WHAT Krummrich IS DOING

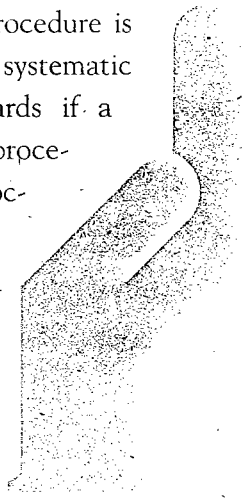
Responsible Care:®
A Public Commitment

• Through Electronic Document (ED) Access, Krummrich employees will instantaneously have the latest, most current information about the plant. Material Safety Data Sheets (MSDS), Monsanto Pledge Guidelines, safety information, department hazards and a host of other topics will be available to employees from their workstation via the computer terminals. Currently, this program is in the training phase.

• To encourage employee participation, the Employee Participation Plan was developed and will be accessible through ED Access. This plan documents all areas where employee participation is encouraged, from review of new projects to the Safety Committee Network. The aim of this plan is to aid employees in understanding all the programs and initiatives ongoing at the plant, indicate where employee involvement is occurring and needed, and encourage participation.

• All departments in the plant must undergo a detailed process hazards analysis, termed Hazard and Operability Study, or Haz-Op. These studies are mandated by law through the Occupational Safety and Health Administration (OSHA). Auditors, which include employees, look at the way a process is run from a safety standpoint, review hazards and make recommendations for changes. Greater than 50% of the process departments at Krummrich are complete, in accordance with the OSHA mandate.

• Whenever a change occurs in a process, the Management of Change (MOC) procedure is followed. The procedure provides a systematic approach to the analysis of hazards if a change is made. In addition, the procedure requires communication and documentation of the change. This procedure is aimed at small or minor process changes, but does provide a framework for larger projects to follow. The MOC procedure can be found on ED Access.



DSW 135358



This code is designed to prevent fires, explosions and accidental releases. The practices contained in the code are based on the principle that facilities will be safe if they are designed according to sound engineering practices, built, operated and maintained properly and periodically reviewed for conformance. The practices of the code encompass the design stage through operations, maintenance and training.

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Process Safety CODE

Facilities are required to have ongoing safety audit and inspection programs, strengthen employee training programs, develop secondary protection systems against accidental releases or explosions, and share knowledge from past experiences with other members of the chemical industry. Contractor employees are to be included in safety programs.

In early 1994 the CMA Responsible Care® Board approved a Process Safety Code Measurement System independent of regulatory requirements. Incident forms for reportable events are completed by facilities and submitted for tracking to an independent contractor. CMA also uses self-evaluations to measure progress in implementing the practices of the code.

The goals of this code are consistent with the Monsanto Pledge, specifically point number two – to ensure no operation poses any undue risk to employees and communities. The framework of Responsible Care® enhances Monsanto's effort to fulfill this portion of the Pledge.



DSW 135359

STLCOPCB4035340



This code is designed to achieve ongoing reductions in the amount of all contaminants and pollutants released to the air, water and land, and to achieve ongoing reductions in the amount of wastes generated at facilities.

Pollution Prevention CODE

Facilities must inventory wastes generated; evaluate their impact on the environment; seek employee and public input; evaluate ways to reduce wastes and releases at the source; include waste and release prevention objectives in research and design of new or modified facilities, processes and products; and develop an ongoing program for waste reduction.

The code has a "built in" performance measure – the Toxics Release Inventory (TRI) data that each company is mandated by law to make public each year . CMA tracks this trend information as well as uses member self-evaluations to review progress in implementing the code practices.

Monsanto was one of the first companies to voluntarily disclose pollution data to the public prior to its being codified into law. The 90% air releases reduction program was a voluntary initiative that went far above the requirements of governmental programs. Monsanto's Pledge formalized the commitment to the public already made with the 90% air emissions reduction program. Three Pledge points address this focus: to reduce all toxic and hazardous releases and emissions, working toward an ultimate goal of zero effect; to ensure groundwater safety; and to search worldwide for technology to reduce and eliminate wastes from its operations, with top priority being not making it in the first place.

Responsible Care® has provided additional framework to Monsanto's aggressive pollution prevention efforts.

DSW 135360

STLCOPCB4035341

WHAT Krummrich IS DOING

Responsible Care:®
A Public Commitment

• Recovery of hydrochloric acid (HCl) will jump from 67% to over 90% of the available amount with the installation of the HCl Modernization Project. The unrecovered HCl was sent off-site to be neutralized. Now it will be recovered, purified and sold to customers. In addition, the new equipment will replace obsolete technology improving environmental performance.

• Benzene emissions are targeted in the Benzene Handling Project. Replacement of the large benzene floating roof storage tank with a smaller tank equipped with a fixed roof reduces air emissions. A false bottom reduces the risk of a leak to the environment. Emissions will be reduced further with the installation of a process vent scrubber. Any remaining benzene vapors will go to a new state-of-the art thermal oxidizer where they will be destroyed.

• As a result of the 90% air emissions reduction program, the Krummrich Plant reduced its total SARA Title III air emissions by 87%.

• By recycling phosphorus pentasulfide (P_2S_5) reactor vents back into the process instead of sending these gas streams to the incinerator, sulphur dioxide emissions from this source will be eliminated.

DSW 135361



The goal of this code is to protect and promote the health and safety of people working in or visiting a facility. The code is designed to continuously improve work site health and safety, through identifying and assessing hazards, preventing unsafe acts and conditions, maintaining and improving employee health, and communicating health and safety issues.

Employee Health and Safety CODE

Many code requirements parallel regulations of the Occupational Safety and Health Administration (OSHA). However, a unique aspect of this code is its emphasis on employee involvement through employee participation in reviewing and developing health and safety programs.

The code is equipped with a "built in" performance measure – the Occupational Injury and Illness Reports required by OSHA. This information and the self-evaluations are sent to CMA to be used to identify statistical safety trends in the industry and for measuring progress in implementing the code practices.

Monsanto has a long history of being committed to safety – in the workplace, while traveling, and in the home. It is no coincidence that this aspect is included in the Monsanto Pledge: to ensure no operation poses any undue risk to employees and communities. In addition, Monsanto has also committed all major U.S. facilities to participate in the OSHA Voluntary Protection Program (VPP), which goes beyond compliance with the law and sets criteria for operating facilities to become and be recognized as among the safest in the nation.

Responsible Care® has assisted Monsanto's aggressive efforts to meet its commitments to the Pledge and OSHA VPP participation.

DSW 135362

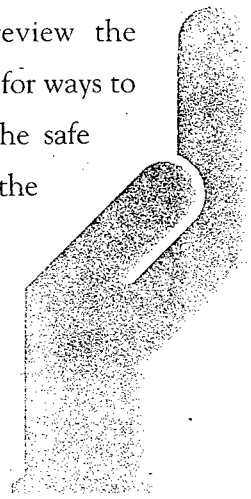
WHAT Krummrich IS DOING

Responsible Care:®
A Public Commitment

• Development of the Contractor/Guest Environment, Safety and Health Guidelines has formalized the procedure to handle visits to Krummrich while ensuring the safety and health of those visiting. The guideline specifies what information must be provided to visitors as well as any on-site training about safety rules and hazards that is required. Also included are the requirements that must be met by any contractor to be qualified to work in the plant.

• Employee participation is encouraged in the Safety Committee Network. Each department has a safety committee which meets to discuss safety issues and hazards. The safety committee chairpersons of each department meet periodically to discuss safety issues and develop training packages that meet the needs of employees across all departments. Members of the Network then meet with the Safety Leadership Committee which discusses safety issues site wide, sets safety policy and encourages communications.

• Behavior Incident Analysis is a new procedure that will be used to analyze safety accidents and near misses. This procedure will review the behaviors behind an incident, looking for ways to remove the barriers to doing a job the safe way. Analyses will be completed by the involved department supervision. The Safety department representative will serve as coach.



