

**The Canadian Chemical Producers' Association**



**Responsible Care®: A Total Commitment**

**Compliance Verification**

**for**

**BASF Canada Inc.**

**May 29 - 31, 1995**

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The Canadian Chemical Producers' Association

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This document has been produced by a team convened by The Canadian Chemical Producers' Association (CCPA) to provide guidance to be above company, as a member of the association, in meeting its obligations under Responsible Care®. Although CCPA members are expected to share the results of this guidance with interested parties, neither the association, its member companies, their employees, consultants and other participants in this study accept any responsibility whatsoever for consequences resulting from its use or application. It is the responsibility of the CCPA member company which is the subject of this report to interpret and act on the findings and recommendations as it sees fit, and any member company, organization or person using this document does so at their own risk.

## **Compliance Verification:**

### **EXECUTIVE SUMMARY**

The Responsible Care® compliance verification of BASF Canada Inc. was conducted on May 29-31, 1995.

The verification was based on visits to the Corporate Office (Toronto), Constellation Court plant (Toronto) and the Brantford plants which are all located in Ontario. In addition, detailed discussions were held with the Site Managers of both the Arnprior, Ontario and Windsor, Ontario plants respectively. Extensive interviews were also held with key business managers. The verification was conducted by a three member team appointed by CCPA and scrutinized by local community representatives from Toronto and Brantford.

The team used the top-down questioning approach described in the *Compliance Verification Protocol*. The questions focused on process rather than detail, and tested for the existence of effective management systems to ensure understanding of Responsible Care®, establishing and meeting the desired level of performance, documentation and adequate resourcing.

Based on its investigation, the verification team (comprised of external members and CCPA staff), is in agreement that BASF Canada Inc. has met the expectations and guidelines to achieve compliance with Phase I of the Responsible Care® initiative.

Effective systems were in place and appear to be generally well designed, and implemented enabling the company to meet and sustain the desired level of performance with the provisions for continuous improvement. It should ensure that BASF can continue to put measures in place for the effective management of chemicals, products and processes in the environment of changing knowledge, regulations, and most importantly, public expectations.

Many examples were found where the company exceeded Phase I requirements and have developed innovative systems which could be useful for other CCPA members.

The verification team found some opportunities for improvement which are cited in the report but not considered essential for Phase I completion.

R.I. Scott  
Verification Team Leader  
July 1995

## 1. INTRODUCTION

*In this report, comments and recommendations of the verification team are shown in italics. **Bold italics are used for any comments on improvements the team considers essential before the company can be considered in compliance.** Positive comments on performance which goes beyond the requirements of Phase I implementation are underlined.*

A glossary of terms and acronyms appears at the end of the report.

### 1.1 Objective

Each member company of the CCPA must commit to the guiding principles and codes of practice of Responsible Care as a condition of membership in the association.

The compliance verification protocol was developed by the association's members and others to confirm, for the CCPA and the public, the existence of a satisfactory system or process which ensures that the guiding principles and codes of practice of Responsible Care® are in place and practised within the organization.

Each member company must therefore undergo compliance verification before Phase I of its commitment can be formally recognized as complete.

It should be noted here that "completion" in this sense does not indicate that nothing further needs to be done, but rather that a key milestone has been reached in a process of continuous improvement.

### 1.2 Verification Criteria

The six codes of practice of Responsible Care® contain altogether 151 individual requirements which member companies must meet to be in compliance. More information on what is expected is given in the documents *Guidelines for Completion of Responsible Care® Implementation (Phase I)* issued on February 20, 1992 and *Community Awareness Code Guidelines for Phase I Completion* issued on February 25, 1994.

The verification principles are set out in the *Compliance Verification Protocol* approved by the association's board of directors on February 9, 1994. For the purposes of examination, a portion of the 151 code requirements are sampled in depth. These items are grouped into seventeen management systems, each of which is examined using a series of questions. Some of the questions are sent to the company in advance of the verification visit, so that supporting documentation, etc. can be available for prompt examination if desired. Additional questions are asked at the discretion of the team during the visit.

### 1.3 The Verification Team

The verification team, BASF Canada Inc., consisted of the following persons:

	<i>Affiliation</i>	<i>Representing</i>
Robert Scott Team Leader	Consultant	Industry
Shan Shanmuganathan	Consultant	Industry
Peter Cameron	First Ontario Fund	Public and Communities at large
Ralph Walicki	Molson Breweries	Toronto Surrounding Community
Jim McCracken	McCracken's Garden Gallery	Brantford Surrounding Community

## 1.4 The Verification Process

The verification was conducted by a pre-meeting in Toronto on April 12, 1995, plus visits to the Corporate Office, Toronto, Constellation Court Plant Site, Toronto, and the Brantford Plant Site. In addition detailed discussions were held with the Site Managers of both the Arnprior and Windsor Plant Sites, respectively.

The scope of the Verification is illustrated in Appendix I.

Key contacts during the process were as follows:

### Corporate (Toronto)

C. Von Krafft	President, BASF Canada Inc.
J. Clarke	Vice-President & Site Manager - Toronto
L. Marshall	Vice-President - Fibers, Chemicals & Polymers
P. Yick	Director of Ecology & Engineering Group
R. Barker	Manager - Safety & Ecology
L. Hunter	Regulatory Compliance Manager - Transportation
A. Joester	Manager - Purchasing & Facilities
I. Videc	Manager - Physical Distribution
J. Filgueira	Business Manager - Industrial Chemicals
D. Pfeiffer	Business Director - Agro
P. Reineck	Business Manager - Dispersions, Intermediates, & Inorganic Chemicals
K. Schaltz	Business Manager - Specialty Chemicals
J. Angus	Manager - Purchasing
E. Henderson	Manager - Product Safety

