AkzoNobel HSE department

Site Stenungsund

Summary of our environmental work 2009

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AkzoNobel
Tomorrow's Answers Today

Keeping you informed on our environmental program

Our annual environmental report is available at:

AkzoNobel
Molekylverkstan Science Center, Stenungsund

AkzoNobel Site Stenungsund
Uddevallavägen 17
SE-444 85 Stenungsund
Tel: +46 (0)303-850 00

www.akzonobel.com/ea
www.akzonobel.com/sc

AkzoNobel in Stenungsund is publishing this summary to demonstrate our commitment to our environmental program and to open communication.

For life's essentials

AkzoNobel is the largest global paints and coatings company and a major producer of specialty chemicals. We supply industries and consumers worldwide with innovative products and quality ingredients for life's essentials. AkzoNobel has around 55,000 employees in more than 80 countries. In Sweden we employ around 3,600 people, working at 20 locations.

One of these locations is Stenungsund, where AkzoNobel has almost 500 employees. Production continues 24 hours a day, all year round. We manufacture chemicals that are used to improve the function and performance of several products that surround us in daily life. Additives in paint, detergents, gasoline, road surface, skin and hair care products are just a few examples of products that may contain our chemicals.

Using our main raw materials ethylene, oxygen and ammonia we manufacture substances such as ethylene oxide, glycols, ethanolamines, ethylene amines, surfactants and mixtures containing both our own and purchased products.

The way we work

We follow environmental regulations and undertake voluntary initiatives in sustainability. Our site in Stenungsund holds ISO 14001 Environmental, ISO 9001 Quality, as well as SS 627750 Energy certification.

These Swedish and international standards guarantee that we take a long-term approach to environmental, quality and energy efficiency management. We have also adopted the principles of the chemical industry's Responsible Care program for continuous improvement in the aspects of health, safety and environment.

Sustainable development

A sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs. In AkzoNobel we want to incorporate sustainable development into the decision-making process.

In our daily work we aim at improving our environmental performance and reducing our energy use. It is also important for us to provide a developing work environment for our employees and to make a contribution to the societies in which we operate. More information about our policy in this area is available at our website www.akzonobel.com/sustainability/managing_sustainability/hse/

We also use tools that investigate the environmental impact of products and processes throughout the value chain, such as Life Cycle Assessment.

A selection of our work in health, safety and environment

Energy and trading with carbon dioxide

The energy issue is important from an environmental as well as an economic perspective. We continuously strive to make our processes more energy efficient and in 2006 our way of working with energy was certified. In collaboration with several chemical companies in Stenungsund and the Chalmers University of Technology we study the possibilities to reduce the energy use by recycling energy among the plants.

At the Climate meeting in Copenhagen in 2009 the leaders of the world discussed how to reduce the emissions of green house gases. Green house gas emissions from the site are strongly connected to energy consumption and therefore energy efficiency measures are important. Since 2005, AkzoNobel in Stenungsund has been a participant in the European Union's trading system with emission allowances for carbon dioxide. The system is one instrument to reduce the emissions according to the Kyoto protocol.

Transport monitoring

We perform studies on the environmental impact of our transport from a local, regional and global perspective in order to maintain an open dialog with our transporters aimed at reducing the environmental load of transport.

AkzoNobel in Stenungsund has realized several measures to reduce the environmental impact of transport. It is worth mentioning that we have successfully increased the loading factor of our transport and that we are using intermodal transports. Intermodal transports means that different types of transports are combined to transport the load effectively, both from an environmental and economic perspective.

Work environment and risk management

No one comes to work to get hurt or sick. We seek to provide a healthy and safe workplace for all employees. Incidents and near-accidents are reported and monitored with various parameters. To prevent accidents we train our personnel and develop procedures and working practices for our processes. Potential risks from the plant and from the transport of hazardous goods are investigated and monitored. These investigations are followed up and risk reducing measures are implemented.

Focusing on chemicals

In 2007 the European union issued a new chemicals legislation; REACH. To meet these demands on our company risk assessments are being performed for all the chemicals that we handle. We provide information about safe handling of the chemical for personnel, consumers and the environment.

We value engagement in society

In Stenungsund we are engaged in the Molekylverkstan Science Center. Being a meeting point for teachers, students and the public, its purpose is to stimulate young people's interest in natural science. In addition, it is a channel of communication for the local chemical companies. Through Molekylverkstan we arrange lectures and visits to the plants, and we have close collaboration with schools and universities in the region.

Monitoring our environmental impact 2000 - 2009

Our environmental program is followed up by means of annual assessments and some of the results are presented below. Our work to reduce the environmental impact is an ongoing long-term process, and therefore we have chosen to describe the trend over the past ten years. To easily identify changes and results of improvement measures, we have used key indicators of emissions and consumption of resources per amount of product.

Emissions to water

Emissions to water from the site have been reduced substantially as a result of a larger share of process water being incinerated, and by improving procedures and equipment. Our emissions of nutrients and organic material are summarized below.

