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Information for VCI member firms – special issue



Product Stewardship: Think global – and act global

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Special issue:
How the German chemical industry
implements Global Product Strategy (GPS)

Industry's commitment recognized

Some 800 representatives of governments, international organizations and NGOs, as well as industrial companies, gathered in Geneva, Switzerland, in May 2009 for the second International Conference on Chemicals Management (ICCM-2). The main topic of discussion at the conference was how best to implement the Strategic Approach to International Chemicals Management (SAICM) adopted by the United Nations in 2006 – the same year in which the International Council of Chemical Industry Associations (ICCA) adopted its Global Product Strategy (GPS) as a voluntary commitment to implementing SAICM and the Responsible Care Global Charter. In Geneva, senior-level representatives of the chemical industry reported on the substantial progress made by the ICCA initiative and discussed with representatives of government and environmental organizations how GPS can contribute to bringing standards of chemical safety in developing and emerging countries more closely into line with those existing in the industrialized world.



UNEP chief Achim Steiner

At the May 2009 meeting, the chemical industry won recognition for its efforts toward implementing GPS as well as praise for its willingness to engage in open dialogue with all parties to the process. At the same time, the industry's presentation awakened significant expectations in the delegates from governmental organizations, the OECD and environmental organizations.

"Harmonize worldwide product safety standards"

Especially as chemical markets become more global, Europe must not be the only region in which product safety as an element of Responsible Care is taken seriously, Reinhold von Eben-Worlée stresses. The managing partner of Hamburg-based Worlée-Chemie and chairman of the VCI committee of independent entrepreneurs is convinced that "every company in every country must be able to guarantee the safety of its products."



R. von Eben-Worlée

Implementing the ICCA's Global Product Strategy and thus helping to educate customers and the general public about responsible application of the chemical industry's products is "the only way to create more confidence in chemical products," says Worlée. As he explains, medium-sized companies are in especially close contact with their customers and have learned that in the long term a trustful relationship is the best recipe for success. "This is why it is important not only to offer highly specialised products and extensive service to our customers, but also to take product stewardship and the safe handling of our products seriously," Worlée concludes.

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Responsible Care

Visit the dedicated website www.responsible-care.de to learn more about the subject – as well as the goals, activities, achievements and past and present projects – of this voluntary initiative of the chemical industry in Germany and worldwide.

UN praises chemical industry's Global Product Strategy

SAICM, the UN's Strategic Approach to International Chemicals Management, will be one of the featured topics at the 18th session of the United Nations Committee on Sustainable Development (CSD-18) to be held in May 2010. The CSD was created by the UN in 1992 to promote and expedite its Agenda 21. In preparation for CSD-18, a high-level meeting was held in Geneva in December 2009, at which the chemical industry reported on its commitment to SAICM, in particular its progress in implementing the Global Product Strategy. At the December meeting, as in May 2009, the industry won much praise for its efforts. In their concluding remarks, the two conference chairpersons said: "The meeting acknowledged in particular the voluntary initiatives of the International Council of Chemical Associations, i.e. the Responsible Care Global Charter and the Global Product Strategy, as essential contributions to SAICM and as improving the sound management of chemicals globally."

Good Examples that all can follow

Much has happened in the year since the German Chemical Industry Association, VCI, in a special issue of its chemie report, presented the industry's concept for fulfilling the International Council of Chemical Associations' (ICCA) commitment to product stewardship, embodied in the ICCA Global Product Strategy (GPS). The foremost goal of the GPS program is to harmonize standards for chemicals handling throughout the world – in developing, emerging and industrialized nations alike – toward the goal of improving product safety and encouraging “fair play” in global competition. While it is one thing to have goals that everyone can pay lip service to, putting the concept into practice is an entirely different matter. Here, some have to pave the way with good examples for others to follow.

Five VCI member companies have already begun to set a good example for others to follow. In this special issue they illustrate how they are filling the concept of global product strategy with life – in Germany, in eastern Europe, the US, China or India. The “tour of the globe” that product stewardship in the German chemical industry takes transcends national borders. The examples presented here also show that a vital part of product stewardship is transparency in communicating the message to the public. Publishing product information on the company website is one way to achieve this. Actively seeking dialogue with customers and suppliers about safe handling of chemical substances is another.

Synergies with the EU's REACH legislation and the UN's Globally Harmonized System (GHS) greatly facilitate the implementation of GPS in Germany and the EU. German chemical producers for the most part already have fulfilled their regulatory obligation to provide information on chemical sub-

stances and communicate this along the value chain. No other branch of industry in Germany or the EU faces such a tight network of regulation. However, apart from legal requirements, the chemical industry is committed to manufacturing environmentally friendly products and taking responsibility for their safe handling. Our long-running internal Responsible Care initiative bears witness to this.

In this era of global trade, product stewardship must be defined globally. In 2008, chemical products worth €1.1 trillion were produced worldwide. Any risks to health or the environment that may be caused by chemical substances are not limited to the country of origin. The “digital revolution” has created a new dimension of transparency. Negative headlines therefore can be beamed across the Internet in a fraction of a second, and impact globally the acceptance of the chemical industry and its products by customers, investors, consumers, public authorities and the general public.

For this reason, it is of utmost importance to countries such as Germany – whose chemical industry is one of the world leaders – that comparable product safety standards are established throughout the world. Implementation of a Global Product Strategy promotes understanding and trust in the safety of our products among customers and the general public. This is why I would like to encourage all VCI members to support this project. Let the success stories presented in these pages be your guide.



Professor Dr. Ulrich Lehner



Professor Dr. Ulrich Lehner
President, Verband der Chemischen Industrie (VCI)

GPS at BASF

GPS IS A VOLUNTARY COMMITMENT OF ICCA TO THE SAICM PROCESS OF THE UNITED NATIONS

“This Agreement is a Real Breakthrough”

The aim of the Global Product Strategy (GPS) is to promote the safe use of chemical products. The global initiative is intended to reduce existing differences in the safe handling of chemical substances between developing, emerging and industrialized countries. GPS meets all the requirements of an effective, efficient modern chemicals management. Dr. Jürgen Hambrecht, Chairman of the Board of Executive Directors of BASF SE, is the sponsor of the GPS initiative.



Dr. Jürgen Hambrecht

Dr. Hambrecht, why are you personally so committed to implementing GPS? What's so special about this initiative?

The Global Product Strategy is a voluntary commitment of the chemical industry. I am convinced that this agreement is a genuine breakthrough and that we have taken a giant step forward for global chemical safety. We want to ensure that chemicals are not handled incorrectly due to a lack of information or incorrect assessments, thus endangering people and the environment. Our industry takes product stewardship extremely seriously.

With GPS, we are contributing to the urgent need to harmonize international chemicals management. This will minimize the dif-

ferences in safety standards between developing, emerging and industrialized countries. At the same time, it will reduce disadvantages such as higher product launch costs, competitive distortions and trade barriers.

It might just be possible for big companies to implement another initiative in addition to REACH. But why should small and mid-sized companies burden themselves with even more work in these difficult economic times?

GPS has huge long-term advantages for our entire industry. Greater transparency and communication will significantly enhance public confidence in the chemical industry and its products. Like the pharmaceutical

industry, the chemical industry is used to testing its products very carefully. Up to now, communication has taken place exclusively between companies and the authorities. Now GPS gives us the opportunity to inform the public about our commitment more openly and in addition to provide them with all the important information about our products in easy-to-understand language. This creates trust.

Apart for this overriding goal, it's precisely the smaller companies that will actively benefit from GPS through the free exchange of information between co-producers. And expanded expertise in risk assessment through the GPS workshops will in turn naturally also help in processing REACH.

The GPS initiative meets all the requirements of a modern, transparent chemicals management but involves far less effort and complexity than REACH. Thanks to the considerable synergies between GPS and REACH, implementing it will entail virtually no extra work for European companies. Nevertheless, we realize that funds are short everywhere. That's why it's particularly important to help SMEs to implement it.