DSW 135363

WHAT Krummrich IS DOING

Responsible Care:®
A Public Commitment

• All products, either final or intermediate, are assessed in terms of their hazards and risks. These hazards and risks are communicated through Material Safety Data Sheets (MSDS), which are available to employees, customers, carriers, distributors and any interested party.

• Before a contractor is allowed to work in the plant, minimum standards, in terms of health, safety and environmental conduct and compliance, must be met. A list of acceptable contractors is maintained and that list is periodically reviewed and updated. This screening process applies to all contract personnel, from waste disposal to contractor manufacturing to performance of mechanical work on-site.

• In addition to contract personnel, customers, distributors, carriers and suppliers must also meet minimum standards in terms of health, safety and environmental conduct and compliance. If a company cannot or does not meet these standards, Krummrich will no longer conduct business with them.

• The phosphorus pentasulfide (P_2S_5) business unit has named a product steward to handle questions and issues surrounding the handling and use of P_2S_5. The steward provides leadership and guidance for process and shipping improvements as well as provides product safety training to employees, customers, carriers and distributors.

DSW 135364



The purpose of this code is to make health, safety and environmental protection an integral part of designing, manufacturing, marketing, distributing, using, recycling, and disposing of products. Essentially, the scope of the code covers all stages of a product's life.

Product Stewardship CODE

The code requires facilities to consider possible health, safety and environmental effects of new and existing products and to promote the safe and environmentally sound development, manufacture, transport, use, and disposal of chemical products.

Currently, self-evaluations are used to measure progress in implementing the code practices. However, CMA is developing an appropriate performance measure to better gauge progress.

While every point of the Monsanto Pledge deals in some way with a product's life-cycle, the Pledge point that best captures the product stewardship commitment is the second – to ensure no operation poses any undue risk to employees and communities. Responsible Care® assists Monsanto in achieving its pledge to the public.



DSW 135365

STLCOPCB4035346



The goal of the CAER code is to assure emergency preparedness and to foster community right-to-know. The code has two major components: first, to assure that facilities that manufacture, process, use, distribute or store hazardous materials initiate and maintain a community outreach program to openly communicate relevant, useful information responsive to the public's questions and concerns about safety, health and the environment; and second, to help protect employees and communities by assuring that each facility has an emergency response program to respond rapidly and effectively to emergencies. This code demands a commitment to openness and community dialogue.

Community Awareness and Emergency Response (CAER) CODE

Currently, self-evaluations are used to measure progress in implementing the code practices. However, a performance measure is being developed by CMA as a better gauge of progress.

The goals of this code are consistent with two of the seven points of the Monsanto Pledge: to ensure no operations pose any undue risks to employees and communities; and to keep plants open to their communities and involve the community in plant operations. Responsible Care® enhances Monsanto's efforts toward meeting this pledge.



DSW 135366

STLCOPCB4035347

WHAT Krummrich IS DOING

Responsible Care:®
A Public Commitment

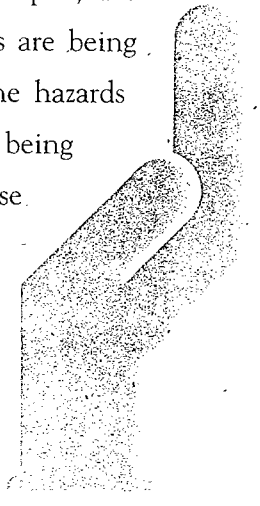
• Since 1989, a group known as the Community Advisory Committee has been meeting quarterly to discuss activities at the plant. Currently this group is made up of a diverse cross-section of the community, from the director of nursing of St. Mary's Hospital to the president of the local Sierra Club to the director of East St. Louis Emergency Service and Disaster Agency (ESDA). The group reviews plant activities from pollution prevention progress to community contributions through the Monsanto Fund.

• Krummrich has taken a leadership role in the St. Clair County Local Emergency Planning Committee (LEPC). This group is currently involved in developing a county-wide emergency response plan for hazardous materials.

• Every three years a community opinion survey is taken to assess the public's view of Monsanto and the impact on its communities. This information is then used to pinpoint community issues regarding the Krummrich Plant as well as to improve and target Monsanto Fund contributions.

• Every year every employee spends three full days in training on environment, safety and health issues. This training includes emergency response, basic safety concerns and industrial hygiene.

• A major restructuring of the emergency response team is underway at Krummrich. Standard operating guides are being developed, the incident command structure is being redefined, pre-plans are being written--which include maps of each department and the hazards peculiar to that department, training and exercises are being improved, and full scale drills are being planned. These changes will not only document emergency response knowledge and provide a vehicle for sharing it internally and externally with emergency responders but will improve response time. When complete, Krummrich's plan may become the model for the rest of Monsanto.



DSW 135367



The Distribution code is designed to reduce the risk that transportation and storage of chemicals pose to the public, carriers, customers, contractor and company employees, and the environment. Adherence to the code will lead to continually safer chemical distribution.

Distribution CODE

Facilities must evaluate the risks associated with chemical distribution and develop methods to reduce those risks, including an evaluation of the qualifications and compliance record of carriers. The code requires companies to provide emergency advise and/or assistance to people on the scene in the event of a chemical distribution emergency. In addition, the code promotes improvements in employee preparedness and awareness in preventing distribution emergencies.

Currently, progress in implementing this code is measured through self-evaluations. However, a performance measure is being developed by CMA to better gauge progress.

The goals of the Distribution code are consistent with two of the seven points of the Monsanto Pledge; to reduce toxic and hazardous releases and emissions, working toward an ultimate goal of zero effect; and to ensure no operation poses any undue risk to employees or communities.

The framework of the Responsible Care® management practices enhances Monsanto's ability to meet its pledge to the public.

DSW 135368

WHAT Krummrich IS DOING

Responsible Care:®
A Public Commitment

• A new container design for shipping phosphorus pentasulfide (P_2S_5) has been adopted industry wide. The container utilizes a cone shaped inlet/discharge with a positive seal valve. The container is shipped cone up and then inverted to empty, eliminating the product leakage problem associated with the old style tote bins. In addition, this new container has eliminated 99% of the fugitive emissions associated with loading and unloading – reducing the risk to employees and customers.

• Every trailer that leaves the Krummrich Plant carrying P_2S_5 is tracked via satellite. This allows instantaneous two-way communication between the driver and Krummrich Shipping, communicating any problems or weather issues. In addition, a panic button is provided that sounds an "alarm"; the Shipping department can then pinpoint the trailer's location to within 1000 ft. and get help on its way.

• A new trailer design for shipping P_2S_5 is now in the third generation of improvement. However, the main features of this design still include a lower center of gravity for the shipping containers, with the bottoms of these containers "nested" into the trailer to prevent container movement. Straps designed by the military are used to secure the containers onto the trailer bed.

• Driver training is ongoing at Krummrich. Product specific emergency response training is given to every driver who carries hazardous materials.

• A strict weather policy has taken some risk out of the transport of Krummrich materials. When drivers encounter severe weather and are carrying Krummrich materials, they have the authority to stop and secure their loads without calling their company dispatcher. Upon notification, Krummrich will pay for their "downtime".

DSW 135369

WHAT Krummrich IS DOING

Responsible Care:®
A Public Commitment

• Through Electronic Document (ED) Access, Krummrich employees will instantaneously have the latest, most current information about the plant. Material Safety Data Sheets (MSDS), Monsanto Pledge Guidelines, safety information, department hazards and a host of other topics will be available to employees from their workstation via the computer terminals. Currently, this program is in the training phase.

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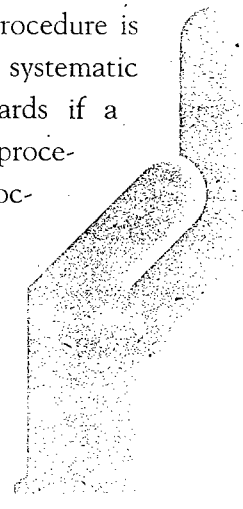

DSW 135370



This code is designed to prevent fires, explosions and accidental releases. The practices contained in the code are based on the principle that facilities will be safe if they are designed according to sound engineering practices, built, operated and maintained properly and periodically reviewed for conformance. The practices of the code encompass the design stage through operations, maintenance and training.

