ICMI Cyanide Code Production
Summary Audit Report

DuPont San Luis Potosi Operation
Re-Certification Audit

Submitted to:
The International Cyanide Management Institute
1400 I Street, NW – Suite 550
Washington, DC 20005
USA

2013 Audit Cycle

Code Certification Service

San Luis Potosi Summary

Company Name & Contact Information

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Operational and Audit Information

E.I. duPont de Nemours and Company, Inc. (DuPont) is a science-based company operating in more than 70 countries. DuPont offers a wide range of products and services for markets including agriculture, nutrition, electronics, communications, safety and protection, home and construction, transportation and apparel. Solid sodium cyanide for use in the gold mining sector is manufactured at the Memphis, Tennessee plant, which is part of the DuPont Cyanides Business and Chemicals & Fluoroproducts Strategic Business Unit. The plant is located just outside of Memphis in Woodstock, Tennessee. Bulk and semi-bulk shipments of sodium cyanide are shipped to the San Luis Potosi Terminal where the cyanide is repackaged into Flo-Bins® and ISO containers mounted on truck chassis.

DuPont was one of the original 14 Cyanide Code signatory companies announced on November 3, 2005. As such, DuPont made the commitment to obtain Cyanide Code certification for its Memphis Solid Cyanide Plant and its packaging operations. DuPont was the first Cyanide Producer to achieve certification in June 2006 and the operation was re-certified in 2009 and again in 2012. The DuPont San Luis Potosi location has been in operation as a warehouse terminal since 2006. It was originally certified to the ICMI Cyanide Code as part of the DuPont Mexico Supply Chain audit in 2010. San Luis Potosi operations were expanded in 2011 to include the loading of cyanide into ISO tanks and Flo-Bins®. The operation was certified in 2011. This 2013 re-certification audit of the San Luis Potosi warehouse, distribution, and ISO tank loading operations was conducted during the same time period as the other portions of the DuPont Mexico Supply Chain. The other portions of the Mexico Supply Chain are contained in separate reports.

Description of the San Luis Potosi Operation:

The San Luis Potosi operation includes warehousing, ISO tank and FLO-BIN® loading operations. Product arrives at the terminal via a KCSM rail spur that comes into the secure facility and by ALR truck delivery. The bulk product arrives in rail hopper cars, and packaged cyanide arrives in boxcars and dry van. All unloading and loading is done within a fenced and secure area.

The unloading of trucks occurs at the loading dock which is also within the secure area. The cyanide is stored in covered well-ventilated warehouses prior to being dispatched to customers by truck.

The DuPont San Luis Potosi terminal is operated by Suministros Industriales Potosinos, S.A. De C.V. (S.I.P.). DuPont closely oversees all operations with an on-site DuPont Management Team.

San Luis Potosi Operations - Auditor's finding and attestation

The audit was performed at the DuPont San Luis Potosi terminal which is operated by Suministros Industriales Potosinos, S.A. De C.V. (S.I.P.). DuPont personnel and S.I.P. personnel were audited during this assessment. The audit was performed by an independent third-party audit team that was pre-approved by the ICMI for production and transportation audits. The re-certification audit was conducted as part of the overall DuPont Mexico Supply Chain Re-Certification audit that was conducted August 12-16 and October 23, 28, and 29, 2013. The San Luis Potosi operation was audited on-site on August 13, 2013.

The DuPont cyanide operation practices this facility is using were evaluated against the Cyanide Code requirements documented in *ICMI Cyanide Code* and the *ICMI Cyanide Code Production Protocol*. DuPont internal Standards, Policies, Practices, and Procedures regarding the management of the operations were reviewed. The audit was conducted through discussions and interviews with multiple individuals in cross-functional roles at DuPont and S.I.P (see table below). Records were randomly sampled for all ICMI Cyanide Code requirements and were found to be acceptable.