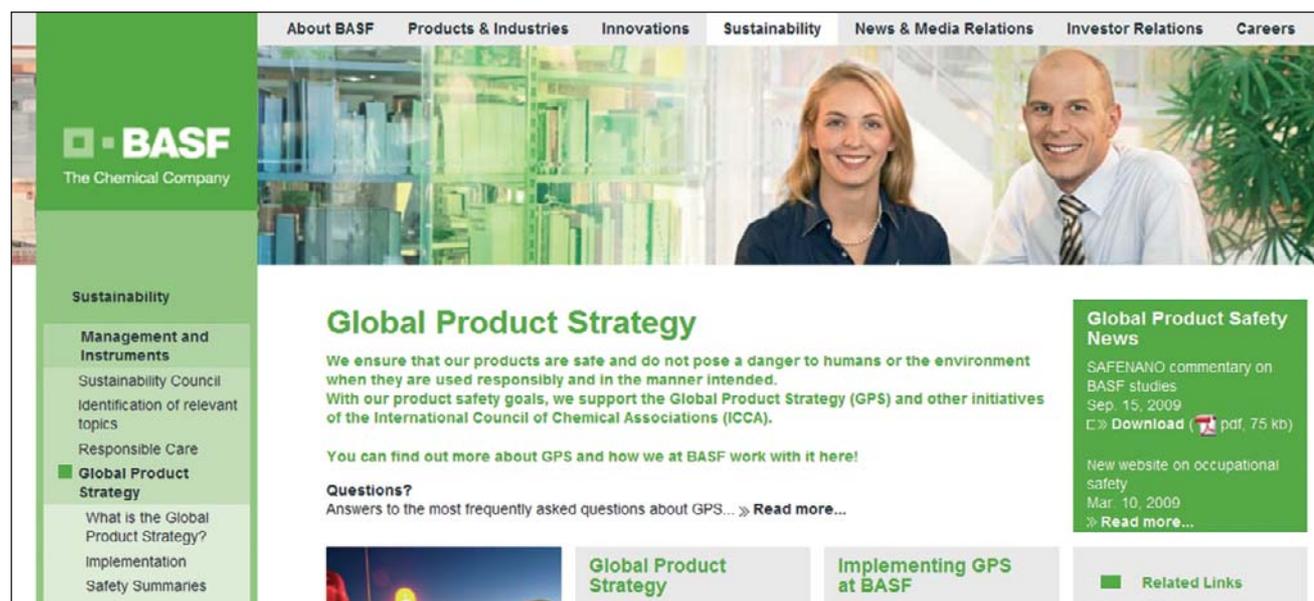
The project was launched in 2006. How far has implementation moved forward? What has BASF undertaken thus far?

Multinational companies like BASF are naturally currently leading the way in GPS implementation. And I think this is important and right. We must demonstrate the practical advantages and in this way motivate and help other companies to implement GPS. This is why BASF experts have already given presentations at numerous GPS workshops for SMEs around the world.

In addition, we now have a dedicated and comprehensive GPS section on BASF's website. Interested companies will not only find all the information they need about GPS but also several safety summaries. And we are

offering practical help, for example in compiling risk assessments and safety summaries.

How important the subject of product safety and product stewardship is for us at BASF isn't just shown by our many years of commitment in this field but also by the actual goals we have set ourselves, which go far beyond statutory and voluntary requirements. BASF intends not only, as required, to review all substances but also all BASF products sold worldwide in quantities of more than 1 metric ton per year by 2020 on the basis of a risk assessment.



Information on the internet: www.basf.com/group/corporate/en/sustainability/management-and-instruments/gps/index

Glossary: Key Abbreviations

SAICM (Strategic Approach to International Chemicals Management)

The Strategic Approach to International Chemicals Management (SAICM), adopted by the UN in early 2006. The purpose of SAICM is to integrate all existing and to a certain extent overlapping chemical safety activities worldwide and close the gaps in chemicals management.

ICCA (International Council of Chemical Associations)

The International Council of Chemical Associations (ICCA) was founded in the late 1980s. It represents 53 national chemical associations around the world. Their member companies have total annual sales of around \$1,600 billion, which amounts to more than 75 percent of total world chemical production.

UN Global Compact

The Global Compact is an initiative established by U.N. Secretary-General Kofi Annan, in which NGOs, companies, international business and labor organizations as well as representatives from the world of science and politics work closely together with the aim of forging a global economy based on the principles of sustainable development.

eSDS (REACH Safety Data Sheet extended by annexed exposure scenario)

The extended safety data sheet consists of a safety data sheet and an annex. This contains exposure scenarios either for individual substances for which a chemical safety report (CSR) has been compiled or for the relevant preparation.

GPS at BASF

THE GLOBAL PRODUCT STRATEGY IS AIMED AT HARMONIZING SAFETY STANDARDS

Product Safety is a Global Responsibility

In today's world of globalized product flows, problems related to product safety are no longer restricted to their country of origin. They have a negative impact on the perception of chemical products in many regions and markets. The effects are also felt in Europe.



Dr. Martin Kayser

"Products regularly arrive in Europe as imports which do not meet our high safety standards", says Dr. Martin Kayser, responsible for product safety at BASF SE. "And that's exactly what should no longer happen in the future. The Global Product Strategy is aimed at helping to ensure that similar safety standards exist in every country in the world", stressed Kayser who, along with Dr. Greg Bond (Dow), heads the ICCA Group "Chemical Policy & Health", which is responsible for implementing GPS.

REACH AND GPS GO HAND IN HAND

For chemical companies in the EU, implementing GPS, REACH and the Globally Harmonized System goes hand in hand. GPS implementation takes place in the same way as REACH, which means that risk assessments (CSRs) developed according to REACH guidelines are fully valid for GPS. Since REACH data requirements go beyond GPS in some areas, European companies even exceed in this part of the voluntary commitment without having to duplicate their work. Any company that has already set up a prioritization and risk assessment process as a result of its regulatory obligations can leverage the work and results for GPS. Therefore additional

"The Global Product Strategy is aimed at helping to ensure that similar safety standards exist in every country in the world."

workload through GPS is not expected for the European product range. Kayser underlined again: "Risk assessment, in other words the first part of GPS, involves no extra work for companies. Only the related GPS safety summaries involve a little extra work but we offer extensive help here."

SUPPORT FOR SMES

Resources are a key factor for small and mid-sized companies (SMEs) when implementing GPS. An important objective is therefore to find ways for associations and large companies to support SMEs.

For example, all relevant information on, say, toxicology and technical guidelines on risk assessment is stored on a central information portal on the ICCA website or on the website of member companies such as BASF. All co-producers can then use the information free of charge for their risk assessments.

The website doesn't however publish the complete study on a substance but only the information needed for a safety assessment. "This isn't enough for the data to be used commercially, for example to register a substance under REACH, so the companies involved do not need to fear any competitive disadvantage", explained Kayser. If interest is shown in using the studies for registration purposes too, they can be exchanged on the

basis of a simplified compensation scheme between companies. This does of course not invalidate existing compensation agreements, for example in REACH consortia.

Another service for SMEs are special workshops and training programs currently offered both in Europe partly in cooperation with the EU Commission and also worldwide. In practice-related exercises, these explain and simulate the individual steps involved in risk assessment and risk management. Experts from associations and big companies such as BASF act as local trainers and contacts. "The response to these workshops has been very good", emphasized Kayser. "In particular contributions by speakers from companies who can offer practical examples and extensive experience in implementing GPS are seen as very positive and extremely helpful."

As an additional support, the ICCA is considering establishing a network of experts, who could answer technical questions about risk assessment or about drawing up GPS safety summaries. In addition, the German chemical industry association (VCI) in collaboration with member companies will be developing a German format for safety summaries based on the eSDS. This will make them easier to compile and keep extra work to a minimum.

"Risk assessment doesn't involve any extra work for companies."

KNOWLEDGE TRANSFER WORKS

How successfully the transfer of knowledge between big, medium and small companies can work and thus improve product safety is shown by the "1+3" project, which BASF initiated in China in 2006. Here, sustainability standards were passed on to partners in the value chain. BASF experts formed a team with three business partners to exchange principles, established practices and experiences in areas like product safety. The project pro-

duced a snowball effect, in which the SMEs taking part actively continued the project by each inviting three customers from their value chain to exchange experiences. In this way, in just two years more than 55 companies had taken part in the project. Due to this outstanding success, it was recognized by the United Nations Global Compact in 2008 as a best practice case study.

Customers depend on Easy-to-access and Comprehensive Sources of Information

The Global Product Strategy applies to all companies in the chemical industry regardless of where, how much or what they produce. This means not only large companies higher up the supply chain but small and mid-sized ones will implement GPS too. Like Follmann & Co. in Minden, northern Germany. Around 280 employees manufacture and sell products such as printing inks for paper coating, products for coating wallpaper and technical textiles or adhesives for wood and paper. How is GPS seen here? We talked to Dr. Julia Szincsak, head of Environment and Safety:

Ms. Szincsak, Follmann is above all a manufacturer of preparations and thus also a customer of the chemical industry. Is GPS useful for you too or do you just regard it as more bureaucratic overhead?

On the contrary, GPS is very helpful to us. Although, as a manufacturer of preparations, we are one of the companies that are lower down the supply chain, we are on the other hand one of the first to be faced with concerned consumer enquiries. Many of our products go directly into end consumer products. So the use of chemicals is naturally a delicate issue and confidence in the quality and safety of our products a crucial factor. It's precisely the increased transparency offered by GPS that strengthens the relationship of mutual trust with our customers and that's the foundation of our long term

success and hence also for the success of our suppliers.

What would really help you?

The GPS safety summaries and the web portal are particularly interesting for us. I can well imagine that chemical industry customers in the supply chain will use the portal as a source of information even more than the consumers. Every day we get customer enquiries about consumer protection. That's why we depend on easy-to-access, solid and comprehensive sources of information. Currently we are primarily using the BG Chemie hazardous substances database. However it mainly offers us information about the hazardous potential of a substance and not information about its positive properties, benefits and alternative applications.