Process Safety CODE

Facilities are required to have ongoing safety audit and inspection programs, strengthen employee training programs, develop secondary protection systems against accidental releases or explosions, and share knowledge from past experiences with other members of the chemical industry. Contractor employees are to be included in safety programs.

In early 1994 the CMA Responsible Care® Board approved a Process Safety Code Measurement System independent of regulatory requirements. Incident forms for reportable events are completed by facilities and submitted for tracking to an independent contractor. CMA also uses self-evaluations to measure progress in implementing the practices of the code.

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DSW 135371

STLCOPCB4035352



This code is designed to achieve ongoing reductions in the amount of all contaminants and pollutants released to the air, water and land, and to achieve ongoing reductions in the amount of wastes generated at facilities.

Pollution Prevention CODE

Facilities must inventory wastes generated; evaluate their impact on the environment; seek employee and public input; evaluate ways to reduce wastes and releases at the source; include waste and release prevention objectives in research and design of new or modified facilities, processes and products; and develop an ongoing program for waste reduction.

The code has a "built in" performance measure – the Toxics Release Inventory (TRI) data that each company is mandated by law to make public each year . CMA tracks this trend information as well as uses member self-evaluations to review progress in implementing the code practices.

Monsanto was one of the first companies to voluntarily disclose pollution data to the public prior to its being codified into law. The 90% air releases reduction program was a voluntary initiative that went far above the requirements of governmental programs. Monsanto's Pledge formalized the commitment to the public already made with the 90% air emissions reduction program. Three Pledge points address this focus: to reduce all toxic and hazardous releases and emissions, working toward an ultimate goal of zero effect; to ensure groundwater safety; and to search worldwide for technology to reduce and eliminate wastes from its operations, with top priority being not making it in the first place.

Responsible Care® has provided additional framework to Monsanto's aggressive pollution prevention efforts.

DSW 135372

STLCOPCB4035353

WHAT Krummrich IS DOING

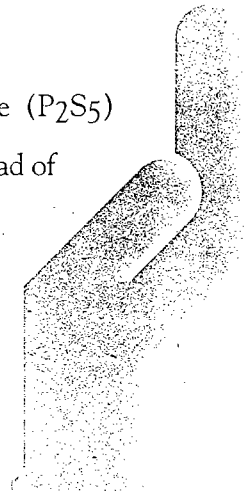
Responsible Care:®
A Public Commitment

• Recovery of hydrochloric acid (HCl) will jump from 67% to over 90% of the available amount with the installation of the HCl Modernization Project. The unrecovered HCl was sent off-site to be neutralized. Now it will be recovered, purified and sold to customers. In addition, the new equipment will replace obsolete technology improving environmental performance.

• Benzene emissions are targeted in the Benzene Handling Project. Replacement of the large benzene floating roof storage tank with a smaller tank equipped with a fixed roof reduces air emissions. A false bottom reduces the risk of a leak to the environment. Emissions will be reduced further with the installation of a process vent scrubber. Any remaining benzene vapors will go to a new state-of-the art thermal oxidizer where they will be destroyed.

• As a result of the 90% air emissions reduction program, the Krummrich Plant reduced its total SARA Title III air emissions by 87%.

• By recycling phosphorus pentasulfide (P_2S_5) reactor vents back into the process instead of sending these gas streams to the incinerator, sulphur dioxide emissions from this source will be eliminated.



DSW 135373



The goal of this code is to protect and promote the health and safety of people working in or visiting a facility. The code is designed to continuously improve work site health and safety, through identifying and assessing hazards, preventing unsafe acts and conditions, maintaining and improving employee health, and communicating health and safety issues.

Employee Health and Safety CODE

Many code requirements parallel regulations of the Occupational Safety and Health Administration (OSHA). However, a unique aspect of this code is its emphasis on employee involvement through employee participation in reviewing and developing health and safety programs.

The code is equipped with a "built in" performance measure – the Occupational Injury and Illness Reports required by OSHA. This information and the self-evaluations are sent to CMA to be used to identify statistical safety trends in the industry and for measuring progress in implementing the code practices.



Monsanto has a long history of being committed to safety – in the workplace, while traveling, and in the home. It is no coincidence that this aspect is included in the Monsanto Pledge: to ensure no operation poses any undue risk to employees and communities. In addition, Monsanto has also committed all major U.S. facilities to participate in the OSHA Voluntary Protection Program (VPP), which goes beyond compliance with the law and sets criteria for operating facilities to become and be recognized as among the safest in the nation.

Responsible Care® has assisted Monsanto's aggressive efforts to meet its commitments to the Pledge and OSHA VPP participation.

DSW 135374

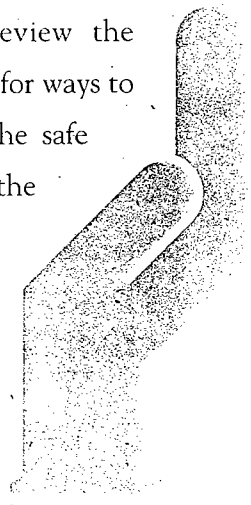
WHAT Krummrich IS DOING

Responsible Care:®
A Public Commitment

• Development of the Contractor/Guest Environment, Safety and Health Guidelines has formalized the procedure to handle visits to Krummrich while ensuring the safety and health of those visiting. The guideline specifies what information must be provided to visitors as well as any on-site training about safety rules and hazards that is required. Also included are the requirements that must be met by any contractor to be qualified to work in the plant.

• Employee participation is encouraged in the Safety Committee Network. Each department has a safety committee which meets to discuss safety issues and hazards. The safety committee chairpersons of each department meet periodically to discuss safety issues and develop training packages that meet the needs of employees across all departments. Members of the Network then meet with the Safety Leadership Committee which discusses safety issues site wide, sets safety policy and encourages communications.

• Behavior Incident Analysis is a new procedure that will be used to analyze safety accidents and near misses. This procedure will review the behaviors behind an incident, looking for ways to remove the barriers to doing a job the safe way. Analyses will be completed by the involved department supervision. The Safety department representative will serve as coach.,



DSW 135375

WHAT Krummrich IS DOING

Responsible Care:® A Public Commitment

- All products, either final or intermediate, are assessed in terms of their hazards and risks. These hazards and risks are communicated through Material Safety Data Sheets (MSDS), which are available to employees, customers, carriers, distributors and any interested party.

- Before a contractor is allowed to work in the plant, minimum standards, in terms of health, safety and environmental conduct and compliance, must be met. A list of acceptable contractors is maintained and that list is periodically reviewed and updated. This screening process applies to all contract personnel, from waste disposal to contractor manufacturing to performance of mechanical work on-site.

- In addition to contract personnel, customers, distributors, carriers and suppliers must also meet minimum standards in terms of health, safety and environmental conduct and compliance. If a company cannot or does not meet these standards, Krummrich will no longer conduct business with them.

- The phosphorus pentasulfide (P_2S_5) business unit has named a product steward to handle questions and issues surrounding the handling and use of P_2S_5. The steward provides leadership and guidance for process and shipping improvements as well as provides product safety training to employees, customers, carriers and distributors.

DSW 135376



The purpose of this code is to make health, safety and environmental protection an integral part of designing, manufacturing, marketing, distributing, using, recycling, and disposing of products. Essentially, the scope of the code covers all stages of a product's life.

Product Stewardship CODE

The code requires facilities to consider possible health, safety and environmental effects of new and existing products and to promote the safe and environmentally sound development, manufacture, transport, use, and disposal of chemical products.

