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XF: Desk

TO: Dave Penney-Austin

FROM: T. G. Grumbles

DATE: November 13, 1991

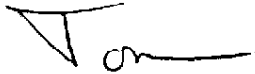
SUBJ: PRODUCT STEWARDSHIP CODE

Interoffice
Communication

VISTA

Attached is a request from CMA for review of Product Stewardship Code documents. The self-evaluation form is significantly different from others seen to date. The issue of how to self-evaluate, products line, business area, etc., is still open.

Please review and let's discuss who else needs to review and comment. We should provide combined Vista comments. They are due January 30.



T. G. Grumbles

dlj

Attachment

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CHEMICAL MANUFACTURERS ASSOCIATION

November 6, 1991

TO RESPONSIBLE CARE® COORDINATORS

Subject: Draft Product Stewardship Code of Management Practices,
Booklet, Question-and-Answer (Q&A) and Member Self
Evaluation Form

Dear Responsible Care® Coordinator:

The draft Responsible Care® Product Stewardship Code of Management Practices, booklet, Q&A and member self-evaluation form are enclosed for your company's review. The code and supporting documents were developed by CMA's Health and Safety Committee through a code drafting group representing a broad range of member company expertise (roster enclosed), and a series of four Open Meetings for the general membership.

Please review the draft code, booklet, member self evaluation and Q&A and provide your comments to CMA by January 30, 1992.

Please also note that an Open Meeting will be held during the comment period on December 5, 1991, in Washington, DC (announcement enclosed). This meeting will provide an opportunity for you to ask questions and discuss your comments directly with the code drafting group members. In addition, a preview of the code by the CMA Board of Directors on January 14, 1992, will provide another opportunity for your company to express its views.

Product Stewardship Code of Management Practices

The purpose of the Product Stewardship (PS) Code of Management Practices is to make health, safety and environmental protection an integral part of designing, manufacturing, distributing, using, recycling and disposing of our products. It presents new challenges through its product-oriented focus and consideration of the complete product life cycle, affecting nearly every segment of a company's operations. The code also emphasizes interaction with suppliers, contract manufacturers, distributors and customers to encourage responsible handling of the product by other parties.

The elements of the PS Code address management leadership and commitment, development of health, safety and environmental information, product risk characterization and risk management. The

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code complements all of the other codes due to its broad scope, but has an especially close relationship with the Distribution Code of Management Practices.

The code is an obligation of CMA membership and requires the commitment of all levels of management to the goal of effective product stewardship. It provides guidance to member companies on practices intended to achieve continuous improvement in product stewardship. With this in mind, a proposed member self-evaluation is enclosed for your review.

Two additional supporting documents are also enclosed for comment. The draft booklet provides a brief discussion of each management practice to aid in understanding the code. The Q&A addresses some of the most commonly asked questions that have been posed in the Open Meetings.

Drafts of the PS Code were reviewed by the Responsible Care® Public Advisory Panel. In addition, the current draft reflects comments from the Product Stewardship Legal Advisory Group, Health and Safety Committee, other CMA task groups and the general membership through the four Open Meetings. Other chemical trade associations have also participated through the Open Meetings.

Resource Needs for Implementation of the Code

Implementation of the PS code as an obligation of membership under the Responsible Care® initiative will require the commitment of significant resources by CMA and its member companies. Implementation will be supported by both new and existing materials from CMA, as well as other appropriate sources. An implementation resource manual is currently under development by the code drafting group. With this in mind, please use the response form to identify resources your company would find helpful in implementing the code.

Written Comments

To assure that all member companies have an opportunity to review the code before it is sent to CMA's Board of Directors for approval in April, 1992, please submit any comments you may have in writing. A response form is enclosed for your convenience. In completing the response form, please feel free to identify other areas of concern to your company or to suggest a more appropriate approach. Please return the response form and any supplemental comments to Claudette M. Cofta, Associate Director, Health Programs, by January 30, 1992.

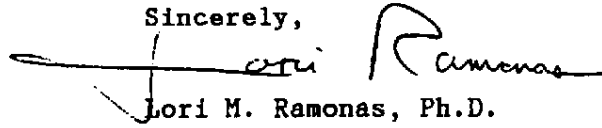
The Product Stewardship Code of Management Practices represents the continuing commitment of CMA and the chemical industry to the principles of Responsible Care®. It reflects our concern for the proper use and handling of our products through out the life cycle.

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Responsible Care® Coordinators
November 6, 1991
Page 3

If you have any questions about the draft code, December Open Meeting, or resource needs for implementation, please call Claudette M. Cofta at 202/887-1278 (or fax: 202/887-1237).

Sincerely,

A handwritten signature in black ink, appearing to read "Lori Ramonas", is written over a horizontal line.

