

Responsible Care

Product Stewardship

Responsibility and Product Stewardship

A guide for how the company can continually assess and reduce product risks and disseminate information.

The Swedish Plastics & Chemicals Federation

Contents

1 INTRODUCTION	3
2 TO THE CEO	5
2. CHECKLIST FOR THE CEO	8
3 TO THE PRODUCT DEVELOPER	10
3 CHECKLIST FOR THE PRODUCT DEVELOPER	13
4 TO THE TECHNICAL WRITER	15
4 CHECKLIST FOR THE TECHNICAL WRITER	17
5 TO THE PRODUCTION MANAGER	19
5 CHECKLIST FOR THE PRODUCTION MANAGER	21
6 TO THE MARKETER	23
6 CHECKLIST FOR THE MARKETER	26
7 TO THE LOGISTICS MANAGER	28
7 CHECKLIST FOR THE LOGISTICS MANAGER	30
8 WORKSHEET FOR CHECKLISTS	32

Please read this first.

This document has been arranged so you can begin working with it after having read only the introduction and the chapter that particularly concerns you in your position.

Each chapter includes the subheadings Risk Management and Communication. These steps must be observed when you assess and analyse products. The risk management process identifies the risks associated with the product. Thereafter, decisions must be made on how, and to whom, information about these risks shall be communicated.

1 Introduction

A great deal is expected and demanded of companies that make and market chemical products. Everything that happens at a chemical company is always very closely observed by the outside world. Chemical products are used for their effects and reactions for positive purposes, but they can simultaneously constitute a risk to health, safety or the environment. The effects of chemicals are often difficult to observe and it can take a long while before they are noticed. It is critical to also be aware of the negative effects throughout the product's life cycle and to take measures to minimise or avoid them.

Staying a step ahead

Staying a step ahead of environmental standards can bring market advantages. In order to anticipate political measures, it is in the interest of companies to think in terms of the future. Concern for the environment has become widespread in the consumer sector. Environmental policies have also changed, changing from control of production plants and products to a holistic view of the company's total impact on the environment. It is important that the company introduce some form of internal check or audit of its activities within various areas.

Responsible Care, RC, is the chemical industry's commitment to continual improvement in all aspects of health, safety and environment performance. The commitment is based upon openness and credibility. Active application of RC is one way for the chemical industry to stay a step ahead.

Responsible Care

Responsible Care is a concept used for all activities related to health, safety and the environment. RC is not a separate system, but rather encompasses existing and future environment, safety and quality systems. Environmental reports to authorities, environmental annual reports, environmental audits, environmental management systems such as EMAS and ISO 14000, and eco-declarations may be regarded as different ways of accounting for certain aspects of RC. However, the RC commitment extends much further than outside environmental issues to include health and safety aspects, as well as open communication with the outside world.

Product Stewardship

In the past, RC efforts were concentrated primarily on production plants and good results have been achieved. An aspect of RC becoming ever more important is the possible environmental impact of finished chemical products. Responsible Care for a product throughout its life cycle, seen from a holistic, natural life cycle perspective, is called Product Stewardship. This guide is a Swedish extension of the CEFIC (European Chemical Industry Council) guidelines for Product Stewardship.

According to the RC commitment, companies that have ratified the commitment shall comply with ten guiding principles. Several of these principles already address chemical products, among them principles 3, 5, 8 and 9, as below.

Point 3: Minimised risk of disturbances in consequence of its operations as well as minimised consumption of raw materials and energy should be important characteristics of the company.

Point 5: Any new process and product as well as any new information on existing processes and products should be thoroughly analysed with regard of their health, safety and environmental implications.

Point 8: The customers should be supplied with advice and instructions regarding safe transport, storage and use of its products and, when applicable, safe disposal of used products and packages.

Point 9: Suppliers and contractors should be able to demonstrate that they apply rules and routines of equivalent purport as those of the company.

The Guidelines

The guidelines on Product Stewardship show how a company can work concretely with the concept. The entire company must be involved in Product Stewardship. Certain aspects may seem self-evident for some companies. The guidelines are an attempt to take a holistic view and cover legislation as well as other standards that should be met according to the principles of RC. Each chapter stands on its own and is directed to the person at the company who is responsible for the product at a particular point on its way through the company. As a result, certain information is repeated in the various chapters and each contains references to the others. Each chapter concludes with a checklist in the form of a worksheet. The checklists should be seen as examples of the frequently asked questions to which the company should have the answers. Naturally, they must be complemented with the company's own specific questions, based upon the company's situation. The worksheets are formatted with various columns where notes can be made about the current status of each question.

The worksheets can be easily copied or purchased on floppy disk, which allows the Product Stewardship programme to be continually followed-up and revised.

Product liability and producer liability

Product liability and producer liability are easily confused terms. However, they refer to completely different things and must be kept separate.

Product liability refers to the liability to pay damages for injuries caused by products. The term is thus a matter of tort law found in, among else, a special 1993 Swedish act on product liability, based upon an EU Directive. The Product Liability Act covers personal injury and damages to personal property. Injuries affecting companies are regulated by contracts among the parties or through tort law in general.

Producer liability refers not to damages or tort law, but rather to taking responsibility for the final product after it or its package has been used. There is special legislation in this area, which is being successively supplemented with regulations within various product segments.

Environmental awareness in the future

Product Stewardship is a way for the chemical industry to practice long-term environmental awareness and remain a step ahead.

2 To the CEO

In your company, you share responsibility for the company's future business with the Board of Directors. Together, you must inventory the opportunities and risks within the company's field of operations, set objectives, prioritise, and allocate resources to various activities. Furthermore, you must keep customers, employees and society in general informed.

RISK MANAGEMENT

Beyond pure business risk, there are other risks of various nature inherent in your company's operations. Negative events must be prevented wherever possible; the effects of those that occur despite all efforts to the contrary must be ameliorated. Preventive efforts are mainly based on company-wide knowledge and understanding of the company's objectives and priorities. It is also important that personnel have the right competence and work according to well-functioning routines.

The Responsible Care commitment

Most of the members of the Association of Swedish Chemical Industries have joined Responsible Care, RC, the international commitment for the chemical industry. RC entails responsibility for the risk aspects involving production plants and those related to products. Product Stewardship concentrates on the product. The RC commitment is worldwide for both plants and products.

Business ethics and openness

The fundamental precept of RC is genuine care for those who come into contact with your business and to create belief that such is truly the case. This can only be achieved through openness about your corporate values and work methods. It is vital that your company develop and clarify your business ethics and morals and put them into practise. The external world needs to know what your company stands for to be able to trust it. You should also be aware that you will be forced as a result to make decisions and to carefully consider the pros and cons based upon your ethical judgement. In turn, this demands a well thought-out strategy and thorough analysis of how various possible situations should be handled. Crisis communication with a crisis management group within the company should be built up with a clear strategy and delegation of responsibility.

