



GAS CLEANING EQUIPMENT



■ RECUPERATIVE THERMAL OXIDATION



Recuperative thermal oxidation is a technology that carries out the destruction of volatile organic compounds in an oxidation chamber, providing adequate conditions of temperature, residence time and turbulence of the mixture.

This technology is suitable for treating gases with high VOCs concentrations and also for residual liquids. In addition, it allows the recovery of most of the energy generated in the combustion, either as water vapor, thermal fluid or hot air.

■ COMPLEMENTARY TECHNOLOGIES

As well as volatile organic compounds other pollutants may be present, such as particulate matter pollution or halogenated compounds.

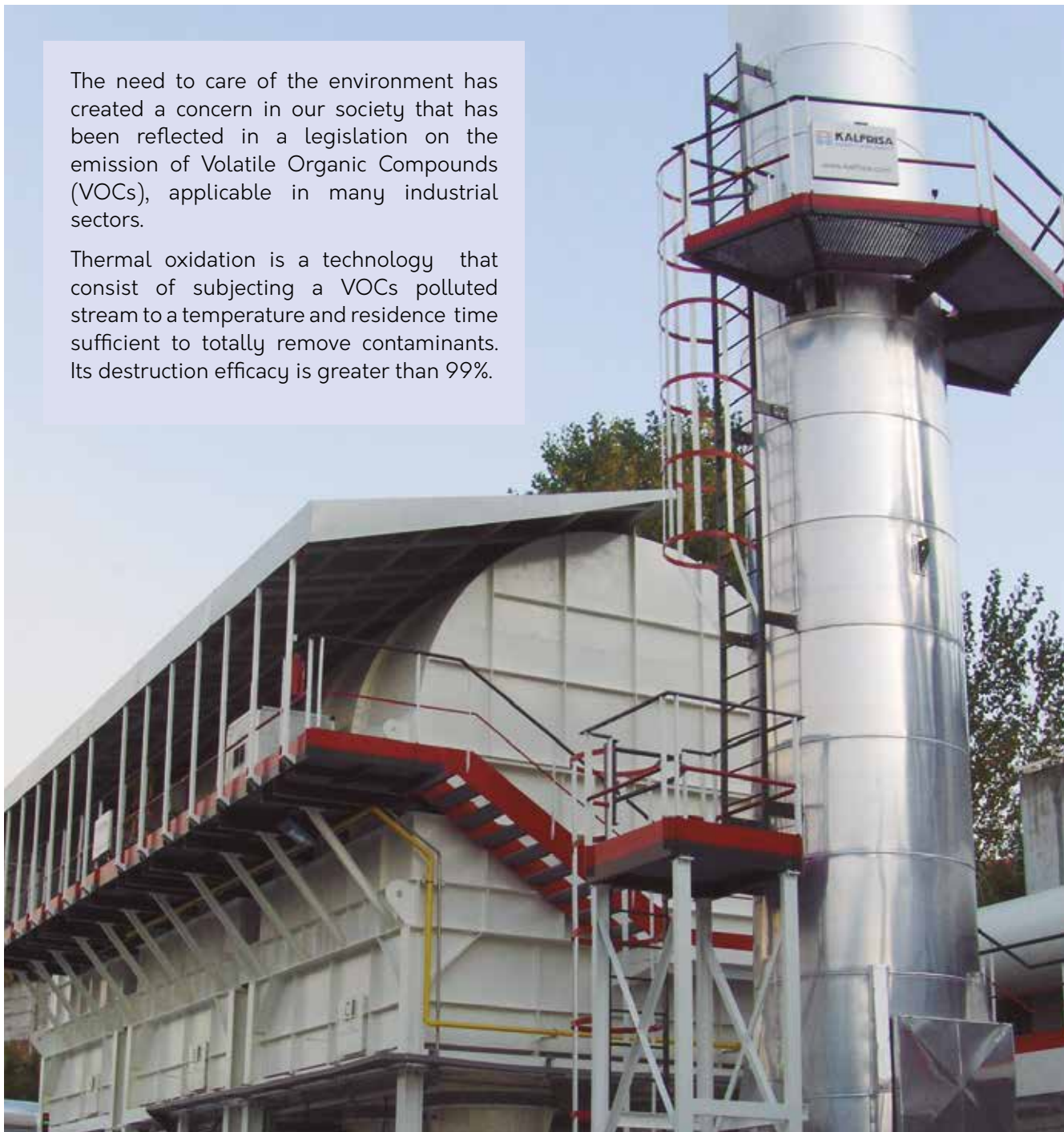
In addition to thermal oxidation, Kalfrisa offers alternative or complementary abatement technologies, which enable us to provide specific solutions for each case:

- Zeolite roto-concentrators
- Activated carbon filters
- Gas scrubbers and neutralization systems
- Particle filters

VOCs TREATMENT AND CONTROL

The need to care of the environment has created a concern in our society that has been reflected in a legislation on the emission of Volatile Organic Compounds (VOCs), applicable in many industrial sectors.