Production Practice Discussed → **Audit Participants**	**Organization**	**1.1 QA / QC – Design of Facility**	**1.2 Safe Operations to Avoid Accidents**	**1.3 Inspect Facilities and Equipment**	**2.1 Safety Procedures – Protect Against Exposure**	**2.2 Plans and Procedures for Response to Exposure**	**3.1 Environmental Monitoring**	**4.1 Train Employees in Safe Operations**	**4.2 Train Employees to Respond to Emergencies**	**5.1 Emergency Response Plan**	**5.2 Involve Stakeholders**	**5.3 Emergency Response Resources**	**5.4 Notification Procedures**	**5.5 Remediation & Cyanide in Water Hazards**	**5.6 Emergency Response Drills**
Operation Leader – San Luis Potosi	DuPont - Mexico	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Safety Engineer - SHE	DuPont - Mexico	X		X					X	X					X
Cyanides Product Steward	DuPont - Mexico	X			X			X	X	X	X	X		X	X
Product Stewardship Manager	DuPont - US	X							X	X	X	X	X	X	X
General Manager – San Luis Potosi	S.I.P.		X					X							
Operations & Warehouse Personnel – San Luis Potosi	S.I.P.		X	X	X	X		X	X	X		X	X		X

The results of this certification audit indicate that the DuPont San Luis Potosi Operations are in FULL COMPLIANCE with ICMI Cyanide Code requirements.

Auditor's Finding

The DuPont San Luis Potosi Operation is in **FULL COMPLIANCE** with the International Cyanide Management Code.

This operation has not experienced any significant cyanide incidents, releases, exposures since the previous ICMI Cyanide Code audit in 2010. The operation was found to have been in compliance with the ICMI Cyanide Code since the previous certification audit.

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Date(s) of Audit:	Mexico Supply Chain: August 12-16 and October 23, 28, and 29, 2013

I attest that I meet the criteria for knowledge, experience and conflict of interest for Code Certification Audit Team Leader, established by the International Cyanide Management Institute and that all members of the audit team meet the applicable criteria established by the International Cyanide Management Institute for Code Verification Auditors.

I attest that the Audit Reports accurately describe the findings of the certification audit. I further attest that the certification audit was conducted in a professional manner in accordance with the International Cyanide Management Code Verification Protocol for Cyanide Transportation Operations and using standard and accepted practices for health, safety and environmental audits.

DuPont San Luis Potosi Operations		December 6, 2013
Name of Operation	Signature of Lead Auditor	Date

1. OPERATIONS: ***Design, construct and operate cyanide production facilities to prevent release of cyanide.***

Production Practice 1.1: *Design and construct cyanide production facilities consistent with sound, accepted engineering practices and quality control/quality assurance procedures.*

The operation is **☑ in full compliance with Production Practice 1.1**

Summarize the basis for this Finding:

The San Luis Potosi facility was built using sound, accepted engineering practices and quality control processes. Extensive QC & QA records regarding the construction of the facilities were reviewed during the certification audit in 2011 and were found to be complete. Appropriate quality assurance and quality control, management of change documentation, drawing control, and equipment sign-offs were available to demonstrate compliance to ICMI Cyanide Code requirements. Acceptable materials of construction are formally defined in DuPont Engineering Standards and the original review of records confirmed that materials used conform to internal requirements. Confirmation was made that no significant changes to the facility had been made since the most recent ICMI certification audit in 2011.

All loading operations and process equipment are under the roof of an open-air building within lined concrete secondary containment areas with concrete sumps. The operations area has appropriate containment systems that ensure full containment with sufficient capacity in case of a storm event bringing rain water. There is no cyanide solution processed or packaged at this facility. Alarms and interlock systems stop the process and loading equipment in the event that there is an upset condition or a container that is being loaded becomes full. DuPont uses management system procedures and standard forms to inspect their interlocks, dust collection systems, process equipment, and containment systems regularly to ensure functionality and integrity.

Production Practice 1.2: *Develop and implement plans and procedures to operate cyanide production facilities in a manner that prevents accidental releases.*

The operation is **☑ in full compliance with Production Practice 1.2**

Summarize the basis for this Finding:

DuPont has many detailed procedures that were specifically developed for this facility and operation that define how the facility is to be operated in a safe and environmentally sound manner. Standard operating procedures are used to systematically shut-down the process equipment if there is an upset condition. Operations personnel were interviewed and their awareness level of emergency and contingency procedures was very good.

Formal Process Safety Management (PSM) and Management of Change (MOC) processes are used to manage the operation and changes to any part of the operation. Job Cycle checks are performed regularly to confirm that actual practice fulfills procedural requirements and that no unintended changes have been introduced to the process. Process Safety Reviews and Job Cycle Check records were reviewed and were found to be acceptable. All process equipment and cyanide monitoring equipment is carefully maintained using formally defined procedures and checklists. Maintenance and calibration procedures were reviewed for process equipment, and Cyanide monitors. Records showed that required maintenance and calibrations according to manufacturer's recommendations are being completed as planned.