### Arnprior, Ontario

D. Nicholas	Site Manager
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### Brantford, Ontario

S. Rapaport	Site Manager
A. Bernat	Plant Engineer
M. Kirby	Business Director - Automotive Refinish
R. Lowe	Training Supervisor
H. Morrison	Supervisor - Refinish Laboratory
G. Murray	Warehouse Supervisor
W. Normann	Production Superintendent
J. Rusheleau	Manager - Emergency Response
D. Scott	Supervisor - Site, Safety & Ecology Production

### Constellation Court, Toronto

S. Belej	Plant Manager
A. Calovini	Maintenance, Safety & Ecology Manager
K. Dondorff	Technical & Business Development Manager - Polyurethane Systems

**Oshawa, Ontario**

M. Holmes	Business Director, OEM
P. Macko	Business Director, Industrial & Container Coatings
C. Wilkinson	Sales Manager - Product Steward, OEM, Container Coatings Industrial

**Windsor, Ontario**

M. McGuinness	Site Manager
A. Ligorì	Manager - Corporate Engineering

**Site Visits**

Constellation Court	-	Operators and Staff
Brantford	-	Operators and Staff

**External Contacts**

- Carriers
- Contractors
- Customers
- Distributors
- Fire Chiefs
- Suppliers
- Surrounding Community Residents
- Toll Manufacturers
- Waste Handlers

## 2. FINDINGS

The headings which appear below are brief summaries of each topic rather than the detailed questions actually used during the verification. For more information on the actual questions and the verification protocol please contact the CCPA's Responsible Care office at (613) 237-6215, fax (613) 237-4061.

### 2.1 Set organization and responsibilities

Note: This section also covers management system #17 (Audit and Follow-up).

#### 2.1.1 Organization and personal involvement - CEO

- President, Christoph Von Krafft, stated that a functional organization was established in November 1990 to ensure that BASF would meet its Responsible Care® commitments.
- Accountability for Responsible Care® performance was specifically assigned to individual managers with specific performance goals established within each code of practice. The managers were supported by code coordinators at each site. The site coordinators and the corporate coordinator reported on progress through a steering committee to the Management Council.
- Responsible Care® was extended to all business divisions - not just the chemical side. This permitted a more effective process since there can be multiple businesses on one site.
- A seventh code - Product Stewardship - was later introduced at every sales business group level. The reporting structure up to the Management Council parallels that cited for Responsible Care® codes above.
- A concentrated effort is currently underway to cross reference all management systems with Responsible Care®.
- Christoph Von Krafft demonstrated his personal commitment through specific business activities.
- Documentation is maintained through a series of reviews and reports with specific time frames.

#### 2.1.2 Application outside Canada

- BASF Canada is part of the larger global BASF organization which is in the process of implementing Responsible Care® throughout North America and Europe.
- All products sold outside of Canada are distributed through a BASF group/company serving the country where the customer is located.
- Completion of the Global Integration of Responsible Care® will take time due to different implementation time lines.

### 2.1.3 Distribution code application in all geographic jurisdictions

- The Distribution Code is applied Canada-wide and no distinction is made between jurisdictions nor whether the products are sold direct or through distributors.
- The required performance standards are well outlined and documented under Product Stewardship. Record keeping is maintained in database systems such as S.P.S.

### 2.1.4 Staff responsibilities and performance

- Product Stewardship is a major responsibility for all sales personnel, although the mechanism varies somewhat between the various businesses due to different marketing systems and requirements.
- Performance is evaluated as part of the “Performance and Development Review” (P.D.R.) Procedure which in turn is linked to compensation.

### 2.1.5 Organization and personal involvement - site managers

- All sites assigned responsibilities for the six codes of management which reported to the Site Managers. Progress was monitored by the Corporate Responsible Care® Coordinator.
- All Site Managers have developed Community Awareness programs in addition to Community Awareness and Emergency Response (CAER) activities.

#### *Team comments on Section 2.1*

- *The verification team noted the commitment to Responsible Care®. There is an effective process to clearly assign responsibilities across all management levels with a good progress review system. This is reflected in the hands-on involvement and knowledge at the executive level.*
- *A particular strength is their Product Stewardship program which will be a key element to Responsible Care® sustainability.*
- *The high involvement of Sales, Distribution and Transportation personnel in Responsible Care® activity and visibility in their functions across all business levels is impressive.*
- *Responsible Care® has a high visibility throughout all locations.*
- *The cross referencing of all management systems would be a benefit to some of the smaller CCPA member companies..*

## **2.2 Meet or exceed laws and regulations**

### **2.2.1 Company**

- The company has an integrated system for maintaining awareness of applicable legislation at all sites.
- The Manager of Government Relations and Corporate Standards is responsible for keeping the company updated and aware on Safety, Health, and Environmental laws and regulations. Guidance is also obtained from the Corporate Legal Department.
- Annual audits to assess compliance are conducted by the Manager of Safety and Ecology. Any deficiencies are noted and follow-up is tracked by the system.

### **2.2.2 Sites**

- All sites confirmed that they have effectively a Safety and Ecology Coordinator who is in contact and works with government agencies to ensure compliance.
- The corporate government liaison issues all new legislation through the ALERT programme to ensure that all locations are up-to-date with new or upcoming legislation.
- Regulatory compliance assessments are carried out to ensure that the process is working and in compliance with all laws and regulations.

#### *Team comments on Section 2.2*

- *The verification team noted that BASF is meeting and in many cases exceeding legal and regulation requirements.*
- *This was all confirmed by examination of pertinent documentation*

## **2.3 Inform public and understand and respond to concerns**

### **2.3.1 Outstanding charges, etc.**

- There are no outstanding directives or control orders against the company at any location.
- Systems are in place to deal with any regulatory excursion, non-compliance, and directives. They are reported monthly to the Management Council via the monthly BASF Ecology Report.

### **2.3.2 Identification of community interests and representatives**

- All sites have utilized a similar series of processes for identifying community interests and the people associated with these areas of interest through the use of a number of communication techniques.
- Networking with various associations and participation in local CAER groups also helps to define community interests and concerns. Arnprior is the only site currently with a Community Advisory Panel.
- Regular contacts are maintained with key municipal, provincial and federal officials.