Currently, self-evaluations are used to measure progress in implementing the code practices. However, CMA is developing an appropriate performance measure to better gauge progress.

While every point of the Monsanto Pledge deals in some way with a product's life-cycle, the Pledge point that best captures the product stewardship commitment is the second – to ensure no operation poses any undue risk to employees and communities. Responsible Care® assists Monsanto in achieving its pledge to the public.



DSW 135377

STLCOPCB4035358



The goal of the CAER code is to assure emergency preparedness and to foster community right-to-know. The code has two major components: first, to assure that facilities that manufacture, process, use, distribute or store hazardous materials initiate and maintain a community outreach program to openly communicate relevant, useful information responsive to the public's questions and concerns about safety, health and the environment; and second, to help protect employees and communities by assuring that each facility has an emergency response program to respond rapidly and effectively to emergencies. This code demands a commitment to openness and community dialogue.

Community Awareness and Emergency Response (CAER) CODE

Currently, self-evaluations are used to measure progress in implementing the code practices. However, a performance measure is being developed by CMA as a better gauge of progress.

The goals of this code are consistent with two of the seven points of the Monsanto Pledge: to ensure no operations pose any undue risks to employees and communities; and to keep plants open to their communities and involve the community in plant operations. Responsible Care® enhances Monsanto's efforts toward meeting this pledge.



DSW 135378

STLCOPCB4035359

WHAT Krummrich IS DOING

Responsible Care:® A Public Commitment

• Since 1989, a group known as the Community Advisory Committee has been meeting quarterly to discuss activities at the plant. Currently this group is made up of a diverse cross-section of the community, from the director of nursing of St. Mary's Hospital to the president of the local Sierra Club to the director of East St. Louis Emergency Service and Disaster Agency (ESDA). The group reviews plant activities from pollution prevention progress to community contributions through the Monsanto Fund.

• Krummrich has taken a leadership role in the St. Clair County Local Emergency Planning Committee (LEPC). This group is currently involved in developing a county-wide emergency response plan for hazardous materials.

• Every three years a community opinion survey is taken to assess the public's view of Monsanto and the impact on its communities. This information is then used to pinpoint community issues regarding the Krummrich Plant as well as to improve and target Monsanto Fund contributions.

• Every year every employee spends three full days in training on environment, safety and health issues. This training includes emergency response, basic safety concerns and industrial hygiene.

• A major restructuring of the emergency response team is underway at Krummrich. Standard operating guides are being developed, the incident command structure is being redefined, pre-plans are being written--which include maps of each department and the hazards peculiar to that department, training and exercises are being improved, and full scale drills are being planned. These changes will not only document emergency response knowledge and provide a vehicle for sharing it internally and externally with emergency responders but will improve response time. When complete, Krummrich's plan may become the model for the rest of Monsanto.

DSW 135379

STLCOPCB4035360



The Distribution code is designed to reduce the risk that transportation and storage of chemicals pose to the public, carriers, customers, contractor and company employees, and the environment. Adherence to the code will lead to continually safer chemical distribution.

Distribution CODE

Facilities must evaluate the risks associated with chemical distribution and develop methods to reduce those risks, including an evaluation of the qualifications and compliance record of carriers. The code requires companies to provide emergency advise and/or assistance to people on the scene in the event of a chemical distribution emergency. In addition, the code promotes improvements in employee preparedness and awareness in preventing distribution emergencies.

Currently, progress in implementing this code is measured through self-evaluations. However, a performance measure is being developed by CMA to better gauge progress.

The goals of the Distribution code are consistent with two of the seven points of the Monsanto Pledge; to reduce toxic and hazardous releases and emissions, working toward an ultimate goal of zero effect; and to ensure no operation poses any undue risk to employees or communities.

The framework of the Responsible Care® management practices enhances Monsanto's ability to meet its pledge to the public.

DSW 135380

STLCOPCB4035361

WHAT Krummrich IS DOING

Responsible Care:®
A Public Commitment

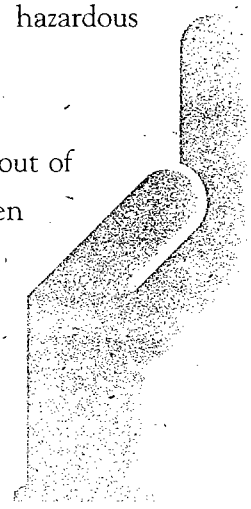
• A new container design for shipping phosphorus pentasulfide (P_2S_5) has been adopted industry wide. The container utilizes a cone shaped inlet/discharge with a positive seal valve. The container is shipped cone up and then inverted to empty, eliminating the product leakage problem associated with the old style tote bins. In addition, this new container has eliminated 99% of the fugitive emissions associated with loading and unloading – reducing the risk to employees and customers.

• Every trailer that leaves the Krummrich Plant carrying P_2S_5 is tracked via satellite. This allows instantaneous two-way communication between the driver and Krummrich Shipping, communicating any problems or weather issues. In addition, a panic button is provided that sounds an "alarm"; the Shipping department can then pinpoint the trailer's location to within 1000 ft. and get help on its way.

• A new trailer design for shipping P_2S_5 is now in the third generation of improvement. However, the main features of this design still include a lower center of gravity for the shipping containers, with the bottoms of these containers "nested" into the trailer to prevent container movement. Straps designed by the military are used to secure the containers onto the trailer bed.

• Driver training is ongoing at Krummrich. Product specific emergency response training is given to every driver who carries hazardous materials.

• A strict weather policy has taken some risk out of the transport of Krummrich materials. When drivers encounter severe weather and are carrying Krummrich materials, they have the authority to stop and secure their loads without calling their company dispatcher. Upon notification, Krummrich will pay for their "downtime".



DSW 135381

STLCOPCB4035362



This code is designed to prevent fires, explosions and accidental releases. The practices contained in the code are based on the principle that facilities will be safe if they are designed according to sound engineering practices, built, operated and maintained properly and periodically reviewed for conformance. The practices of the code encompass the design stage through operations, maintenance and training.

Process Safety CODE

Facilities are required to have ongoing safety audit and inspection programs, strengthen employee training programs, develop secondary protection systems against accidental releases or explosions, and share knowledge from past experiences with other members of the chemical industry. Contractor employees are to be included in safety programs.

In early 1994 the CMA Responsible Care® Board approved a Process Safety Code Measurement System independent of regulatory requirements. Incident forms for reportable events are completed by facilities and submitted for tracking to an independent contractor. CMA also uses self-evaluations to measure progress in implementing the practices of the code.

The goals of this code are consistent with the Monsanto Pledge, specifically point number two – to ensure no operation poses any undue risk to employees and communities. The framework of Responsible Care® enhances Monsanto's effort to fulfill this portion of the Pledge.



DSW 135382

STLCOPCB4035363

WHAT Krummrich IS DOING

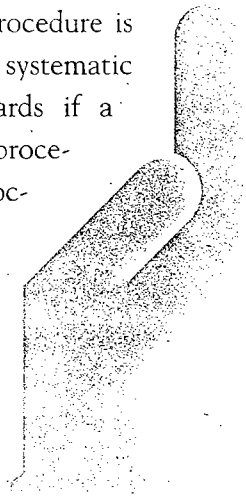
Responsible Care:®
A Public Commitment

• Through Electronic Document (ED) Access, Krummrich employees will instantaneously have the latest, most current information about the plant. Material Safety Data Sheets (MSDS), Monsanto Pledge Guidelines, safety information, department hazards and a host of other topics will be available to employees from their workstation via the computer terminals. Currently, this program is in the training phase.

• To encourage employee participation, the Employee Participation Plan was developed and will be accessible through ED Access. This plan documents all areas where employee participation is encouraged, from review of new projects to the Safety Committee Network. The aim of this plan is to aid employees in understanding all the programs and initiatives ongoing at the plant, indicate where employee involvement is occurring and needed, and encourage participation.