What information should the safety summaries contain?

It would be incredibly helpful to us if by responding to a customer enquiry we could leverage easy-to-understand examples which place the substances in our every day products in relation to nature. Many of what appear to be a harmful substance also occurs in nature. This means, for example, when we get an enquiry about our wood glue we could compare the formaldehyde concentrations of the glue with formaldehyde emissions from natural wood. In addition information about other areas of application of a substance would also contribute to improve our customer communication, for example whether the substance is also used in food or cosmetics and whether in some cases even higher concentrations are permitted there.

GLOBAL PRODUCT STRATEGY AT BAYER

Value-added through Product Stewardship

Product Stewardship is a top priority for Bayer. To obtain maximum leverage and attention for the Global Product Strategy, Bayer channels communications through its established *BayCare*-platform. Experience has shown that targeted communication is the key to successful implementation: supply chain outreach programs demonstrate that GPS and Product Stewardship is a value-added service.



Dr. Wolfgang Plischke,
Board Member
Bayer AG

“Environmental protection and the judicious use of natural resources, the health of our employees and safety at the workplace are essential elements of our corporate policy. As part of our commitment to sustainability we also specifically endeavor to ensure that consideration is given to these requirements along the entire value chain – in particular among our customers. The safe handling and application of our products is thereby at the very focus of our activities, which include in particular the transparent communication and distribution of information on the safety of our products.”

commitments and procedures, customized to account for regional needs, laws and language. Beginning with the North American regional pages in English, a Latin American regional section was recently added in Spanish and further regions in appropriate languages will be added as Bayer drives its implementation of GPS forward.

COMMITMENT AND WEBSITE

The safety and compatibility of its products is a top priority for Bayer, and consequently it was among the first companies to sign the Responsible Care Global Charter, thereby endorsing the Global Product Strategy (GPS) in 2006. Through GPS, the chemical industry, as a whole, can demonstrate its commitment to product stewardship, whilst at the same time enabling companies to identify, pursue and communicate their own individual priorities and implementation.

Bayer has already been successfully communicating its Product Stewardship activities to customers and other stakeholders through the *BayCare*-platform since the year 2000. In order to gain maximum leverage and attention for GPS, the company therefore decided to channel its communications through this well known and well established brand, and link to it directly from the corporate Bayer AG website (Fig. 1). Experience has shown that targeted communication is the key to successful Product Stewardship. Communication strategies and contents therefore need to be customized to address the needs – and lan-

guage – of the dialogue partners. The *BayCare* site is correspondingly divided into worldwide and regional sections. On the *BayCare* Worldwide pages information is provided on global commitments, policies and procedures (Fig. 2). The regional sections address the implementation and communication of these

PRODUCT SAFETY ASSESSMENT

The cornerstone of Bayer's Product Stewardship and GPS implementation is the product safety assessment and management process, which is described in detail on the *BayCare* Worldwide pages (Fig. 3). The product prioritization process is based on the International Council of Chemical Associations' (ICCA)

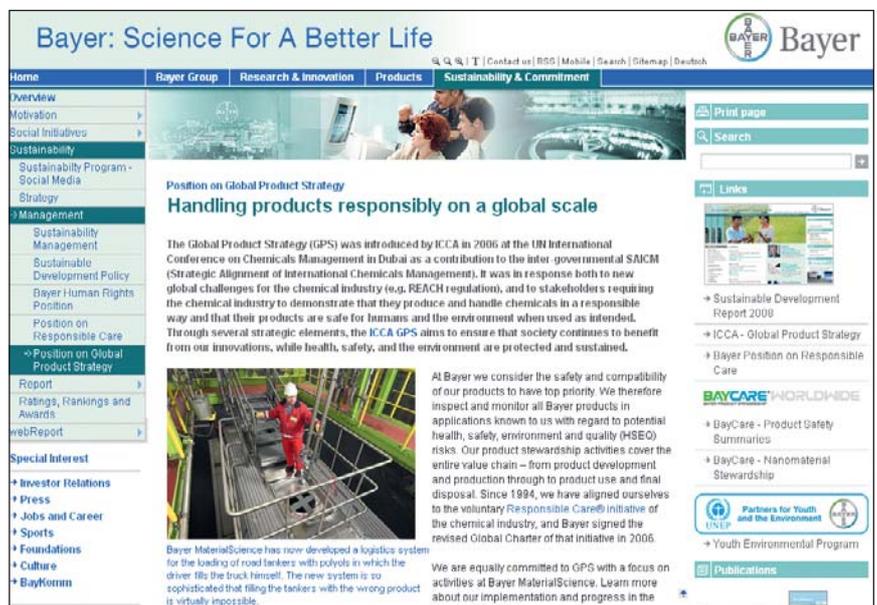


Fig. 1: Bayer AG GPS website – www.bayer.com/en/position-on-global-product-strategy.aspx



Fig. 2: Bayer's BayCare Worldwide website - www.baycareonline.com/product_safety_summaries.asp

languages and laws. More importantly, the tools are also used in targeted supply chain outreach programs for conducting presentations and workshops for customers and logistic service providers on safe logistics, handling, use and disposal of Bayer products. Best practice case studies of two such outreach programs in NAFTA and Asia-Pacific are given below.

CUSTOMER SITE EVALUATION PROGRAM IN NAFTA

Continuing concern for customers' safety led Bayer MaterialScience LLC (BMS) to develop a program that has now been recognized as an industry best practice for developing literature and training aids to educate customers about how to safely receive, unload, store and handle BMS products. In 1996, a trial program was conducted involving proactive consultations at five existing customer sites in USA that were purchasing bulk volumes of toluene diisocyanate (TDI) from BMS. Through this trial program it became clear that there was not always an adequate awareness of the applicable requirements and best practices for receiving, unloading, storing and handling TDI products.

Global Product Stewardship Guidelines, and enables the identification of priority chemicals for risk characterization. The identification and evaluation of potential hazards and exposure risks for chemicals in commerce is performed through the risk characterization process. Depending on the level of potential risk identified in the risk characterization process, appropriate risk management actions are then implemented. These could include recommendations for personal protective

equipment, engineering controls or even limiting specific applications. Risk management actions also include developing tools for risk communication, including Material Safety Data Sheets (MSDS), documents on safe transport, logistics, handling and disposal of the chemicals and, in future, the new Product Safety Summaries (PSS) introduced under GPS. These risk communication tools can be accessed from the regional BayCare resources, since they take account of local conditions,

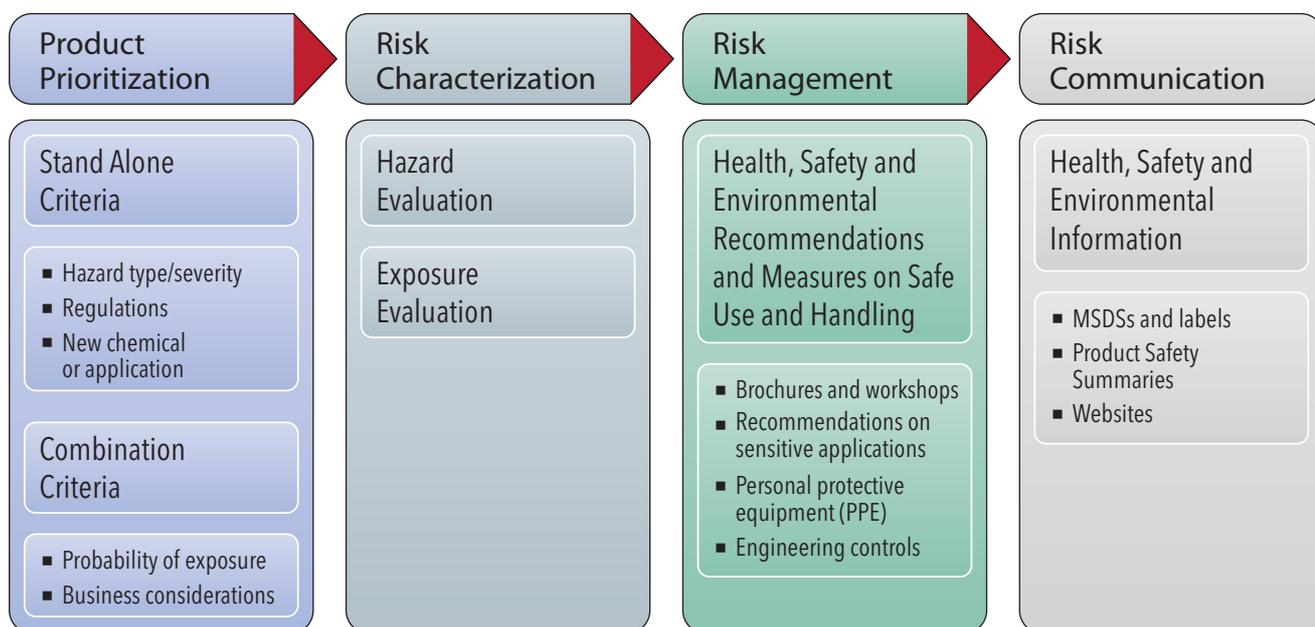


Fig. 3: Product Safety Assessment and Management Process

GPS at Bayer

The program formally started in 1997 to provide assistance to customers who had never received a bulk delivery of TDI. By 2000, it became apparent that customers receiving diphenylmethane diisocyanate (MDI) and other BMS reactive raw materials also needed the same type of assistance. The Customer Site Evaluation Program was therefore expanded to include all BMS customers of polyurethane and coatings raw materials in USA, Canada and Mexico (Fig. 4).