### **2.3.3 Provision of risk information to the community**

- Information is provided to the communities on risks associated with operations through a process which will aid the company in its accountability to the communities, environmental performance and voluntary environmental commitments.
- Each site is in the process of communicating its Worst Case Scenario to its neighbours.
- Extensive use of various media formats have been used to communicate over a broad range of issues, many of which are related to risk.
- There is also a direct dialogue and consultation process at each location. A follow-up system is in place to respond for those requiring additional information.

### **2.3.4 Process for community dialogue**

- Key initiatives for dialogue include continual access to operations, tours, neighbour contact, and open house programs.
- Other mechanisms for ongoing two-way dialogue with key community interests include participation in local communities, associations, community-based groups, education initiatives and donations programs.
- Acceptable performance is gauged or measured largely through the feedback process. The process is documented and kept current.
- All systems have a process for monitoring and follow-up with respect to unacceptable performance.

### 2.3.5 Response to community concerns

- Some sites highlighted several examples of their response to community concerns raised by various stakeholders. In general, the feedback from the communities has been positive.
- A few locations have had no expression of community concerns to-date. All community concerns would be addressed with a formal reply and follow-up visit.

### 2.3.6 Information sharing and dialogue for new or modified facilities

- BASF illustrated several examples of sharing of plans with community groups. In other areas there have been no significant expansions and therefore no Public Consultation.

### 2.3.7 Process re: community interests and concerns - site manager

- Refer to Section 2.3.2

### 2.3.8 Community awareness along transportation corridors

- The primary process is CCPA "Partners in Transcaer" program. The process for community awareness along transportation corridors has been to outreach the vast majority of on-line communities. BASF has assumed responsibility for the transportation corridor from Ottawa to Arnprior.

#### *Team comments on section 2.3*

- *The verification team found that BASF has an active community outreach program at each site.*
- *Community interests and concerns are identified through the issue assessment process and there is evidence of a response mechanism to community concerns.*
- *During the past three (3) months, all sites have implemented processes to share risk information (Worst Case Scenario) with all community interests.*
- *All site managers have given Outreach a very high personal priority on their agenda. The team encouraged continued reviews and development of community dialogue processes that are appropriate.*
- *Effective benchmarking of the Outreach Program needs development.*
- *Following discussions with numerous neighbours, the Brantford plant needs to follow up as to the effectiveness of their Risk Communication. There appears to be confusion as to the degree of Risk, understanding of the information and feedback as to their concerns.*

## **2.4 Hire, train, assess and communicate to employees**

### 2.4.1

- At BASF, training is an important part of employee development. Each new or transferred employee is given an orientation training and education session which includes an introduction to Responsible Care®.
- Goal setting is integrated with business planning and the Performance and Development Review System. Individual employee objectives are reviewed relative to department, site, and division objectives.
- Total Job Analysis (TJA), job observation, and other forms of performance audit are also used to ensure that appropriate skills and training are reflected in job behaviour.
- Contractors are also subject to training expectations which are clearly spelled out in their policy and performance guidelines. There is also special training for specific process units where there are unique hazards.
- Performance is recognized by several processes. There is an incentive compensation scheme extending right down to middle management. The review process is conducted at least annually around achievements opposite annual objectives or agreed upon personal performance objectives.

### 2.4.2 Communication of hazard and risk information to employees

- On site training programmes are the primary method of informing all employees of the hazards and risks associated with the sites operations. Components and/or topics include W.H.M.I.S., M.S.D.S.'s, specific personal safety, industrial hygiene, spills clean up and control, and other emergency procedures.
- These training sessions are reinforced by individual safety contacts, Total Job Analysis (TJA) and scheduled monthly departmental safety meetings.
- Employees are encouraged to identify and report problems and make suggestions for improvements.

### 2.4.3 Health monitoring and communication

- All new employees must first pass a pre-placement medical examination which forms a baseline to measure the health of the individual.
- The health program addresses any designated substances used in the workplace and reportedly exceeds governmental directives.
- The process is administered and reviewed by the BASF Human Resources personnel, Safety and Ecology department, and the company medical staff.

#### 2.4.4 New employee orientation

- New and transferred employee training program includes a section on Responsible Care®. In addition, all employees are given an orientation related to BASF's expectations in environmental, health, and safety issues. Specific training is given on an as needed basis to ensure that employees have the necessary skills.
- Regular employees receive information on Responsible Care® via numerous communication techniques such as meetings, notice boards, newspapers, etc.

#### *Team comments on section 2.4*

- *BASF has developed an extensive orientation program and a comprehensive training process.*
- *According to outside contractors in Brantford, BASF training far exceeds anything any other manufacturing companies are doing, It is very rigorous and strictly enforced.*
- *Goal setting and performance recognition is handled through the Performance and Development programme. The compensation and reward system is well developed, but effectiveness needs to be measured.*
- *The company has a good program for training and assessing employees in Safety, Health and Environment, and for monitoring Safety and Health. It is backed up with an appropriate database and documentation trail.*
- *The team was impressed by the quality and attitude of the employees at the floor level throughout the company.*
- *Key Emergency Team Leaders attended Emergency and Spill Response Training in Colorado.*

## **2.5 Collect hazard information and assess and minimize risks**

### 2.5.1 Analysis of worst-case scenarios and informing the community

- Process Risk Assessments have been compiled for the most hazardous processes at all locations. The risk analysis was based on Primatech "What if" software programme for Hazard Analysis of Industrial Facilities.
- The Worst Case Scenarios (WCS) have been communicated internally to the employees, first responders, and local fire departments. All sites share or are in the process of sharing their Worst Case Scenario with their respective community.
- Information about all chemicals used on site are shared with area first responders.
- Fire Department (Brantford) very supportive and BASF was most effective at providing full information.