Regardless of whether an individual consumer or a company, the customer is interested in building up long-term, sustainable relationships with suppliers. A company that loses the faith of its customers runs an enormous business risk. Modern customers are interested not only in the product and its qualities, but also the product's environmental impact throughout its life cycle, from the consumption of raw materials to waste. The objectives of a Product Stewardship programme must therefore address the entire chain from the writing of the sales agreement to how employees are rewarded for achieving goals.

Environment and quality policy

You will soon find it necessary for your company to have a clear strategy and applied routines for production and marketing. This strategy should be part of your company's environment policy, which can be combined to advantage with the quality policy. The policy should be stated in writing. In addition to health and environment, it can also cover safety aspects. Without a clear strategy and policy there is a great risk that different departments or functions in your company may handle product issues differently. The Tips Box refers to examples of how the environment and quality policy can be designed.

Objectives and routines

The fundamental prerequisite for successful Product Stewardship programme is that everyone in the company is involved and has the necessary information. After an inventory of your company's risks and opportunities, a prioritisation is done of the long-term environmental objectives that are to be achieved in the product management sphere. Every unit needs to set its own environmental objectives in light of the company's priorities in order to be able to distribute information about the overarching objectives and as a basis for the actual work. The objectives should be concrete and measurable. Implementation demands delegation of tasks and that routines exist and are followed. You who are in an executive position can never delegate supervisory responsibility. A decentralised organisation must provide clear support and the necessary resources to the operative managers. Formalised routines make gaps and overlaps in the daily work less likely and ensure that environment and quality work is kept at the same level.

Product liability

Your company has extensive tort liability for its products. This liability extends to design, fabrication and instruction defects and applies to both intended use as well as improper use to a certain extent. Meticulous follow-up of complaints and past error management reduces the risk for product liability claims. You should make sure that your company insurance covers product liability claims. Naturally, you should make sure that other relevant insurance policies are in force.

COMMUNICATION

Openness is a cornerstone of credibility. Your company must take the initiative and give information about events, particularly if they are of negative nature. Read more in the RC publication *The Company and the Media*, in which there is a useful checklist for conceivable crisis situations. Conceivable crisis situations must be practised and a clear delegation of responsibility must be worked out for how communication shall be handled.

It is also important that your company can provide good, detailed information about the product, its function, contents, handling and any associated risks. Environmental awareness has led to additional demands for information, e.g., with respect to waste management.

That the customer is the main target for your information is self-evident, but do not forget banks and authorities who are more frequently looking at corporate performance from a holistic perspective with respect to the environment and safety. Contact with the public schools is also important in order to stimulate and assist future interested and educated employees.

Responsible Care

Your company has officially committed to compliance with voluntary agreements that go further than applicable law. This shows your customers and society in general that the company is willing to take serious responsibility for its operations and products. However, it is critical that your company continually communicates and concretises this willingness to its customers so that the commitment is not perceived as empty rhetoric.

Openness and information

The customer's faith in your company depends on knowledge about the company and experience with the company as a manufacturer and supplier of products. This faith and the perception that the product is functionally good and environmentally acceptable are the basis of purchasing loyalty. If your company makes an occasional mistake in its environmental work or

with respect to a product's function, the customer will usually overlook it if his previous experience is positive. It is important that your company acknowledge such events and rectify its mistakes as soon as possible.

Annual environmental reports give the public, customers, shareholders and other financial stakeholders a good picture of how the company is working with environmental issues. It may be advantageous to publish the report in conjunction with financial reports. The environmental report should include a product description including any new and improved products, as well as a report on how these products can solve environmental problems for your customers. Reports to authorities, employees and community residents on local environmental efforts at your company's production plants are also important. These information procedures, like cogent warning texts and handling instructions, help the company maintain its credibility.

Long-term strategy and routines

Through disseminating information about your company's policy, you demonstrate willingness to take long-term responsibility for the products, their functions and the processes used to manufacture them. The faith of your customers, stakeholders and the public in you as a producer and/or supplier is strengthened if your company runs its business in a consistent manner.

Well-functioning routines help your company maintain consistent product quality and prevent accidents along the handling chain. Good routines also make it possible for your company to ensure that your products are of high quality from an environmental perspective as well. It is equally important that products are continually developed with the help of improved knowledge and techniques.

Responsibility

Continual education of your personnel is a prerequisite for your company to be able to take responsibility for its products, among else in accordance with the regulations on product and producer liability. The latter means that the manufacturer is responsible for the product even after it has been used by the customer. For this to function in practise, one must think from the design stage about how the product will be finally disposed of or, preferably, reused/recycled in some way. That your company espouses and works according to an ecological life cycle philosophy is an important piece of information that you should convey to your customers. Responsibility also means that your personnel should know what conditions your company's insurance provider has placed upon your routines and commitments.

Your company also has a responsibility to participate actively in discussions with authorities, organisations and scientific institutions whenever possible with respect to various aspects of the products and their uses. A balanced presentation of the scientific, economic and practical arguments is usually well received.

2. Checklist for the CEO

Risk Management

The Responsible Care commitment

- 2.0 Has your company joined Responsible Care?
- 2.1 Have you thought through the consequences of introducing an RC culture in your company?
- 2.2 Do you fully support the work of your RC coordinator?
- 2.3 Are the objectives of RC firmly established in the company?

Business ethics and openness

- 2.4 Does your company have a documented code of business ethics?
- 2.5 Is your company open towards society?
- 2.6 Does your company hold Open House days?
- 2.7 Does your company have the knowledge it needs to participate in the environmental debate?

Environment and quality policy

- 2.8 Does your company have a quality policy?
- 2.9 Does your company have an environment policy?
- 2.10 Do they include the safety aspects?
- 2.11 Is your company working with EMAS?
- 2.12 Is your company working with ISO 14000?
- 2.13 Is there a Product Stewardship policy in place?

Objectives and routines

- 2.14 Are the objectives of executive management well established?
- 2.15 Are there measurable environmental objectives for every department in the company?
- 2.16 Do your employees have routines to follow in their work?
- 2.17 Have you delegated responsibility and tasks in writing?
- 2.18 Have you allocated resources for Product Stewardship efforts at your company?

Product liability

- 2.19 Is there an established routine for following up on complaints?
- 2.20 Does your company have product liability insurance?

Communication

Responsible Care

- 2.21 Is everyone concerned at your company knowledgeable about current chemical-related law?
- 2.22 Is this knowledge regularly updated?
- 2.23 Do you inform your customers about your RC programmes?

Openness and information

- 2.24 Does your company publish an annual environmental report?
- 2.25 Do you have an established information strategy in case a crisis situation occurs?
- 2.26 Does your company stay in regular contact with local authorities?