The program provides customers with information and guidance on proper equipment, practices and procedures for receiving, unloading, storing and handling BMS products as well as on-site assistance with initial deliveries to our customers. Key aspects of the program are:

- Development of written procedures and practices for safe handling of products;
- Providing assistance in advance of the initial delivery to ensure the customer's systems meet minimum requirements;

- Providing on-site assistance with initial deliveries to ensure customer employees are well trained, carrier obligations are communicated, and an expert is present should a problem occur;
- Collaboration with existing customers to ensure all receiving sites understand the best practices for receiving, unloading and storing chemicals and that all sites have access to all applicable literature and training aids.

To date, BMS safety experts have visited more than 700 new or existing customer locations in NAFTA where they have trained more than 2,200 customer employees how to safely receive, unload, store and handle bulk shipments of BMS products. BMS has received very positive feedback from these customers and, in some cases, customers indicated they made their buying decision based upon their participation in this program. Through this program, a significant amount of literature and training aids have

been developed and published on the *BayCare*-platform, Center for the Polyurethanes Industry and the International Isocyanate Institute. Additionally, the program literature is available in English, Spanish, Portuguese, French and Chinese to enable transferability to other regions.

ON-SITE TRAINING PROGRAM IN ASIA-PACIFIC

The rapid economic growth in the Asia-Pacific region over the past years generates new business opportunities for new and existing customers using products from Bayer MaterialScience (BMS). However, these customers may not be fully aware of the potential risks of using such products.

To address this, BMS in China began developing a product safety training program for customers sourcing coating and adhesive raw materials in 2006. As in the NAFTA region, this supply chain outreach program has subsequently been expanded to cover coating, adhesive and polyurethane raw



Fig. 4: Supply Chain Outreach in NAFTA. Mark Wilson from Bayer MaterialScience (on left) conducts on-site training for a group of customer employees.



Fig. 5: Supply Chain Outreach in Asia-Pacific. Lily Sun from Bayer MaterialScience conducts on-site training for customer employees.

materials, and to cover ASEAN countries and India. Key aspects of the program are:

- Clarification of the customers' needs through a previsit questionnaire, to enable a customized program to be developed;
- On-Site, but before the training, a plant safety walk through is conducted, with focus on activities and places where BMS products are being handled, i.e. storage, handling and waste disposal. At the same time, general aspects such as house-keeping, workplace conditions and safety facilities are also observed, and suggestions for improvement summarized in a Visit Report;
- Safety training is targeted on the properties of the purchased materials and procedures for their safe handling, storage, logistics, disposal, and emergency response;
- Real cases or incidents of the visited plant are used for discussion and learning;
- Badges for monitoring airborne aromatic isocyanates as well as a set of personal protective equipment are provided to

customers as sample. Posters and other reference literature in electronic form are also provided.

The training program now targets users and distributors separately. To date, about 130 training sessions for customers and distributors have been conducted in China, ASEAN and India, with over 3,400 customer and distributor employees being trained in total (Fig. 5).

Through active feedback dialogue with its customers, BMS has achieved a very high degree of customer satisfaction. On-site visits and training is exactly what the customer wants to increase the awareness of best practice among its employees.

BMS training is perceived as targeted, practical and informative. As in NAFTA, the customers in Asia-Pacific consider this a value-added service which, in addition to price, quality and technical service, favors a purchasing decision based on the perspective of safe handling and use of BMS products.

BAYER: SCIENCE FOR A BETTER LIFE

Bayer is a global enterprise with core competencies in the fields of health care, nutrition and high-tech materials. The company's products and services are designed to benefit people and improve their quality of life. At the same time Bayer creates value through innovation, growth and high earning power. The Group is committed to the principles of sustainable development and to its role as a socially and ethically responsible corporate citizen. Economy, ecology and social responsibility are corporate policy objectives of equal rank. In fiscal 2008, Bayer employed 108,600 people and had sales of EUR 32.9 billion. Capital expenditures amounted to EUR 2.0 billion, R&D expenses to EUR 2.7 billion. For more information, go to www.bayer.com.

GPS at Dow



Dow is committed to implementing the Global Product Strategy: the Böhlen, Germany manufacturing site.

A Matter of Responsibility

The global chemical economy needs global standards for product responsibility. This is not merely a political and social requirement, but increasingly a question of economic necessity and of competition.

For Dow, product responsibility is an essential component of its comprehensive sustainability strategy which is one of four constituting elements of the company's strategy. The successfully met or exceeded company goals for environment, health and safety, originally presented in 1995, are tangible expressions of the sustainability strategy. In 2006, they were revised and communicated externally as Dow's 2015 Sustainability Goals focusing on a broader, even more ambitious set of targets.

Chief among the 2015 goals, in the context of product responsibility, are goals for 'Product Safety Leadership' and 'Sustainable chemistry, so Dow's "cradle-to-cradle" concept is firmly integrated into the business strategy of the company. Dow is committed to applying its

expertise in science, technology and chemistry to create solutions that address some of the world's most pressing challenges in areas such as climate change, energy, water, food and nutrition, health, environment and product safety.

PRODUCT RESPONSIBILITY AS AN EXPRESSION OF COMPANY PHILOSOPHY

Against the backdrop that 95 percent of the goods manufactured worldwide are made with the support of chemistry and chemical products, responsible management is essential. For this reason Dow ensures that processes for the manufacture, storage, transport, utilization, disposal and recycling of products are aligned to by parameters of human health, safety and environmental responsibility. For its global activities around prod-

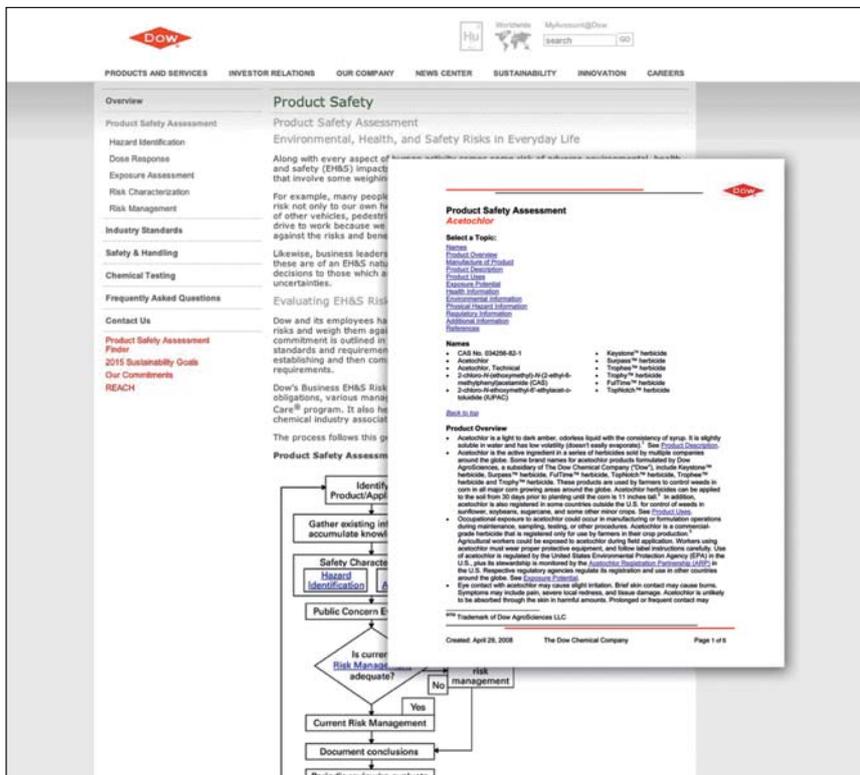
uct safety the company makes available substantial employee and financial resources. Dow annually spends tens of millions of dollars and employs over 300 people in this area.

The global chemical industry has committed to implement the Global Product Strategy (GPS) by 2018. It is an essential building block in the framework of product responsibility. GPS complements and builds on existing initiatives, such as the Responsible Care Global Charter, and represents the global chemical industry's contribution to the Strategic Approach to International Chemicals Management (SAICM) of the UN environmental protection program. In Europe, and hence also in Germany, GPS is mainly implemented by the mandatory regulations of the REACH legislation.