The purpose of an incinerator is to reduce the emissions to water. By incinerating the process water the amount of toxic substances and nutrients are reduced. The effect of the incinerator is significant. The nitrogen emissions are less than one tenth today compared to 2004, when the incinerator was started.

Emissions to air

The Stenungsund plant's main emissions to air consist of carbon dioxide, nitrogen oxides, ammonia and volatile organic compounds, such as ethylene. We work continuously to minimize our emissions to air. For ammonia and volatile organic compounds this is also important with respect to the work environment and we use strict routines to prevent those emissions.

Waste management

Waste generated by our operations is sorted into 13 separate fractions. We are committed to recycling and reusing waste as much as possible. Our waste management manual, available to all employees on the plant, describes how waste should be handled.

Energy

The Stenungsund site's energy use is approximately 1,000 GWh annually. About 30 percent of this is supplied as electricity and fuel, mainly in the form of gas from the Borealis cracker in Stenungsund and as electricity from the national power grid. The remaining 70 percent is supplied internally by recycling of energy. By recovering excess energy from our process we reduce our demand for energy from fossil fuels.

Actual amounts of emissions

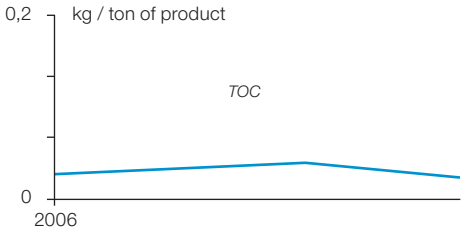
In this summary, the emissions and consumption of resources have been specified per amount of product. The table is to facilitate comparison between the actual emissions and consumption of resources over the years.

			2000	2003	2006	2009
To water	TOC	ton			5.8	**5.6**
	Nitrogen	ton	34	47	7	**3**
	Phosphorus	ton	1.1	1	0.5	**0.3**
To air	Carbon dioxide	ton	71 000	73 000	71 000	**79 000**
	Nitrogen oxides	ton	53	55	43	**57**
	Ammonia	ton	32	50	33	**16**
	Volatile organic compounds	ton	86	58	38	**44**
Resources	Electricity	GWh	82	87	98	**97**
	Fossil fuels	GWh	206	200	210	**269**
	Water	ton	483 000	522 000	711 000	**762 000**
Production	Products	ton	172 441	182 797	227 432	**212 885**

Emissions to water

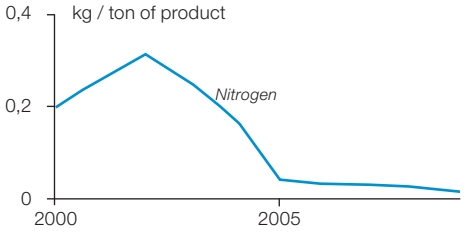
Organic material

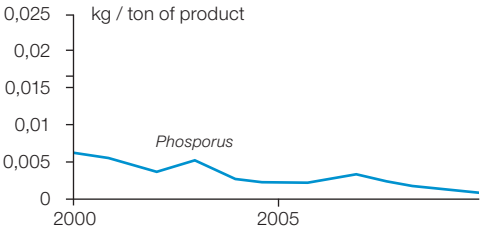
Large emissions of organic material can cause oxygen depletion in our waters, since oxygen is consumed when micro-organisms decompose the material. TOC means “Total organic carbon” and measures the amount of organic material released to water. The measurements presented are only from 2006 and onwards, since that year the method of measurement was changed. This change was an environmental improvement, since the older method contained mercury.



Nitrogen and phosphorus

The nutrients nitrogen and phosphorus increase the growth in waters, and may lead to algal bloom, for example. This is something we are working to avoid, and therefore always minimize our emissions. Following the investment in the new incinerator there has been a significant reduction in nitrogen emissions. The emissions of nitrogen per ton of product have been reduced by 92 percent since the year 2000. For phosphorus the reduction is 78 percent.