• All departments in the plant must undergo a detailed process hazards analysis, termed Hazard and Operability Study, or Haz-Op. These studies are mandated by law through the Occupational Safety and Health Administration (OSHA). Auditors, which include employees, look at the way a process is run from a safety standpoint, review hazards and make recommendations for changes. Greater than 50% of the process departments at Krummrich are complete, in accordance with the OSHA mandate.

• Whenever a change occurs in a process, the Management of Change (MOC) procedure is followed. The procedure provides a systematic approach to the analysis of hazards if a change is made. In addition, the procedure requires communication and documentation of the change. This procedure is aimed at small or minor process changes, but does provide a framework for larger projects to follow. The MOC procedure can be found on ED Access.



DSW 135383



This code is designed to achieve ongoing reductions in the amount of all contaminants and pollutants released to the air, water and land, and to achieve ongoing reductions in the amount of wastes generated at facilities.

Pollution Prevention CODE

Facilities must inventory wastes generated; evaluate their impact on the environment; seek employee and public input; evaluate ways to reduce wastes and releases at the source; include waste and release prevention objectives in research and design of new or modified facilities, processes and products; and develop an ongoing program for waste reduction.

The code has a "built in" performance measure – the Toxics Release Inventory (TRI) data that each company is mandated by law to make public each year . CMA tracks this trend information as well as uses member self-evaluations to review progress in implementing the code practices.

Monsanto was one of the first companies to voluntarily disclose pollution data to the public prior to its being codified into law. The 90% air releases reduction program was a voluntary initiative that went far above the requirements of governmental programs. Monsanto's Pledge formalized the commitment to the public already made with the 90% air emissions reduction program. Three Pledge points address this focus: to reduce all toxic and hazardous releases and emissions, working toward an ultimate goal of zero effect; to ensure groundwater safety; and to search worldwide for technology to reduce and eliminate wastes from its operations, with top priority being not making it in the first place.

Responsible Care® has provided additional framework to Monsanto's aggressive pollution prevention efforts.

DSW 135384

STLCOPCB4035365

WHAT Krummrich IS DOING

Responsible Care:®
A Public Commitment

• Recovery of hydrochloric acid (HCl) will jump from 67% to over 90% of the available amount with the installation of the HCl Modernization Project. The unrecovered HCl was sent off-site to be neutralized. Now it will be recovered, purified and sold to customers. In addition, the new equipment will replace obsolete technology improving environmental performance.

• Benzene emissions are targeted in the Benzene Handling Project. Replacement of the large benzene floating roof storage tank with a smaller tank equipped with a fixed roof reduces air emissions. A false bottom reduces the risk of a leak to the environment. Emissions will be reduced further with the installation of a process vent scrubber. Any remaining benzene vapors will go to a new state-of-the art thermal oxidizer where they will be destroyed.

• As a result of the 90% air emissions reduction program, the Krummrich Plant reduced its total SARA Title III air emissions by 87%.

• By recycling phosphorus pentasulfide (P_2S_5) reactor vents back into the process instead of sending these gas streams to the incinerator, sulphur dioxide emissions from this source will be eliminated.

DSW 135385



The goal of this code is to protect and promote the health and safety of people working in or visiting a facility. The code is designed to continuously improve work site health and safety, through identifying and assessing hazards, preventing unsafe acts and conditions, maintaining and improving employee health, and communicating health and safety issues.

Employee Health and Safety CODE

Many code requirements parallel regulations of the Occupational Safety and Health Administration (OSHA). However, a unique aspect of this code is its emphasis on employee involvement through employee participation in reviewing and developing health and safety programs.

The code is equipped with a "built in" performance measure – the Occupational Injury and Illness Reports required by OSHA. This information and the self-evaluations are sent to CMA to be used to identify statistical safety trends in the industry and for measuring progress in implementing the code practices.

Monsanto has a long history of being committed to safety – in the workplace, while traveling, and in the home. It is no coincidence that this aspect is included in the Monsanto Pledge: to ensure no operation poses any undue risk to employees and communities. In addition, Monsanto has also committed all major U.S. facilities to participate in the OSHA Voluntary Protection Program (VPP), which goes beyond compliance with the law and sets criteria for operating facilities to become and be recognized as among the safest in the nation.

Responsible Care® has assisted Monsanto's aggressive efforts to meet its commitments to the Pledge and OSHA VPP participation.

DSW 135386

STLCOPCB4035367

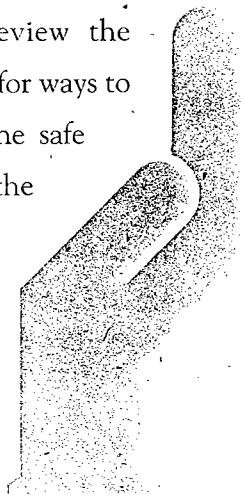
WHAT Krummrich IS DOING

Responsible Care:®
A Public Commitment

• Development of the Contractor/Guest Environment, Safety and Health Guidelines has formalized the procedure to handle visits to Krummrich while ensuring the safety and health of those visiting. The guideline specifies what information must be provided to visitors as well as any on-site training about safety rules and hazards that is required. Also included are the requirements that must be met by any contractor to be qualified to work in the plant.

• Employee participation is encouraged in the Safety Committee Network. Each department has a safety committee which meets to discuss safety issues and hazards. The safety committee chairpersons of each department meet periodically to discuss safety issues and develop training packages that meet the needs of employees across all departments. Members of the Network then meet with the Safety Leadership Committee which discusses safety issues site wide, sets safety policy and encourages communications.

• Behavior Incident Analysis is a new procedure that will be used to analyze safety accidents and near misses. This procedure will review the behaviors behind an incident, looking for ways to remove the barriers to doing a job the safe way. Analyses will be completed by the involved department supervision. The Safety department representative will serve as coach.



DSW 135387

STLCOPCB4035368

WHAT Krummrich IS DOING

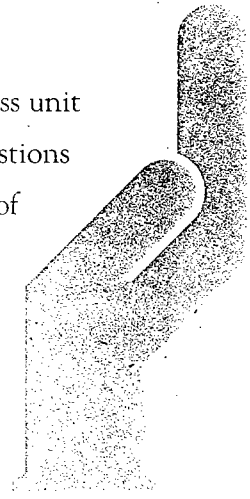
Responsible Care:® A Public Commitment

- All products, either final or intermediate, are assessed in terms of their hazards and risks. These hazards and risks are communicated through Material Safety Data Sheets (MSDS), which are available to employees, customers, carriers, distributors and any interested party.

- Before a contractor is allowed to work in the plant, minimum standards, in terms of health, safety and environmental conduct and compliance, must be met. A list of acceptable contractors is maintained and that list is periodically reviewed and updated. This screening process applies to all contract personnel, from waste disposal to contractor manufacturing to performance of mechanical work on-site.

- In addition to contract personnel, customers, distributors, carriers and suppliers must also meet minimum standards in terms of health, safety and environmental conduct and compliance. If a company cannot or does not meet these standards, Krummrich will no longer conduct business with them.

- The phosphorus pentasulfide (P_2S_5) business unit has named a product steward to handle questions and issues surrounding the handling and use of P_2S_5. The steward provides leadership and guidance for process and shipping improvements as well as provides product safety training to employees, customers, carriers and distributors.



DSW 135388

STLCOPCB4035369



The purpose of this code is to make health, safety and environmental protection an integral part of designing, manufacturing, marketing, distributing, using, recycling, and disposing of products. Essentially, the scope of the code covers all stages of a product's life.

Product Stewardship CODE

The code requires facilities to consider possible health, safety and environmental effects of new and existing products and to promote the safe and environmentally sound development, manufacture, transport, use, and disposal of chemical products.

Currently, self-evaluations are used to measure progress in implementing the code practices. However, CMA is developing an appropriate performance measure to better gauge progress.

While every point of the Monsanto Pledge deals in some way with a product's life-cycle, the Pledge point that best captures the product stewardship commitment is the second – to ensure no operation poses any undue risk to employees and communities. Responsible Care® assists Monsanto in achieving its pledge to the public.