IMPLEMENTATION OF GPS

Dow is committed to help GPS be successful in its practical implementation. The company takes a leadership role in the chemical industry and will contribute to embedding product responsibility in all areas along the value chain. Thus, outlined in the company's 2015 Sustainability Goals, Dow is determined to make publicly available safety evaluations of its products that contain both safety-related basic information and risk evaluations.

In 2005, Dow was the first chemical company to establish a specific website for this purpose: www.dowproductsafety.com. On this website, Dow has made its product safety processes and information more transparent and readily available to the public through Product Safety Assessments (PSAs). Written in non-technical language and covering topics such as basic hazards, product uses, potential for exposure-risk and risk management, the PSAs are intended to offer the public general information about chemical products or product families. PSAs complement Dow's existing practices to make material safety information known to customers to ensure safe handling and that the products will meet safe conditions of use. As of December 2009, more than 230 detailed PSAs can be viewed at www.dowproductsafety.com. There is an impressively



The screenshot displays the Dow Product Safety Assessment website. The main content area features a flowchart titled "The process follows this general Product Safety Assessment process" with steps: Identify Product/App, Gather existing information, Safety Characterization, Hazard Identification, Public Concerns, Is current Risk Management adequate?, Current Risk Management, Document conclusions, and Periodic review/evaluate. The right-hand side shows a detailed "Product Safety Assessment" for Acetochlor, including a list of names (Acetochlor, Acetochlor Technical, etc.), CAS numbers, and a "Product Overview" section describing its use as a herbicide in corn crops and safety precautions.

Product Safety Assessments can be downloaded from www.dowproductsafety.com.

high interest in them: to date, nearly 70 PSAs were downloaded 30,000 times by people in 145 countries. At this time Dow's published PSAs have covered around 75 percent of its priority compounds. For comparison: the industry average is about 26 percent. By 2010, Dow

will have made available the safety evaluations for all priority compounds, and by 2015 an estimated 850 safety evaluations covering the complete product portfolio will be published.

Wim Jetten, Director Environment, Health and Safety, Dow Europe GmbH

"Dow clearly accepts its leading role in the area of product responsibility. Within the framework of the Responsible Care Global Charter and Global Product Strategy, and in line with our 2015 Sustainability Goals, we make a considerable voluntary contribution to increasing product safety.

I see three definite advantages in GPS: first, it is a truly global program. It is designed to drive product safety internationally. Secondly, GPS is not limited to manufacturers of chemicals, but reaches out along the entire product and value chain – a very important element as for us product responsibility

does not end at the fence of our site. Thirdly, we not only gather data, but perform a risk evaluation which is available to producers, converters, and end users. I consider this an important step in building trust.

For sure, the key challenge is to implement GPS globally. For this reason a main focus of our future activities is capacity building in the developing countries."



GPS at Dow

DOW'S GPS COMMITMENT IN GERMANY
While making data available is an important element of transparent and continuous communication and knowledge transfer, process innovations such as the cradle-to-cradle approach or new business models like chemical leasing are equally important.

CRADLE-TO-CRADLE APPROACH

The example of SAFECHEM demonstrates how Dow is implementing product responsibility in Germany. SAFECHEM, a Dow subsidiary, based in Düsseldorf, has specialized as a service enterprise in the safe use of chemicals and has developed a comprehensive risk management approach for the handling of chlorinated solvents. These highly active materials are used to clean metal parts in automobiles, aircraft and electronics. Recognizing that chlorinated solvents are carrying product specific risks, SAFECHEM previously developed an

improved handling process by applying the cradle-to-cradle approach, primarily focused on the recycling principle. In order to assume responsibility along the whole closed-loop supply chain – from cradle to cradle – SAFECHEM conducts a service alliance with the manufacturer, qualified distributors, leading cleaning equipment manufacturers and certified waste management companies. This cooperation between the different partners is a key requirement of an effective risk management system.

The core of the supply chain is the SAFE-TAINER™ system, a double-walled safety container system for the safe transport, handling and storage of fresh solvents and the take back of used solvents. The system is connected to a hermetically closed cleaning machine. This process reduces emissions and solvent spillages to basically zero. Active solvent maintenance, including on-site test methods, lab analysis and stabilization packages enable cus-

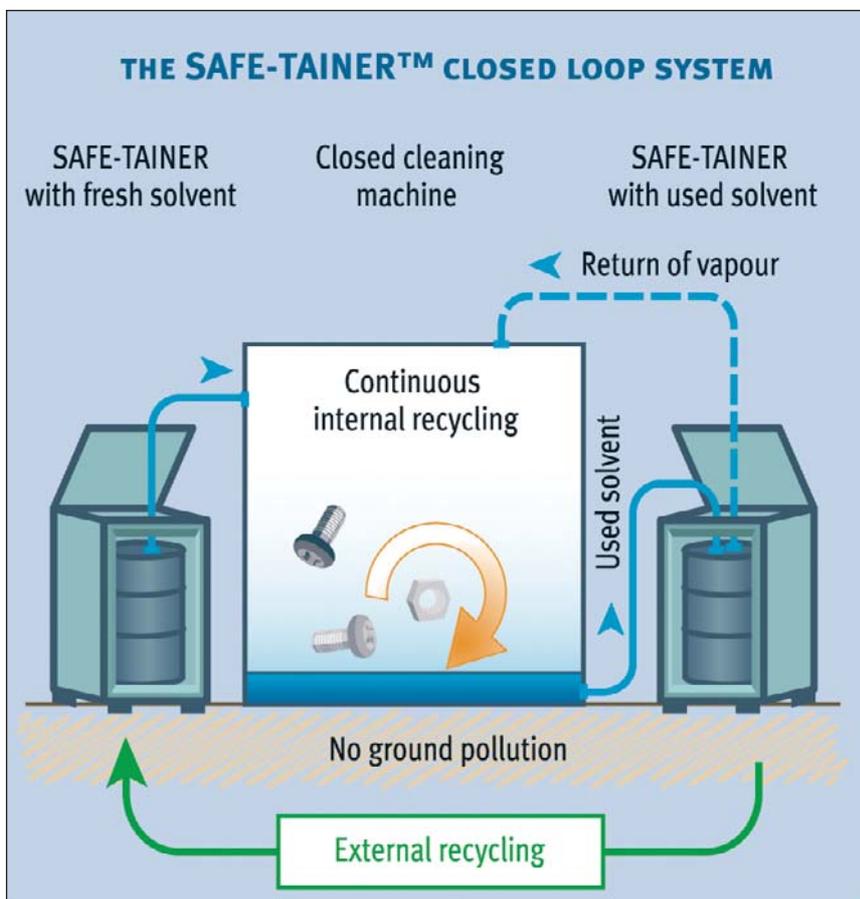


tomers to benefit from internal recycling within the cleaning machine thus keeping the solvent longer in the process – an important factor of the cradle-to-cradle approach and deriving as the result of the education dialogue with the customer.

NEW BUSINESS MODEL

In addition to the SAFE-TAINER™ closed-loop system, SAFECHEM continues to drive new sustainable business models like chemical leasing approaches, which offer clear environmental and health benefits.

The chemical leasing takes the company's focus on performance and service one step further: invoices to the customer are based on product performance instead of solvents consumed. For example, chemical leasing changes the source of a chemical supplier's revenues from being based on the volume of sold solvents to being based on the volume of cleaned metal – a clear paradigm shift. When revenue is based on the efficiency of the cleaning services provided, solvent consumption becomes a cost factor for the supplier instead of the customer. Chemical leasing then creates a unique situation in which the supplier and its customers share the same objective: maximizing the efficiency of the cleaning process and reducing the solvent expenditure.



The SAFE-TAINER™ closed-loop system

Thanks to this business model, companies can remain well below official requirements with emission levels far below the imposed thresholds without compromising the quality of the products or services.

As a result of these measures – the cradle-to-cradle approach and chemical leasing – the use of solvents in cleaning processes has been reduced by 90 percent over the past decade while the quantity of cleaned parts increased.

ACTIVE KNOWLEDGE TRANSFER

Transparent information and knowledge transfer is a key concern of the GPS. SAFECHEM launched CHEMAWARE™, a knowledge platform providing information about the safe and sustainable use of solvents in 2008. The SAFECHEM service alliance partners will participate in this initiative and contribute their specific know-how from their roles in the solvent closed-loop supply chain. CHEMAWARE will help ensure that solvents are used safely and responsibly throughout their life cycle helping the cleaning industry in protecting their employees and the environment.

GLOBAL COOPERATION

While in Germany the focus is on close collaboration with suppliers and partners, capacity building is of decisive importance on an international level. If GPS is to lay the foundation for a uniform global level of product responsibility, all enterprises and organizations involved in the handling of chemicals must learn how this can be implemented in practice.

Dow's engagement is evident as shown by its business practices in China:

- In September 2008, a landmark agreement between MEP officials, UNEP and Dow was signed in Beijing, creating a project designed to support safer production of chemicals and enhance safety management systems in pilot industries. The first of its kind in China, the partnership will also assist organizations charged with improving local awareness and preparedness for industrial environmental emergencies.