2.27 Are you in contact with local politicians?

Long-term strategy and routines

2.28 Do you inform your customers about your company's long-term strategy?

2.29 Do you inform your employees and customers about your company's environmental objectives?

Responsibility

2.30 Do your employees receive training in environmental matters?

2.31 Do you or your company participate actively in discussions with authorities?

2.32 Has responsibility for the above routines been clarified?

3 To the Product Developer

As a product developer, you have a key role in your company's application of Product Stewardship. The greatest opportunity to achieve products and system solutions with the least possible environmental impact lies in the product development phase. As a product developer, you are responsible for assessing any risks that may arise from your company's end products. To amass knowledge about how the products are used and their final impact on the outside world, you must maintain an active dialogue with your customers. It is important that you are given all available information so that you can prioritise and choose between various alternatives on the basis of well-founded fact. At the same time, you can assess the effects of each alternative on the product's technical qualities.

RISK MANAGEMENT

Your company is responsible for assessing the risks entailed in various product alternatives and system solutions. The substitution principle has been written into law through the Swedish Chemical Products Act. You can read more about the interpretation of the law in the RC paper The Product Choice Rule. As a product developer, you must have excellent knowledge of the impact of various raw materials and end products on the environment and natural resources. If you feel that you do not have the knowledge you need, you must be able to consult internal experts or resources outside the company. You should also pay attention to various types of substance lists and the contents of those that are published by authorities. See the Tips Box.

Customers and society

There must be a routine at your company for compiling and coordinating requirements from customers, authorities and society. Your company must then translate them to a requirement specification based particularly upon environmental considerations. The environmental specification thus becomes a vital aspect of the total requirement specification for the product. Clearly, this phase is critical for the product's success on the market. Requirements have been mainly oriented towards the technical and functional aspects for a very long time. More recently, requirements for safe handling of the product have become increasingly significant and are now a very important part of the requirement specification used for product development. The environmental specification may include many different requirements, e.g., classification, environmental class, biodegradability, recycling, packaging, prudent use of natural resources or acceptable emissions values.

Life Cycle Analysis

The Life Cycle Analysis (LCA) is a process for assessing the impact of a product or product system on the surrounding environment throughout the product life cycle from raw material to waste. Knowledge of the properties of raw materials from an environmental standpoint and the consumption of resources during production should exist from the beginning of the development phase. Thereafter, careful follow-up on experiences gained and possible supplementation with your own toxicological and ecotoxicological studies will be required.

There should be knowledge within your company on how LCA can be used as a product development tool. LCA can be used to compare various alternatives and to provide information on the greatest consumption of resources and the most significant environmental impact throughout a product's life cycle. Taken together, this information will help identify where the most important measures should be taken to minimise environmental impact. Upon comparison of different solutions where the aim is to choose the one with the least possible environmental impact, a complete LCA lacks meaning. Instead, you should select and concentrate efforts on

the critical aspects. The idea is not to obtain absolute ratios, since uncertainty is still very considerable when the LCA is used. Examples of suitable literature for further study are given in the Tips Box.

Assessment of substitutes

As a product developer, you must be able to assess various alternatives. Ideally, you should make planned and systematic assessments of alternative raw materials and production processes during the development phase. You have a great responsibility to stay abreast of research and development so that you maintain function while using the most suitable raw materials with respect to health and the environment.

This systematic assessment also extends to choice of suppliers and any certification requirements that may exist. This demands intimate collaboration with the purchasing function so that an active evaluation of suppliers can be put into effect. Assessment of alternative system solutions should also be included. Naturally, this demands a broad base of knowledge that will most likely need to be sought from sources outside the company and in collaboration with users and suppliers. Application of this knowledge and the ability to analyse your products in relationship to other solutions will provide your company with critical information for marketing its products. In the process, your company can gain credibility.

You can read more in the RC publications *Safe Chemicals* and *The Product Choice Rule*.

Updating the product

There should be a routine at your company that addresses how the health and environmental effects of products are kept current based upon new data and knowledge. Since new knowledge will always arise and the customer's requirements can change, products should be continually reassessed based upon new available information.

Experience that is gained through users and systematically, meticulously utilised is an important basis for improvements. Complaints and returns from customers are examples of such information.

Documentation and classification

You are responsible for ensuring that routines are developed for documentation and development efforts. It is recommended that the routines be based upon the principles of the ISO 9000 quality assurance system. It is important that you can show from now on how the assessments were done and that you can easily go back and make updates if new findings come to light. Be careful to give references so that information can be tracked, which can be valuable and necessary if problems arise or the material needs to be updated.

You are also responsible for ensuring that there is data available to technical writers responsible for product information so that the product can be correctly classified and labelled. There must be a routine in place that ensures that this information is automatically transferred when updates and product modifications occur. How the residual product shall be dealt with must be determined during the design stage. You must be well acquainted with the law on producer liability. Further details are found in the next section. See Chapter 5: *To the Technical Writer*.

COMMUNICATION

All significant information that has emerged during the course of development must be communicated to other employees, customers or society at large. What information should be

given to which parties, and in what way, should naturally be clarified. As a product developer, you have the necessary knowledge and can determine how various data can be used for informational purposes.

Customers and society

It is vital that the customer's requirements and opinions are communicated back to your company and to you as the head of product development. Responsibility for these contacts should be clearly delegated. There should also be a routine for documentation of customer information.

Sharing information with the public is also important and can take place via information meetings, informative publications, etc. This type of contact commonly becomes a matter of one-way communication, so it is important that you be responsive and encourage the public to respond, e.g., by setting up a consumer hotline.

Life Cycle Analysis

Some aspects of the information produced through an LCA coincide with the requirements that determine the contents of product information sheets, e.g., ecotoxicological information, a description of hazards and waste management. You should think about how you can utilise LCA data for qualified information to customers and authorities. Absolute values cannot be obtained from the LCA. Numbers and ratios resulting from the LCA should thus not be used for marketing purposes, but only for comparison of various alternatives during product development.

Recommendations for eco-declarations for products that include information on total consumption of resources, environmental impact, etc., are presently under discussion. The idea is that the declarations will be used by qualified buyers. How the declarations will finally be designed has not yet been determined. The important thing is that you, as a product developer, are aware that your customers will probably be requiring this information and that you prepare for the compilation of data.

Assessment of alternatives/substitutes

You should recommend how the results of comparisons of various alternatives can be communicated to customers and authorities. The format of the information depends upon whether the product is intended for private consumers or industrial customers. It is likely that parts of the current environmental report can serve very well to describe the total substitution efforts carried out by your company.

Updating the product

Together with the marketing department, you should design a routine for maintaining an ongoing dialogue with the customer based upon new available data. Remember to always inform the technical writer responsible for product information if any changes are made to the product. See Chapter 4.

Documentation and classification

You must ensure that there is a routine in place so that the basis of documentation directed towards the customer, i.e., classification, labelling, description of goods, transport and fire classification is forwarded to the technical writer responsible for product information. See Chapter 4. You should know what documents are given to the customer. See Chapter 6: To the Marketer.

