

ENVIRONMENTAL TECHNOLOGY FOR AIR, WATER AND WASTE





EISENMANN DELIVERS CUSTOMIZED, SUSTAINABLE SOLUTIONS
FOR A CLEAN ENVIRONMENT.

THIS IS EISENMANN ENVIRONMENTAL TECHNOLOGY

EISENMANN Environmental Technology GmbH is one of the leading international suppliers of turnkey plants and services in the field of environmental technology.

For over 50 years, we have been a reliable and competent partner to the industry in the development and construction of energy-efficient and resource-saving plants for exhaust air purification, heat recovery and wastewater treatment. In addition, we have extensive know-how in complex thermal waste disposal plants with material recycling. Each plant is customized and individually adapted to the requirements of our customers.

Our employees are specialists in various fields with engineering or technician qualifications. Thanks to their in-depth process know-how, they develop and project plants perfectly matched to the application process, ensure smooth on-site installation and fast commissioning as well as professional maintenance.

We are ISO 9001 and ISO 14001 certified experts for complex tasks in a wide range of industries. Our future-oriented systems set standards in terms of operational reliability, long-term durability and performance, ensuring that the required limits are met safely and efficiently. Our technologies contribute to a clean climate and protect the environment for future generations.



Headquarters in Holzgerlingen, Germany

INNOVATIVE ENVIRONMENTAL PLANTS FROM A SINGLE SOURCE

- + Research & Development
- + Comprehensive Customer Consulting
- + Planning, Project Engineering & Pre-acceptance
- + Site Planning & Management
- + Assembly & Commissioning
- + Training of Operating Personnel
- + Service & Plant Optimization

COMPLETE ENVIRONMENTAL SOLUTIONS SINCE 1968

A healthy environment and state-of-the-art production are not a contradiction. Rather, they go hand in hand – thanks to sophisticated technologies that enable ecologically sound manufacturing.

EISENMANN customers stand to benefit in two ways: from our far-reaching experience with environmental technology, and from our comprehensive engineering skills in manufacturing and process technology.

The EISENMANN Environmental Technology business unit provides a wide spectrum of tailor-made solutions and optimum process designs in the following areas:

- **Exhaust air purification and heat recovery**
- **Water and waste water treatment, water recycling**
- **Waste disposal and recycling of valuable materials**
- **Heat recovery from industrial and other waste**
- **Ammunition disposal**
- **Custom solutions for highly toxic waste**
- **End-to-end and integrated solutions**



Customized solutions for industrial applications

With the aim of production-integrated environmental protection, our engineers first examine all measures for avoiding and reducing pollution in the production environment. In cooperation with our customers we develop customized systems for the purification of exhaust air and waste water as well as for the recycling and disposal of waste. We accompany you from the official approval to the installation and commissioning of your plant.



EXHAUST AIR PURIFICATION

In line with the “reduce, reuse, recycle” principle, we begin by examining the entire production process to gain a holistic picture of the current situation. We believe that the best way to protect the environment is to avoid emissions. To decide which measures and processes are best suited to a particular application in terms of effectiveness and cost, a number of factors must be considered. These include the temperature and volume of exhaust air to be treated, the type and concentration of pollutants, and opportunities for utilizing recovered energy.

Thermal Treatment

The fastest and safest way to remove combustible organic contaminants is through oxidation. During this process, the polluted air is heated to a sufficiently high temperature to oxidize the organic compounds to mostly water and carbon dioxide.

Thermal oxidation (TO)

TO is ideal for applications where the waste heat can be recovered and directly utilized in other production processes. Thermal oxidation technology is regarded as robust, reliable, and universally deployable.

Regenerative Thermal Oxidation (RTO)

Due to its low supplemental energy requirements, and because in many cases, there are no suitable heat consumers on the same site, the RTO is a very efficient exhaust air treatment system. The Eisenmann solution features a special rotating air distribution system instead of a valve or damper system which gives you a system with very high reliability and low maintenance.



Exhaust air purification with thermal oxidation (TO)



Regenerative thermal oxidation (RTO) with rotating distributor to minimize pressure fluctuations

Adsorption

In contrast to the thermal methods described earlier, adsorption processes do not require high temperatures, and do not convert the contaminants.

Adsorption wheel

Adsorption systems are used to concentrate large volumes of exhaust air with few contaminants. Because smaller air volumes with a higher concentration can be treated more economically, concentrating the contaminants in a low-volume desorption stream is a logical first step in the treatment of exhaust air with a low pollutant load. This makes subsequent processes – such as combustion or solvent recovery – more cost effective.

Combustion chambers

Eisenmann combustion chambers are ideal for exhaust air with high concentrations of halogens and explosive air/solvent mixtures. Various configurations are available for a range of applications. For example, the EISENMANN Turaktor can be installed as a vertical or horizontal combustion chamber for the removal of pollutants.