Lori M. Ramonas, Ph.D.
Director
Responsible Care®

Enclosures

cc: Health and Safety Contacts
Health and Safety Committee
Product Stewardship Code Drafting Work Group
Product Stewardship Quarterly Review Group
Responsible Care® Coordinating Group

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Product Stewardship Open Meeting

*Thursday
December 5, 1991*

The Stouffer Concourse Hotel

2399 Jefferson Davis Highway

Arlington, VA 22202

(703) 418-6800

*(2 1/2 blocks south of Crystal City Metro Stop)
5 minutes from National Airport)*

**The registration fee for the meeting is \$125
Please register early as space is limited.**

**A block of rooms has been reserved at a special rate of \$129
This rate is available until November 22, 1991.**

**Also, for details on special air discounts, call
Continental Airlines at 1-800-468-7022.
and refer to file number: **EZ 14 QP 52****

**Please return the enclosed registration form
to Mary Beth Preston as soon as possible.**

*If you have any questions, please contact
Mary Beth Preston at (202) 887-1277.*

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George Simmons	Vice President of Mktg and Sales First Chemical Corporation P.O. Box 1249 Jackson, MS 39205	601/949-0246 601/949-0264 F
Ladd W. Smith	Director, Product Stewardship Occidental Chemical Corporation 360 Rainbow Blvd. Niagara Falls, NY 14302	716/286-3358 716/286-3141 F
Dale E. Struthers	Manager, Product Safety and Toxicology BP America 200 Public Square, 7-K Cleveland, OH 4411	216/586-8262 216/586-8085 F
Michele Sullivan	Hoechst Celanese Routes 202-206 Sommerville, NJ 08876-1258	908/231-4480 908/231-4554 F
Donald R. Theissen	Director, 3M Corporate Product Responsibility 3M Center Bldg. 225-3N-09 St. Paul, MN 55144	612/733-6050 612/736-9278 F
Janice Warnquist	Crompton & Knowles Corp. P. O. Box 341 Redding, PA 19603	215/582-6651 215/582-6665 F
Glenn R. Weckerlin	Chevron Corporation 6001 Bollinger Canyon Road Building T San Ramon, CA 94583	415/842-5538 415/842-1501 F

CMA Staff:

Technical Department: C. Cofta	202/887-1278
Communications Department: (pending assignment)	
Government Relations Department: E. Winkelman	202/887-1134
Legal Department: D. Evans	202/887-1354
S. Conti	202/887-1356
B. Ondoscin	202/887-1352

CMA FAX: 202/887-1237

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Product Stewardship Open Meeting

*The Stouffer Concourse Hotel
Arlington, VA
December 5, 1991*

Yes, I will be attending the Product Stewardship Open Meeting

NAME: _____
TITLE: _____
COMPANY: _____
ASSOCIATION: _____
ADDRESS: _____

PHONE: _____
FAX: _____

Please return this registration form, along with a check for \$125 made payable to CMA, to:

Mary Beth Preston
Chemical Manufacturers Association
2501 M Street, NW
Washington, DC 20037
(202) 887-1277
Fax (202) 887-1237

Please complete a separate form for each registrant.

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Product Stewardship
Code Drafting Work Group

Roster

<u>Name</u>	<u>Company and Address</u>	<u>Phone</u>
Phill Ashkettle/ Andy Allen	Ashland Chemical, Inc. P.O. Box 2219 Columbus, OH 43216	614/889-3798 614/889-3823 F
Mark E. Berenson	Director, Quality Control SCM Chemicals 3901 Fort Armistead Road Baltimore, MD 21226	301/355-3600 301/354-7351 F
Pat Brink	Environmental Issues Manager The Dow Chemical Company 2020 Building Midland, MI 48674	517/636-5787 517/638-9919 F
Bill Cooper	Univar Corporation P.O. Box 34325 Seattle, WA 98124-1325	206/889-3417 206/889-4136 F
Bill Haaf	Environmental Issues Manager E.I. du Pont de Nemours & Co. 1007 Market Street Room N11530 Wilmington, DE 19898	302/774-6749 302/774-2093 F
Fred Hill	Staff Engineer Shell Oil Company P.O. Box 4320 Houston, TX 77210	713/241-5778 713/241-2494 F
Harry Hunter	Manager, Environmental Health Exxon Chemical Americas 13501 Katy Freeway Houston, TX 77070	713/870-6874 713/588-2522 F
Rod Johnson	Unocal Corporation 1700 East Golf Road Schaumburg, IL 60173	708/619-2543 708/619-2515
Jim Mieure	Director, Product Safety Monsanto Company 800 N. Lindbergh Blvd St. Louis, MO 63167	314/694-3146 314/694-6262 F
Don Kreh	Manager, Product Stewardship Eastman Kodak Company P.O. Box 1974 Kingsport, TN 37662-5230	615/229-8496 615/229-3928 F