To enable the customer to perform a meaningful risk/benefit analysis, you should also have a routine for assessment and testing of the product's technical function.

3. Checklist for the Product Developer

Risk Management

Knowledge and competence

- 3.1 Have responsibilities and authority for development efforts been clarified?
- 3.2 Is necessary personnel competence updated regularly?
- 3.3 Are there resources available for getting expert assistance when necessary?

Customers and society

- 3.4 Have environmental requirements for the product from the customer, authorities and society been clarified and documented?
- 3.5 Do you observe and analyse how the customer uses the product and how this use affects the environment?

Life Cycle Analysis

- 3.6 Is the value of a Life Cycle Analysis assessed for every development project?
- 3.7 Is knowledge on the methodology of the Life Cycle Analysis available (internally or externally)?
- 3.8 Are there routines for application of LCA in development work?
- 3.9 Are there routines for documentation of the LCA?

Assessment of substitutes

- 3.10 Are there routines for regular assessment of alternative raw materials and production methods?
- 3.11 Do you regularly assess the environmental management programmes used by your suppliers?
- 3.12 Are there routines for assessment of alternative system solutions?
- 3.13 Is consideration given during the development process to the OBS list and the restrictions list issued by the Swedish National Chemicals Inspectorate?

Updating products

- 3.14 Are there routines for regular updating and assessment of possible product improvements with respect to the environment?

Documentation and classification

- 3.15 Are results obtained from the development process systematically documented?
- 3.16 Are there routines for developing the basis for classification and labelling?
- 3.17 Is all documentation kept on file for at least ten years?

Communication

Customers and society

- 3.18 Are there routines for gathering and compiling customer requirements for products?

3.19 Are requirements from authorities and society with respect to the product's function and use observed?

Life Cycle Analysis

3.20 Are there instructions on how the results obtained from a Life Cycle Analysis may be used?

Assessment of substitutes

3.21 Are the results from assessments of alternatives given in the environmental report?

3.22 Are concerned personnel regularly educated about the effects of products on the environment?

Updating the product

3.23 Are there routines for how updated information shall be communicated internally as well as to customers and authorities?

Documentation and classification

3.24 Are there routines for disseminating information within the organisation, specifically to personnel responsible for writing product information?

3.25 Has responsibility for the above routines been clarified?

4 To the Technical Writer

It is your job to see that the customer gets relevant information on health, environment and safety risks associated with the product. There are express requirements for information included in the Chemical Products Act and in the rules of tort in the Product Liability Act. It must be stressed that requirements for information and warnings do not apply only to intended use, but also to certain foreseeable improper use. You should assist in the effort to reduce the risk of claims for damages by carefully following up on complaints and past instances of improper use.

The ecological life cycle philosophy puts new demands on you for information. Active efforts are required beginning at the construction and design stage with respect to handling of residual products, see Chapter 3: To the Product Developer. Producer liability means that you as the manufacturer are liable for the product even after it has been used by the customer. Naturally, recycling or reuse is desirable. How the residual product is to be handled must be clearly communicated to the customer.

RISK MANAGEMENT

The product's environmental impact and risk profile during use and after it has been used must be thoroughly analysed.

Assessment

You must assess risks associated with intended use and also be able to predict other reasonable uses of the product. This assessment must be continually updated. It is important that you maintain a dialogue with your customers so that you can make this assessment in consultation with the marketing and development functions.

Documentation

It is your responsibility to design and document information on health, environment, fire and transport risks, including classification of products. In some cases, special risks during loading, unloading and storage must also be documented. Toxicological and ecotoxicological information must also be documented. According to law, documentation must be kept on file for ten years. The information above is the basis for design of the product information sheet, labels, safety instructions and waste management instructions.

When there is knowledge about product exposure, it should be documented.

Classification of residual products

Your proposed management systems for residual products and packaging must be adapted to the health and environment properties of the product. Environmentally hazardous waste must be sent to SAKAB or another station authorised to handle environmentally hazardous waste. The current Swedish law on environmentally hazardous waste is going to be harmonised with EU regulations. There is specific legislation on export of environmentally hazardous waste that states that you must make sure there is a valid export permit.

If disposal of empty packages, primarily those that contained chemical products, is done in a controlled manner, the packages should not be classified as environmentally hazardous waste. The word waste can be consistently replaced with descriptive expressions that clearly state the facts with no value judgements. Read more in the RC publication Towards Less Waste.

Reuse and recycling

You must be able to assess the best disposal method for your products. Depending on the classification and possible impurities, you can determine whether the packaging and product can be reused or if recycling is more appropriate. You should take the total consumption of resources into account, including energy, etc., used during transport.

Energy utilisation and disposal

If your assessment is that the final fraction or packaging must be disposed of either through energy utilisation in an environmentally sensitive way or disposed of under controlled circumstances, this should be made clear when the product is marketed.

Collection systems for residual products and packages

The producer liability law puts demands on you as a manufacturer. There is already a certain body of knowledge and experience with producer liability as applied to packaging. Regulations on producer liability for a number of other product sectors will be issued within the near future. The Repa register is a joint-owned company of the materials companies Plastkretsen AB, Svensk Kartong†tervinning AB, Svenska Metallkretsen AB and RWA Returwell AB. The materials companies are building recycling stations and centres in every municipality in Sweden. Outside the Repa group, there is the Pl†tfatsgruppen, which works with disposal and recycling of metal barrels made of cold-rolled steel plate. Svensk Glas • tervinning AB handles collection and recycling under its own aegis. It is important to keep constantly abreast of coming regulations and the construction of recycling centres.

COMMUNICATION

You must ensure that there is a routine in place in e.g., the marketing department, for supplying the customer with product information sheets and other information about safe handling of the product. You must also make sure that there is a routine that ensures that every product is correctly classified and labelled for its intended market.

How the product and its package should be handled when the product is used must also be communicated to the customer and society in general. If you are able to argue in an objective, well-considered manner in favour of the handling method you recommend, your company will gain credibility.

Safety measures

You should ask for an account from the customer regarding any safety problems when the product is used, including any improper use of the product that occurs. You must be given the opportunity to take measures based on the problems. An appropriate measure may be to improve the instructions. If that is the case, you must always inform the responsible parties at your company and document the information.

Exchange of knowledge

You can gather excellent and practical knowledge by taking advantage of trade and industry contacts to exchange information on product risks and effective measures to minimise them.

Classification of residual products

You must ensure that product information or labelling clearly states how the product must be handled once it is regarded as waste.

Reuse and recycling

You must ensure that the instructions on waste management your customer gets from your company's representative clearly describe any possible reuse or recycling of the product. A summary of your company's work with these issues and the possibilities that exist can be written on an information sheet supplied to customers, authorities and other stakeholders.

