng.



WILK-GRAPHITE  
EQUIPMENT FOR THE CPI





# CAUSTIC REVAMPING UNIT



# ExtrAkali®

## Tailor made plant

- No standard concept – designed according to given situation using modules
- According available utilities on site (cooling water, steam, etc..)
- Optimizing OPEX according energy prices (gas, steam, etc...)
- CAPEX consideration







# Revamping module

1

Typical revamping: upgrade from a double or triple effect system to a quadruple effect system

2

By high temperature only use of SIC equipment to grant an excellent product quality (more or less no Ni pick up) and a long life of all equipment.

3

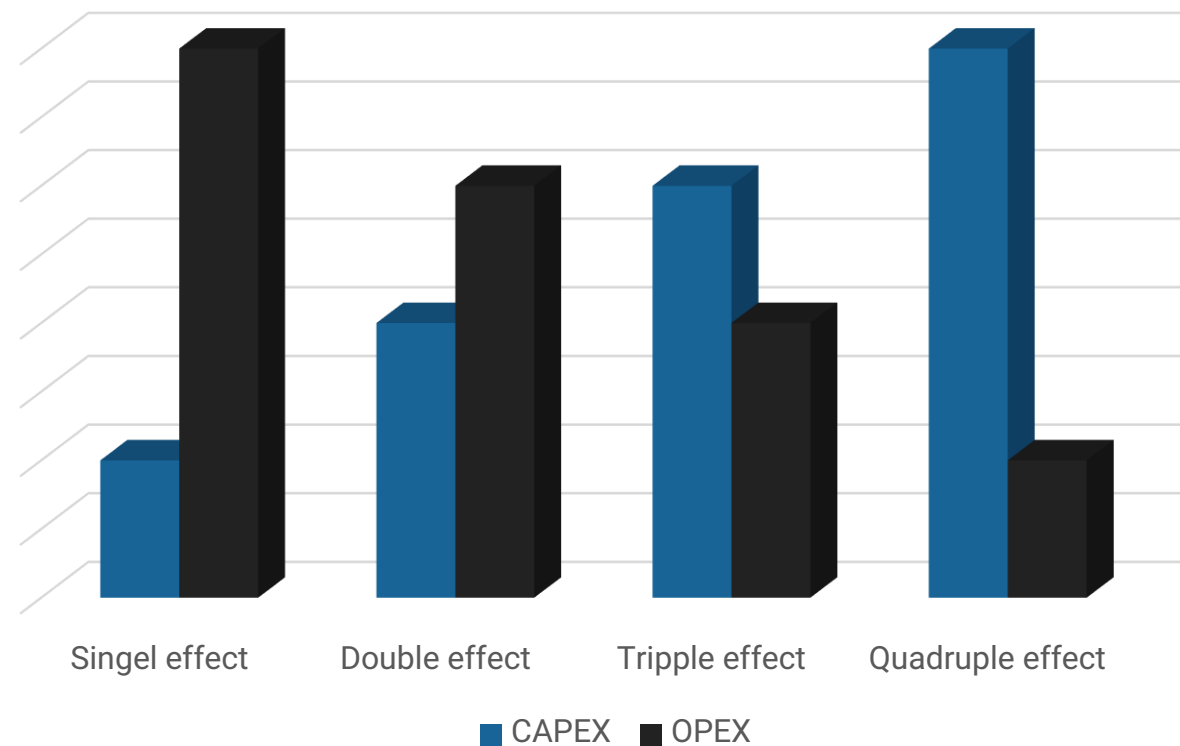
Up to 5 effects available to reduce energy consumptions / CO2 emissions

4

ExtrAlkali is the only brand offering such plant concept.



# CAPEX / OPEX for Evaporation plant



# Revamping

1

Possibility to revamp existing double effects or triple effects evaporation to a quadruple effects system (very low space requirement)

2

Payback **less than two years** even considering an additional thermal oil heating system