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Product Stewardship Code of Management Practices Comment Response Form

Purpose and Scope:

Management Practice 1, LEADERSHIP:

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[illegible]

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Page 3

**Management Practice 8, EMPLOYEE EDUCATION and
PRODUCT USE FEEDBACK:**

Management Practice 9, CONTRACT MANUFACTURERS:

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DRAFT

PRODUCT STEWARDSHIP CODE OF MANAGEMENT PRACTICES

DRAFT MEMBER SELF-EVALUATION FORM

Member Company

Name: _____

Responsible Care® Coordinator

Name: _____

Address: _____

Telephone: () _____

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PRODUCT STEWARDSHIP CODE OF MANAGEMENT PRACTICES

Management Practices

Categories

	NA	EV	DP	IA	PP	RI
1. LEADERSHIP: Demonstrate senior management leadership through written policy, active participation and communication. Comments on Category NA: _____ _____ _____						
2. ACCOUNTABILITY and PERFORMANCE MEASUREMENT: Establish goals and responsibilities for implementing product stewardship throughout the organization. Measure performance against these goals. Comments on Category NA: _____ _____ _____						
3. RESOURCES: Commit resources necessary to implement product stewardship practices. Comments on Category NA: _____ _____ _____						
4. HEALTH, SAFETY and ENVIRONMENTAL INFORMATION: Establish and maintain information on health, safety and environmental hazards and on potential exposures from new and existing products. Comments on Category NA: _____ _____ _____						

- Category NA - No action. If no action taken because the management practice is not applicable, please explain.
- Category EV - Evaluating existing company practices against the Management Practice.
- Category DP - Developing plan to implement Management Practice.
- Category IA - Implementing action plan
- Category PP - Management Practice in place.
- Category RI - Reassessing Management Practice implementation.

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Categories

NA EV DP IA PP RI

9. **CONTRACT MANUFACTURERS:** Select contract manufacturers who employ appropriate practices for health, safety and environmental protection for the operations under contract; or, work with contract manufacturers to help them implement such practices. Provide information and guidance appropriate to the product and process risk to foster proper handling, use, recycling and disposal. Periodically review performance of contract manufacturers.

Comments on Category NA: _____

10. **SUPPLIERS:** Require suppliers to provide appropriate health, safety and environmental information and guidance on their products. Factor adherence to sound health, safety and environmental principles, such as those contained in Responsible Care®, into procurement practices.

Comments on Category NA: _____

11. **DISTRIBUTORS:** Provide health, safety and environmental information to distributors. Commensurate with product risk, work with them to foster proper use, handling, recycling, and disposal, and the transmittal of appropriate information to downstream users. When a company identifies improper practices involving a product, it will take corrective measures. As one option, a company may decide to cease doing business with those unwilling to implement corrective actions. Implement this Management Practice in conjunction with the Distribution Code of Management Practices.

Comments on Category NA: _____

- Category NA - No action. If no action taken because the management practice is not applicable, please explain.
- Category EV - Evaluating existing company practices against the Management Practice.
- Category DP - Developing plan to implement Management Practice.
- Category IA - Implementing action plan
- Category PP - Management Practice in place.
- Category RI - Reassessing Management Practice implementation.

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Product Stewardship Code of Management Practices

PURPOSE AND SCOPE

The purpose of the Product Stewardship Code of Management Practices is to make safety, health and environmental protection an integral part of designing, manufacturing, distributing, using, recycling and disposing of our products. The code provides guidance as well as a means to measure continuous improvement in the practice of product stewardship.

The scope of the code covers all stages of a product's life. Successful implementation is a shared responsibility. Everyone involved with the product has responsibilities to address society's interest in a healthy environment and in products that can be used safely. All employers are responsible for providing a safe workplace, and all who use and handle products must follow safe and environmentally sound practices.

The code recognizes that each company must exercise independent judgment and discretion to successfully apply the code to its individual business environment and customers' needs.

RELATIONSHIP TO RESPONSIBLE CARE® AND GUIDING PRINCIPLES

Implementation of the code promotes achievement of several of the Responsible Care® Guiding Principles:

- o to make health, safety and environmental considerations a priority in our planning for all existing and new products and processes;
- o to develop and produce chemicals that can be manufactured, transported, used and disposed of safely;
- o to extend knowledge by conducting or supporting research on the health, safety and environmental effects of our products, processes and waste materials;
- o to counsel customers on the safe use, transportation and disposal of chemical products;
- o to report promptly to officials, employees, customers and the public, information on chemical-related health or environmental hazards and to recommend protective measures;
- o to promote the principles and practices of Responsible Care® by sharing experiences and offering assistance to others who produce, handle, use, transport or dispose of chemicals.