Energy extraction and waste disposal

If your assessment is that the residual product and its packaging can be used for energy extraction, you should state how this can be accomplished in an environmentally correct way. In this context, it is important that you are able to describe the energy gains and resource utilisation. See the section on the Life Cycle Analysis in Chapter 3.

Collection system for residual products and packages

You must be able to tell the customer clearly and unambiguously where used products can be disposed. The alternative is for you and the customer together to work out an environmentally acceptable management system. This must be made very clear in the customer dialogue so that no misunderstandings arise.

4. Checklist for the Technical Writer

Risk Management

- 4.1 Do you know what the requirements for product information are as stated in the Chemical Products Act?
- 4.2 Do you know what the regulations on product liability require of product information?
- 4.3 Is there a follow-up routine in place on improper use that may occur at the customer?
- 4.4 Is there a routine for following up on complaints and returns?
- 4.5 Is there a routine for filing notice with the product register at the National Chemical Inspectorate?

Assessment

- 4.6 Is there a routine that continually updates how customers are using the products?
- 4.7 Do you get this information routinely?

Documentation

- 4.8 Do you have a routine for gathering and processing information about health risks?
- 4.9 Do you have a routine for gathering and processing information about environmental risks?
- 4.10 Do you have a routine for gathering and processing information about fire risks?
- 4.11 Do you have a routine for gathering and processing information about transport risks?
- 4.12 Do you have a routine for documenting and archiving data for ten years?
- 4.13 Do you document any existing exposure data?
- 4.14 Do you have a routine for writing product information sheets?
- 4.15 Do you have a routine for writing labels?
- 4.16 Do you have a routine for writing safety instructions?
- 4.17 Do you have a routine for writing transport documents?

Products and packages

- 4.18 Do you have information on how the residual products should be disposed of?

- 4.19 Do you have information on how used packaging should be disposed of?
- 4.20 Is there a routine for writing instructions on waste management before the product is marketed?

Communication

The customers

- 4.21 Does the marketing function have a routine for supplying the customer with complete product information?
- 4.22 Is there a follow-up routine to ensure that the product is correctly labelled for its intended market?
- 4.23 Is there a routine for informing customers about the correct handling of residual products?

Safety measures

- 4.24 Is there a routine for offering training to the customer on safe handling of the product when appropriate?

Documentation

- 4.25 Is there a routine that ensures you get information on improper use?
- 4.26 Do you have a routine for documenting this kind of information?

Exchange of knowledge

- 4.27 Are you in continuous contact with industry organisations?

Reuse and recycling

- 4.28 Do you have a routine for informing the customer about the residual product and disposal of packaging?
- 4.29 Has more general informational material been written about the disposal of residual products?

Energy extraction and deposition

- 4.30 Do you have a routine for writing instructions on how energy extraction can be utilised?

Collection systems for residual products and packaging

- 4.31 Do you have a routine for informing customers, etc., about which collection system should be used?
- 4.32 Has responsibility for the above routines been clarified?

5 To the Production Manager

A great many chemicals are handled in production at chemical companies. The risks to health, the environment and safety upon improper handling can be great. Accordingly, the demands for excellence in working methods, routines and reporting are high.

The competence of production management and personnel is of critical importance for the quality of the product from both the technical and environmental standpoints. The production manager must also be involved in the work with Product Stewardship.

This chapter does not claim to be exhaustive, but rather is meant to serve as an inspiration towards further reading in other relevant RC publications.

RISK MANAGEMENT

Various incidents of greater or lesser seriousness inevitably occur in production plants. It is important to use good routines to identify models for minimising such events. Risk analyses should be carried out and documented regularly. Naturally, the results should lead to improvements.

Delegation and training

Delegation of tasks is necessary, as is continual updating of work routines based upon experience. Tasks can only be delegated to individuals who have the competence and authority to carry them out. The individual must also be supplied the necessary resources, both economic and human. If these requirements are not met, the responsibility for the tasks returns to the delegating individual. The person who delegates must also make sure that the individual in question truly understands what has been delegated and has accepted the responsibility. When necessary, this should be confirmed in writing. Read more in the RC publication Safe Work Environment.

The right training is critical so that your personnel will be able to perform their tasks in the production department correctly. Quality efforts within production are of decisive importance for how well the product will correspond to the customer's expectations and stated requirements. If your department works according to any particular quality system, this should also be the basis for training.

Environmental protection and work environment

The Environmental Protection Act requires operating permits. When a permit is issued for the plant, a check programme is often established at the same time to follow up on the conditions that have been placed for operations and emissions. Whether the company can present a positive and accepted environmental profile depends to a great extent on how well the plant is run. Read more in the RC publications The Environmental Protection Act - Responsibility, Organisation and Administration, Safe Chemical Transports, and Towards Less Waste.

To be able to do a correct Life Cycle Analysis, it is important that emissions and consumption of resources can be calculated per product and produced volume. The alternative is for you to present total quantities for total production and make estimates per product. Your product development and marketing functions are interested in these facts in order to be able to perform correct Life Cycle Analyses. The plant's waste management procedures also affect the results of a Life Cycle Analysis for the product. See Chapters 3 and 6.

Internal checks are a legislated process within the occupational safety arena and are the basis of work environment programmes. Risk analyses must be continually carried out when new products are introduced into production. Emergency plans and safety instructions in such cases must be completed before a new product is introduced. In some cases, specific training of production personnel may be needed. Instructions for disposal of production spills and any discards must be available for all products in production.

Audits

A systematic description of the company's internal controls related to health, environment and safety should be written. Suggestions for doing this are found in Risk Management, a publication of the Association of Swedish Chemical Industries, and the RC publication Environmental Safety Review - a model, which describes external environmental audits. If your company is working with an environmental management system, e.g., EMAS, ISO 14000 or an internal environmental management system, this should be made clear.

When making a total assessment of a product's environmental impact, production is often a significant aspect. Customers are becoming all the more aware of this relationship and asking for documentation on this part of the Life Cycle Analysis. Audits in accordance with ISO 14000 and EMAS are thus very important.

COMMUNICATION

The Environmental Protection Act also states requirements on the scope and design of the environmental information that companies must submit to the authorities. Information from the company's production unit primarily concerns the surrounding residential community. An information strategy sanctioned by executive management can function as an excellent source of support. A good point of departure can be obtained from the RC publication The Company and the Media. The environmental report or special environmental audit, if such have been done, should also be available to local stakeholders. The reports should list the products that are being made and give examples of their uses.

Delegation and training

Delegation of tasks entails responsibility for information as well. The immediate supervisor must inform his/her employees about the company's policy, environmental policy and RC commitments as well as the importance of Product Stewardship efforts. Training can provide production personnel with better knowledge about the products and help them understand that they themselves are an important link out into the community. This helps the company become more credible and trusted.

It is important that internal information on the environmental impact of production processes reaches out to the personnel to give them insight and motivation. The work to minimise production waste is another important aspect of reducing total environmental impact. You can read more about minimising production waste in the RC publication Towards Less Waste.

