



# Sustainable Development Report 2005



ENGAGEMENT  
DE PROGRES

ENVIRONMENT HEALTH SAFETY

LAUTERBOURG SITE



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# A strong and long term commitment

The sustainable development 'balance sheet' for 2005, the last year of the 2001-2005 strategic plan, is decidedly positive. Eighty per cent of our ambitious environmental objectives have been achieved and the results on safety are also highly encouraging. All this has been paralleled by an increase in production of between 5 and 10%, depending on the units. These excellent results have been obtained through the efforts of all of the staff at Lauterbourg.

Outstanding achievements include a 30% reduction in groundwater used and a reduction of around 50% in chemical oxygen demand and suspended solids in discharges to the Rhine, as well as the elimination of a main source of odours.

Another highlight is the 27 000 hours of training provided to the plant's 560 staff members, half of which related to environmental, safety and health issues. Almost € 30 million have been invested.

We are embarking on a new five year period with new environmental objectives, focusing this time on continued reductions in our water consumption, on improving our emissions at source and reducing our energy consumption. This latter issue is a very important one for the future, both for our companies and for sustainable development.

This common approach, aiming to build a working environment that is mindful of the well-being of both staff and local residents, is in line with the environment, health and safety policies of each of our companies. It is the fruit of our strong and long term commitment.



**Robert Bluntz**  
Director of Rohm and Haas



**Denis Schmitt**  
Managing Director of RohMax



**Ben Hackett**  
Director of Dow AgroSciences

# ECONOMIC ASPECTS

## The 3 companies on the site



Rohm and Haas is a pioneer in the development of innovative technologies and solutions in the specialty materials industry. Our expertise enhances the quality of life for billions of people around the world.

### AT LAUTERBOURG

- Opened in 1958
- 323 staff members, including 48 women, 1 person on fixed term contract and 5 temporary staff.
- Products:
  - plastics additives
  - architectural and functional coatings
- Certification: Quality ISO 9001 and Environment ISO 14001
- Seveso II classification, top tier



### degussa.

*RohMax Oil Additives*

**RohMax** is an international supplier of additives for high-performance lubricants and of additives for refining processes.

### AT LAUTERBOURG

- Opened in 1996, head office of RohMax France
- 43 staff members, including 7 women and 1 person on fixed term contract
- Products: additives for lubricants and crude oil
- Sales revenue: €40 million
- Certification: Quality ISO 9001 and Environment ISO 14001
- Seveso II classification, lower tier



**Dow AgroSciences** is a major international supplier of products that help to protect crops and control parasites to improve the quality and quantity of agricultural produce.

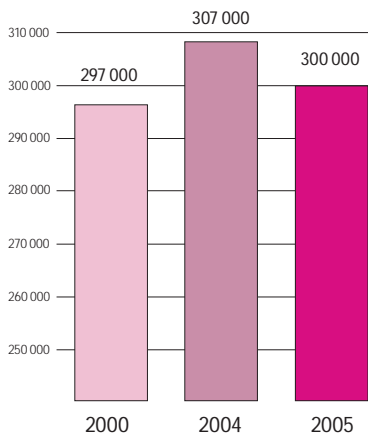
### AT LAUTERBOURG

- 190 staff members, including 5 people on fixed term contracts
- Products: fungicides for crop protection
- Certification: Quality ISO 9001 and Environment ISO 14001
- Seveso II classification, top tier