### 2.5.2 Hazard data/communication for new products, processes and procedures

- BASF has the system in place to ensure the development and communication of hazard data packages for all new products, processes, and procedures.
- The experimental products development system is staged with periodic reviews and checkpoints. There are numerous review mechanisms in place with respect to process activities covering Risk, Safety, Health and Environment.
- The processes are benchmarked and there is a system in place to monitor and follow-up on unacceptable performance. Built into the system is the need for periodic reviews for understanding and improvement.

### 2.5.3 Hazard and risk assessment for existing facilities

- The overall process for hazard and risk assessment of existing facilities conforms to several corporate Performance Standards.
- The Risk Management approach was developed from the Prima tech “What If” program.
- New processes are subjected to the BASF STEP 1, 2, 3 safety reviews which include HAZOP analyses following ICI systems, an industry standard.
- The Risk Assessment process is subjected to regular external audits and annual internal self-assessments. A continuous improvement cycle forms an integral part of the process.

### 2.5.4 Potential impact of process incidents

- The Prima Tech “What If” program is used to step through the risk areas and identify the scenarios to be considered. Environmental Modelling and/or the MIACC criteria is used for determining the magnitude of impact
- Benchmarking is based on industry and corporate information.
- The results are reviewed during annual audits in the emergency response section and in updates of the well developed “Crisis Management System”
- Trials on the crisis system using simulated catastrophes are used to critique the system.

### 2.5.5 Minimization of risk

- The principle process for risk minimization is the systematic analysis of Process Flow Diagrams (PFD's) and/or Process and Instrument Diagrams (PID's) using HAZOP techniques which analyse risk at every step of a process.
- STEP 1, 2, 3 reviews are triggered by new projects.
- Benchmarking is based on BASF global practice and operating experience and with close affiliation with external Risk Assessment forums.
- Feedback from incidents provide data for analysing Risk mitigation procedures which in turn can be used to instigate changes in risk assessment as well as design, construction, and operating procedures.

### 2.5.6 Minimization of risk for transportation modes and routes

- BASF reduces the risk through the management of their transportation/distribution process which is a significant part of their Product Stewardship program.
- The Accident Investigation and Prevention process, Emergency Response Preparedness, and continual training programs are several key elements.
- Monitoring is continual with closure on each specific incident. Incidents are reviewed by "Root Cause Analysis"
- Appropriate audits and assessments are carried out on all carriers.
- It may be valuable to identify table top exercises for crisis management.

#### *Team comments on section 2.5*

- *The required systems appear to be well designed and in place. Examined documents supported that the systems are working. Both internal and external audit systems are in place. Overall, the company has a very high commitment in this important area.*
- *The team urged that the communication of risk to external stakeholders must be pursued to minimize concerns.*

## **2.6 Identify, manage and minimize emissions and wastes**

### **2.6.1 Emission and waste reduction objectives**

- BASF Environmental Policy commits the company to meet all regulatory environmental standards and regulations. For 1995, all Vice-Presidents have an objective to develop and meet release and waste minimization targets by year end. The development of site specific targets and plans is supported by the Ecology and Safety Department.
- Previous years anticipated reductions are compared to actual emission and wastes annually which is used to improve the objective setting process.
- Process is documented through NERM/NPRI annual reports, ARET progress reports and related supporting documents.
- BASF Canada's 5 year objective is to reduce air emissions by 23% by the end of 1997 despite an anticipated increase in production levels during this period.
- BASF continues to record zero tonnes of emissions into lakes, rivers or on sites since 1992.
- All sites are continuing to reduce the quantities of wastes produced and to increase reuse and/or recycling.
- Environmental Engineer position at plant level (i.e Windsor) created to address this area shows BASF's commitment and recognition of the value.
- Inter-plant co-operation in addressing waste and emission issues (i.e. Windsor and Brantford).

### **2.6.2 Health and environmental impacts of emissions and wastes**

- A program of routine Industrial Hygiene monitoring of employees in the work environment is maintained. The company has a medical surveillance program for all employees (specific to the work environment). Control programs for designated substances are in place.
- Benchmarking is against government regulations and accepted industry practices.
- The processes are audited annually by the Corporate Safety/Ecology department. Incidents involving permit excursions and employee overexposure are reported using the Accident/Incident Report systems.
- A continuous improvement loop is built into the system.

### **2.6.3 Waste minimization for new products and processes**

- BASF uses many processes to ensure that wastes and emissions are minimized with various reviews and checkpoints.
- Waste minimization is part of the site functional and individual goals and therefore closely tied in to new products and processes.

#### 2.6.4 Application of hazardous waste management code to co-disposal sites

- All landfill sites have to be approved by the BASF Corporate Safety/Ecology department.
- All hazardous waste landfill sites and waste disposal companies are audited and approved by Corporate Safety/Ecology staff.

#### *Team comments on section 2.6*

- *Compliance to NERM and NPRI have been carried out and shared with the community.*
- *The ongoing focus to eliminate emissions in air, and solid landfill is commendable. Good recycling programs.*
- *The systems in place demonstrate commitment in this area.*
- *Numerous examples of “Extra Mile” and “Good Business Practices”.*

### **2.7 Incorporate safety, health and environment into design stages**

#### 2.7.1 Environmental impact of new facilities

- This is covered in detail through the company's Environmental, Health and Safety guidelines and standards.
- Project Safety Reviews require a hazard and Risk Assessment to identify all safety and environmental concerns. Site change notice requires the same assessment for all changes and are covered by the reviews above. Closing or demolishing old facilities is managed through the same process.
- Benchmarking is based on standards established by BASF. The process is assessed both internally and externally and goes through the continuous improvement cycle.
- Documentation is as described in the BASF Corporate Engineering standards.

#### 2.7.2 Buffer zones

- The Corporate Safety and Environmental Department maintains a carefully designed “Master Plan” for all major sites. BASF Germany plays an important role in reviewing and approving any plans for sites with provisions for adequate buffer zones.