Procedures are in place to prevent unauthorized/unregulated discharge to the environment of any cyanide-containing water. This facility only packages solid cyanide briquettes. There are no water bodies near the facility. Rain and wash water is collected in secondary containment and is sent to a licensed company for disposal. A review of permits and records confirmed that there have been no unauthorized cyanide discharges. Comprehensive procedures are used for the management and disposal of cyanide and cyanide-contaminated solids.

All cyanide is stored in buildings that were designed to protect the cyanide from water and have adequate ventilation and prevent the build-up of air-borne cyanide concentrations. The site has a secure perimeter and access to the facility is tightly controlled. Security improvements were made since the original certification audit as part of the NEEC (Nuevo Esquema de Empresas Certificadas) certification process. The facility achieved this approval as a NEEC (highly-secure) facility in 2013. Operations procedures and DuPont internal controls ensure that cyanide is packaged, labeled, and placarded in accordance with requirements of the political jurisdictions through which the load will pass.

Production Practice 1.3: *Inspect cyanide production facilities to ensure their integrity and prevent accidental releases.*

The operation is **☑ in full compliance with Production Practice 1.3**

Summarize the basis for this Finding:

A review of records and results of interviews confirmed that process equipment, dust collection systems, and secondary containment areas are routinely inspected for their proper function, pressure level of the dust collection system, presence of cyanide in rain water, and deterioration of equipment and secondary containment areas. Operators were interviewed and completed inspection forms were reviewed. There are no cyanide solution tanks or process solution tanks or piping at this facility. Inspection frequencies were deemed to be sufficient to assure that equipment is functioning within design parameters.

Inspections are documented and formatting of records show the date of the inspection, the name of the inspector, and any observed deficiencies. Records demonstrated that any deficiencies noted during inspections were appropriately resolved in a timely manner.

2. WORKER SAFETY: ***Protect workers' health and safety from exposure to cyanide.***

Production Practice 2.1: *Develop and implement procedures to protect plant personnel from exposure to cyanide.*

The operation is **☑ in full compliance with Production Practice 2.1**

Summarize the basis for this Finding:

Worker exposure to cyanide is minimized through properly engineered systems with appropriate levels of ventilation, the use of detailed standard operating procedures, and proper use of personal protective equipment (PPE). The minimum PPE requirements are defined in each procedure. Operators, forklift drivers, and warehouse personnel were interviewed. Personnel showed excellent awareness of PPE requirements associated with different types of tasks under both normal and abnormal operating scenarios. Maintenance procedures are available and records showed that appropriate personnel had been trained on maintenance requirements.

Management of Change (MOC) and Pre-Start-Up-Safety Review (PSSR) procedures are used to evaluate the potential safety, health, and environmental impact of proposed and implemented operational changes and modifications. Worker input and feedback is an integral part of safety at DuPont. Operators are encouraged to suggest improvement ideas to management, and formal opportunities for operator feedback include Job Cycle Checks, Process Safety Start-Up Reviews (PSSRs), and Core Value Contacts at the start of meetings. An Occupational Health study is conducted annually to confirm that working conditions are safe. Records were reviewed for 2011, 2012, and 2013. The studies showed that normal task work areas are under the action level of 4.7 parts per million (ppm). Personal HCN monitors are used by employees for specific tasks that have a potential for exposure to increased levels of cyanide. This practice was observed throughout the audit. A stationary cyanide monitor is located at the bottom of the cambelt equipment. The personal monitors and the stationary monitor alarm if air-borne cyanide concentrations go above 4.7 ppm. Procedures and records of calibration were reviewed and were found to be acceptable for all cyanide monitoring devices.

The buddy system is used for all tasks. Employees have radios and access to alarm and process stop buttons throughout the facility in case of emergency. Employees' health is evaluated upon hire and periodically thereafter. Health exams are used to evaluate the employee general health and confirm fitness for duty. Records were available for 2011 though 2013 to confirm this practice. The clothing change policy for employees and visitors is documented. Interviews and observation during the audit were used to confirm that the practice is being followed. The operation has posted signs that limit access to storage and production areas. PPE signs are posted in appropriate locations. Eating, drinking, smoking, open flames are prohibited where there is a potential for cyanide contamination. Employees showed very good awareness of the restrictions and of the potential dangers of not following the rules. Eating is allowed in a designated lunchroom area and in offices. Smoking is restricted to a designated smoking area.