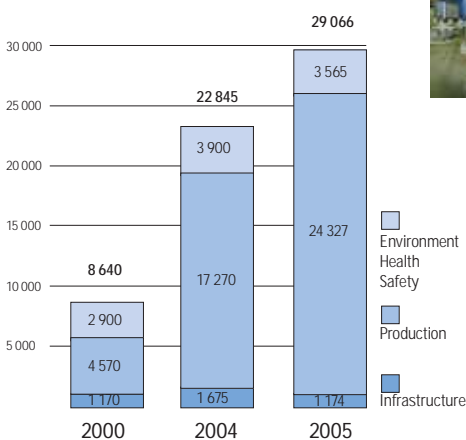
# Site production and investment

PRODUCTION IN TONS



Investments for protection of the environment represented around 12% of the plant's annual budget, i.e.: €3 million. A part of this sum was used to further upgrade our storage and unloading facilities to prevent pollution of groundwater. A 6 000 m<sup>3</sup> tank in the plant's water treatment plant was also reconditioned. Another improvement, particularly appreciated by the local community, is the new biological treatment system that Dow AgroSciences has installed to eliminate the smell of rotten eggs.

INVESTMENTS, IN THOUSANDS OF EUROS



# ENVIRONMENTAL ASPECTS

## Environmental objectives

### HIGHLY SATISFACTORY RESULTS

Overall, the extremely ambitious objectives the plant set for itself between 2000–2005 have been met, with a success rate of 80%. This is an exceptionally good result that justly rewards the efforts of all of our staff.



### NEW OBJECTIVES FOR 2006–2010

- odours: elimination
- noise: continued reduction
- landfilled waste: 60% reduction
- chemical oxygen demand (COD) and suspended solids discharged to the Rhine: 20% reduction
- water used: 20% reduction
- energy consumed/ton produced: 15% reduction
- protection of groundwater

### AN ECO-RESPONSIBLE APPROACH

The plant is encouraging environmentally friendly processes. This year, for example, it has succeeded in reducing the volatile organic compounds (VOC) used in the production processes for two families of products.

The plant has also introduced a management plan for its 'bois de l'Hôpital' area (15 hectares of protected forest) in line with the aims of the Natura 2000 program on protection of birds and habitats.



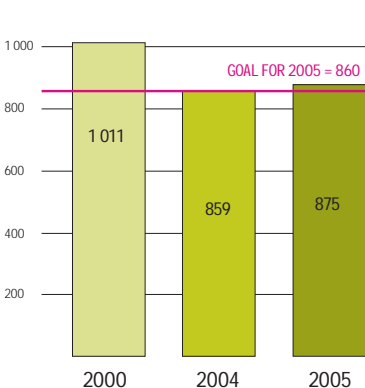
## Energy and waste

### INCREASED PRODUCTION, LOWER ENERGY CONSUMPTION

Continuous efforts are being made to optimize the energy used at the plant, mainly in the forms of electricity, steam, gas or compressed air. Consumption has been reduced by 13% over 5 years. Replacement of a drying oven contributed to this result.

#### ENERGY CONSUMPTION AT THE PLANT

ENERGY INDEX: THERMIES/TONNE PRODUCED

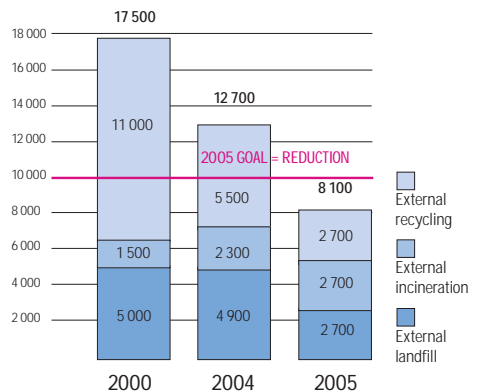


### LIMITING PRODUCTION OF WASTE

Our combined efforts have enabled us to achieve full management of our wastes. In particular, a change in the manufacturing process for magnesium sulphate and better control of sludge drying have led to a 75% reduction in wastes sent to landfill.