Safe production and safe handling of products have top priority at Dow.

- The GPS focus on the value chain is reflected in a project that involved a week long workshop held in China, led and sponsored by Dow to train 60 of this country's Ministry of Health officials in risk assessment techniques.
- Another example spotlights the role of capacity building in improving worker safety in China. In 2006 Dow began working with the State Administration of Work Safety (SAWS) to foster and promote better understanding and awareness of chemical safety management among subject matters experts (SMEs) from various industries nationwide. SAWS and Dow identified 34 SMEs engaged in either storing or transporting liquid chlo-

rine or liquid ammonia and have reached about 4,000 staff through more than 25 training sessions in hazardous chemicals supervision. The company has provided chlorine and alkali experts with global experience to train their Chinese counterparts in developing emergency and contingency strategies. Dow has also translated the "Chlorine Manual", published by the Chlorine Institute, into Chinese. The manual offers an important reference for implementing chlorine and alkali production safety standardization.

Through such projects Dow delivers on a central idea of the Global Product Strategy and contributes to homogenizing the level of product responsibility worldwide.

The Dow Chemical Company



Founded in 1897 in Midland, MI, Dow is a leading chemical company with sales of USD 57.4 billion (2008). Dow delivers a broad range of products and services to customers in 160 countries. With its approximately 46,000 employees worldwide, the Company constantly contributes to improving what is essential to human progress. Dow has been active in Germany since 1960. With over 6,000 employees and sales of EUR 4.8 billion (2008), Germany today is the largest market and most important manufacturing location outside the US. Dow is among the 10 largest US-American companies in Germany.

Learn more at: www.dow.com

GPS at Evonik Industries



Sure care: creams with ingredients from Evonik

„You have to earn Trust“

Thanks to its strong corporate citizenship efforts and its compliance with all legal requirements, the German chemical industry plays in the major league when it comes to safety standards. But unlike sports, everyone should be playing in this league, and as many as possible should be standing on the victory podium – the ultimate goal, after all, is safety and trust. This is why Evonik Industries strongly supports the Global Product Strategy. Dr. Klaus Engel, chairman of the Executive Board, explains why the GPS is so important, even to companies subject to REACH.

Dr. Engel, REACH, GHS – and now GPS too?

Yes! The EU is not an isolated market. The worldwide chemical industry has to ensure that its products are safe, no matter who produces them or where. This can be done only with the kind of globally standardized and binding chemicals management system promoted by GPS. It is the only way to ensure that all companies worldwide produce and use chemicals safely and without adversely affecting health or the environment. It is why Evonik strongly supports the Global Product Strategy and actively promotes its implementation. It's an essential part of our voluntary obligation as a party to the Responsible Care Global Charter.

From the perspective of the EU, then, is GPS primarily for manufacturers who aren't affected by REACH?

Essentially, this project is about product stewardship and building the public's trust in the safety of chemicals – an issue that concerns us all. If you can't gain the public's trust and acceptance, you won't meet success in business.

And trust is something you have to work on continuously. In an extreme case, this may mean that a company would have to announce restrictions on the use of products when the risk cannot be controlled. While companies in the EU have an advantage with GPS – thanks to REACH – it would be dangerous to rest on

our laurels. For us, it's a reality check when products come on the market that could pose a threat to individual health or the environment. Experience has shown that not only the company in question is affected, but so is the entire industry – including the sector that's active in the EU.

GPS is voluntary. Can that work?

As we've seen, national or international laws and directives, such as those of the EU, fail to achieve a globally uniform chemicals management system. Every country or region handles occupational, environmental, and health protection individually. That applies not only to legislation, but to product stewardship too.

“In a sense, GPS is a chemical industry template that can be used to design more harmonized, internationally-focused chemicals legislation that doesn't change from border to border.”

Chemical companies must close these gaps themselves. They have to offer uniform and binding rules that provide the basis for handling hazardous materials safely.

In your view, what's the biggest advantage of GPS?

Global Product Strategy is international and ensures that the same rules apply to everyone. It's also pragmatic, because it focuses not only on quantity, but also on risk. And, in most cases, the risk posed by certain chemical sub-

stances can be kept to a minimum. Consider lead, for example. The heavy metal is toxic, but it has served safely as a component of car batteries for a number of years because we've been taking the proper precautions. This is why GPS is so important, even for companies active in the EU.

And what does this mean for Evonik?

We'll implement GPS extensively in our company, and actively support ICCA in promoting GPS.

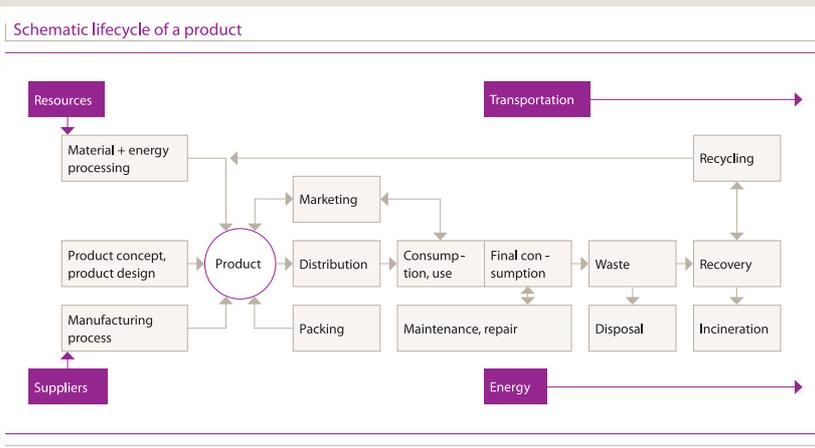


Evonik Industries is the creative industrial group from Germany which operates in three business areas: Chemicals, Energy, and Real Estate. Evonik is a global leader in specialty chemicals, an expert in power generation from hard coal and renewable energies, and one of the largest private residential real estate companies in Germany. The industrial group is active in over 100 countries around the world. In its fiscal year 2008 about 41.000 employees generated sales of about EUR 15.9 billion and an operating profit (EBITDA) of about EUR 2.2 billion. www.evonik.com

Handling Chemicals Responsibly

Evonik is committed to protecting individuals and the environment, as expressed in its ESH values. The company also explicitly requires that its Chemicals Business Area implement product stewardship according to the specifications of the Responsible Care Initiative of the chemical industry.

To meet its product stewardship obligations, Evonik has used the Chemicals Management System since 2001 to evaluate its products by a method similar to a lifecycle analysis. The key elements of the system are risk assessments and estimations to which people and the environment can be exposed to a substance while handling or using it. A product's risk can be estimated from this information. The risk, in turn, allows us to draw conclusions about the adequacy of current safety practices and whether improvements should



be made. In special cases, such analyses can result in restrictions on the use of Evonik products.

Through its membership in the European Centre of Ecotoxicology and Toxicology of Chemicals (ECETOC), Evonik is collaborating on toxicological issues and

developing methods for assessing the risk of chemicals, and is also an active dialogue partner for the OECD in matters related to the toxicological evaluation of chemicals.

GPS at Evonik Industries

What kind of support will Evonik provide?

We'll publish our GPS-relevant information from REACH and provide this information to other companies for risk assessment. We value the trust in our products so highly that we support an intensive exchange of information. And by making available product data that others would otherwise have to gather themselves, we are also helping reduce the need for animal testing.

Are you also involved in the worldwide implementation of GPS by the ICCA?

We are collaborating on the GPS steering committee – the Chemical Policy and Health Group – and are actively designing the working principles and conditions of GPS. We'll also hold workshops with ICCA and other companies to do our part for "capacity building."

To this end, we are planning basic workshops in Russia and Eastern Europe in 2010 to convey the basics of GPS to the chemical

"By making available our GPS-relevant product data from REACH that others would otherwise have to gather themselves, we are also helping reduce the need for animal testing."

industry there, as well as Train the Trainer workshops in Brazil and Asia. The latter events aim to train and advise companies and associations about methods. These workshops are designed to ensure that all companies worldwide have the same level of knowledge and use uniform methods for assessing the risk of substances.

This is why we also participated in the CEFIC pilot project, which used practical examples to test the methods for evaluating the risks of products and deriving safety measures.

How will Evonik implement GPS?

Our first task is to inform our employees – Responsible Care and GPS can work only when the employees understand them and are convinced they will succeed. We've already taken the first step and reported about GPS in our employee magazine – detailing its genesis, objective, and ways we are implementing it.

And how are you implementing it?

GPS means that companies all over the world must ensure the safety of their products. And

Actively promoting GPS Worldwide

Evonik Industries has systematically expanded its commitment in the Greater China region – China, Hong Kong and Taiwan – in the past few years: with 19 companies and 15 production sites, the Chemicals Business Area now has a strong local presence. In all, some 4,000 employees of the Evonik Group generated sales of more than EUR 820 million in 2008, with the People's Republic of China accounting for about 85 percent of this figure.

