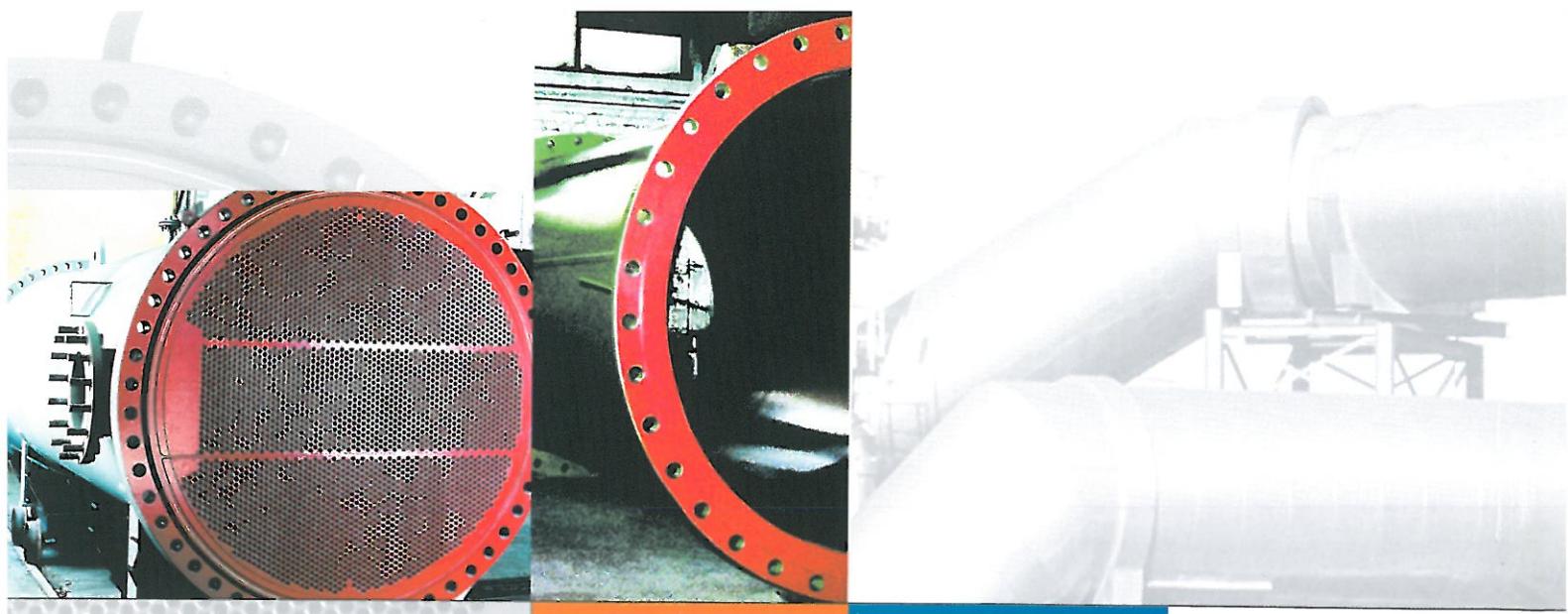
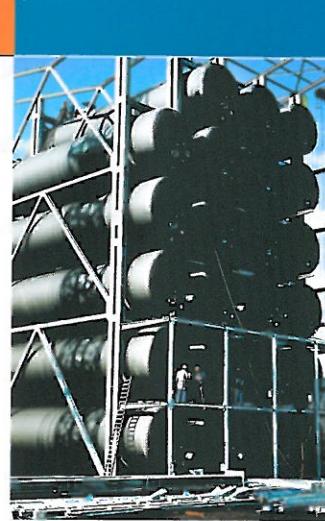


Your partnership for perfect
Application technologies and system
anti-corrosion protection



tube-side
SAEKAPHEN coating

More than 120.000 heat exchangers, condensers and air coolers have been coated on the tube-side and the shell-side.



Year after year billions are lost in highly industrialised countries due to corrosion. Increasing operating and repair costs affect the profitability of production plants. Repairs and maintenance are facts which increasingly burden industry.