The combustion chambers by EISENMANN will be integrated in your production with a customized heat recovery system and a flue gas cleaning which enables you to fulfill all clean gas values needed.



Exhaust air purification with an adsorption wheel and TO in the chemical industry



Combustion chamber for VOC treatment



WATER AND WASTE WATER TREATMENT



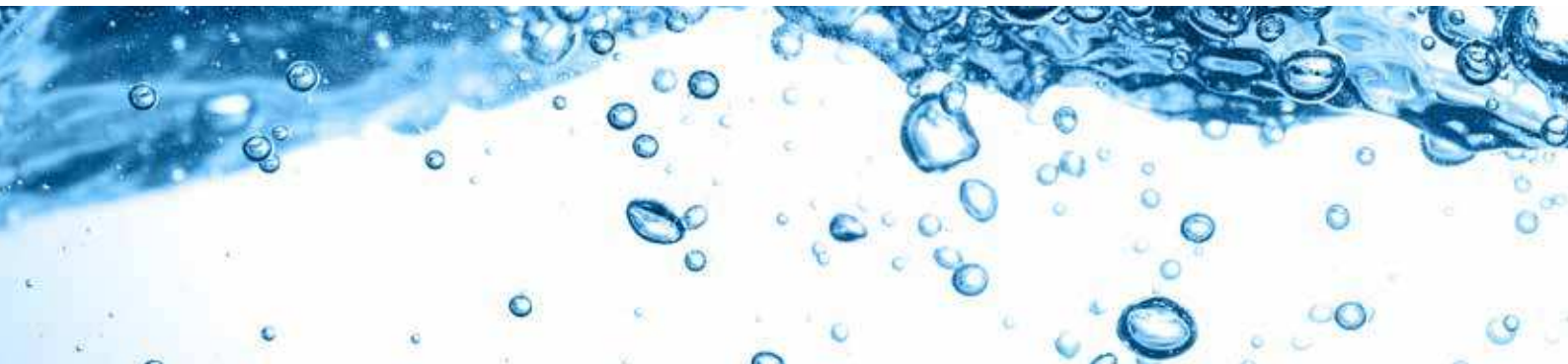
This continuous treatment plant for precipitating fluoride from waste water was pre-assembled at EISENMANN

EISENMANN develops and designs tailor-made systems for process water supply and waste water treatment. Various processes can be combined for the development and installation of water management systems, and for the implementation of zero liquid discharge (ZLD) concepts. Our customer base includes leaders from the chemicals and automotive industries and all other sectors where water plays a major role in production processes.

Inorganic contaminants in waste water

For many decades now, EISENMANN has been delivering conventional chemical-physical processes, including precipitation, and subsequent flocculation, sedimentation and gravel filtration for removing heavy metals, fluorides and phosphates from industrial waste water and flue gas purification plants.

No matter what toxic inorganic substances the industrial waste water contains – cyanide, chromates, arsenates or nitrites – EISENMANN provides the specific solution to best fit the customers needs.



Organic contaminants in waste water

EISENMANN's patented Fentox process is used for oxidizing toxic or non-degradable pollutants in the chemical industry. Biodegradable waste water can either be anaerobically digested, with biogas as a by-product, or purified in industrial water treatment facilities. In addition, EISENMANN offers processes for separating oil and water, and removing oil or grease.

Water management systems and ZLD concepts

Environmental laws and regulations are tightening in many parts of the world, and clean water is becoming increasingly scarce. As a result, our customers are growing aware of the need to optimize their consumption of this resource, and to minimize pollutants released into the environment. EISENMANN offers solutions tailored to your needs. We are intimately familiar with our customers' production processes – which enables us to choose the most appropriate recycling methods. For sites where waste water cannot be discharged, EISENMANN closely collaborates with customers to implement zero liquid discharge concepts (ZLD).



Rinse water recycling system with a capacity of 25 m³/h



THERMAL WASTE DISPOSAL AND RECYCLING OF VALUABLE MATERIALS

The portfolio of EISENMANN Environmental Technology includes facilities for the thermal treatment of a wide range of residues in solid, liquid, viscous and gaseous form, such as industrial waste and sewage sludge from municipal and industrial waste water treatment plants. The technologies offered by EISENMANN can also be used for the inerting of non-recyclable materials for disposal in landfills, and for the incineration of hazardous waste such as toxic materials with combustible components, or substances containing persistent organic pollutants (POPs).

A wide variety of thermal waste disposal methods are available, depending on the customer's requirements. These include drying, incineration, pyrolysis, torrefaction, gasification and the engineering and delivery of multi-stage processes.

Turaktor

The Turaktor high-turbulence combustion chamber was developed by EISENMANN for the thermal treatment of liquids, suspensions and contaminated gases. The Turaktor has been successfully employed for catalyst regeneration and precious metal recovery.