DSW 135389

STLCOPCB4035370



The goal of the CAER code is to assure emergency preparedness and to foster community right-to-know. The code has two major components: first, to assure that facilities that manufacture, process, use, distribute or store hazardous materials initiate and maintain a community outreach program to openly communicate relevant, useful information responsive to the public's questions and concerns about safety, health and the environment; and second, to help protect employees and communities by assuring that each facility has an emergency response program to respond rapidly and effectively to emergencies. This code demands a commitment to openness and community dialogue.

Community Awareness and Emergency Response (CAER) CODE

Currently, self-evaluations are used to measure progress in implementing the code practices. However, a performance measure is being developed by CMA as a better gauge of progress.

The goals of this code are consistent with two of the seven points of the Monsanto Pledge: to ensure no operations pose any undue risks to employees and communities; and to keep plants open to their communities and involve the community in plant operations. Responsible Care® enhances Monsanto's efforts toward meeting this pledge.



DSW 135390

STLCOPCB4035371

WHAT Krummrich IS DOING

Responsible Care:® A Public Commitment

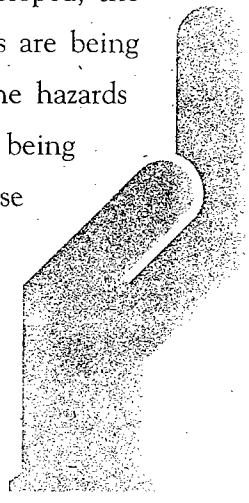
• Since 1989, a group known as the Community Advisory Committee has been meeting quarterly to discuss activities at the plant. Currently this group is made up of a diverse cross-section of the community, from the director of nursing of St. Mary's Hospital to the president of the local Sierra Club to the director of East St. Louis Emergency Service and Disaster Agency (ESDA). The group reviews plant activities from pollution prevention progress to community contributions through the Monsanto Fund.

• Krummrich has taken a leadership role in the St. Clair County Local Emergency Planning Committee (LEPC). This group is currently involved in developing a county-wide emergency response plan for hazardous materials.

• Every three years a community opinion survey is taken to assess the public's view of Monsanto and the impact on its communities. This information is then used to pinpoint community issues regarding the Krummrich Plant as well as to improve and target Monsanto Fund contributions.

• Every year every employee spends three full days in training on environment, safety and health issues. This training includes emergency response, basic safety concerns and industrial hygiene.

• A major restructuring of the emergency response team is underway at Krummrich. Standard operating guides are being developed, the incident command structure is being redefined, pre-plans are being written--which include maps of each department and the hazards peculiar to that department, training and exercises are being improved, and full scale drills are being planned. These changes will not only document emergency response knowledge and provide a vehicle for sharing it internally and externally with emergency responders but will improve response time. When complete, Krummrich's plan may become the model for the rest of Monsanto.



DSW 135391



The Distribution code is designed to reduce the risk that transportation and storage of chemicals pose to the public, carriers, customers, contractor and company employees, and the environment. Adherence to the code will lead to continually safer chemical distribution.

Distribution CODE

Facilities must evaluate the risks associated with chemical distribution and develop methods to reduce those risks, including an evaluation of the qualifications and compliance record of carriers. The code requires companies to provide emergency advise and/or assistance to people on the scene in the event of a chemical distribution emergency. In addition, the code promotes improvements in employee preparedness and awareness in preventing distribution emergencies.

Currently, progress in implementing this code is measured through self-evaluations. However, a performance measure is being developed by CMA to better gauge progress.

The goals of the Distribution code are consistent with two of the seven points of the Monsanto Pledge; to reduce toxic and hazardous releases and emissions, working toward an ultimate goal of zero effect; and to ensure no operation poses any undue risk to employees or communities.

The framework of the Responsible Care® management practices enhances Monsanto's ability to meet its pledge to the public.

DSW 135392

STLCOPCB4035373

WHAT Krummrich IS DOING

Responsible Care:® A Public Commitment

• A new container design for shipping phosphorus pentasulfide (P_2S_5) has been adopted industry wide. The container utilizes a cone shaped inlet/discharge with a positive seal valve. The container is shipped cone up and then inverted to empty, eliminating the product leakage problem associated with the old style tote bins. In addition, this new container has eliminated 99% of the fugitive emissions associated with loading and unloading – reducing the risk to employees and customers.

• Every trailer that leaves the Krummrich Plant carrying P_2S_5 is tracked via satellite. This allows instantaneous two-way communication between the driver and Krummrich Shipping, communicating any problems or weather issues. In addition, a panic button is provided that sounds an "alarm"; the Shipping department can then pinpoint the trailer's location to within 1000 ft. and get help on its way.

• A new trailer design for shipping P_2S_5 is now in the third generation of improvement. However, the main features of this design still include a lower center of gravity for the shipping containers, with the bottoms of these containers "nested" into the trailer to prevent container movement. Straps designed by the military are used to secure the containers onto the trailer bed.

• Driver training is ongoing at Krummrich. Product specific emergency response training is given to every driver who carries hazardous materials.

• A strict weather policy has taken some risk out of the transport of Krummrich materials. When drivers encounter severe weather and are carrying Krummrich materials, they have the authority to stop and secure their loads without calling their company dispatcher. Upon notification, Krummrich will pay for their "downtime".

DSW 135393

WHAT Krummrich IS DOING

Responsible Care:®
A Public Commitment

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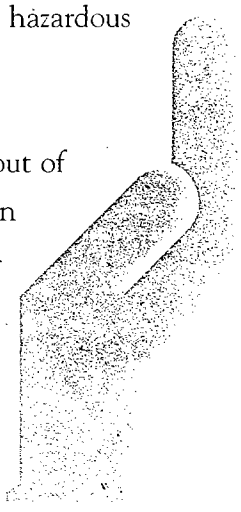

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DSW 135395

STLCOPCB4035376

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DSW 135396

STLCOPCB4035377



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Community Awareness and Emergency Response (CAER) CODE

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DSW 135397

STLCOPCB4035378

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Responsible Care:®
A Public Commitment

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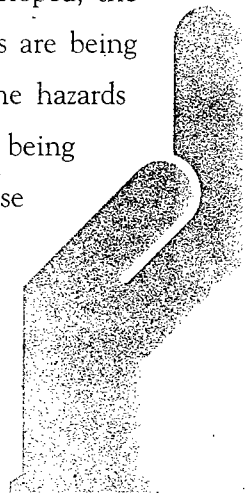

DSW 135398

STLCOPCB4035379



The purpose of this code is to make health, safety and environmental protection an integral part of designing, manufacturing, marketing, distributing, using, recycling, and disposing of products. Essentially, the scope of the code covers all stages of a product's life.

Product Stewardship CODE

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DSW 135399

STLCOPCB4035380

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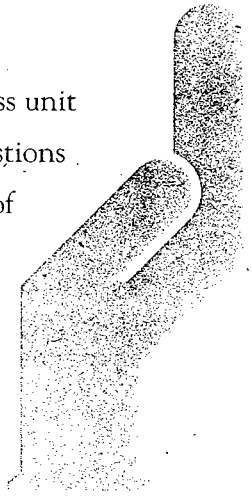

DSW 135400

STLCOPCB4035381

WHAT Krummrich IS DOING

Responsible Care:®
A Public Commitment

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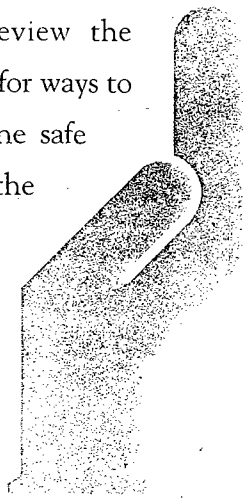

DSW 135401



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DSW 135402

STLCOPCB4035383

WHAT Krummrich IS DOING

Responsible Care:® A Public Commitment

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DSW 135403



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Pollution Prevention CODE

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DSW 135404

STLCOPCB4035385

WHAT Krummrich IS DOING

Responsible Care:®
A Public Commitment

• Through Electronic Document (ED) Access, Krummrich employees will instantaneously have the latest, most current information about the plant. Material Safety Data Sheets (MSDS), Monsanto Pledge Guidelines, safety information, department hazards and a host of other topics will be available to employees from their workstation via the computer terminals. Currently, this program is in the training phase.

