

# Safety and Environmental Protection in Chemistry

## EDITORIAL

Since the industrial revolution, human health and well-being have developed and improved very rapidly in our part of the world. However, many activities and processes that contribute to our standard of living also have a negative impact on the environment, and, hence, are a long-term threat to nature and mankind alike. Chemistry as scientific discipline and as a branch of industry is at the very heart of these global problems. Yet, what other discipline besides chemistry is as well-positioned to contribute to the resolution of our global problems? From this point of view, safety and environmental protection are among the key success factors for chemistry, today and in the future.

This has been generally recognized in the mid 1980s, after several industrial disasters severely damaged the public's confidence in technological progress. The credibility gap between industry and science, the general public and the political establishment became a limiting factor for scientific innovation and industrial development. As a consequence, industry and academia have established a new approach to safety and environmental protection.

Safety technology, environmental protection, risk management, and many related topics are well-established at universities today. In Switzerland, departments for environmental science have been founded. Environmental protection and safety technology are part of the chemistry, chemical engineering, and engineering curricula. The Swiss Chemical Industry sponsored a Professorship for Safety and Environmental Protection at the Swiss Federal Institute of Technology in Zurich (Prof. *Konrad Hungerbühler*) in order to assure state-of-the-art safety and environmental training of its future employees.

In industry, safety and environmental protection have undergone pronounced changes since their early development some 30 to 50 years ago. Safety and environmental protection are no longer peripheral functions that can be managed separately from the business processes. Performance in these areas has an influence on the success of a chemical company beyond the negative impact of spectacular accidents and the remediation cost of past mistakes. Integration of safety and environmental considerations into process development leads to more economical processes and helps to avoid expensive investment into end-of-pipe installations. The safety and environmental performance of chemical products contribute to lowering the risks and reducing the costs for the customers. This allows innovative companies to differentiate themselves in the market. Safety and environmental performance contribute to the reputation and the trustworthiness of a company, an immaterial but precious asset on which the future 'license to operate and to innovate' may depend. Based on these considerations, Chemical Industry has developed the worldwide Responsible Care Program.

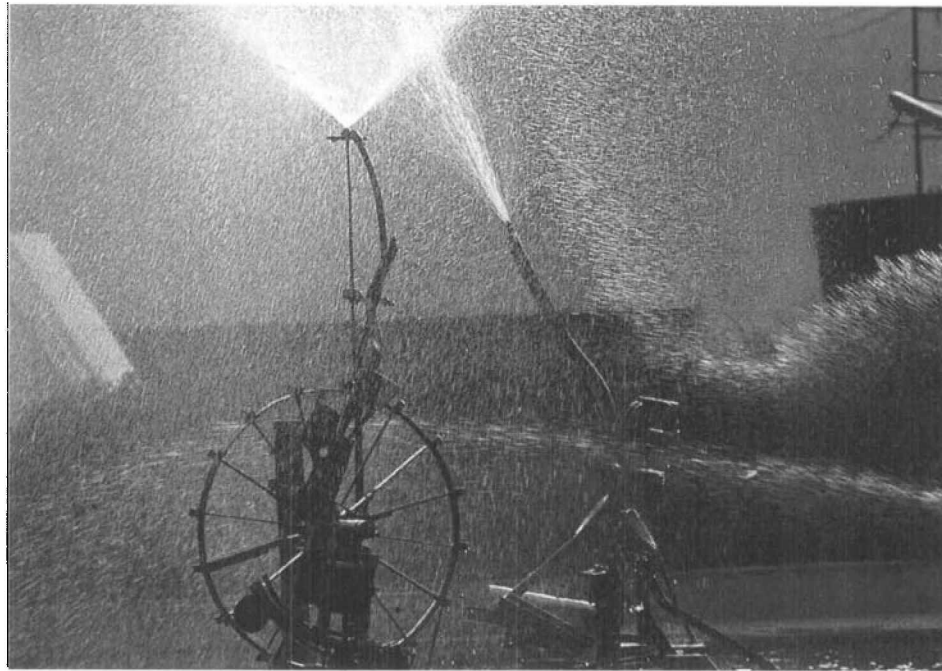
Parallel to these developments at universities and in industry, governments have established a special branch of legislation. In earlier days, legislation often had to react to critical environmental situations. Today, life cycle and risk assessment methods allow a more rational, proactive and risk-based approach.

The contributions to this special edition of CHIMIA, coordinated by *André Weidenhaupt*, exemplify these trends, give an account of recent scientific and technical developments, and also reflect the long-term cooperation of the Swiss Chemical Industry with the Technical Universities.



Kaspar Eigenmann  
Head Corporate Health, Safety and Environment  
Novartis International AG, CH-4002 Basel

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Interessiert? Telefon 061 688 69 65

F. Hoffmann-La Roche AG, 4070 Basel