Although cyanide signs were not posted due to security concerns, all packaging, vehicles, and rail cars were cleared marked with appropriate labeling and placarding. The operations are not co-mingled with other operations and the auditor concluded that no additional signage specifically stating "cyanide present" was necessary.

Production Practice 2.2: *Develop and implement plans and procedures for rapid and effective response to cyanide exposure.*

The operation is **☑ in full compliance with Production Practice 2.2**

Summarize the basis for this Finding:

DuPont maintains comprehensive Emergency Response Plans and procedures for rapid and effective response to cyanide exposure. The procedure for on-site treatment of cyanide exposure is very detailed and the response kit was complete. The Operations Leader and employees interviewed showed excellent awareness of emergency cyanide exposure response procedures. Non-acidic fire extinguishers, and industrial combination shower / low-pressure eye wash stations are located at strategic locations in the facility. The fire extinguishers are checked monthly and the eye wash/shower unit is checked daily. The facility has water, oxygen, resuscitator, antidote and a means of communication readily available at strategic points in the facility. Emergency equipment is inspected on a monthly basis. Emergency response equipment is stored and tested according to manufacturer's recommendations. Cyanide antidote medicine is stored in a number of locations, including a temperature-controlled office. MSDS and first aid procedures in Spanish are available to workers in operational areas. There are no process storage tanks or piping that contains cyanide solutions at this facility.

Decontamination procedures for employees, contractors, and visitors are outlined in formal procedures. Cyanide safety training is given annually and employees and supervisors demonstrated a very good understanding of the decontamination policy and the need for safety precautions. All employees are trained to provide first aid assistance to workers who may be exposed to cyanide. Formal procedures call for the decontamination of a cyanide exposure victim prior to transport. The DuPont Product Steward ensures that medical personnel in the local area surrounding the operation are trained on cyanide safety and response procedures. Training records for local doctors were available for review. The operation conducts mock emergency drills, holds a drill critique, and evaluates the need for further training or adjustment to the emergency procedures each year. Full incident investigation reports are filled out in the event of an incident. Records were available to show full compliance with ICMI Cyanide Code Worker Safety requirements.

3. MONITORING: ***Ensure that process controls are protective of the environment.***

Production Practice 3.1: *Conduct environmental monitoring to confirm that planned or unplanned releases of cyanide do not result in adverse impacts.*

The operation is **☑ in full compliance with Production Practice 3.1**

Summarize the basis for this Finding:

The facility does not have any requirements or demonstrated need to perform environmental monitoring. This part of the ICMI Cyanide Code is therefore deemed to be "not applicable at this time". The facility does not discharge directly or indirectly to surface water. Water from the sumps near process areas and storage areas is sent to a licensed operator for disposal. There are no water bodies near the operation and there have been no known spill events that could have impacted groundwater. There has been no known cyanide release by the site that would have led to measurable air emissions. There is no processing or handling of cyanide solution and there is no known generation of measurable quantities of hydrogen cyanide gas. Dust collection systems are carefully monitored and maintained. This was deemed acceptable by the auditor.

4. TRAINING: ***Train workers and emergency response personnel to manage cyanide in a safe and environmentally protective manner.***

Production Practice 4.1: *Train employees to operate the plant in a manner that minimizes the potential for cyanide exposures and releases.*

The operation is **☑ in full compliance with Production Practice 4.1**

Summarize the basis for this Finding:

DuPont has a formal training program that includes cyanide safety training prior to the start of work and annual refresher training on all procedures. The training program discusses cyanide hazards and safety precautions. The training program is very well organized and records are maintained. Safety training records were readily available and complete. All personnel are trained on all of the operating and safety procedures. Personnel performing maintenance are also trained on maintenance procedures. Fork lift drivers also receive specialized training in order to perform their jobs safely. Procedures are complete with many photos and descriptions of safety and process requirements. All workers are trained prior to being allowed to work with cyanide.