SAEKAPHEN guarantees in petrochemical and chemical process plants high profitability

SAEKAPHEN's research and development in materials intends to assist in overcoming these problems.

Where corrosion protection is concerned, SAEKAPHEN sets new standards. For more than 50 years coating materials and application technologies have been developed, which provide a reliable corrosion protection and prevent fouling and have consequently become world famous under the name of SAEKAPHEN.

SAEKAPHEN

SAEKAPHEN know-how

if perfect corrosion protection is required

from practical experience

SAEKAPHEN the expert where corrosion protection is required. Extensive know-how and long-standing experience are the basis for individual and economical solutions.

Definition

1

The SAEKAPHEN coating is produced from complex mixtures of liquid thermosetting plastics to own formulations and is applied by using specially developed flooding - or spraying techniques - resulting in the application of several layers onto the surfaces which are to be protected.

As a result of heat treatment in polymerisation ovens at up to 250°C, homogenous, hard, flexible coating layers with high chemical resistance are formed.

Application

2

This is what SAEKAPHEN can do

SAEKAPHEN prevents corrosion.

SAEKAPHEN is resistant to water vapour and to extreme temperature fluctuations.

SAEKAPHEN has a long life at temperatures ranging from -100°C to +200°C.

SAEKAPHEN is non-conductive.

SAEKAPHEN prevents incrustation, allowing a considerably lower fouling factor when designing new heat exchangers.

More than 120.000 heat exchangers, condensers and air coolers for the chemical and petrochemical industry have been SAEKAPHEN coated on the tube-side and the shell-side. With the aid of

new production methods (the application of SAEKAPHEN coating to individual tubes), SAEKAPHEN is able to provide optimum protection for heat exchangers and condensers by applying a continuous coating to the shell-side of tubes. With this technique, the range of application offered by SAEKAPHEN for heat exchangers has been further increased. A great number of tanks, silos, vessels, containers and pipelines will be continuously protected against corrosion, indicating the wide range of application of SAEKAPHEN.

SAEKAPHEN-coated equipment has been used for many years by industries such as the refrigeration, water treatment, crude oil distillation, petrochemical and chemical industry.

without SAEKAPHEN



with SAEKAPHEN



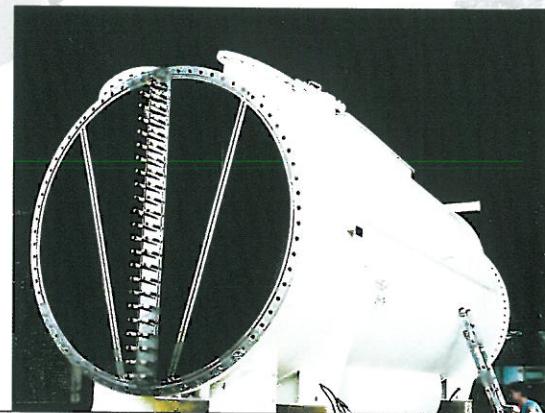
Practical example
2 parallel operating heat exchangers,
operating time 2 years
without cleaning

SAEKAPHEN

the perfect alternative for protection against corrosion

Coating Technology

SAEKAPHEN offers 2 coating techniques adapted to customer requirements:



heat cured

The heat cured SAEKAPHEN coating is only applied in the SAEKAPHEN plant and in plants of the licensees, because of the special application technology. The result is a high resistance against temperature and an excellent resistance against aggressive chemical mediums.

cold cured

The cold cured SAEKAPHEN coating is applied on site at home and abroad with a great number of possible applications. A high resistance against aggressive chemical media is the advantage of the cold cured SAEKAPHEN coating. When does not become the work from the if entrance and the exit, The work is possible from the shop and site of the customer