#### WASTE DISPOSAL

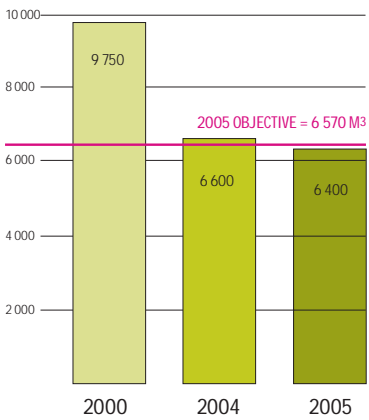
IN TONS/YR, FOR ENTIRE PLANT



# Water

## Consumption

**WATER CONSUMPTION  
TOTAL SITE  
IN THOUSANDS OF M<sup>3</sup>**



### SAVING RESOURCES

The water used on site is pumped directly out of the ground, without the need for treatment. Optimization of our industrial processes (by, for example, using closed circuit cooling) and waste prevention have resulted in a 34% reduction in amounts of water used over 5 years.

The plant's aim is to preserve natural resources for future generations, even though, at present, Alsace's water table is recharged at a rate that is higher than that of extraction for industrial needs.



# Discharges

The plant produces three types of effluents: stormwater, cooling water and production process water. Production process water is treated in our own treatment plant which has a capacity equivalent to that for a town of 80 000 inhabitants.

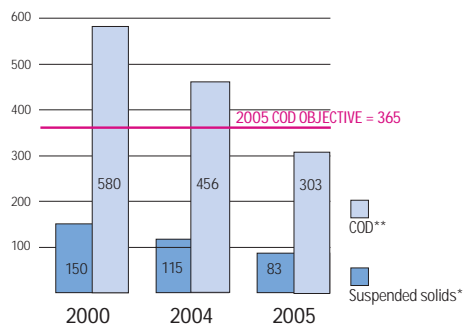
## MONITORING DISCHARGES

All of the wastewater is discharged to the Rhine after treatment and testing. Out of more than 2 500 measurements made, only 10 were in excess of the limits set. Nine of these involved discharge limits to the Rhine and corrective action has been taken. Our goal is zero non-compliance.

Reduction in waste generation at source and cleaning of the treatment station aerator have led to reductions in COD and suspended solids of 48% and 46% respectively, over 5 years.

Another positive point: results of analyses carried out under the European Water Directive found only 8 hazardous substances out of the 97 listed in Alsace. However, their concentrations were below those stipulated in quality standards or discharge limits set.

## AQUEOUS DISCHARGES FROM THE PLANT TO THE RHINE IN TONS/YR



\* High levels of particles in suspension in the water can reduce light penetration and asphyxiate fish.

\*\* Chemical oxygen demand (COD) is an indicator of water pollution. It is a measurement of the amount of oxygen removed from an aquatic environment by a discharge. Imbalance can result in asphyxiation of flora and fauna.

## PROTECTING GROUNDWATER

To prevent any risk of contamination of groundwater by leakages, 34 installations were improved in the 2001–2005 period, including storage confinement bunding, loading-unloading areas and wastewater tanks.

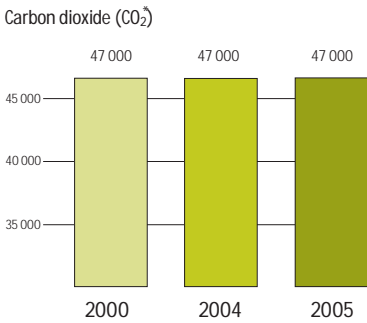


# Air

## CONTROLLING AIR EMISSIONS

Our air pollution control equipment (especially caustic and water washers, biological washers and thermal oxidisers) ensures that the air quality in nearby residential areas meets standards.

### EFFECTS ON GLOBAL WARMING IN TONS PER YEAR, FOR ENTIRE PLANT

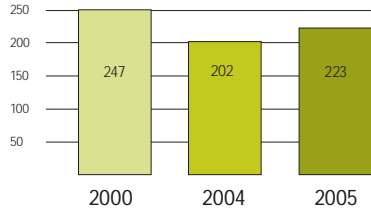


Greenhouse gases such as carbon dioxide – produced by respiration, breakdown of vegetable matter and combustion of all fossil fuels – contribute to global warming.