Knowledge about raw materials and their effects on health, environment and safety must also be shared with everyone. The same applies to knowledge about the customers needs for and interest in obtaining products of high and consistent quality.

Environmental protection and work environment

The ability to present a clean and attractive plant that carefully follows up on environmental data is of fundamental importance if the company wishes to inspire trust in its products from its customers and society in general.

The responsibility for information and training of production personnel when new products are introduced must be made clear. The same applies to following up on the need for supplementary training.

Environmental reports

A local environmental report can give the community and other stakeholders an understanding of how the company works with environmental issues. This report need not be overly complicated and can be based upon legally required environmental reports to authorities. Write a brief summary that gives a few examples of emissions over a number of years; see the Tips Box for suggestions. It is important here to also describe the uses of the products. It can be useful to use present key figures in the report such as emissions per tonne of produced product, energy consumption, etc., as well as the company's established environmental goals.

5. Checklist for the Production Manager

Risk Management

Delegation and training

- 5.1 Are there routines for delegation?
- 5.2 Is delegation put in writing?
- 5.3 Do personnel have sufficient competence within the areas of health, safety and environment?
- 5.4 Do you have a training plan?

Environmental protection

- 5.5 Are there stated environmental goals for the plant?
- 5.6 Are the environmental goals followed up with continual measurements or estimates?
- 5.7 Do you know the facts on your company's consumption of resources, emissions to water and air and quantity of waste?
- 5.8 Can you also distribute this per product?
- 5.9 Is environmentally hazardous waste from the plant handled according to applicable routines?
- 5.10 Are there routines for sorting waste?
- 5.11 Is the RC publication Towards Less Waste available?
- 5.12 Is a risk assessment done before a new product is introduced?
- 5.13 Are their established routines for emergency plans and safety routines?
- 5.14 Are the personnel trained before a new product is introduced?
- 5.15 Is there a routine for disposal of discards?
- 5.16 Is the RC publication Safe Work Environment available?

Environmental audits

- 5.18 Is there a routine for the company's internal checks?
- 5.19 Does the company work according to EMAS or ISO 14000?
- 5.20 Is the RC publication Environmental Safety Review - a model available?

- 5.21 Is the Association of Swedish Chemical Industries publication Risk Management available, with an assessment of the entire health, safety and environment area?

Communication

Delegation and training

- 5.22 Is there a routine for informing employees about the environmental effects of the products and the manufacturing process?
- 5.23 Is there a routine for continually informing employees about how well the plant is meeting its environmental goals?
- 5.24 Is there a routine for informing and training about the health and environmental effects of raw materials?

Environmental protection and work environment

- 5.25 Is there a routine for training production personnel when new products are introduced?
- 5.26 Have you developed contacts with the community?
- 5.27 Have you developed contacts with the schools?

Environmental reports

- 5.28 Does your production plant publish a local environmental report?
- 5.29 Is data presented in the form of key figures and established goals?
- 5.30 Has responsibility for the above routines been clarified?

6 To the Marketer

The products you market perform a chemical job. Through various types of chemical reactions, the product's inherent properties are utilised to do a job that your customer needs and benefits from. As a marketer, you also have a great responsibility for how chemical products are received on the market. A serious manner and assumption of responsibility are fundamental aspects of all sales of chemical products. You must work actively according to your company's business ethics and morals. As a marketer, you know you can only do a good job if you believe in what you are doing. Adopting the Product Stewardship approach demands that you take a personal position.

RISK MANAGEMENT

The way that you market chemical products can have a decisive effect on how the products are handled and, therewith, the risks that they will come to represent. If possible risks are ignored when products are marketed, the risk for accidents rises. Knowledge is the primary ingredient in marketing of chemical products, but you must also comply with recommended rules for marketing. It is through your contacts with the market and customers that your company learns how the products are being used and how improper use can be avoided.

Marketing

The Swedish Marketing Act applies to sales and marketing of chemicals. In addition, there are special laws and certain international conventions concerning chemicals.

Because marketing materials/activities etc., related to chemicals often allude to the environment, it is important to comply with recommendations on environmental advertising. The international chemical industry has ratified the Ten Rules for Environmental Advertising issued by the International Chamber of Commerce (ICC). See the Tips Box. These rules are based on relatively obvious precepts, but provide good guidelines. You shall work according to these recommendations or equivalent internal rules, which should be documented. Some fundamental precepts follow:

Do not attempt to gain points on what the product does not contain, e.g., this product does not contain freon and is therefore implicitly adapted to the environment.

Marketing of a product must be done based on the product's own merits and may not be misleading.

Do not overrate your product at the expense of competing products.

Do not call a chemical product environmentally friendly.

When you work according to these or other equivalent rules, you assume responsibility towards the customer and society in general. Serious marketing gives your company credibility and respect. See the Tips Box for further studies.

Sales

As a marketer, you also have a responsibility for how your products are used by the customer or resold by dealers. In order to control this, it is recommended that you ask your industrial customers and retailers for periodic follow-ups on how your product is being used. This is one way to check that they are following the rules and instructions that you, the supplier, have

established. Customers should be trained by your company's own technical experts in how the products must be handled in order to achieve optimal technical benefit, but also the highest level of safety. This may not always be possible in practise for those of you with a great many customers, but should be considered for products with specific requirements.

As a supplier, you must acquire in-depth knowledge about your customers and dealers so that you can separate serious customers from the rest. As a marketer, you must make sure customers are visited periodically to discuss and discover any problems that may exist. Complaints or returns from customers should be dealt with and documented. This should be the basis for preventing similar problems from occurring again. The routine must also include required measures for how the returned product should be managed.

You as a marketer should make sure that experience from one customer is shared in appropriate forms with other customers. Remember that certain information may be considered confidential. You are responsible for making sure that knowledge is transferred from the customer to your own company.

As a marketer, you should make sure that sales agreements and bonus systems are designed in accordance with the objectives of Product Stewardship.

Delivery commitments

As a marketer, you are responsible for ensuring that routines for loading, transport and unloading have been issued prior to delivery. See Chapter 7, To the Logistics Manager.

Delivering to a customer is a self-evident proposition, but if the customer cannot ensure that legal requirements for health, environment and safety are met when it handles the product, you must consider another decision in your capacity as a marketer, especially if you have reason to suspect that the customer is handling the product in a way that is dangerous to people or the environment.

If possible, you should also be involved, together with your industrial customers, in the decision on choice of packaging when products are delivered. Safe and reusable or resource-conservative packaging should be considered at an early stage. See also Chapter 7.

Environmental and health effects

When a new product is designed, its components should be chosen to achieve the least possible impact on the environment and health throughout the product's life cycle. You must obtain information on various opportunities and risks associated with the products via intimate collaboration with your company's product development function.