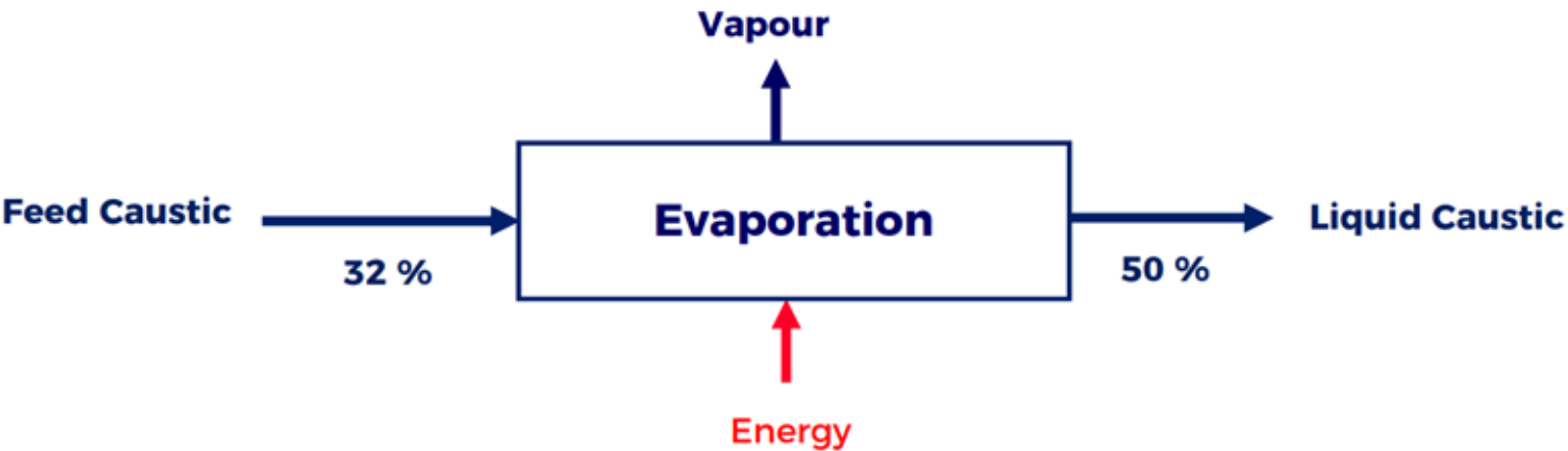
3

Attractive concept especially in country with high energy costs and CO2 emission taxes





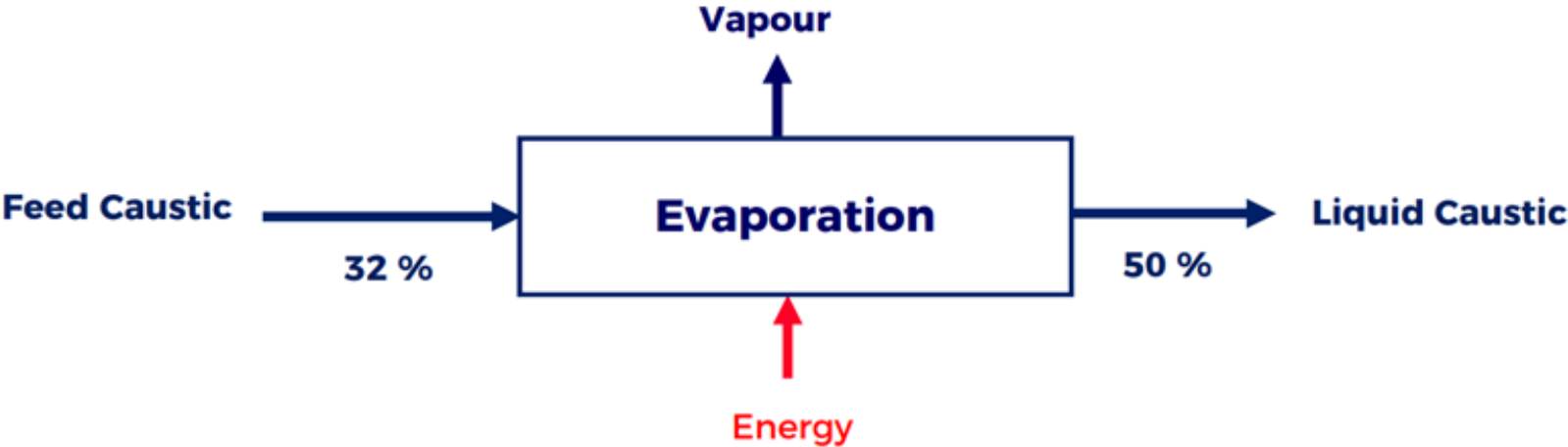
# Revamping



	Energy per ton of NaOH 100%		
	Steam consumption (kg)	Thermal oil consumption (kW)	CO2 emission (kg)
Single effect	1500	1020	220
Double effect	750	510	120
Triple effect	500	340	80
Quadruple effect	390	265	65