• To encourage employee participation, the Employee Participation Plan was developed and will be accessible through ED Access. This plan documents all areas where employee participation is encouraged, from review of new projects to the Safety Committee Network. The aim of this plan is to aid employees in understanding all the programs and initiatives ongoing at the plant, indicate where employee involvement is occurring and needed, and encourage participation.

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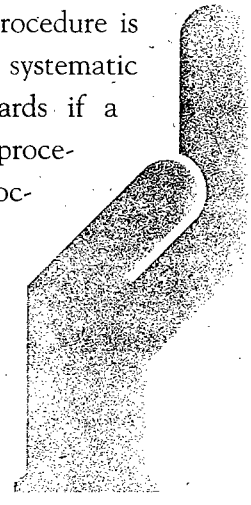


DSW 135405

STLCOPCB4035386



This code is designed to prevent fires, explosions and accidental releases. The practices contained in the code are based on the principle that facilities will be safe if they are designed according to sound engineering practices, built, operated and maintained properly and periodically reviewed for conformance. The practices of the code encompass the design stage through operations, maintenance and training.

Process Safety CODE

Facilities are required to have ongoing safety audit and inspection programs, strengthen employee training programs, develop secondary protection systems against accidental releases or explosions, and share knowledge from past experiences with other members of the chemical industry. Contractor employees are to be included in safety programs.

In early 1994 the CMA Responsible Care® Board approved a Process Safety Code Measurement System independent of regulatory requirements. Incident forms for reportable events are completed by facilities and submitted for tracking to an independent contractor. CMA also uses self-evaluations to measure progress in implementing the practices of the code.

The goals of this code are consistent with the Monsanto Pledge, specifically point number two – to ensure no operation poses any undue risk to employees and communities. The framework of Responsible Care® enhances Monsanto's effort to fulfill this portion of the Pledge.



DSW 135406

STLCOPCB4035387

WHAT Krummrich IS DOING

Responsible Care:®
A Public Commitment

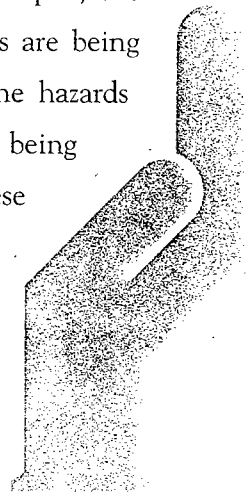
• Since 1989, a group known as the Community Advisory Committee has been meeting quarterly to discuss activities at the plant. Currently this group is made up of a diverse cross-section of the community, from the director of nursing of St. Mary's Hospital to the president of the local Sierra Club to the director of East St. Louis Emergency Service and Disaster Agency (ESDA). The group reviews plant activities from pollution prevention progress to community contributions through the Monsanto Fund.

• Krummrich has taken a leadership role in the St. Clair County Local Emergency Planning Committee (LEPC). This group is currently involved in developing a county-wide emergency response plan for hazardous materials.

• Every three years a community opinion survey is taken to assess the public's view of Monsanto and the impact on its communities. This information is then used to pinpoint community issues regarding the Krummrich Plant as well as to improve and target Monsanto Fund contributions.

• Every year every employee spends three full days in training on environment, safety and health issues. This training includes emergency response, basic safety concerns and industrial hygiene.

• A major restructuring of the emergency response team is underway at Krummrich. Standard operating guides are being developed, the incident command structure is being redefined, pre-plans are being written--which include maps of each department and the hazards peculiar to that department, training and exercises are being improved, and full scale drills are being planned. These changes will not only document emergency response knowledge and provide a vehicle for sharing it internally and externally with emergency responders but will improve response time. When complete, Krummrich's plan may become the model for the rest of Monsanto.



DSW 135407



The goal of the CAER code is to assure emergency preparedness and to foster community right-to-know. The code has two major components: first, to assure that facilities that manufacture, process, use, distribute or store hazardous materials initiate and maintain a community outreach program to openly communicate relevant, useful information responsive to the public's questions and concerns about safety, health and the environment; and second, to help protect employees and communities by assuring that each facility has an emergency response program to respond rapidly and effectively to emergencies. This code demands a commitment to openness and community dialogue.

Community Awareness and Emergency Response (CAER) CODE

Currently, self-evaluations are used to measure progress in implementing the code practices. However, a performance measure is being developed by CMA as a better gauge of progress.

The goals of this code are consistent with two of the seven points of the Monsanto Pledge: to ensure no operations pose any undue risks to employees and communities; and to keep plants open to their communities and involve the community in plant operations. Responsible Care® enhances Monsanto's efforts toward meeting this pledge.



DSW 135408

STLCOPCB4035389



The purpose of this code is to make health, safety and environmental protection an integral part of designing, manufacturing, marketing, distributing, using, recycling, and disposing of products. Essentially, the scope of the code covers all stages of a product's life.

Product Stewardship CODE

The code requires facilities to consider possible health, safety and environmental effects of new and existing products and to promote the safe and environmentally sound development, manufacture, transport, use, and disposal of chemical products.

Currently, self-evaluations are used to measure progress in implementing the code practices. However, CMA is developing an appropriate performance measure to better gauge progress.

While every point of the Monsanto Pledge deals in some way with a product's life-cycle, the Pledge point that best captures the product stewardship commitment is the second – to ensure no operation poses any undue risk to employees and communities. Responsible Care® assists Monsanto in achieving its pledge to the public.



DSW 135409

STLCOPCB4035390

WHAT Krummrich IS DOING

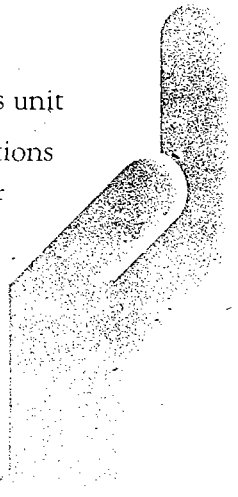
Responsible Care:®
A Public Commitment

• All products, either final or intermediate, are assessed in terms of their hazards and risks. These hazards and risks are communicated through Material Safety Data Sheets (MSDS), which are available to employees, customers, carriers, distributors and any interested party.

• Before a contractor is allowed to work in the plant, minimum standards, in terms of health, safety and environmental conduct and compliance, must be met. A list of acceptable contractors is maintained and that list is periodically reviewed and updated. This screening process applies to all contract personnel, from waste disposal to contractor manufacturing to performance of mechanical work on-site.

• In addition to contract personnel, customers, distributors, carriers and suppliers must also meet minimum standards in terms of health, safety and environmental conduct and compliance. If a company cannot or does not meet these standards, Krummrich will no longer conduct business with them.

• The phosphorus pentasulfide (P_2S_5) business unit has named a product steward to handle questions and issues surrounding the handling and use of P_2S_5. The steward provides leadership and guidance for process and shipping improvements as well as provides product safety training to employees, customers, carriers and distributors.



DSW 135410

STLCOPCB4035391

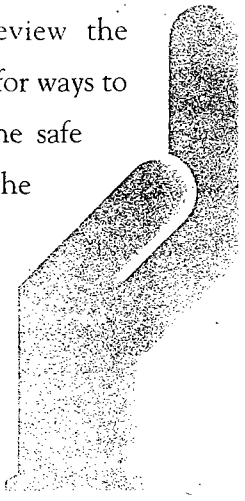
WHAT Krummrich IS DOING

Responsible Care:®
A Public Commitment

• Development of the Contractor/Guest Environment, Safety and Health Guidelines has formalized the procedure to handle visits to Krummrich while ensuring the safety and health of those visiting. The guideline specifies what information must be provided to visitors as well as any on-site training about safety rules and hazards that is required. Also included are the requirements that must be met by any contractor to be qualified to work in the plant.