The company has made its commitment not only in the area of production, but also in product stewardship: „As part of the Responsible Care Global Charter, we see it as our duty to support and actively promote GPS internationally, beyond the borders of our company including China," says Dr. Volker Soballa, head of product

stewardship for the Chemicals Business Area in Evonik's Environment, Safety, Health Division. The China International Symposium on Work Safety and Sustainable Development of the Chemical Industry, which was held in October, 2009, in Shenzhen, China, offered the first opportunity to do just that. Organized by the Chinese National Center for International Exchange & Cooperation in Work Safety (SAWS) and the China Chemical Safety Association, the two-day event drew more than 200 experts from all over the world. Soballa and his colleague Dr. Zhu Yutong, general manager of Evonik Sanzheng (Yinkou, China), used the symposium to report on the Complete Work Safety System and GPS, and present a Best Practice example for product stewardship.

A second focus of GPS support is the region of Eastern Europe, where Evonik is participating in the EU Commission's From REACH to Global Product Strategy (GPS) and Product Stewardship workshops in Sofia, Bulgaria in September 2009 and in Zagreb, Croatia in December, 2009.



Photo left: The China International Symposium on Work Safety and Sustainable Development in Shenzhen. Photo right: Dr. Volker Soballa.

that can happen only when they explain the products to customers and the public. I see a need for action not only regarding customers – they receive extensive information from us in the form of continuously updated safety data sheets – but more importantly with the public. For the public, we've already published summary information on our U.S. Web site that provides valuable information on the safety of nearly 100 chemicals in easy-to-understand language. Our next step is to add information on handling and publish that information in each of the other regions.

But that's just the beginning. Gradually, whenever we register products under REACH, we also intend to prepare the data for GPS – to provide information to other companies and also to the public. By the end of next year, for example, we will have registered about 180 substances under REACH, whose risk assessments we'll then make accessible in line with GPS. By 2018, we will have registered nearly

1,000 substances under REACH, so the public will also be able to find clear information about our substances at our Web site.

How much effort will be required?

The data requirements under REACH are enormous. While some used to consider this a bother, for GPS, it's now a blessing. Under REACH, all dangerous substances produced in quantities greater than one metric ton per year must be considered and appropriate management measures proposed for their safe use. That means that all data are available and must be prepared for the public in accordance with GPS.

The effort will also be limited for small-volume substances. The Chemicals Management System Evonik launched years ago requires us to evaluate all our products for any danger they could pose to humans and the environment and to supply our customers with detailed information on how they can safely use these

products. That means that we have all the information necessary to ensure safe handling. Here, too, we must make the risk assessment and the safety measures derived from it available as needed.

How do you judge the success of GPS – for example, in developing countries?

I'm completely convinced that most companies will recognize the advantage of a worldwide standardized approach to assessing the risk of chemicals. For me, it's very simple.

Our products always come with a promise to the customer: that they will perform as expected and not harm people. We have to fulfill both promises, because that's the only way we can permanently secure our business foundation. To this end, we need the Global Product Strategy.

Sustainable Use of Cyanides

CyPlus GmbH, a wholly-owned subsidiary of Evonik Industries AG, has proven for decades that the risk posed by chemicals can be safely managed. A specialist in the marketing of sodium and potassium cyanide, CyPlus was the first company worldwide to be audited and certified to the ISO 9001:2000 and 14001 management systems, as well as the International Cyanide Management Code (ICMC).

The International Cyanide Management Code is a voluntary program of the global gold mining industry to ensure extremely high and uniform standards of safety, environment and quality worldwide in the use of cyanides in gold mining and thereby prevent serious accidents.

For CyPlus, this commitment begins with its customers, the mining companies. Customers are selected according to strict,

measurable criteria. If a customer cannot meet these criteria, CyPlus does not do business with that company. CyPlus offers complete support to existing customers in implementing the Cyanide Management Code. But more than that, the company also sets standards for the entire industry. „We hire only those logistics service providers who meet comprehensive requirements for reliability and quality in all transport-related activities,“ says managing director Frank Harenburg. This includes testing according to the Safety and Quality Assessment System (SQAS) of CEFIC, the European Chemical Industry Council.



The chairman of the Executive Board of Evonik Industries AG, Dr. Klaus Engel



Iron oxide pigments are used in the coloring of a wide variety of products such as concrete elements, coatings and plastics.

LANXESS – PRODUCT STEWARDSHIP IN PRACTICE

Flying the Colors for the Environment

The name says it all: LANXESS operates a production facility for iron oxide pigments in the Brazilian city of Porto Feliz, which translates as “happy harbor”. The products manufactured here are sold worldwide and make life more colorful. Porto Feliz is a prime example of how the specialty chemicals group puts product stewardship into practice.

Bayferrox® and Xadrez® – the brand names for the products – are particularly popular in the construction industry and are used for the integral coloration of architectural concrete and the coloration of countless other materials. The iron oxide pigments are distinguished by their high quality, can stand up to any weather and are environmentally compatible. They protect the Eiffel Tower against corrosion, make artificial turf as green as its natural counterpart, are used to mark bicycle paths and to color asphalt.

The standard is high. Besides increasingly stringent requirements in terms of quality

and economy, LANXESS iron oxide pigments must also satisfy strict environmental requirements. The company makes adjustments throughout the process chain to further improve product safety, more effectively reduce the burden on the environment and enhance application utility to the customers. The production facility in Porto Feliz has made a name for itself with iron oxide yellow, a pigment with a wide range of applications. Thanks to the special properties of this product, fewer admixtures are required, the potential solids content is increased and the good dispersability reduces energy consumption.

SUSTAINABLE PRODUCTION FROM A TO Z
LANXESS’ focus on sustainable solutions and conservation begins with how the raw materials are obtained. Using scrap iron as the raw material, the pigments are produced by means of air oxidation in iron salt solutions. This process, known as the Penniman process, is environment-friendly and does not pose a health risk to the employees. Waste products that were once sent to the dump for disposal are now the basis for new products. A LANXESS partner completely reconditions them, converting them into a raw material for the steel industry. And iron oxide pigments

that have been improperly stored or became unusable during transport are also completely recyclable. Waste separation and recycling has enabled LANXESS to significantly reduce the overall volume of waste generated at the Porto Feliz site. Thanks to the latest process optimizations, 40 percent less solid waste is generated today than in 2004. LANXESS also uses innovative and climate-friendly methods for energy input. The Porto Feliz site obtains a significant fraction of the energy it needs from renewable resources, such as wood chips from eucalyptus plantations. In the future, energy will also be generated using sugar cane wastes. The ash left over by both processes is sold as natural fertilizer.

LANXESS also places great value on the safety of its employees, devoting roughly 14,000 hours to occupational safety training in 2008 alone. Daily safety meetings contribute to the high safety awareness of the employees, with very satisfying results: Porto Feliz has gone more than 1,600 days without an accident.



Operation Retro Washing

Responsible production – at LANXESS, this also means systematically reducing the consumption of process water. The company launched an ambitious environmental initiative in Porto Feliz back in 2005. The Retro Washing Project critically examined all of the production workflows and identified more efficient processes to reduce water consumption by 47 percent and wastewater generation by 38 percent. The water saved is enough to supply roughly 12,000 households in Porto Feliz for a year.

INTERNATIONAL STANDARDS

Farsighted Commitment

Since responsibility has no boundaries, the products manufactured by LANXESS are subject to the same high quality and safety standards all over the world. Indeed, the company often exceeds the legal requirements applicable locally. In doing so, LANXESS is consciously leading the way in terms of sustainability.



Take synthetic rubber, for example. As of 2010, the sale of tires made using DAE oils will no longer be permitted in Europe and Japan. These plasticizer oils are suspected of being harmful to both the environment and health. As a leading rubber manufacturer, LANXESS is setting an example by banning the use of DAE oils in its worldwide operations. To that end, LANXESS is working with Swedish oil manufacturer Nynas to offer an environmentally friendly alternative in the form of naphthenic specialty oils that have been developed specifically for the manufacture of tires and are avail-

able without restriction worldwide. Since as early as 2006, LANXESS has been switching to alternative oils in its production operations at all its European sites and developing appropriate technologies for its customers in the rubber processing sector. By setting up its own logistics network, the company has now also ensured that production operations in Brazil are free from DAE oils.

TRANSPARENT SUPPLY CHAIN

LANXESS has a responsibility to consistently improve product safety in all areas of business,

GPS at LANXESS

whether rubber, plastics, specialty chemicals or synthesized products. Our product stewardship begins from the very point that we acquire the raw materials and services. LANXESS carries out regular supplier audits in Germany and abroad to ensure that companies operate in compliance with applicable legislation on environmental protection, occupational safety and social standards. The company's internal "Central Product Surveillance" directive governs worldwide tracking of the health-related and ecological implications of raw materials and products so as to help prevent damage to both health and the environment.