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9. **CONTRACT MANUFACTURERS:** Select contract manufacturers who employ appropriate practices for health, safety and environmental protection for the operations under contract; or, work with contract manufacturers to help them implement such practices. Provide information and guidance appropriate to the product and process risk to foster proper handling, use, recycling and disposal. Periodically review performance of contract manufacturers.
10. **SUPPLIERS:** Require suppliers to provide appropriate health, safety and environmental information and guidance on their products. Factor adherence to sound health, safety and environmental principles, such as those contained in Responsible Care®, into procurement practices.
11. **DISTRIBUTORS:** Provide health, safety and environmental information to distributors. Commensurate with product risk, work with them to foster proper use, handling, recycling, and disposal, and the transmittal of appropriate information to downstream users. When a company identifies improper practices involving a product, it will take corrective measures. As one option, a company may decide to cease doing business with those unwilling to implement corrective actions. Implement this Management Practice in conjunction with the Distribution Code of Management Practices.
12. **CUSTOMERS AND OTHER DIRECT PRODUCT RECEIVERS:** Provide health, safety and environmental information to direct product receivers. Commensurate with product risk, work with them to foster proper use, handling, recycling, and disposal, and the transmittal of appropriate information to downstream users. When a company identifies improper practices involving a product, it will take corrective measures. As one option, a company may decide to cease doing business with those unwilling to implement corrective actions.

RELATIONSHIP TO OTHER CODES OF MANAGEMENT PRACTICES

This code complements, and should be implemented in conjunction with, current and future Codes of Management Practices.

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Product Stewardship Question and Answer Document

The following questions and answers are intended to provide brief explanations of the Product Stewardship Code of Management Practices.

(1) How is product stewardship different from traditional health, safety and environmental practices?

Today's concept of Product Stewardship is a natural outgrowth of various programs that have developed within the U.S. chemical industry. These practices or programs go by many different names, including product safety, product integrity and product responsibility.

The purpose of the Product Stewardship Code of Management Practices is to make safety, health and environmental protection an *integral part of designing, manufacturing, distributing, using, recycling and disposing of our products.* The Code will affect nearly every segment of a company's operations.

On the other hand, traditional health, safety and environmental practices tend to focus on product development and regulatory issues identified in the Toxic Substances Control Act (TSCA) and the Occupational Safety and Health Act (OSHA). Product Stewardship also emphasizes such concepts as customer interaction and communication where the goal is to foster proper product use, handling, recycling and disposal of products.

(2) Why are energy and natural resource conservation considerations part of the Product Stewardship Code?

Along with the traditional health, safety and environmental issues, product stewardship integrates the consideration of "non-traditional" product development issues such as energy and natural resource conservation into the development of appropriate business strategies.

Energy and natural resource conservation are important considerations for reducing potential adverse environmental impacts, a common concern to both the product stewardship code and the international movement for sustainable development.

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(3) What is meant by the terms "hazard," "exposure," "risk," "risk characterization," and "risk management?"

These are important terms for understanding the subject of risk as used in the Product Stewardship Code:

HAZARD: "Hazard" refers to the potential to cause harm. Hazards can be grouped into three broad classes: physical (flammability, explosivity), health (acute and chronic toxicity) or environmental (ecological). Factors such as potency, dose response relationship, and environmental fate must be considered in determining the potential hazard.

EXPOSURE: Exposure is contact between a substance and a human, animal or some environmental medium. Exposure should be determined by considering factors such as: proximity to the source, dose received (magnitude, duration and frequency), environmental fate, and route of contact.

RISK: Risk refers to the probability that harm will occur from exposure to a hazard.

RISK CHARACTERIZATION: Risk characterization involves the qualitative or quantitative process of evaluating hazard and potential exposure for a given situation. The public's perception of a risk should also be factored into the process. Because risk perception changes with time, the risk should be periodically re-evaluated.

RISK MANAGEMENT: Risk management involves the actions taken to reduce the potential risk associated with each stage of a product's life. Actions can include: no change (because the risk is well managed), MSDS or label changes to provide additional information, product reformulation, repackaging, etc.

(4) How do we know when we've achieved an adequate level of implementation of the management practices? How much improvement is required?

These questions are similar. Both imply a clearly defined end point in the implementation process, which is not the case.

Implementation of each management practice under Responsible Care® varies from company to company. It is a dynamic process and should focus on continuous improvement from the status quo. Each company must determine for itself what constitutes "code-in-place" and maintain consistency from year-to-year for conducting the self-evaluation. The Product Stewardship Resource Guide will provide some suggestions for activities that may contribute to code implementation.

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(5) Why are distributors discussed in the Distribution Code and the Product Stewardship Code?

