



Caloric

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CALORIC is one of the leading companies in the world specializing in the design and manufacture of gas generating plants and hazardous waste incinerating plants. The roots of CALORIC go back to a research and engineering company established in Munich, Germany in 1937.

In 1965, CALORIC became an engineering and manufacturing company serving the market from design studies up to turn-key plant projects. Advanced by creativity, CALORIC has constantly accumulated know-how and developed unique technologies. More than 500 installations of various types based on CALORIC's proprietary know-how are located in 5 continents and more than 50 countries, demonstrating CALORIC's potential and reputation.

CALORIC's location in the center of Europe facilitated the adoption of all kinds of customer standards and local country codes. CALORIC's way of pre-manufacturing its plants in CALORIC's own factory in Germany continues to prove its effectiveness and competitiveness in the market.



Incineration of mercaptanes and amines



Natural gas steam reformer capacity
2500 Nm³/h hydrogen purity 99.995%

HYDROGEN HYDROGEN GENERATION GENERATION PLANTS PLANTS

Our production program  includes the following processes for the generation of high-purity hydrogen:

Steam reforming
Methanol cracking

A special process for smaller hydrogen requirements in our program is Steam Reforming "Economy".

The generated hydrogen-rich gas is typically purified up to 99.999% hydrogen in a pressure-swing adsorption unit.

Small and medium-sized plants are supplied as skid-mounted units. Large plants are pre-assembled in modules.





Methanol Cracker
capacity 500 Nm³/h
hydrogen purity 99.999%



Natural gas steam reformer capacity 2500 Nm³/h
hydrogen purity 99.995%



Natural gas steam reformer capacity 360 Nm³/h
hydrogen purity 99.999%

CARBON MONOXIDE GENERATION PLANTS

CALORIC has developed its unique high-efficiency process for the generation of carbon monoxide called CALCOR®. Our production program includes the following process versions:

CALCOR® "Standard"
CALCOR® "Economy"

The CALCOR® process is based on the reforming of a hydro-carbon with carbon dioxide. While CALCOR® "Standard" generates its own carbon dioxide, CALCOR® "Economy" uses carbon dioxide from an external source.

The generated carbon monoxide rich gas is typically purified in a membrane or coldbox system to carbon monoxide of high purity.

Small sized plants are supplied as skid-mounted units. Medium-sized and large plants are pre-assembled in modules.

CALCOR® is a registered trademark of Caloric Anlagenbau GmbH.





CALCOR® plant
producing 330 Nm³/h CO



CALCOR® plant
producing 330 Nm³/h CO



CALCOR® plant
producing 380 Nm³/h
during construction at
Caloric's own factory



INCINERATORS



CALORIC incinerators are designed for the thermal disposal of gaseous and liquid hazardous wastes.

CALORIC has supplied almost 100 plants in this field and is therefore an experienced partner in the design and execution of custom-made solutions for the chemical and pharmaceutical industries.

Typical wastes disposed of in CALORIC incinerators:

- hydrocarbons ✕
- halogenated hydrocarbons ✕
- organic sulphur compounds ✕
- organic nitrogen compounds ✕
- CO, NH₃, NO_x, H₂S, CS₂, ✕
- COS, phosgene
- salty wastes ✕
- contaminated water ✕

Our program includes incinerators equipped with:

- multi-stage combustion ✓
- heat recovery (by generation of steam, hot water or hot oil) ✓
- flue-gas after-treatment ✓
- HCl recovery ✓
- plume suppression ✓
- energy-saving CALSAVE® ✓
- process for aqueous wastes

The destruction efficiency of CALORIC incinerators safely meets the stringent emission standards of the European legislation for incineration of hazardous wastes

CALSAVE® is a registered trademark of Caloric Anlagenbau GmbH.



Incineration of liquid and gaseous wastes containing organic nitrogen and inorganic salts



Incineration of chlorinated offgas



Incineration of ventgas with chlorinated VOC load

GENERAL GAS TECHNOLOGIES

CO₂ Technology

CALORIC offers the complete range of CO₂ generation, separation, purification, liquefaction, storage and handling technology.

CALORIC offers plants and technology for CO₂ generation or separation from fuel or stack gas, and for purification and liquefaction of CO₂ from natural, chemical or biological sources, as well as for the removal of CO₂ from industrial gases. Our program includes adsorptive processes, thermal and catalytic CO₂ purification and cold rectification of CO₂.

Inert Gas Generators

CALORIC combustion gas generators are designed for the generation of inert gas or a reducing atmosphere through a controlled combustion of gaseous or liquid fuels.

Combustion gas generators can be built with heat recovery, water or air cooling.

Special Plants

Caloric offers tailor-made plants and equipment for thermal processes, gas purification and related applications:

- submerged combustion burners ✕
- liquefied gas evaporizers ✕
- direct-fired heaters ✕
- high-velocity burners ✕
- high-pressure burners ✕
- burners for exotic fuels ✕
- plants for purification and separation of gases ✕





MEA process for the removal of CO₂ from syngas



Inertgas generators with a capacity of 10.000 Nm³/h each



ENGINEERING & ENGINEERING & SERVICES SERVICES

CALORIC represents a highly trained and experienced team of chemical, process, mechanical, instrumentation and software engineers. On the basis of CALORIC's proprietary know-how we offer process engineering, basic engineering and detail engineering.