SÄKAPHEN product mix

SAEKAPHEN material type	colour	surface	dry film thickness µ	density g/m³	solid volume ltr./100 kg	hardness (König) imp./sec.	resistance	field of application
Si 14 E	dark-green	hydrophob, smooth	120	1,39	27,41	190	high acid to slightly alkaline, salt solutions, cooling water, gases, organic liquids	heat exchangers, air coolers, condensers, evaporators, tanks
Si 14 EG	red-brown	matte	150	1,30	29,32	134	water vapour diffusion, slightly acid a. alkaline liquids and vapour	heat exchangers, condensers, condensate containers, thermal degasers
Si 17 E	red-brown	hydrophob, smooth	120	1,44	30,13	143	liquid or gaseous KW, salt solutions, oils, acid to slightly alkaline mediums to PH8	inside coating of tanks for storage of flammable liquids, class of risk A/I/AII and B, aliphatic hydrocarbon
Si 57 E	red-brown	hydrophob, smooth	120	1,16	30,10	200	high alkaline to acid, all cooling waters incl. brackish- a. sea-water	heat exchangers, condensers, evaporators, vessels, water treatment plants
Si 57 EG	grey-olive	matte	150	1,24	29,52	120	water vapour diffusion in alkaline to low acid liquids	condensers, condensate containers, degasers a. boilers
HR 60 extra G	green, red, grey	smooth, glossy	200-500	1,50	60,3	120	high alkaline to acid mediums, brackish, sea a. deionized water as well as inorganic salt solutions	tanks, silos, filters, vessels
HR 60 extra TG	red, grey, red-brown	matte	200-350	1,40	33,1	100	slightly acid to alkaline aqueous mediums water to 100°C a. water vapour diffusion	desalination plants, condensation tanks, process water tanks, metal pipelines
Säkatonit K 80 LS	red-brown	satin-finished	200- max. 800	1,40	66,4		acids to high alkaline mediums, sea- a. brackish-water, cooling water a. salt solutions	water tanks in power stations, turbine condensers, heat exchangers, coolers, evaporating a. cooling water pipelines
Säkaline	red-brown, white	smooth, glossy	mind.500	1,55	64		water to 100°C a. temperature drop to the surface, temperature difference up to 80°C	boilers a. other water heaters for drinking a. nondrinkable water, KTW recommendation a. all ranges of cold a. heat water
Säkaflake 900	white	matte	200-1500	1,42	46,09	ca. 120	aggressive mediums of chemical industry, high acid ranges a. high temperatures	flue gas desulfurizing plants, tanks, pipelines, tanks, vessels, pipes
Säkatar D extra	black, red-brown	matte	mind. 500	1,5	79,5	74	good chemical resistance, high temperature load, higher water vapour diffusion	power stations, nuclear power stations, cooling water pipelines, tanks



3 important
reasons for
SAEKAPHEN

material savings

material provision

material resistance

Economy

Capital costs are reduced

SAEKAPHEN coated plants are economical ... because simple carbon steel may be used even under aggressive conditions. Additional costs required for using copper, brass or high grade steels are no longer necessary.

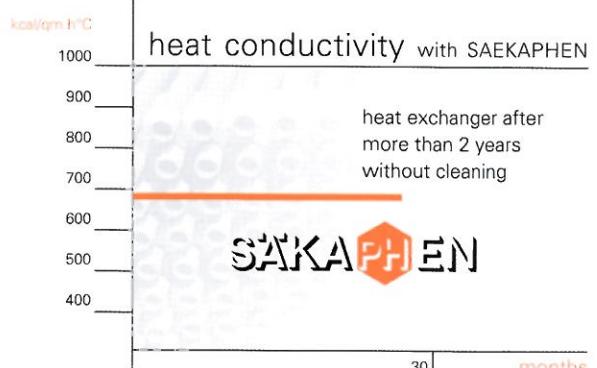
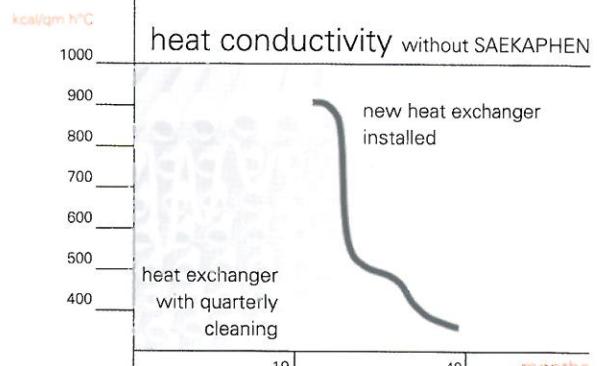
Operational costs are reduced

SAEKAPHEN coated plants are economical ... because incrustation on the tube surfaces of the heat exchanger is avoided. This improves the performance. The heat exchanger's efficiency remains constant over a long period of time. It requires less cleaning. Cleaning is made easy. A significantly lower fouling factor can be used for the design of the heat exchanger as a result of which, investment costs are going down.