The Distribution Code focuses on the safe "transportation, storage and handling" of products as they move from manufacturer to end

user. The Product Stewardship Code emphasizes working with distributors to help them achieve an appropriate level of environmental, health and safety performance in areas not addressed by the Distribution Code. These include, but are not limited to, use, handling, recycling, disposal and customer interface. Together, the two codes provide a comprehensive structure for the relationship between manufacturers and distributors.

(6) What do we mean by distributor?

A "distributor" is any independent business entity authorized by a manufacturer to sell, re-sell, or market its product(s). The relationship between the manufacturer and distributor is normally established by contract.

(7) Does the Product Stewardship Code apply to international operations? How does it apply to suppliers from other countries?

Major cooperative efforts are underway to implement the Responsible Care® initiative worldwide. Currently, close to two dozen countries have either adopted, or are proposing to adopt, generic principles of environmental, safety and health stewardship which are incorporated in the Responsible Care® initiative. The present Product Stewardship Code officially applies only to CMA member company operations and locations in the United States. However, many multinational companies are implementing similar Responsible Care® practices and guidelines throughout their worldwide operations. It is envisioned that suppliers both in the U.S. and from other countries will eventually operate under programs similar to Responsible Care® as well.

(8) What type of information should be shared with customers, distributors and other third parties? How can this information be provided?

Information that would help protect health, safety, and the environment should be shared. In addition to MSDSs and labels, a company may choose to supply its customers with further product information through bulletins, videos, instructional workshops, seminars, training programs or site visits. The appropriate actions and information vehicle will vary with each company and with the product risk. In addition, information required by regulations under such laws as the Occupational Safety and Health Act (OSHA) and the Toxic Substances Control Act (TSCA) and any state or federal "right-to-know" laws must be shared.

(9) What do we do if we lack adequate resources to implement the code?

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Through a process of continual review, a company should set its own priorities to implement Responsible Care® management practices according to company resources and its own requirements. This

approach will assist in planning for the use of scarce resources. Continuous improvement is inherent in the resource-allocation process.

(10) How does the Product Stewardship Code relate to the other Responsible Care® codes?

The Product Stewardship Code is unique in several ways. First, it is the only one of the six codes that looks specifically at a product rather than a process. Secondly, the code emphasizes interaction with suppliers, distributors and customers, and encourages responsible downstream handling and use of the product. The Product Stewardship Code attempts to weave all six Codes of Management Practices into a single, cohesive program for implementing the Responsible Care® initiative.

(11) Will I be required to carry out a customer audit?

Audits are not required by the Product Stewardship Code. However, some form of assessment is needed to characterize the hazards and potential exposures of products and the risks associated with their distribution and use. Similarly, the facilities, practices and competence of contract manufacturers, distributors and customers need to be considered. Follow-up action is determined on a case-by-case basis, commensurate with the product risk.

(12) What job functions inside a company should receive product training?

Any employee whose job function involves customer contact should be familiar with the properties of a product and the potential adverse effects, and be adequately trained in its proper handling and use. Employees in sales, marketing, research & development, technical service, distribution and production, should be able to recognize either new uses or misuses of a product and, subsequently, feed that information back into the risk characterization and management processes. (See also the Employee Health and Safety Code of Management Practices).

(13) What is the appropriate unit of measurement for evaluation (i.e., by business unit, product line, plant site)? vvv 000008144

The Product Stewardship Code presents a challenge because the code focuses on activities involving a company's products rather than on a company's facilities, and the traditional measurement units used by other codes may not apply. In addition, no uniform measurement is recommended for every company to use in conducting self-evaluations against the management practices. Each company will determine what works best for its particular circumstances. Some companies may choose to evaluate each

individual product, while others may choose product lines or business units.

The most important point is that each company must establish some unit of measurement and remain consistent year-to-year. Since the self-evaluation process aims to measure each member company's annual progress against the code practices, and since results are not absolute, the scores are relevant only to the company's progress measured in subsequent years. The focus is on continuous improvement, regardless of the unit of measurement.

(14) What is meant by the term "work with?"

Although responsibility for proper manufacture, handling, use, recycling and disposal rests with each party in the chain, the concept of product stewardship includes a willingness to assist where requested or where a need is apparent.

"Working with" may include providing detailed health, safety and environmental product information, providing technical assistance on product handling techniques, or visiting facilities.

The risk associated with a product will help determine the appropriate response in each individual case. In addition, certain parties in the life cycle may require more assistance than others. The response remains a judgment call in each individual case by the company involved.

(15) Why does the code appear negative? Why does it constantly refer to "risk?"

The purpose of the Product Stewardship Code is "to make health, safety and environmental protection an *integral part of designing, manufacturing, distributing, using, recycling and disposing of our products.*" It is meant to reflect the positive commitment of our industry to meeting these challenges, and represent a proactive approach to addressing customer, public and chemical industry concerns for the safe handling, use and disposal of products.