\* CO<sub>2</sub>: some of the emissions from our boiler are covered by the quotas set under the Kyoto Protocol.

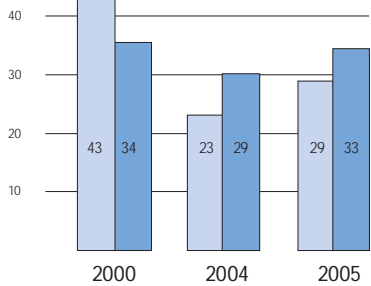
### EFFECTS ON ACID RAIN IN TONS PER YEAR, FOR ENTIRE PLANT

Sulphur dioxide (SO<sub>2</sub>), carbon disulphide (CS<sub>2</sub>) and hydrogen sulphide (H<sub>2</sub>S), as SO<sub>2</sub> equivalent



### EFFECTS ON TROPOSPHERIC OZONE IN TONS PER YEAR, FOR ENTIRE PLANT

Nitrogen oxide (NO<sub>x</sub>)  
Volatile organic compounds (VOC) as carbon equivalent



Tropospheric ozone is an irritant gas. Volatile organic compounds – such as solvents – contribute to its formation when they react with nitrogen oxides resulting from combustion of fuels and natural gas, in the presence of sunlight and heat.

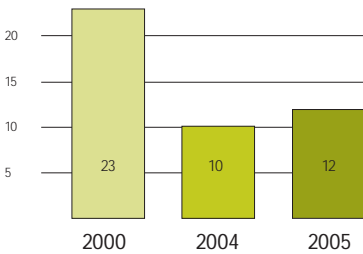


## OTHER EMISSIONS

Other emissions are mainly dusts from powder drying units.

### DUST

IN TONS PER YEAR, FOR ENTIRE PLANT



## Odours and noise

### ELIMINATING ODOURS

Complaints about odours have dropped from 52 in 2000 to only 3 in 2005.

At the end of 2005, Dow AgroSciences introduced a new effluent treatment system to eliminate the smell of rotten eggs. In 5 years, our odour reduction program has reduced the number of complaints from the surrounding community by around 75%.

Our international free-phone number to report an odour problem is: **00 800 16 26 36 46**

### REDUCING NOISE POLLUTION

Eight complaints about noise were received in 2005. We are continuing our efforts to reduce the noise impact of our activities. Sixteen of the 36 items of equipment identified as sources of noise in 2002 have been improved, including better insulation to reduce the noise from a cooling tower fan.



# SOCIAL ASPECTS

## Employment and training

Attentive to the needs of its staff, the Lauterbourg plant has channels of communication such as a works committees, Personnel representatives and Health, Safety and Working Conditions Committees that encourage two-way communication dialogue.

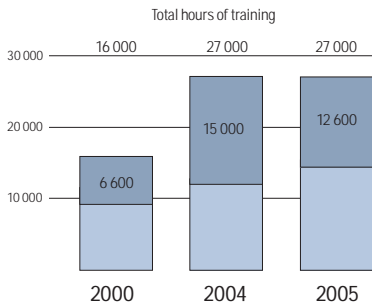
To support the career development of its staff the plant allocates a large part of its annual budget to training. In 2005, around 27 000 hours of training were provided on-site.



### A FOCUS ON SAFETY

Around half of the training was on the subject of safety, with a focus on 'Corporate Risks Information and Training Days' which targeted all of the staff and taught them the most important elements of response in case of an incident.

### NUMBER OF HOURS OF TRAINING FOR ENTIRE PLANT



■ Hours on environment, health and safety

### SHARING EXPERIENCE

In 2005, the plant offered around thirty interns from a wide range of backgrounds their first experience of the world of work.



## Health and safety

### HEALTH

The medical department organizes information campaigns on specific areas such as accidents to the hands or working in very hot periods. In 2005, it collaborated with the CNRS (France's national institute for research) in a study of 350 operators, focusing on shift work and more specifically on the relationship between exposure to noise and ageing.