For consumer products, eco-labelling can be one way to guide the consumer on the best product in a particular range from the environmental perspective. One of the official eco-labelling systems should be used. Introducing some form of company-specific eco-labelling for products for industrial use is not recommended. Industrial customers must be competent to make their own assessments and thus provided with the available facts. Eco-declarations are a new concept currently under discussion.

Substitution

As a marketer, you have a responsibility to encourage and actively seek out less hazardous alternatives to products in a very broad sense. Furthermore, you must actively promote the idea

of possible product substitution. Read more in the RC publication The Product Choice Rule. If the product is transferred to other packaging, there must be a routine for how the product data sheet and goods description sheet will follow the product.

COMMUNICATION

As a marketer, you have a key role in communications with the customer and with society in general. Accordingly, it is very important that you have good knowledge about all aspects of the product, including the environmental aspects, and that you communicate this knowledge to others. It is equally important that you understand and handle reactions and questions from customers and society about the business you represent.

Marketing

You are responsible for informing customers and society about legal requirements regarding sales of chemicals. You must also be able to demonstrate the business ethics of your company. To follow up on compliance, you should hold internal meetings with training and discussion related to ethical issues.

Sales

Product data sheets and goods information sheets shall be drawn up for all health hazardous and flammable products except for those that are sold only in consumer packages. There is no legal requirement to issue goods information sheets for non-hazardous products, but they should be written anyway as part of the Product Stewardship programme. These documents shall be sent to the customer before the first product delivery is made. There are examples of established routines that include confirmation of receipt. Naturally, these documents should be available to the customer before an order is placed. Customer complaints and returns should naturally be rectified, but must also be documented. A legal responsibility has been placed upon your company through the product liability law to be able to show that experience with the product has been taken into account. Defective products must be recalled quickly; accordingly, there must be relevant routines in place. It is important to know which production batches are delivered where, i.e., trackability must be good.

Environmental impact

You must make sure that adequate information has been produced by your company before you begin to market a product. A 16 point goods information sheet according to applicable law shall be written for the product before it is marketed. It includes, among else, instructions for First Aid, corrective measures in case of emissions, fire and safety measures, toxicological and ecotoxicological information and instructions on waste management.

Delivery commitments

As a marketer, you must make sure that proper instructions and documents are available before an order is delivered, such as loading and unloading instructions with allocation of responsibility, transport classification and product classification. A recipient signature by the customer can be an appropriate routine to ensure that the information has reached its intended mark.

Substitution

So that you will be perceived as credible and serious in your work to find substitutes with better environmental profiles, you must inform the customer and society about your company's efforts in this respect. A simplified version of the environmental report sent to authorities can be sent upon direct request. This report addresses product development and changes that have

taken place in the company and can be written as an easily accessible source of information for customers and society. This is especially important with respect to individual consumers, with whom you will have relatively little direct contact. One possible means of contact can be a consumer hotline.

6. Checklist for the Marketer

Risk Management

Marketing

- 6.0 Have you taken a personal position on the meaning of Product Stewardship?
- 6.1 Do you know about the Marketing Act?
- 6.2 Do you know what rules apply with respect to product liability?
- 6.3 Are you aware of the terms of your liability insurance?
- 6.4 Are the ICC rules on environmental advertising available at your company?
- 6.5 Is all advertising material evaluated in light of these rules?
- 6.6 Are the recommendations on environmental advertising issued by The Nordic Council available at your company?
- 6.7 Are your products covered by any special laws?

Sales

- 6.8 Are sales representatives and service technicians aware of the applicable product liability rules?
- 6.9 Do you know about the product's health and environmental properties?
- 6.10 Is there a routine for performing periodic customer audits?
- 6.11 Do you know what your customers use your products for?
- 6.12 Is there a routine for following up on returns and complaints?
- 6.13 Is there a routine for recalling and tracking a product?

Environmental impact

- 6.14 Have the product's health and environmental properties been adequately investigated?
- 6.15 Have your sales representatives received sufficient training about environmental issues?
- 6.16 Is there a need for eco-labelling?
- 6.17 Do you participate actively in product development meetings?

Delivery commitments

- 6.18 Have you made sure there is a routine to clarify the logistics chain?
- 6.19 Have you decided jointly with your customers on packaging for the product in suitable cases?
- 6.20 Do you follow up to ensure that your customer requires fulfilment of applicable legal standards for health, safety and the environment?

Substitution

- 6.21 Do you work actively and routinely with substitution?

Communication

Marketing

- 6.22 Is there a routine for informing your customers about applicable legal requirements for your products?

6.23 Do you inform your customers about your company's business ethics?

Sales

6.24 Is there a routine for sending product data and goods information sheets out before the first delivery?

6.25 Do you have routines for documenting complaints and returns?

6.26 Do you visit your customers periodically?

Environmental impact

6.27 Do you inform your customers about your products' potential effects on health and the environment?

6.28 Is there a routine for following up to make sure the customer has read and understood information on measures to take in case of accident and how he should handle spills, waste and destruction?

Delivery commitments

6.29 Is there a routine for submitting transport documents?

6.30 Is there a routine for providing the customer with loading and unloading instructions?

6.31 Is there a routine for sending out goods information sheets?

6.32 Is there a routine for updating warning labels?

Substitution

6.33 Have you informed your customers about the substitution principle and ongoing efforts at your company?

6.34 Has responsibility for the above routines been clarified?

7 To the Logistics Manager

As a logistician, you have a responsibility to follow the entire logistics chain and to be able to perform risk analyses at various points along the chain. Logistics covers all transport, both to and from the company. This applies both to the physical handling of the product as well as administrative routines. Assessments and proposed measures based upon this chain must therefore be communicated to the responsible parties both inside and outside the company, i.e., customers, suppliers, freight forwarders and authorities., Safety-enhancing routines in conjunction with transport of dangerous goods are addressed in greater detail in the RC publication Safe Chemical Transports.

RISK MANAGEMENT

Risk management in the logistics chain involves measures taken by your company aimed at reducing potential risks related to distribution, storage and handling of chemicals. This includes procurement of transport services both to and from the company.

Risk reduction

Risk minimisation is a constant process aimed at reducing the risk at every distribution and handling link along the entire logistics chain. From raw materials to manufacturing and from manufacturing to end customer. The chain includes transport and storage before production, intermediate storage after production, loading, transport and unloading at the customer. Administrative routines are also included and consist among else of delivery agreements, liability and insurance matters and document management.

This means that from the point that raw materials are purchased, the purchase agreement should contain agreements on transport mode and delivery commitments. There must also be knowledge within your company about your customers' routines once they receive your products. There should also be routines at your company for ensuring that approved and adapted packaging is used.

Transport mode and choice of route

The composition and volume of the product determines the best transport mode. Volume determines whether the choice of carrier becomes piece goods, tanker truck, railway carriage or boat. If, for example, bulk deliveries are made via boat and intermediate storage must take place at a port, this step must also be assessed in the risk management chain. The composition of the product must determine whether the transport can be made in bulk, container, barrels or smaller packages.

