

# WASTE GAS AND COMBUSTION TECHNOLOGY



INNOVATION

ENGINEERING

OPTIMIZATION

## Waste Gas Treatment

### Our service ...

The experienced expert staff of Bayer Technology Services' Environmental Protection Department will help you with the precise planning and implementation of projects in all areas of waste gas treatment. Our spectrum of services covers all stages of a project from the initial plans to the handover of the finished facility.

Our expertise includes a variety of incineration technologies such as:

- optimal incineration even under difficult conditions such as sudden variations in volume, oxygen and/or pollutant load;
- cost-effective incineration of large waste gas amounts by autothermal operation (thermal reactor);

and also special aspects of waste gas technology such as:

- safe disposal of explosive waste gases by the proven TAREX® process technology by feeding the waste gas without dilution (minimizing the size of the facility as well as the operating cost);
- tested waste heat utilization systems at very high temperatures (up to 1,600 °C);
- tested hot-gas quenches to cool flue gases from up to 1,200 °C to saturation temperature.

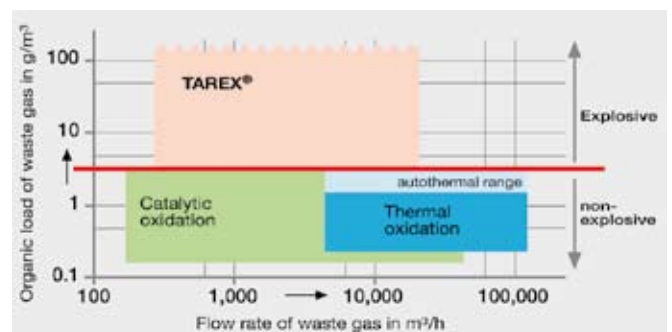


TAREX® Unit of TAD plant in Dormagen, Germany

Furthermore we offer special options for dealing with NO<sub>x</sub> emissions:

- reduction of NO<sub>x</sub> emissions by the SNCR process with optimal injection technology;
- treatment of off-gases with high NO<sub>x</sub> load through multi-stage incineration systems.

We also have experience in the design of cost-effective back-up solutions which will increase the overall availability of your waste gas treatment facilities.



Fields of application for waste gas treatment processes

### ... is your gain.

Working together with you as an independent expert partner, we develop solutions that are specially tailored to your requirements taking into account cost and quality issues. Maximum plant safety and availability combined with minimum capital expenditure and operating costs – that's an aim we both share.



**Bayer Technology Services**  
Powering Your Performance

Our work will provide you with an ideal basis for making decisions on planned investments. The service we provide will contribute to your economic success.

You will benefit from our extensive knowledge of disposal technologies and our detailed know-how of all process areas, which is steadily growing with every project – to your advantage. The feedback from operated units all over the world helps us to increase our wealth of experience – quality assurance that you can benefit from, too.

You can rely on our internationally experienced staff to complete your projects on time and with the quality you require.



Thermal reactor for the PSA plant, Uerdingen, Germany

We are familiar with all details involved in permit procedures and we organize your projects from beginning to end, starting with the initial planning right through to the start-up; you can concentrate on your core business.

We maintain contact with all the relevant specialist departments in our company, fully involving them in the project as required.

## Our approach

After having clearly defined the task and framework conditions specific to the project, we develop the most suitable concept for the application in question, using our extensive experience with existing facilities. In implementing a project we go through the following stages:

- collation of all relevant process data;
- assessment of the data and plausibility evaluation;
- analysis of the results and drawing up of process options;
- working out tailor-made safety concepts;
- selection of the most suitable treatment technology based on the technical and economical factors;
- design of the facility with our own calculation programs and integration of the results in an optimal process control concept;

- optimization of the overall concept taking into account the existing conditions;
- examination of whether centralized or decentralized treatment is the better option as well as checking possibilities to connect to an existing facility and selection of a suitable location;
- final check of the correct function of the facility through tried and tested calculation programs and comparison with existing facilities fulfilling similar requirements.

## References

We have extensive experience in all areas of waste gas treatment. In the past 30 years we were involved in the planning, engineering and start-up of over 70 centralized and decentralized treatment facilities all over the world. The plants have a proven very high availability and meet even the most stringent government regulations.

Examples (selection):

TAREX® unit for the multi-purpose plant, Bayer AG, Leverkusen

TAREX® unit for the U-Block, Bayer AG, Leverkusen, with additional disposal of up to 1,000 kg/h of liquid waste

Thermal reactor for the PSA plant, Bayer AG, Uerdingen with a waste gas treatment capability of 160,000 Nm<sup>3</sup>/h

Central Thermal Oxidizer (CTO), Bayer Corporation, Baytown, TX, USA, for the treatment of 15 waste gas streams, partially having a very high NO<sub>x</sub> load.



Thermal Oxidizer Unit (TOU) in Israel