Concerned for the well-being of staff at work and elsewhere, the medical department also provides advice on diet, coping with heat, summer time illnesses, precautionary measures when taking long-distance flights, avoiding tropical diseases, and even precautions against avian flu.

### SAFETY AT WORK

In 2005, there was no lost time injury: a level of performance that was rewarded by the Regional Safety Award from the Chemical Association (Union des Industries Chimiques), and by the "Rohm and Haas Safety Award".



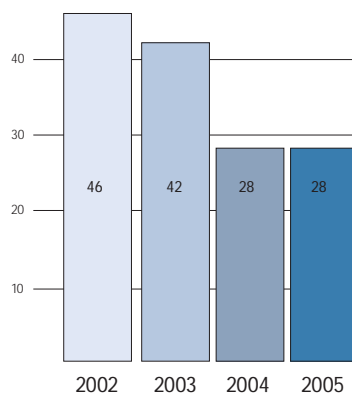
### ACCIDENTS AT WORK: FREQUENCY INDEX

	2000	2004	2005
FRENCH INDUSTRY	44	NA	NA
ROHM AND HAAS	4	3	0
DOW AGROSCIENCES	-	0	0
ROHMAX	0	0	0
<b>TOTAL FOR THE PLANT</b>	<b>4</b>	<b>3</b>	<b>0</b>

$$\text{FREQUENCY INDEX} = \frac{\text{NUMBER OF LOST TIME INJURIES} \times 1\,000}{\text{NUMBER OF PEOPLE}}$$

People coming on site from other companies must also be familiar with and abide by all of our safety rules. They must be accredited by an independent agency before being able to operate on the Seveso classified site.

### FIRST AID FOR EXTERNAL CONTRACTING FIRMS





## Safety

### REGULAR EXERCISES

The 2005 annual safety exercise took an acrylonitrile spill after collision between a tractor and rail wagon as its theme. The exercise also provided the opportunity to inaugurate the new control room set up by Rohm and Haas in the Lauterbourg fire station.

### RAPID RESPONSE

After the accidental spillage of several litres of monomer from a river barge, a floating boom was put in place in the port of Lauterbourg and all of the spill recovered.



### MAKING TRANSPORT SAFE

Rohm and Haas favors rail and inland waterway transport for movement of hazardous substances – modes of transport that provide a greater guarantee of safety than road.

Rohm and Haas is a participant in the European monomer response unit and centralizes emergency calls relating to Rohm and Haas products in France.

### TRANSPORT INCIDENTS AND ACCIDENTS

There were no transport incidents or accidents in 2005.



## Communication

### ENCOURAGING DIALOGUE

The Community Advisory Council, the website, the *Rive Rhin* newsletter, the sustainable development report and site visits are just some of the tools that allow the plant to communicate with local residents.

The plant engages in new actions to encourage greater transparency each year.

### OPENING UP TO THE COMMUNITY

As a partner to the 'A la Rencontre de la Chimie' (meeting the chemical industry) initiative, the plant opened its doors to the public in October 2005, allowing local residents to learn about different aspects of the site from production through to protection of the environment.



### LISTENING TO FEEDBACK

An opinion survey was conducted in the spring of 2005. A point that emerged strongly from this was the desire for a simpler sustainable development report, judged too technical by our readers. This version of the report attempts to satisfy that wish.

The *Rive Rhin* newsletter has also been re-designed. Its new and more readable magazine format will now provide shorter articles to readers, some of whom said they were a little tired of the old layout.

### ENCOURAGING LOCAL INITIATIVES

The three companies also support a range of local initiatives. Around €40 000 were distributed in 2005 to encourage associations and voluntary work. Some of this money was used to support the reintroduction of the cistude (European pond tortoise) to the Woerr lake.

# Sustainable Development Report

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