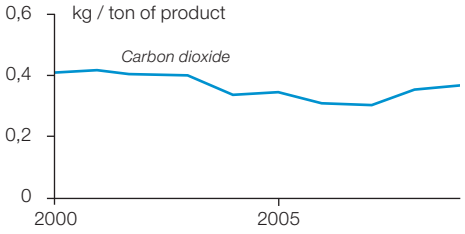




Emissions to air

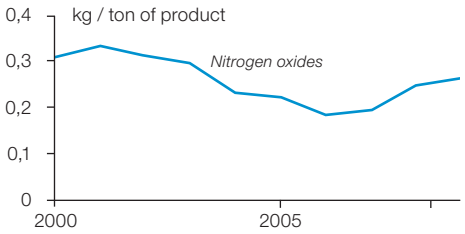
Carbon dioxide

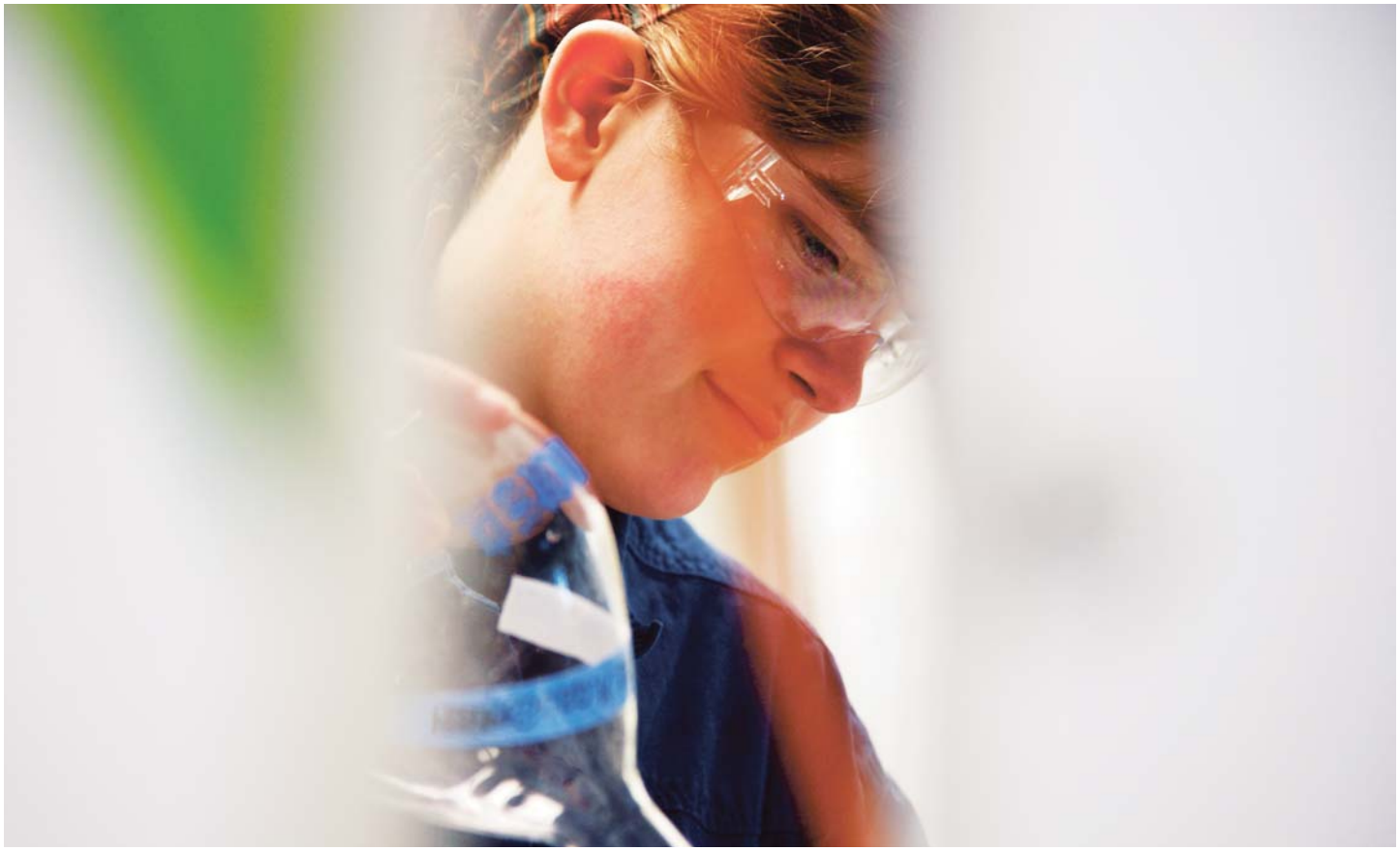
The emissions of carbon dioxide contribute to global warming, which threatens to change our climate. In 2009 the emissions of carbon dioxide were 79,000 tons, which amounts to 7 percent of the emissions from fossil fuels of the community of Stenungsund. Since the year 2000 the emissions have been reduced by 10 percent per amount of product.



Nitrogen oxides

Emissions of nitrogen oxides contribute to eutrophication and acidification, and high levels can cause health effects. The emissions, which arise from combustion, have fluctuated over the years. The increase during the last few years is due to more process water being incinerated. The incineration will be adjusted to minimize the emissions of nitrogen oxides. Since the year 2000 the emissions have been reduced by 13 percent.





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AkzoNobel is the largest global paints and coatings company and a major producer of specialty chemicals. We supply industries and consumers worldwide with innovative products and are passionate about developing sustainable answers for our customers. Our portfolio includes well known brands such as Dulux, Sikkens, International Paint and Eka. Headquartered in Amsterdam, the Netherlands, we are a Global Fortune 500 company and are consistently ranked as one of the leaders on the Dow Jones Sustainability Indexes. With operations in more than 80 countries, our 55,000 people around the world are committed to excellence and delivering Tomorrow's Answers Today™.

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