• Employee participation is encouraged in the Safety Committee Network. Each department has a safety committee which meets to discuss safety issues and hazards. The safety committee chairpersons of each department meet periodically to discuss safety issues and develop training packages that meet the needs of employees across all departments. Members of the Network then meet with the Safety Leadership Committee which discusses safety issues site wide, sets safety policy and encourages communications.

• Behavior Incident Analysis is a new procedure that will be used to analyze safety accidents and near misses. This procedure will review the behaviors behind an incident, looking for ways to remove the barriers to doing a job the safe way. Analyses will be completed by the involved department supervision. The Safety department representative will serve as coach.



DSW 135411

STLCOPCB4035392



The goal of this code is to protect and promote the health and safety of people working in or visiting a facility. The code is designed to continuously improve work site health and safety, through identifying and assessing hazards, preventing unsafe acts and conditions, maintaining and improving employee health, and communicating health and safety issues.

Employee Health and Safety CODE

Many code requirements parallel regulations of the Occupational Safety and Health Administration (OSHA). However, a unique aspect of this code is its emphasis on employee involvement through employee participation in reviewing and developing health and safety programs.

The code is equipped with a "built in" performance measure – the Occupational Injury and Illness Reports required by OSHA. This information and the self-evaluations are sent to CMA to be used to identify statistical safety trends in the industry and for measuring progress in implementing the code practices.

Monsanto has a long history of being committed to safety – in the workplace, while traveling, and in the home. It is no coincidence that this aspect is included in the Monsanto Pledge: to ensure no operation poses any undue risk to employees and communities. In addition, Monsanto has also committed all major U.S. facilities to participate in the OSHA Voluntary Protection Program (VPP), which goes beyond compliance with the law and sets criteria for operating facilities to become and be recognized as among the safest in the nation.

Responsible Care® has assisted Monsanto's aggressive efforts to meet its commitments to the Pledge and OSHA VPP participation.

DSW 135412

WHAT Krummrich IS DOING

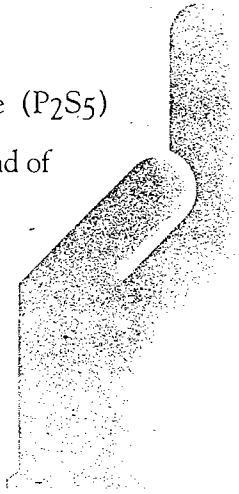
Responsible Care:®
A Public Commitment

• Recovery of hydrochloric acid (HCl) will jump from 67% to over 90% of the available amount with the installation of the HCl Modernization Project. The unrecovered HCl was sent off-site to be neutralized. Now it will be recovered, purified and sold to customers. In addition, the new equipment will replace obsolete technology improving environmental performance.

• Benzene emissions are targeted in the Benzene Handling Project. Replacement of the large benzene floating roof storage tank with a smaller tank equipped with a fixed roof reduces air emissions. A false bottom reduces the risk of a leak to the environment. Emissions will be reduced further with the installation of a process vent scrubber. Any remaining benzene vapors will go to a new state-of-the art thermal oxidizer where they will be destroyed.

• As a result of the 90% air emissions reduction program, the Krummrich Plant reduced its total SARA Title III air emissions by 87%.

• By recycling phosphorus pentasulfide (P_2S_5) reactor vents back into the process instead of sending these gas streams to the incinerator, sulphur dioxide emissions from this source will be eliminated.



DSW 135413



This code is designed to achieve ongoing reductions in the amount of all contaminants and pollutants released to the air, water and land, and to achieve ongoing reductions in the amount of wastes generated at facilities.

Pollution Prevention CODE

Facilities must inventory wastes generated; evaluate their impact on the environment; seek employee and public input; evaluate ways to reduce wastes and releases at the source; include waste and release prevention objectives in research and design of new or modified facilities, processes and products; and develop an ongoing program for waste reduction.

The code has a "built in" performance measure – the Toxics Release Inventory (TRI) data that each company is mandated by law to make public each year . CMA tracks this trend information as well as uses member self-evaluations to review progress in implementing the code practices.

Monsanto was one of the first companies to voluntarily disclose pollution data to the public prior to its being codified into law. The 90% air releases reduction program was a voluntary initiative that went far above the requirements of governmental programs. Monsanto's Pledge formalized the commitment to the public already made with the 90% air emissions reduction program. Three Pledge points address this focus: to reduce all toxic and hazardous releases and emissions, working toward an ultimate goal of zero effect; to ensure groundwater safety; and to search worldwide for technology to reduce and eliminate wastes from its operations, with top priority being not making it in the first place.

Responsible Care® has provided additional framework to Monsanto's aggressive pollution prevention efforts.

DSW 135414

STLCOPCB4035395

WHAT Krummrich IS DOING

Responsible Care:®
A Public Commitment

• A new container design for shipping phosphorus pentasulfide (P_2S_5) has been adopted industry wide. The container utilizes a cone shaped inlet/discharge with a positive seal valve. The container is shipped cone up and then inverted to empty, eliminating the product leakage problem associated with the old style tote bins. In addition, this new container has eliminated 99% of the fugitive emissions associated with loading and unloading – reducing the risk to employees and customers.

• Every trailer that leaves the Krummrich Plant carrying P_2S_5 is tracked via satellite. This allows instantaneous two-way communication between the driver and Krummrich Shipping, communicating any problems or weather issues. In addition, a panic button is provided that sounds an "alarm"; the Shipping department can then pinpoint the trailer's location to within 1000 ft. and get help on its way.

• A new trailer design for shipping P_2S_5 is now in the third generation of improvement. However, the main features of this design still include a lower center of gravity for the shipping containers, with the bottoms of these containers "nested" into the trailer to prevent container movement. Straps designed by the military are used to secure the containers onto the trailer bed.

• Driver training is ongoing at Krummrich. Product specific emergency response training is given to every driver who carries hazardous materials.

• A strict weather policy has taken some risk out of the transport of Krummrich materials. When drivers encounter severe weather and are carrying Krummrich materials, they have the authority to stop and secure their loads without calling their company dispatcher. Upon notification, Krummrich will pay for their "downtime".

DSW 135415



The Distribution code is designed to reduce the risk that transportation and storage of chemicals pose to the public, carriers, customers, contractor and company employees, and the environment. Adherence to the code will lead to continually safer chemical distribution.

Distribution CODE

Facilities must evaluate the risks associated with chemical distribution and develop methods to reduce those risks, including an evaluation of the qualifications and compliance record of carriers. The code requires companies to provide emergency advise and/or assistance to people on the scene in the event of a chemical distribution emergency. In addition, the code promotes improvements in employee preparedness and awareness in preventing distribution emergencies.

Currently, progress in implementing this code is measured through self-evaluations. However, a performance measure is being developed by CMA to better gauge progress.

The goals of the Distribution code are consistent with two of the seven points of the Monsanto Pledge; to reduce toxic and hazardous releases and emissions, working toward an ultimate goal of zero effect; and to ensure no operation poses any undue risk to employees or communities.

The framework of the Responsible Care® management practices enhances Monsanto's ability to meet its pledge to the public.

DSW 135416

STLCOPCB4035397

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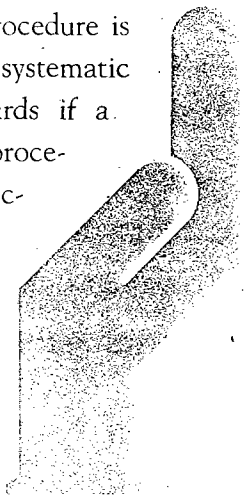

DSW 135417



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DSW 135418

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