Turaktor for halogenated exhaust air

Rotary kiln

Rotary kilns are employed for the thermal treatment of solid and viscous materials and can be all-steel or brick-lined. Depending on the calorific value of the input material, rotary kilns are designed for either co-current or counter-current operation. Especially advantageous is the rotary kiln in special waste applications.

Chambustor chamber kiln

The chamber kiln can be deployed for recovering precious metals from solid and viscous materials. It can also be used for environmental-friendly disposal of highly toxic or contaminated materials. Batch processing with the Chambustor is a highly cost-effective solution for the disposal of waste produced intermittently or in small quantities.

Pyrobustor

The Pyrobustor, a dual-chamber rotary kiln with no refractory lining, was specially developed by EISENMANN for decentralized sewage sludge incineration. It is particularly suitable for small- to mid-sized waste water treatment plants installed on-site. The Pyrobustor converts pre-dried sewage sludge into heat and inert ash that is suitable for landfill disposal.



Rotary kiln for the treatment of hazardous waste

INTEGRATED CUSTOMER-SPECIFIC SOLUTIONS



Solid waste treatment plant with combustion chamber and dry flue gas cleaning

EISENMANN's extensive range of solutions for waste water, exhaust air and waste enables us to develop sophisticated plants that combine a variety of processes, and assume overall responsibility for their implementation. This ensures seamless dovetailed processes and minimized operating costs. The realized modular waste disposal plant described below is a prime example:

1. Module 1: High-turbulence combustion chamber (Turaktor) for incinerating liquid waste.
2. Module 2: Exhaust air purification for purifying flue gases produced by the Turaktor.
3. Module 3: Waste water plant for treating water after the flue gas purification line.

In these three steps, hazardous, highly toxic materials are converted into waste safe enough for landfill disposal. The treated water can be discharged to the drains, and the purified air can be released into the atmosphere.



Liquid waste treatment plant with wet flue gas cleaning and waste water treatment

SERVICE



Proper maintenance is key to the longevity and efficient operation of production plants. Opportunities for improvement or upgrades must be regularly examined to keep the technology up-to-date in every way. EISENMANN offers custom-tailored services:

Standard after-sales service

- Supply of spare parts
- Maintenance management
- Employee training and instruction

Plant optimization

- Retrofits and upgrades
- Plant modifications
- Process optimization
- Consulting

Custom solution

- Service modules
- Emergency on-call service
- Remote services
- Ramp-up support
- Support during production

Full service and operator models

DEUROTECH GROUP

EISENMANN Environmental Technology is a member of the Deurotech Group, an association of specialists in the wood-based materials and paper industry as well as in environmental technology. Together with machine and plant manufacturers Vits Technology, IFA Technology, Wessel-Umwelttechnik and Oschatz Power we offer coordinated process steps from a single source: Impregnation and coating plants, systems for resin production and resin processing as well as various environmental technologies.

 **Deurotech® Group**
Partnering for Efficiency



Wessel-Umwelttechnik GmbH is a leading specialists for all aspects of exhaust air cleaning and heat recovery - since 1965. Based on many years of know-how and international experience, Wessel plans, projects and implements exhaust air purification systems and turnkey plants for various environmental tasks and different industries. Wessel concentrates on the development of plants with high operational safety and reliability.

Wessel
Environmental Technologies
Specialist for biological, thermal, chemical and physical exhaust air purification and energy recovery.

Oschatz Power GmbH is an innovative expert for highly efficient solutions for the thermal utilization of numerous industrial energy sources and fuels. With more than 170 years of experience, Oschatz is today a leader in the product areas: chemical industry, non-ferrous industry, iron and steel industry as well as environmental and power plant technology. The core of the product portfolio are resource-efficient waste heat systems for the conversion of industrial waste heat.



Our competent partner for energy recovery systems as well as biomass and residues incineration plants.



OUR TECHNOLOGIES CONTRIBUTE TO A HEALTHY CLIMATE
AND PROTECT THE ENVIRONMENT FOR GENERATIONS TO COME.

EISENMANN
Environmental Technology

Eisenmann Environmental Technology GmbH
Max-Eyth-Straße 42
71088 Holzgerlingen | Germany

Phone +49 7031 44809-0
office@eisenmann-environmental.com
www.eisenmann-environmental.com

Member of  **Deurotech Group**

2024 © Eisenmann Environmental Technology GmbH

All rights reserved. All text, images, photos and graphics are subject to copyright and other intellectual property laws. Content may only be used with the express permission of Eisenmann Environmental Technology GmbH.
All content, including, without limitation, specifications, descriptions and illustrations, are subject to error and change, in particular with regard to ongoing development of our products in line with technological progress.
Changes to content will not be proactively communicated. Technical specifications may vary from country to country.