Risk, whether perception or reality, is a major concern associated with chemical industry products. In response to this concern, product risk characterization must be followed by appropriate actions to manage risks from the manufacture, distribution, use, recycle or disposal of our products. It is imperative that we communicate these actions.

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(16) How far down the chain of commerce does the code apply? Does it apply through the first point-of-sale or beyond?

The Product Stewardship Code covers all stages of a product's life. It is intended to cover as much of the chain of commerce as necessary to help prevent misuse, mishandling or other activities that might result in harm to people or the environment from our

products. The word "help" is key because it acknowledges that to be successful, product stewardship must be a cooperative effort.

The main focus of the management practices in relation to the chain of commerce is on contract manufacturers, suppliers, distributors, customers and other direct product receivers, or those with whom there is a close business relationship. The main responsibility lies with the next party in the chain, which should consequently practice product stewardship and encourage its downstream users to do the same.

(17) How do you acquire health, safety and environmental information from a supplier?

Ask. The real issue is how to ask so the supplier clearly understands what information is needed and why providing that information is valuable and beneficial.

Health, safety and environmental information may be beneficial not only to the requesting member company, but to the future stewardship activities of the supplier as well. It is important to establish a dialogue with the supplier that facilitates an understanding of the product's risks by both parties.

In the final analysis, the company is responsible for all chemical products received and handled by its employees or agents, as well as all products that are sold or shipped by its operation or agent.

(18) Will there be a glossary?

A glossary will be provided in the final version of the Resource Guide.

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DRAFT BOOKLET

Management Practice 1

LEADERSHIP: Demonstrate senior management leadership through written policy, active participation and communication.

The objective of this management practice is to set the foundation for the product stewardship code. To this end, senior management must first adopt a policy that reflects the company's vision for product stewardship. This policy should state clearly how senior management expects product stewardship to be managed within the company.

To be effective, the policy should emphasize that product stewardship, like quality and safety, must be woven into every employee's job. It also should be clear that the commitment is an ongoing, long-term part of the company's operation and culture.

Finally, if the new policy represents a change in the way of doing business, it should be clear that a change in behavior is expected. In some companies, a separate written product stewardship policy may be effective. In others, a broader health, safety and environmental policy that incorporates the principles of product stewardship may be more appropriate.

However, a policy alone is not enough. The words of a policy must be reinforced by actions and behaviors that continuously reaffirm the goals senior management has set. Senior management is responsible for conveying its involvement with, and support of, product stewardship to the next level of management and encouraging it to do the same. (Management Practices 2 and 3 focus on some of the visible signals -- for example, goals, performance measurement and resource allocation).

Management Practice 2

ACCOUNTABILITY and PERFORMANCE MEASUREMENT: Establish goals and responsibilities for implementing product stewardship throughout the organization. Measure performance against these goals.

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As described in Management Practice 1, one of the key ways senior management can convey the importance of product stewardship is by establishing it as a priority in business planning and individual performance planning. The objective is to develop a process that will result in continuous improvement through goals that are well-defined, achievable and measurable. Similarly, staff responsibilities should be clear and consistent.

Individual performance planning is an important step that allows employees to relate their roles to their company's goals and overall vision. Senior management is responsible for ensuring that this planning process is in place.

Management Practice 3

RESOURCES: Commit resources necessary to implement product stewardship practices.

The commitment of resources, both human and financial, is a critical signal that management can send to show its commitment to product stewardship practices. Undoubtedly, resources will vary from company to company. However, in all cases, the commitment of resources should be consistent with product stewardship implementation plans and sufficient to support continuous improvement.

Management Practice 4

HEALTH, SAFETY and ENVIRONMENTAL INFORMATION: Establish and maintain information on health, safety and environmental hazards and on potential exposures from new and existing products.

Just as Management Practice 1 is the foundation for the Product Stewardship Code, Management Practice 4 is its driving force. The objective of Management Practice 4 is to establish a knowledge base of human and environmental hazards and potential exposures and, once established, to maintain it. Under this practice, companies gather information to support the system that characterizes a product's risk (Management Practice 5) and, ultimately, the system that develops the methods to manage that risk (Management Practice 6).

Initially, some companies may establish their knowledge base by developing information; others may do so by collecting and compiling available information. However, all companies should have a process to continuously gather relevant product information and to review existing information to determine if it is accurate, current and complete.

Sources of information may include published, unpublished and/or internally generated scientific reports on health, safety and environmental effects and exposures. Generally, the types of information would include animal or human toxicity, ecotoxicity and chemical and physical properties that affect exposure or environmental impact. In many cases, exposure information is not directly available but may be estimated by product use information.

Information on a product's handling, use and potential misuse in research, development, manufacturing, transport, storage, packaging and disposal may be obtained by a number of means. These could include surveys of customers and other product handlers, technical reviews or visits to customers, and/or observations reported by sales and marketing personnel.