### 2.7.3 R & D project reviews

- There are various processes or systems that review projects and impact continuance.
- All Safety, Health and Environmental issues and concerns are addressed at each level of the reviews. Recommendations out of the various reviews are followed up and used to assess continuance.
- Documentation was presented that supported the project review process.

#### *Team comments on section 2.7:*

- *Good integration of Environmental, Health, and Safety into new facility design. All systems appear to be in place with the appropriate checks and balances.*
- The BASF Engineering systems are comprehensive in their directives on design.
- *The 1, 2, 3 Safety Review process is very encompassing and thorough.*

## 2.8 Document standards and procedures

#### *Team comments on section 2.8:*

- *Although the issue of procedures and document standards is addressed throughout the report it must be highlighted that BASF's Standards of Performance Documentations are by far on the leading edge.*

## 2.9 Provide information to second parties

### 2.9.1 Supply of SHE information by distributors to customers

- BASF's Responsible Care® Distribution/Reseller policy and Self-Assessment Form is used equally throughout all jurisdictions in Canada. On the chemical side, most of the distributors are members of the Canadian Association of Chemical Distributors (CACD).
- Under Product Stewardship the company has a process to supply the appropriate literature, labels and Material Safety Data Sheets.
- Sales/Marketing visits and Distribution Self Assessment Form determines if the distribution is complying with the product stewardship process. Unacceptable performance is reported with subsequent corrective action. It is all recorded on a Database.
- The Agro Chemicals group are subject to more stringent labelling process by regulatory agencies and the Pest Control Products Act.
- Distribution facilities are audited on a regular basis.

## 2.9.2 Receipt of SHE information by customers

- A Material Safety Data Sheet (MSDS) tracking system is in place. Under Product Stewardship, a check is made on the MSDS system and if required, any deficiencies corrected. A Non Conforming Reporting (NCR) system logs and corrects any missing MSDS or label.
- MSDS's are reviewed at least every three (3) years.
- The Automotive Refinish Business Group has a more difficult task as the ultimate end-user is three levels down in the distribution system. This has necessitated an extensive technical and product stewardship training of the BASF technical sales staff and customers from all levels.

### *Team comments on Section 2.9*

- *BASF has a good product stewardship relationship with distributors and customers providing MSDS and other technical services.*
- *Additional documentation on high risk products are forwarded with MSDS to customers to cover information not adequately dealt with in the MSDS format*
- *Commitment to ensuring full product knowledge is essential in its dealing with Customers.*
- *The Automotive Refinish Product Stewardship program, if ultimately successful, could be a future model for industry.*
- *Second party interviews confirmed that BASF was doing what they stated that they were doing in their relations, and doing it well.*
- *BASF faces a difficult and long process to get customers, especially paint shops, on board to their Product Stewardship program. Calls to some customers indicated no knowledge of the program as yet, but all acknowledged BASF's good training program.*
- *BASF has to be commended for encouraging paint shops to recycle old paint at the loss of potential revenue*

## **2.10 Assess second parties**

### **2.10.1 Selection of site contractors**

- Contractors which supply manpower to BASF sites must supply substantial documentation before being included on the bid list. These include: financial statement, references, workers' compensation certificate, safety record, insurance certificate, safety policy, and rates.
- Contractors are secured by the Purchasing Department and selection is based on safety performance, technical competence, quality, and economic considerations.
- Benchmarking is done to accepted industry standards and the process is audited as part of the Annual Corporate Safety audits.

### **2.10.2 Contractor understanding and compliance with SHE instructions**

- BASF has an extremely high process of screening and training of outside (temporary) contractors.
- A pre-job construction meeting is held where a BASF safety checklist is reviewed. For new contractors, safety training is conducted by a site professional.
- The completed checklist serves as the contractors work permit and is issued upon arrival for work on site.
- Checklists are reviewed by site engineering and/or the Safety Department.
- Benchmarking is against Government and Corporate Standards and Regulations. The process is audited annually during the Corporate Safety/Ecology Audit.
- Contractor Safety Performance Statistics are recorded. Deficiencies are documented on the Incident/Accident Report. There is a system to deal with corrective actions to prevent reoccurrence.

### **2.10.3 Selection and assessment of distributors**

- BASF has several processes for selection and assessment of distributors depending on the business segment. All are required to comply with the Product Stewardship policy and must complete the appropriate self-assessment.
- Distributors of chemicals are expected to be CACD or CCPA member companies since membership is contingent on compliance with code requirements. Distributor unacceptable performance is used as the basis for corrective action.
- In the case of Agro Products, distributors are selected according to their compliance with the regulations set out by the Crop Protection Institute (CPI). The CPI enforces warehousing standards which are fully supported by industry and its members. New distributors go through a three phase introduction involving two self-assessments and ultimately an audit.
- BASF's activities in these areas were confirmed by distributors interviewed.

#### 2.10.4 Evaluation of hazardous waste contractors

- The Corporate Safety and Ecology Department conducts regular audits of Waste Facilities and Hazardous Waste Contractors. It supplies each site with an approved Hazardous Waste Contractor list.
- The process is benchmarked against government and industry standards. Procedures have been derived from well established programs used by BASF, North America.
- Regular audits monitor the program.

#### 2.10.5 Selection and assessment of suppliers

- BASF Canada's Purchasing Department, in December 1992, sent a policy statement on its commitment to Responsible Care® as part of its Supplier Delivery Quality Requirements. All members were also asked to complete and return a Responsible Care® Self-Assessment. In 1994, BASF started regular supplier quality audits as part of its Partners in Excellence (PIE) (ISO-9000 based) program.
- Supplier follow-up is prioritized based upon incidents, self-assessment responses and the products purchased. Requested self-assessments are monitored by means of a small database.
- The Supplier Delivery Quality Requirements is an excellent document with Responsible Care® quite prominent.
- BASF activities in these areas were confirmed by interviews with suppliers.