LANXESS supports the protection goals of EU chemicals policy and the implementation of the REACH Regulation concerning the

registration, evaluation, authorization and restriction of chemicals. The aim is to ensure that substances are used safely throughout their entire lifecycle. LANXESS completed the pre-registration phase for all relevant substances by the deadline of December 1, 2008. The designated transition timeframes will be taken into account for the subsequent registration phase. In addition, LANXESS is committed to the global harmonization of existing classification and labeling systems. By the end of 2010, the company will classify all the chemicals it uses according to the Globally Harmonized System of Classification and Labeling of Chemicals (GHS) and without applying any lower limit in terms of volume.

A FIRM PLEDGE

With its futureproof products, LANXESS is helping customers from a very diverse range of industries to adapt to new challenges and legal frameworks. The company makes no compromises when it comes to quality and environmental management - worldwide, at 46 sites in 23 countries. LANXESS applies the same standards across the board, a fact that is verified by means of external audits. By 2009, the vast majority of the company's branches had already been certified to at least one of the two ISO standards 9001 (quality management) and 14001 (environmental management). The aim is that all the relevant LANXESS sites will be brought together under a single global certificate in line with ISO 9001 and ISO 14001.

INTERVIEW WITH DR. WERNER BREUERS, MEMBER OF THE LANXESS AG BOARD OF MANAGEMENT

"A Chain is only as Strong as its Weakest Link"

Within the space of just a few years, LANXESS has succeeded in establishing an ambitious quality and environmental management system encompassing globally applicable standards for safe processes, plants and products. In this interview, member of the LANXESS AG Board of Management Dr. Werner Breuers reveals how the concept of product stewardship is put into practice at 46 production sites in 23 countries around the globe.



Dr. Werner Breuers

If the concept of product stewardship is to become a reality, companies must ensure it is properly integrated into day-to-day operations. In your opinion, what are the key factors for success in this respect?

In order to ensure high levels of safety for people and the environment, the first thing we need to do is establish a clear set of regulations that apply right throughout the Group. By implementing its own internal guidelines on quality and environmental policy, LANXESS has taken the obligations set out in the Responsible Care® Global Charter a step further and, in many instances,

is exceeding the stipulated legal requirements. Regulations are one thing, but it is the commitment and sense of identification displayed by each individual that ultimately makes or breaks efforts to ensure Responsible Care. That's why increasing awareness of this shared responsibility among our employees worldwide is a top priority for us. Basically, we consider product stewardship to be an integral part of our innovation strategy. By engaging in intensive discussions with our customers, we develop new, future-proof solutions and products that fulfill the increasing demands made in terms of safety,

environmental protection and costeffectiveness.

LANXESS is represented on every continent. What specific measures and tools have you implemented worldwide?

As a specialty chemicals group, people have to be able to trust us implicitly at all times, from development and production to transportation, storage and disposal. That applies no matter whether we're in Shanghai, São Paulo or Leverkusen.

Many LANXESS products are subject to the German Hazardous Substances Regulations or corresponding EU legislation. In order to pre-

vent any damage to health or the environment, every single commercial user or processor of our products receives a materials-based safety data sheet with each delivery. As part of this, we take into account the specifications laid down in the REACH Regulation and the GHS system for the standardized classification and labeling of chemicals. The foundations for a more efficient international HSEQ management system were laid a few years back. In 2007, we established an electronic system to enable the systematic collection of key performance indicators worldwide in the fields of health, safety and environmental protection. As a result, we can now monitor and continue to improve the quality and environmental performance of each business unit and site.

How do you communicate the complex interactions between REACH, HSEQ and internal product monitoring to your staff?

The most important thing is to maintain an open, direct and up-to-date communication

strategy using the worldwide LANXESS intranet, for example. Outstanding achievements in the field of occupational and product safety and environmental protection are regularly recognized with the internal Global HSE Award. By awarding this prize, we want to motivate all our employees worldwide to use their creativity to promote safety and sustainability at LANXESS. Our staff are constantly coming up with ideas for improving occupational safety and environmental protection. They submitted more than 2,000 suggestions in 2008 alone. However, it's not just about reducing risks; it's also about developing innovative products that will enable our customers to improve their environmental figures and their safety standards.

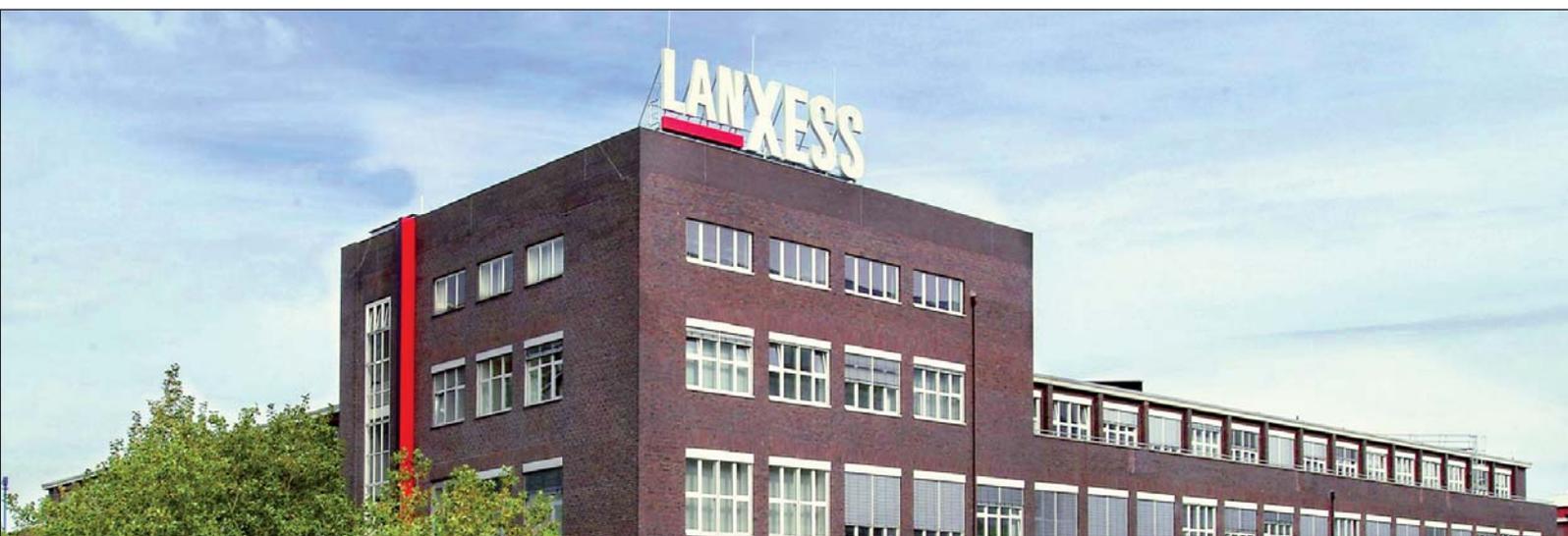
Can you give us an example?

Just recently, the Rhein Chemie business unit succeeded in developing a product that can completely replace the toxic, embryotoxic and carcinogenic hazardous substance ETU in the

rubber industry. In the main, our goal is to offer real added value to customers in a wide range of industries. LANXESS uses its know-how to develop innovative products that benefit society, protect the environment and also unlock new added-value potential. Other examples include ion exchange resins for treating drinking water and solutions for climate-friendly mobility.

On a personal level, what do you want the GPS initiative to achieve?

A chain is only as strong as its weakest link. That's why I hope that the chemical industry will take the very particular responsibilities it has in this field seriously. We have to reach a critical mass and encourage more and more companies to back this cause. The GPS initiative can have a knock-on effect on a global scale – and that's why LANXESS is lending its wholehearted support to this project.



LANXESS – Facts and Figures

As one of the leading specialty chemicals groups, LANXESS generated sales of EUR 6.58 billion in 2008. Listed on the Frankfurt Stock Exchange, the company employs around 14,600 people in 23 countries and has 46 production sites worldwide. LANXESS' core business includes the development, manufacture and sale of plastics, rubber, intermediates and specialty chemicals.

Product Stewardship online

Detailed, up-to-date information about LANXESS' activities as part of the Global Product Strategy is available at www.lanxess.com/product-responsibility

Service

Telefax reply form

For a more in-depth look at topics covered in this newsletter or information on other matters of interest to the chemical industry, VCI offers a range of pertinent literature. Please photocopy and use this form to request information by fax. Alternatively, send an e-mail to our reader service department.

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This special 16-page issue of VCI's newsletter for members focuses on the political background for the GPS initiative and explains its content, responsibilities and targets in substantial detail.



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- **BAYER AG**
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- **The Dow Chemical Company**
www.dow.com/commitments/debates/respcaire/index.htm
- **Evonik Industries AG**
http://corporate.evonik.com/en/chemicals/product_stewardship/
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 BASF SE (4-7)
 BAYER AG (8-11)
 The Dow Chemical Company (12-15)
 Evonik Industries (16-19)
 LANXESS (20-23)