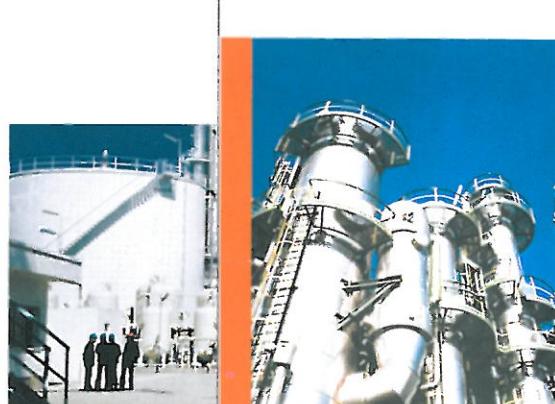
SAEKAPHEN - the optimum solution against corrosion

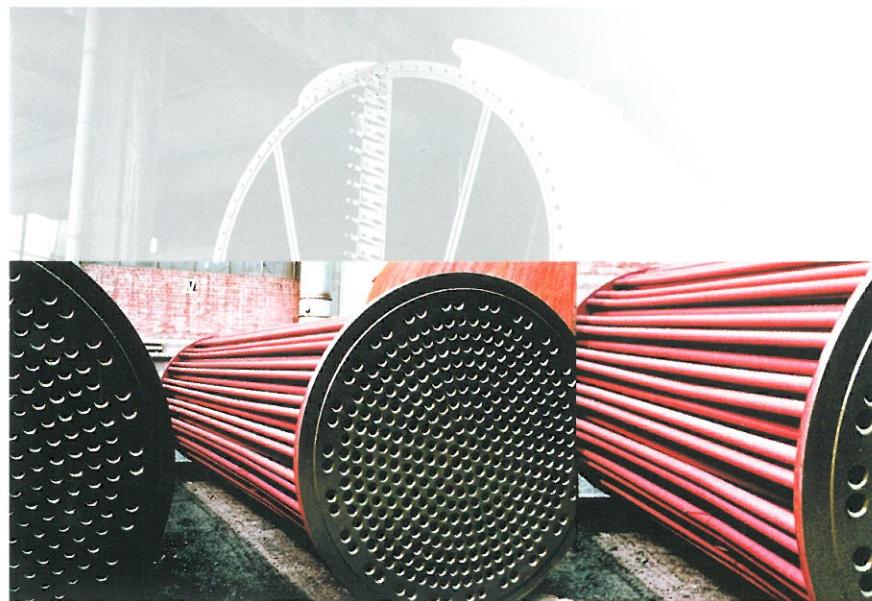
SAEKAPHEN coated plants are economical ... service life prolonging. The life of heat exchanger for example, is increased more than 5 times. Coolers in refineries will provide more than 15 years of trouble-free operation.

SAEKAPHEN is used more and more world-wide. Licensees in almost all European countries, in the USA and the Kingdom of Saudi Arabia underline the technical advantages of SAEKAPHEN.



SAEKAPHEN





Korea
Austria
Belgium
Denmark
France
United Kingdom
Italy
Japan
Kingdom of Saudi Arabia
Norway
Poland
Portugal
Spain
Switzerland
USA

SAEKAPHEN Licensees in



Sandblasting
Priming
Coating
Testing
Inspection
Repairing
Maintenance
Service

SAEKAPHEN

SAEKAPHEN—LICENSEE

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All recommendations contained herein is correct to the best of our knowledge. We do, however, not bear any responsibility for the accuracy of the contents.