#### 2.10.6 Customer compliance

- BASF's process for assessing Customer Compliance is similar to that for distributors cited above and falls under their Product Stewardship Program.
- Self-Assessment form is delivered to customers for response. The returned responses to the questionnaire are tested to confirm compliance with Responsible Care®. Shortcomings are resolved through normal interface.
- The Automotive Refinish business group has a more difficult task to implement this process at the body shop level due to the nature and complexity of this business area.
- In the case of Agro Products, CPI numbers are issued to resellers and distributors for those who have adopted the warehousing standard. The benchmark here is that no one can purchase or use "Licensed" pesticides without proper certification.
- Monitoring is done through periodic reviews and audits. Non-compliance issues are dealt with through an appropriate follow-up system.
- This was all confirmed by interviews with Customers.

### 2.10.7 Selection and assessment of carriers

- The selection of carriers is dependent upon safety and economic criteria. The process for selecting and evaluating motor carriers has been highly dependent upon information provided by the CCPA's "Motor Carrier Evaluation Program".
- A database for all carrier non-conformance is maintained. Quality feedback is given to carriers providing a summary of performance and recommendations for specific improvement.
- "The Carrier Performance Report Card" is an excellent document which includes a section on Emergency Response and Responsible Care®.
- Performance is monitored by distribution incident rate (weekly), carrier performance self-evaluations, and through Emergency Response follow-up.
- BASF's activities in these areas were confirmed by interviews with carriers.

#### *Team comments on Section 2.10*

- *Comprehensive second party contacts in place with excellent recognition of the Responsible Care® ethic.*
- *Contractors selected on the basis of quality and performance.*
- *Good survey systems for all second parties.*
- *The Product Stewardship philosophy well entrenched within BASF and with all second parties.*

### 2.11 Manage changes

- The process for ensuring that all changes are properly evaluated are embedded in the "Management of Process Technology Change" systems.
- The process provides a systematic approach for initiating, assessing, authorizing, and implementing modifications and changes. It also ensures that people are trained and competent in the use of these changes.
- All changes are reviewed by site management and Safety and Ecology personnel. In addition, the corporate Safety and Ecology group audits the site performance.
- A follow-up process is required from the results of any non-compliance which is over viewed by Site Management.
- Audit records are on a database which is kept by both the U.S.A. and Canadian Corporate groups as well as the site audited.

#### *Team comments on section 2.11*

- *Procedures fully implemented. Changes (or need for changes) clearly defined.*

## **2.12 Provide security**

- BASF has a corporate Access Control Policy detailing specific measures protecting company sites. Guard services and/or monitoring equipment are employed at the corporate office and major production sites.
- Site managers and site security representatives are responsible for implementation.
- The corporate security has started to audit compliance as part of its regular security survey at each plant location.

### *Team comments on Section 2.12*

- *The well established security systems and trained personnel appear adequate to the organization's needs.*

## **2.13 Manage previous waste sites**

- The process for dealing with historical environmental practice is well documented under the "Site Remediation Performance Standard" and "Waste Contractors Standard".
- There are no historic waste sites on BASF property. Former/idle sites have all been given an environmental assessment after or prior to shutdown as a condition of sale. BASF has been proactive in remediating idle or parts of inactive sites to meet current regulations. Leased sites are all given an environmental review prior to release.
- The company has taken a very professional and ethical approach in remediation activities.
- Waste contractors are approved by the Safety and Ecology department which includes a listing of waste sites.
- The process is benchmarked against Responsible Care® and BASF standards which are higher than government standards.
- All waste management and on-site spills are carefully documented. Corporate Ecology and Safety audits monitor the process and waste manifests are monitored in perpetuity.
- Historical practices have been documented.

### *Team comments on Section 2.13*

- *There do not appear to be any concerns in this area.*
- *Process in total handling of waste supports environmental integrity.*
- *Proactive in remediation supports the "Ethics" of Responsible Care®.*

## 2.14 Measure and improve performance

### 2.14.1 Continuous improvement

- "Continuous Improvement" is an integral part of the "Quality Performance" process. Active leadership is provided by the Management Quality Team and facilitated by the Quality Toward Excellence Team (QTE).
- Performance and Development Reviews facilitate Continuous Improvement through personal objectives which are documented and stewarded with management.
- The principal drivers for Continuous Improvement are the business planning process and performance benchmarking.
- BASF Canada, as a member of the BASF Corporation, uses the criteria of the Chairman's Quality Award, both as a yardstick and as a catalyst for continuous improvement. Sections in this criteria cover Responsible Care® in the strategic planning process. Another section focuses on Environmental Protection and Safety.

### 2.14.2 Benchmarking

- The Management Systems and Practices were developed with reference to best practices from within the company, from industrial sectors, and outside the industry.
- Through involvement with key associations such as CCPA, etc., each area generally recognizes what are the industry norms and general levels of performance are established.

### 2.14.3 Termination or restriction of non-complying activities

- Non-compliant performance is systematically addressed in the Management Practices. These management systems include specific processes such as risk reviews, along with Environmental Safety and Health surveys and audits.
- BASF showed numerous examples of proactive steps to eliminate specific chemicals or process changes to support improved Safety and Health performance.

### 2.14.4 Going the extra mile - CEO

- Many initiatives demonstrated commitment beyond the formal requirements of Responsible Care®.

Refer to sections 2.14.7, 2.14.9, and 2.14.11.

#### 2.14.5 Employee understanding

- In May 1994, a detailed analysis of employee understanding of Responsible Care® was conducted using a CCPA questionnaire. A 10% sample of employees was surveyed at every BASF location. They concluded that employees were well tuned-in to their Responsible Care® process.
- The Verification Team observed good name recognition down to the operator level. Good detailed understanding begins at higher levels.

#### 2.14.6 Contractor performance

- The monitoring of Contractor performance includes Safety performance, quality of work performed, and on time delivery. Monitoring is done by numerous personnel including project and plant engineers, maintenance and area supervisors, and hourly employees.
- Responsibilities are clearly outlined and understood. The BASF representative must issue a report on the contractor's performance to purchasing for filing and future reference.
- Unacceptable performance by the Contractors is noted and filed with the maintenance manager or site engineer using the Incident Reporting Procedure.