Along with the supply of pre-assembled packaged units or field-erected plants, CALORIC provides a full range of contracting services.

- consulting x
- pilot plant test x
- feasibility studies x
- process evaluation x
- engineering x
- project management x
- procurement x
- manufacturing x
- construction x
- expediting x
- commissioning x
- turn-key service x
- operator training x
- after-sales service x



Natural gas steam reformer capacity
570 Nm³/h hydrogen



Natural gas steam reformer
capacity 2500 Nm³/h hydrogen
during construction at Caloric's
own factory

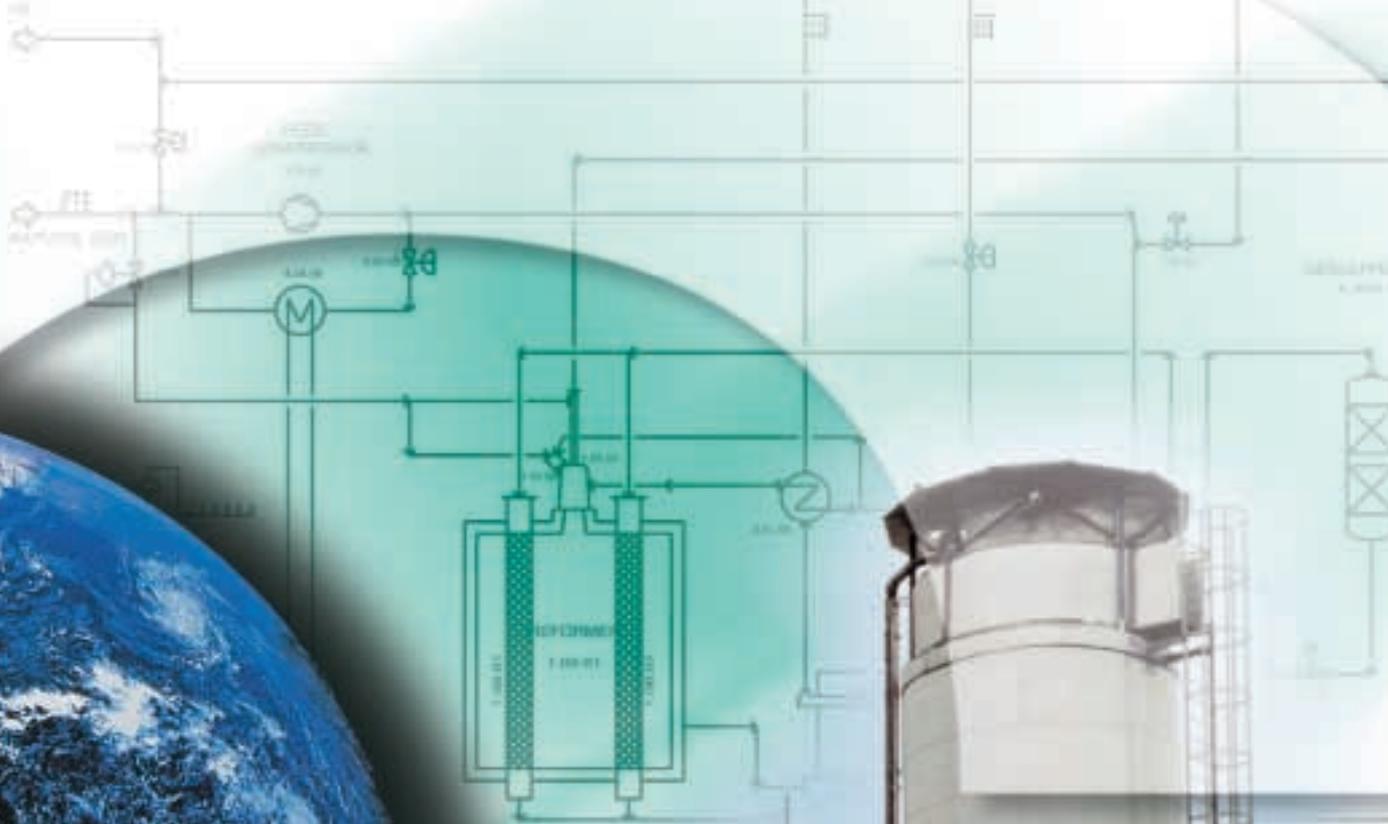


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CALORIC is a medium-sized enterprise with flexible structure and high innovative potential. Advanced by creativity, CALORIC always has and will continue to develop new processes and plants for new requirements to respond to specific customer requirements.

The resulting advantages for the customer are:

- Flexibility towards customer requirements beyond standard technologies ✓
- Fast response due to medium-sized enterprise ✓
- Flexibility on customer standards ✓
- Flexibility on local country codes ✓



Methanol cracker capacity 600 Nm³/h hydrogen



Incinerator for mercaptanes and amines as well as halogenated wastes during erection at site





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