Management Practice 5

PRODUCT RISK CHARACTERIZATION: Using information about health, safety and environmental hazards and potential exposure, characterize new and existing products with respect to their risk. Establish a system that initiates re-evaluation.

This practice has two objectives. The first is to use the information gathered in Management Practice 4 to develop a thorough understanding and characterization of a product's risk. The second objective is to establish a system that triggers re-evaluation, whether upon receipt of new information or upon periodic review.

A product may be a single entity, or it may be a mixture or group of products based on similar uses, composition or physical properties. The characterization can be either quantitative or qualitative. Inevitably, risks vary. For example, a product's risk may vary if it has different uses or exposures.

The time frame for re-evaluation may vary from product to product or company to company. However, all companies should have a system that triggers or provides for re-evaluation as new information becomes available.

Management Practice 6

RISK MANAGEMENT SYSTEM: Establish a system to identify, document and implement health, safety and environmental risk-management actions appropriate to the product risk.

The objective of Management Practice 6 is to establish a system for identifying and implementing risk-management actions. Risks involved in the production and use of chemicals can be managed and controlled if each company takes the basic information on a product's risk (Management Practice 4), characterizes it (Management Practice 5) and then implements a series of risk management actions (Management Practice 7 through 12). These risk management actions are a result of a conscious weighing of technical, ethical, societal and business issues surrounding a product. Actions taken as a result can range from no action, to product reformulation or repackaging, to removal of a product from a market.

The management practices that follow, Management Practices 7 through 12, are specific areas of company operations that warrant discussion and special emphasis.

Management Practice 7

PRODUCT and PROCESS DESIGN and IMPROVEMENT: Establish and maintain a system that makes health, safety and environmental impacts--including energy and natural resource conservation--key considerations in designing and developing products and processes.

This practice focuses on identifying and managing the risks of new and existing products and processes through design or modifications. The objective in all cases is the same: to consider -- before implementing changes or designing new products and processes -- impacts on health, safety and the environment; consumption of energy and natural resources; and recycling.

For new products and processes, these factors should be considered at each critical stage during scale-up, from conception and bench preparation, through pilot work, to initial manufacturing runs. For existing products and processes, these factors should be considered at regular reviews and prior to adopting changes that may alter product properties, utility, quality or content.

Insights and contributions from employees in all functional areas that may affect health, safety and the environment should be incorporated into the review. These functional areas may include research and development, manufacturing, distribution, sales and marketing.

Management Practice 8

EMPLOYEE EDUCATION and PRODUCT USE FEEDBACK: Based on job function, educate and train our employees on the proper handling, recycling, use and disposal of products and known product uses. Implement a system that encourages employees to feed back information on new uses, identified misuses, or adverse effects for use in product risk characterization.

This practice has two objectives. The first is to ensure that all employees involved with products have the training and education necessary to understand product risks and proper use, handling, recycling and disposal procedures. The second is to help ensure that any new information that may alter the way a risk is managed is factored into the risk characterization on a timely basis (Management Practice 5).

The training and education level of employees should be tailored to specific job functions. For example, field sales staff are in a unique position to know how customers are using products and must be aware of product hazards, potential exposures and appropriate uses. Field sales staff should be able to identify deviations from expected end uses or applications.

Timely feedback from employees is essential to maintain an up-to-date health, safety and environmental knowledge base (Management Practice 4).

Management Practice 9

CONTRACT MANUFACTURERS: Select contract manufacturers who employ appropriate practices for health, safety and environmental protection for the operations under contract; or, work with contract manufacturers to help them implement such practices. Provide information and guidance appropriate to the product and process risk to foster proper handling, use, recycling and disposal. Periodically review performance of contract manufacturers.

The objective of this Management Practice is to encourage the use of contract manufacturers who have sound health, safety and environmental practices for the specific operations under contract.

Companies are responsible for assessing the capabilities of each contract manufacturer and for supplementing their expertise with enough guidance to foster proper handling, use and disposal. If contract manufacturers are unwilling to implement appropriate controls, a company may decide to cease doing business with them. While companies are committed to working with contract manufacturers to help them improve performance, improvement to meet appropriate H,S&E standards should occur within a reasonable time frame.

The level of a company's involvement and review will vary according to the degree of risk. "Working with" may include providing detailed H,S and E product information, providing technical assistance on product handling techniques or visiting facilities. These actions will vary according to the individual contract manufacturer and operation. Because of the greater degree of company control, much closer interaction will be appropriate with contract manufacturers as compared to distributors and customers. All contract manufacturers should be subject to periodic performance reviews.