Thermal oxidation is a technology that consist of subjecting a VOCs polluted stream to a temperature and residence time sufficient to totally remove contaminants. Its destruction efficacy is greater than 99%.



■ EMISSION MEASUREMENT SERVICES

To carry out an optimal design of a gas treatment equipment, it is crucial to have a precise characterisation of every emission source and of the processes that produce these emissions. These tasks allow firstly to select the most suitable technology, and secondly to optimise the design of the equipment.

At Kalfrisa we can measure the following parameters:

- | | |
|--------------------|-------------------|
| ■ Flow | ■ TOC |
| ■ Temperature | ■ CO |
| ■ Moisture content | ■ NO _x |

■ REGENERATIVE THERMAL OXIDATION

APPLICATION SECTORS

- Paints, varnishes, and dyes
- Chemical & pharmaceutical industry
- Automotive industry
- Flexography and graphic arts
- Surface coatings
- Biogas upgrading process
- Gas & Oil industry

BURNERS

Our equipment incorporates the most advanced combustion systems and the latest alternative technologies to fossil fuels.

- Natural gas or polyfuel burners
- Biogas burners
- Burners apt for hydrogen
- Electrical heating systems



CERAMIC MATERIAL

Very high-quality ceramic media, which allows greater energy accumulation and a very high exchange surface, which provides an overall thermal efficiency greater than 95%.

ENERGY RECOVERY

In some cases, there is an energy surplus after thermal oxidation, which can be used at later stages for different purposes, such as:

- Air heating
- Hot water generation
- Thermal oil heating

WHY KALFRISA?

- 24/7 operation
- Customised control system
- Remote connection for immediate technical assistance
- Custom design
- Maximum tightness of process valves.
- Low operating and maintenance costs

360°

EXPERIENCE
KNOWLEDGE
IMPLICATION



The knowledge and expertise we have acquired over more than 50 years of experience working with energy & environmental techniques means that we offer our customers reliable, cost-effective solutions.

Our equipment is approved, authorised and certified to EC standards. Furthermore, for its ongoing commitment to innovation Kalfrisa has received the INNOVATIVE SME award from the Spanish Ministry of Science and Innovation.

Providing a 360° service is the key to competing for European market leadership. KALFRISA has its own proprietary technologies, and it designs, develops, manufactures, commissions and provides technical after-sales service for its equipment. Experience, expertise, and involvement are the three pillars on which we base our activities.

Kalfrisa guarantees an optimal match of its equipment to customers' requirements, adapting its designs to meet the different technical specifications of each project. Kalfrisa's commitment to excellence is underpinned by ISO 9001:2015 quality certification as well as the implementation of a work philosophy based on external and internal quality standards.

KALFRISA SERVICE

■ TECHNICAL ASSISTANCE SERVICE

Performed by a team of qualified, experienced professionals, in accordance with certified procedures.

Guaranteeing the use of only original spare parts.

Fault diagnosis and 365-day telephone on-call service.

■ PREVENTIVE MAINTENANCE CONTRACTS AND OPERATIONS

Coordination of scheduled visits with clients to evaluate and guarantee the proper function of the equipment.

■ WE ARE CONNECTED

All our equipment incorporates remote connection systems that allow its operation monitoring in real time. A key factor in preventing breakdowns or repairing them quickly.

360° SOLUTIONS

Our engineering and technical team analyses each project to offer the proper technological solution, designed exclusively to best meet the needs of our clients.

We take responsibility for comprehensive management of the project, from conception and general design to the assembly and commissioning at the client's facilities.

Kalfrisa Service can manage preventive maintenance and periodic review of our equipment to obtain maximum performance.

All our equipment is manufactured in our own facilities, guaranteeing the quality and performance of our projects.