- 22%

# Revamping

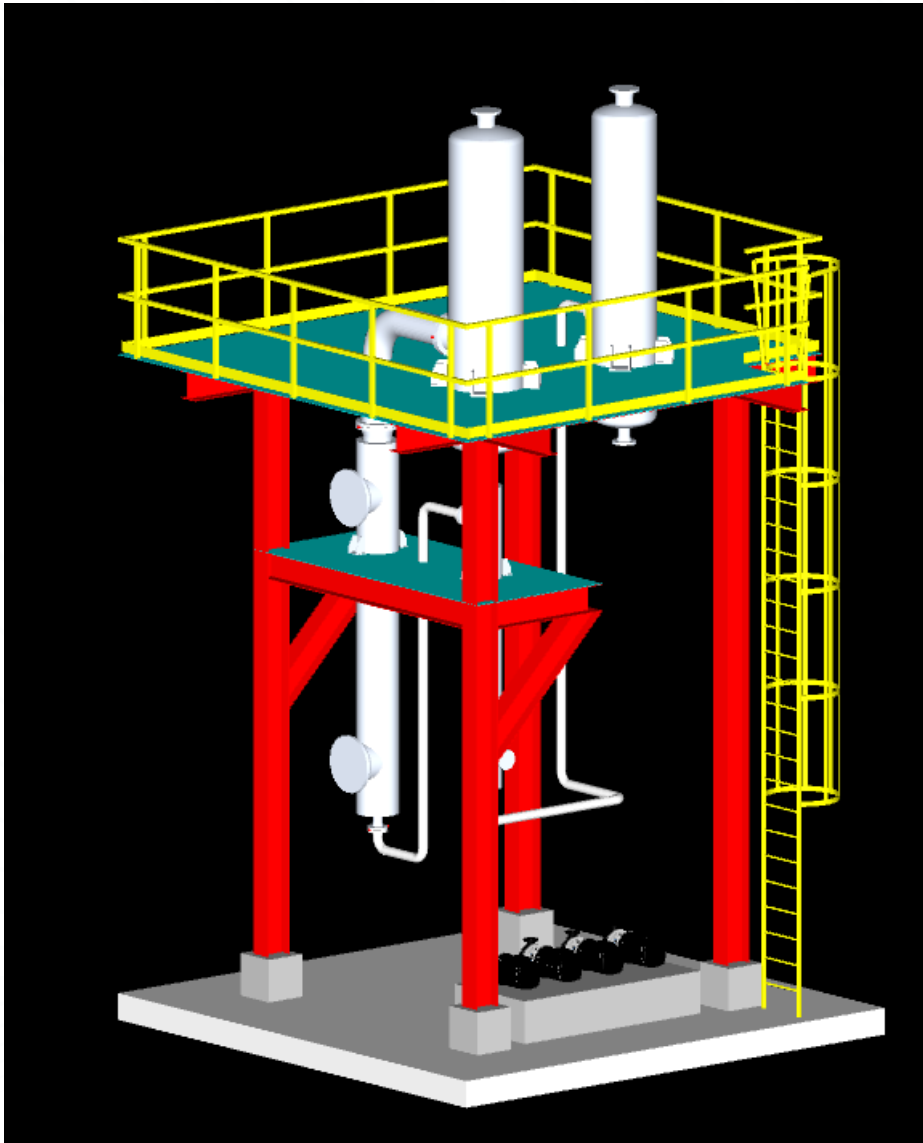


	Energy per ton of NaOH 100%		
	Steam consumption (kg)	Thermal oil consumption (kW)	CO2 emission (kg)
Single effect	1500	1020	220
Double effect	750	510	120
Triple effect	500	340	80
Quadruple effect	390	265	65

- 48%



# Revamping



1

Additional effect can be delivered SKID mounted and be installed next to the existing evaporation unit

2

Additional effect can be installed in the existing building (if space available)

3

Thermal oil heating unit is required



# QUESTIONS ?



**WILK-GRAPHITE**  
EQUIPMENT FOR THE CPI

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