Along with Management Practices 10 and 11, this management practice constitutes an important outreach component of the product stewardship code. The long-term result of implementing this practice, like the other outreach management practices, should be better health, safety and environmental performance -- not just for CMA companies but for the entire chemical industry.

Management Practice 10

SUPPLIERS: Require suppliers to provide appropriate health, safety and environmental information and guidance on their products. Factor adherence to sound health, safety and environmental principles, such as those contained in Responsible Care®, into procurement practices.

The objective of this management practice is to extend product stewardship practices to suppliers. Where appropriate, health, safety and environmental factors should be an integral part of the procurement process, including product exchange. For some companies, this may take the form of close cooperation within the purchasing, manufacturing, health and loss prevention functions to determine how the supplier can contribute to a safer environment. Other companies may opt to make these health, safety and environmental considerations a part of their supplier quality reviews. Suppliers should describe health, safety and environmental programs and goals.

Along with Management Practices 9 and 11, this management practice constitutes an important outreach component of the product stewardship code. The long-term result of implementing this practice, like the other outreach management practices, should be better health, safety and environmental performance -- not just for CMA companies but for the entire chemical industry.

As with customers, it is not practical or constructive to monitor the activities of all suppliers. However, it is appropriate to expect companies to make a continuous effort to extend the principles of product stewardship beyond the CMA membership and Responsible Care® partners.

Management Practice 11

DISTRIBUTORS: Provide health, safety and environmental information to distributors. Commensurate with product risk, work with them to foster proper use, handling, recycling, and disposal, and the transmittal of appropriate information to downstream users. When a company identifies improper practices involving a product, it will take corrective measures. As one option, a company may decide to cease doing business with those unwilling to implement corrective actions. Implement this Management Practice in conjunction with the Distribution Code of Management Practices.

The objective of this management practice is to encourage distributors to establish and implement proper health, safety and environmental practices involving our products. It should be implemented in conjunction with Management Practice 4.6 of the Distribution Code, which focuses on the inbound/outbound and storage aspects of distributor operations. The emphasis in the Product Stewardship Code is on working with distributors to help them achieve an appropriate level of performance on other aspects of their operations, such as recycling, handling, use and disposal and the

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transmittal of information to downstream users. As with customers and other direct product receivers, a company may decide to cease doing business with those who are unwilling to implement corrective actions that are appropriate for the purpose of limiting risks.

The level of involvement with a distributor will vary according to the product's risk. The product's risk should also trigger the frequency of the periodic performance reviews that are mandated in the Distribution Code. These reviews should be used as a forum to share accumulated knowledge that will elevate health, safety and environmental performance -- and product stewardship practices.

It is recognized that distributors perform a broad range of functions, from simply repackaging the original product to reformulating it into a new product with new H,S&E characteristics. The "transmittal of appropriate" information acknowledges that while we want distributors to pass along H,S&E information, changes in the product made by the distributor may mean that the information originally supplied with the product no longer applies. In these cases the distributor needs to issue information that reflects the current H,S&E information.

As with customers and suppliers, it is not practical or constructive to monitor the activities of all distributors due to their large numbers. It is appropriate to expect companies to make a continuous effort to extend the principles of product stewardship beyond the CMA membership and Responsible Care® partners.

Management Practice 12

CUSTOMERS AND OTHER DIRECT PRODUCT RECEIVERS: Provide health, safety and environmental information to direct product receiver. Commensurate with product risk, work with them to foster proper use, handling, recycling, and disposal, and the transmittal of appropriate information to downstream users. When a company identifies improper practices involving a product, it will take corrective measures. As one option, a company may decide to cease doing business with those unwilling to implement corrective actions.

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The objective of this management practice is to encourage customers to establish proper health, safety and environmental practices involving our products. While the emphasis is on working with customers to help them achieve an appropriate level of performance, this management practice recognizes that if those efforts fail, a company may choose to cease doing business with that customer.

The level of involvement will vary according to the product's risk. "Corrective measures" in this practice refer to the actions the company supplying the product will take in regard to any concerns. "Corrective actions" refers to the actions the customer determines it

will make in response to these concerns. At a minimum, both parties should share any accumulated knowledge that will enhance health, safety and environmental protection.

The "transmittal of appropriate "information acknowledges that while we want customers to pass along H,S&E information, changes in the product made by the customer may mean that the information originally supplied with the product no longer applies. In these cases, the customer needs to issue information that reflects the current H,S&E information.

Along with Management Practices 9, 10 and 11, this management practice constitutes an important outreach component of the product stewardship code. The long-term result of implementing this practice, like the other outreach management practices, should be better health, safety and environmental performance -- not just for CMA member companies but for the entire chemical industry.

As with distributors and suppliers, it is not practical or constructive to monitor the activities of all customers. However, it is appropriate to expect companies to make a continuous effort to extend the principles of product stewardship beyond the CMA membership and Responsible Care® partners.