A planned choice of route should also be a self-evident step for every transport and shall be considered if there are available alternatives. The date and weather should also be determining factors.

Audits

Guidelines and exercises should be given to customers, suppliers, carriers and other logistics partners. Depending upon the competence of these various stakeholders, an audit or certification may be necessary to determine whether they are meeting your requirements. It is important that this also covers intermediate storage and terminals. Improvements of various measures must be reported to the various logistics partners.

You should continually and systematically audit the entire distribution chain. This means that your company must review the application of rules, agreements, laws and statutes. Personnel must be educated and trained in this field. Audits of how the company's goals are being fulfilled and how other external requirements are being met are other aspects of the audit process.

Risk management steps

In addition to those addressed above, additional risk management steps in your company's logistics flow include risk assessment and risk management in connection with cleaning of boats, containers, tanks and barrels, as well as loading, unloading and rules for disposal of residual products.

Routines for insurance agreements and procurement of transport services are important. Is there a routine for making sure that the carrier has the necessary permits? Issues of liability and management at intermediate storage sites must also be investigated.

COMMUNICATION

As a logistics manager, you must make sure that your company's routines are documented. Established routines in case of accidents and incidents are critical. This applies to the safety aspects but also to routines for how contacts with customers, carriers and media shall be handled. Read more in the RC publication *The Company and the Media*.

The public view

You should actively observe and forecast the public's perception of risks and the products' potential environmental impact. There is a fear among the public of possible accidents in connection with chemical transports. A statistical basis can constitute part of your communication with the public as well as for a continual improvement programme.

Information and audits

As the logistics manager, you should supply customers and distributors with information about new products with respect to safe storage and handling. There must be established routines for forwarding transport documents and transport cards to distributors. There should also be routines for how other information shall be forwarded to those concerned. See also Chapter 4 *To the Technical Writer*.

As a logistician, you must also request information on safe storage, handling, use and disposal or recycling of new raw materials and other products from suppliers. It is important to share information in order to help your suppliers comply with your company's policy and routines for health, environment and safety. This also includes feedback on use and possible improper handling. Routines for taking back products must be well-known to the customer and the carrier.

You must make sure that there are routines in place to take advantage of the experiences of customers or other partners in the logistics chain with respect to improper handling.

The chemical industry's ERC

If an accident happens, regardless of whether during transport or another occasion, you can get information through the chemical industry's ERC, Emergency Response Center. Information and advice are based on knowledge about the acute health risks associated with various chemical substances and products. Companies can e.g., submit information on environmental

effects when an accident occurs, which the ERC will either pass on or will contact specialists at the company.

The Swedish National Rescue Service Board is informed immediately when an ERC call comes in. ERC is part of a network of national emergency call information centres built up by the chemical industry in Europe, which makes it possible to submit information about products in the rest of Europe. The ERC is staffed around the clock.

The effects of an accident can be minimised by submitting information that is as complete as possible to the ERC with respect to the product and providing a list of specialists at the company.

Training

You must also make sure that employees, the company health care provider and any internal rescue personnel are educated and trained about loading, unloading and near accidents in traffic, depending upon their respective roles and functions. Exercises can be carried out with external rescue services, the police and hospitals. You should consider how training and education should be carried out when new products are to be handled. Routines should be based on past experience gained from accidents and near accidents.

Dialogue

You must maintain a dialogue when so appropriate with other concerned parties in society such as: rescue services, hospitals, police, logistics partners, insurance providers, customers, retailers, suppliers, end users. Naturally, the intensity of these contacts is dependent upon the type of product that is produced and in what quantities.

Routines for reporting near accidents, accidents and measures taken shall be available to those responsible. A routine for improvement measures should also be in place. Information on this can be used to demonstrate to outsiders the responsibility your company has assumed.

7 Checklist for the Logistics Manager

Risk Management

Risk reduction

- 7.1 Do you have a written audit plan for periodic inspection of the logistics chain?
- 7.2 Does it include every handling aspect from the supplier to your end customer?
- 7.3 Do you use approved packaging when you transport dangerous goods?
- 7.4 Is the size of the package adapted to minimise risk?
- 7.5 Are delivery agreements and insurance terms updated?

The public view

- 7.5 Do you take the initiative for an exchange of information with local mass media about transport issues and dangerous goods?
- 7.6 Is there a routine for periodic exchange of information with rescue services, hospitals, etc.?

Transport mode and choice of route

- 7.7 Is there a routine for choice of carrier?
- 7.8 Is there a routine for training and guidance of customers, suppliers and logistics partners?

- 7.9 Is there a routine for reporting incidents and accidents to logistics partners?
- 7.10 Is there a routine for reporting incidents at intermediate storage sites?
- 7.11 Is there a routine for planned choice of route and carrier?

Audits

- 7.12 Is there a routine for continual auditing of the distribution chain?
- 7.13 Are the results and measures communicated in writing?
- 7.14 Is there a routine for ensuring that the measures lead to improvement efforts?
- 7.15 Is the periodicity adapted to the product's danger class?
- 7.16 Is there a routine for educating and training personnel about safety during transport?

Risk management steps

- 7.17 Is there a routine for overall risk identification and risk assessment?
- 7.18 Is there a routine for submission of transport documents and transport cards?
- 7.19 Is there a routine for information about measures taken due to accidents and incidents?
- 7.20 Is there a routine for continual verification of compliance with rules, laws and statutes?
- 7.21 Do you have methods for measuring improvement efforts?
- 7.22 Is the choice of logistics partners, terminals and warehouses made with respect to risk minimisation?
- 7.23 Is there a routine for risk management in connection with cleaning of ship's tanks, tanker trucks, containers, railway carriages, barrels, IBC's etc.?
- 7.24 Is there a routine for handling residual products?
- 7.25 Is there a routine for taking back products?

Communication

Information

- 7.26 Is the RC publication The Company and the Media available?
- 7.27 Is there a routine for ensuring that the customer has received information on storage, handling, use and disposal?
- 7.28 Is there a routine for submitting transport documents and transport cards?
- 7.29 Is there a routine for obtaining adequate information about raw materials from your suppliers?
- 7.30 Is there a routine for making sure that reports on improper use reach you?

The chemical industry's ERC

- 7.31 Has your company submitted product information and a list of experts to ERC?

Training

- 7.32 Is there a routine for training external rescue service personnel together with employees?

Dialogue

- 7.33 Is there a routine for informing external parties about improvement measures within the logistics area?
- 7.34 Has responsibility for the above routines been clarified?

Checklist:

Department:

Head:

Implementation level:

1 = no activity

2 = ongoing activity

3 = established

4 = continual improvement

Question	Imp.level	Objectives	Responsible party	Revision	Date
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					