#### 2.14.7 Going the extra mile - engineering

Documented examples included:

- Reduction of water usage in the plant by changing to air cooled chiller. (COCO)
- Use of cooling towers for heat rejection rather than town water. (Arnprior)
- Use of type "K" concrete for tank dykes - which is impervious to chemical spills. (Brantford and Windsor)
- Hermetically sealed tanks to reduce hygiene and emission problems. (Brantford and Windsor)

#### 2.14.8 Going the extra mile - environment

Documented examples included:

- Replacement of solvent based paint formulations by water base formulations. (Windsor and Brantford)
- Majority of site waste is composted. (Georgetown)
- Filter cake residues are being used for sound deadeners in automotive industry. (Cornwall)
- A second nylon 6 depolymerizer commissioned to recycle all waste nylon that the site produces as well as recycle polymer from its customers. (Arnprior)
- Hired waste reduction consultants (Ontario Waste Management Corporation) to develop a waste reduction/recycling program. (COCO)

#### 2.14.9 Going the extra mile - R & D

Documented examples included:

- Decreasing VOC's of highest volume coating by replacing solvent with water.
- ECHO symposiums for textiles, outlining ecological solutions to customer concerns.
- ARET composition - Methylene Chloride elimination.
- Returnable packaging system for all production areas.

#### 2.14.10 Measurement and communication of safety performance

- Joint Health and Safety meetings are used to keep current on Safety and Health issues. A variety of other communication tools are used, both electronic and published information.
- Occupational injuries and illness rates are compared internally to corporate goals, with other North American company locations and other companies within the chemical industry.
- The process is modified as needed to obtain continuous improvement. Each vice-president, site manager, and safety coordinator have TRIR and Days Away From Work as goals.
- Trend analyses are conducted. A corporate report is issued weekly and a monthly report as well. A database is maintained by Corporate Safety.
- Physical inspection audits are conducted regularly.

#### 2.14.11 Going the extra mile - site managers

Documented examples included:

- Shutting down the three highest risk processes. (Windsor)
- Landfill reduction by 73% since 1991 via introducing a recycling program. (Arnprior)
- BASF is working along with its sister plants in the USA to develop a 100% capacity recycling program for nylon 6 products. (Arnprior)
- Eliminated the sale and use of chlorinated paint stripper. (Brantford)
- Recycle waste paint instead of sending it for disposal.
- Implementation changes in Production Waste Handling methods following recommendations of the consultant. (OWMC). Developed special containment system - tennis court. (COCO)

#### 2.14.12 Measurement and communication of SHE performance in transportation

- The company has a process that measures and monitors all incidents. Internal communications are both incident specific and monthly as a stewardship.
- Benchmarking is done against industry (CCPA).

#### *Team comments on Section 2.14*

- *BASF commended for their activities in good business practices and going the 'extra mile'.*
- *Good performance measurement, quantitative and qualitative, in all functional areas.*
- *Core strength is their comprehensive goal setting and progress reviews.*
- *Well established management systems, continuous improvement, and performance enhancement process.*
- *Commitment to continuous improvement underlines one of the key principles of Responsible Care®*
- *Audit systems well established with follow-up and long term schedule documented.*
- *Adopt more environmentally acceptable storage methods to replace present system of underground storage of solvents and raw materials (Brantford).*

### **2.15 Manage emergencies**

#### 2.15.1 Ability to respond

- All sites have developed the necessary infrastructure to deal with foreseeable emergencies. They all have in place both site emergency and crisis management plans. Mutual aid plans are also in place with the local communities.
- The sites have good communication systems and trained responders. Critiquing drills is a major initiative which can lead to improvements in the response plans.
- Benchmarking is to corporate requirements.
- Documentation confirmed the above.

#### 2.15.2 Integration of site and community emergency plans

- All sites have shared their emergency plans with local external emergency organizations for feedback and critique.
- All sites participate in local CAER type committees and participate in community emergency response drills and integrated team critiquing.

### 2.15.3 Dislocated persons

- BASF has an external emergency response network both at the corporate and site level. The BASF Crisis Management Team is trained to handle the needs of people during lengthy dislocations.
- Each BASF site has a plan in place to look after their own dislocated employees. The BASF Crisis Management Policy includes provisions for the site manager to take appropriate action for dislocated persons.
- The process is documented and kept current through annual reviews of all emergency response plans.

### 2.15.4 Evaluation and correction of emergency systems

- BASF has an incident cause and review system. Critiques of incidents are held as soon as possible after the incident. This might include both an internal and external evaluation.
- The process reviews all facts to determine root cause and makes recommendations for improvements.

### 2.15.5 Transportation emergency response

- BASF has on-call emergency responders 24 hours a day. Their Emergency Response plan identifies liaison personnel across North America to be deployed in the event of incidents including third party contractors.
- Incidents are logged on a monthly basis and analysed/reviewed by the BASF Tracer team. Over 99% of shipments are incident free and have no impact on employees, public, or the environment.
- Documentation confirmed the above.

### 2.15.6 Incident investigation

- The Root Cause Analysis Process is used to follow up on incidents. Representatives from appropriate BASF functions respond to incidents to help assess the need for impacts of an incident.

#### *Team comments on Section 2.15*

- *Emergency systems for both the site and transportation incidents are excellent.*
- *Committed collaboration with communities and resources.*
- *Employees are well trained and motivated.*
- *Good Crisis Management System in place.*

## **2.16 Assist in public policy development**

- BASF continues to play a role in CCPA activities.
- Consistency of public policy activities in all relevant associations is ensured by their organizational structure, individual professionalism, and overlap in involvement from the CCPA to other associations.
- BASF is also involved in, and to some degree committed to, CPIC due to their agricultural and fertilizer/pesticide products manufacturing activities.

### *Team comments on Section 2.16*

- *The involvement with Canadian Chemical Producers' Association is excellent.*
- *Involvement in institutes, organizations, and associations is also extensive.*
- *All Site Managers have had several seminars on public affairs with the development of set specific guidelines.*
- *Consistent Responsible Care® attitude toward public policy issues.*

## **2.17 Audit and follow-up**

### 3. CONCLUSIONS AND RECOMMENDATIONS

The verification team was in complete agreement that BASF Canada Inc. has met the expectations and requirements for Phase I Responsible Care® completion.

Some outstanding strengths of the company were demonstrated by:

- Commitment by Senior and Middle Management which has manifested itself into a highly positive attitude towards Responsible Care® and which has pervaded through all functional areas.
- The organization and documentation for Responsible Care® at all BASF locations was impressive. Updating and monitoring to maintain this high performance will be a daunting task.
- Product Stewardship programs and the Responsible Care® activity is visible across all business levels and job functions.
- Thorough assessments and surveys of second parties.
- Sensitivity to community concerns at all plant locations. There was a decided commitment and involvement in the community particularly by Arnprior and Brantford.
- Core strengths including the Performance Development Program, comprehensive goal setting and progress reviews.
- Numerous examples of going the extra-mile and good business practices.

#### **Action items considered necessary for Phase I compliance:**

- **None**

Other actions recommended by the team though not considered necessary for Phase I compliance are:

- Effective benchmarking of the Outreach Program needs development.
- Communication of Risk to external stakeholders must be continued to minimize concerns.
- Continued commitment, research and efforts in pollution prevention/waste minimization.
- Strive to reduce or eliminate underground storage areas for solvents or raw materials.
- Community involvement and dialogue in larger centres where BASF is less visible.

**Positive items likely to be useful for other CCPA members**

- Cross-referencing of all management systems.
- The Automotive Refinish Product Stewardship Program.
- Supplier Delivery Quality Requirements
- Standards of Performance Documentation.

**4. OBSERVATIONS FROM THE COMPANY**

The underground solvent storage tanks at the Brantford Site are scheduled to be decommissioned and replaced by above ground tanks.

The "Outreach" Program to the community is currently under review to improve the effectiveness of the communication message.

## GLOSSARY

AFA.....	<u>A</u> lberta <u>F</u> ertilizer <u>A</u> ssociation
A/I .....	<u>A</u> ccidents and <u>I</u> ncidents
BCI.....	<u>B</u> ASF <u>C</u> anada <u>I</u> nc.
BDS .....	<u>B</u> usiness <u>D</u> evelopment <u>S</u> pecialist
CAAR.....	<u>C</u> anadian <u>A</u> ssociation of <u>A</u> gri- <u>R</u> etailers (was WFCDA)
CAPCO.....	<u>C</u> anadian <u>A</u> ssociation of <u>P</u> esticide <u>C</u> ontrol
CAR .....	<u>C</u> apital <u>A</u> cquisition <u>R</u> equest
COCO.....	BASF Site, <u>C</u> onstellation <u>C</u> ourt
CPI.....	<u>C</u> rop <u>P</u> rotection <u>I</u> nstitute
CQA.....	<u>C</u> hairman's <u>Q</u> uality <u>A</u> ward
CWA .....	<u>C</u> anadian <u>W</u> arehousing <u>A</u> ssociation
DAFW .....	<u>D</u> ays <u>A</u> way <u>F</u> rom <u>W</u> ork
HAZOP .....	<u>H</u> azardous <u>O</u> perability <u>S</u> tudy
HPA .....	<u>H</u> azardous <u>P</u> rocess <u>A</u> nalysis
IAPA .....	<u>I</u> ndustrial <u>A</u> ccident <u>P</u> revention <u>A</u> ssociation
MAPQ .....	<u>M</u> inistry of <u>A</u> griculture - <u>P</u> rovince of <u>Q</u> uebec
MIACC .....	<u>M</u> ajor <u>I</u> ndustrial <u>A</u> ccident <u>C</u> ouncil of <u>C</u> anada
MQT.....	<u>M</u> anagement <u>Q</u> uality <u>T</u> eam
NCR.....	<u>N</u> on- <u>C</u> onformance <u>R</u> eport
NEER.....	<u>N</u> ew <u>E</u> xperimental <u>E</u> xperience <u>R</u> ating
NERM.....	<u>N</u> ational <u>E</u> missions <u>R</u> eduction Master plan
NSC .....	<u>N</u> ational <u>S</u> afety <u>C</u> ouncil
OMAFRA .....	<u>O</u> ntario <u>M</u> inistry <u>A</u> griculture <u>F</u> ood & <u>R</u> ural <u>O</u> fficials
.....	<u>A</u> ffairs
PDR .....	<u>P</u> erformance and <u>D</u> evelopment <u>R</u> eviews
NPRI .....	<u>N</u> ational <u>P</u> ollutants <u>R</u> elease <u>I</u> nventory
PHA .....	<u>P</u> rocess <u>H</u> azard <u>A</u> nalysis
QFA .....	<u>Q</u> uebec <u>F</u> ertilizer <u>A</u> ssociation
QTE .....	<u>Q</u> uality <u>T</u> owards <u>E</u> xcellence
RPF .....	<u>R</u> isk <u>P</u> otential <u>F</u> actor
S&E .....	<u>S</u> afety & <u>E</u> cology
SWP .....	<u>S</u> afe <u>W</u> ork <u>P</u> ermit
TFIO .....	<u>T</u> he <u>F</u> ertilizer <u>I</u> nstitute of <u>O</u> ntario
WCB.....	<u>W</u> orkers <u>C</u> ompensation <u>B</u> oard
WFCDA .....	<u>W</u> estern <u>F</u> ertilizer & <u>C</u> hemical <u>D</u> ealers <u>A</u> ssociation

## **APPENDICES**

Verification Table