Personnel are trained on the use of personal protective equipment as part of the safety training and again during the on-the-job training done by supervisors. Employees are trained to perform normal production tasks to minimize risks to personal safety and the environment. Personnel are trained on each procedure. Awareness of procedural requirements was evaluated through interviews. Employees showed excellent awareness of procedural requirements for both normal and upset operating conditions. Experienced and qualified DuPont and S.I.P. personnel provide the training. Training effectiveness is evaluated through testing, regular Job Cycle Checks, and observation of on-the-job performance by a qualified person.

Production Practice 4.2: Train employees to respond to cyanide exposures and releases.

The operation is ☑ in full compliance with Production Practice 4.2

Summarize the basis for this Finding:

Employees are trained on what to do if a cyanide release is discovered. This is part of the cyanide safety training and the training on the individual operational procedures. Employees are also trained on how to respond to a worker exposure to cyanide and drills are conducted annually to ensure that the emergency response skills remain fresh. Corrective actions are processed and emergency procedures are revised as necessary following drill critiques. Training records are maintained in each employee file. Records are maintained for at least as long as the employee is working at the site. All records pertaining to cyanide safety were sufficiently detailed to be found compliant to ICMI Cyanide Code and internal requirements.

5. EMERGENCY RESPONSE: ***Protect communities and the environment through the development of emergency response strategies and capabilities.***

Production Practice 5.1: Prepare detailed emergency response plans for potential cyanide releases.

The operation is ☑ in full compliance with Production Practice 5.1

Summarize the basis for this Finding:

The Emergency Response Plan (ERP) and emergency response procedures were reviewed and found to be appropriate for the operation. Potential failure scenarios considered in the emergency response procedures include releases during loading operations, releases during fires

and explosions, power outages, and cyanide spills. The emergency response plan and detailed support procedures for managing emergency situations fulfill ICMI Cyanide Code Emergency Response Plan requirements.

Production Practice 5.2: *Involve site personnel and stakeholders in the planning process.*

The operation is ☑ **in full compliance with Production Practice 5.2**

Summarize the basis for this Finding:
DuPont involves operators and stakeholders, including potentially affected communities, in the emergency planning for the facility. The facility is located in an industrial zone and is not near residential areas. DuPont personnel perform outreach activities and training sessions with local emergency responders in strategic locations near the facility and along routes to the mines. Records were available to show that training and outreach sessions have continued to be performed by DuPont personnel since the 2010 certification audit. Trainees including doctors, hospital personnel, mining personnel, fire fighters, and people from the civil protection agency are included in these outreach sessions. Records were reviewed and found to be acceptable.

Production Practice 5.3: *Designate appropriate personnel and commit necessary equipment and resources for emergency response.*

The operation is ☑ **in full compliance with Production Practice 5.3**

Summarize the basis for this Finding:

DuPont Mexico offers cyanide safety training to stakeholders including employees, S.I.P. personnel, other supply chain partners, customers, emergency responders, and community members, as appropriate. Training records were reviewed during this audit for years 2011, 2012 and 2013. DuPont offers Brigade Training for Emergency Response, Cyanide Handling / Safety, Defensive Driving, Cyanide Emergency Response Drills, and Fire Extinguisher training. Training is offered each year. Trainees included operations and warehouse personnel. Training sessions on cyanide safety and emergency response were also offered to mine customers, hospitals, fire fighters, and emergency responders in strategic locations. Records showed that DuPont allocates substantial resources to outreach programs and training programs to ensure that personnel are well prepared for a potential emergency situation.

The emergency response plan clearly designates full responsibility, authority, and duties for managing an emergency situation. Emergency Response Teams are identified and alternate coordinators are also identified in the ERPs. Call-out procedures including 24-hour contact information for coordinators and response team members are included in the plan. Records of training on the plan were sampled and were found to be acceptable.

Lists of necessary emergency response equipment are contained within the emergency plan. Additionally, the DuPont emergency response procedures detail the different types of personal protective equipment necessary for the different types of response scenarios.

The process for maintaining emergency equipment is addressed in the San Luis Potosi emergency response plan. Emergency equipment is checked at least monthly. Records and interviews during this audit confirmed this practice.

Production Practice 5.4: Develop procedures for internal and external emergency notification and reporting.

The operation is ☑ in full compliance with Production Practice 5.4

Summarize the basis for this Finding:

The notification procedures, including telephone numbers, are described in the Emergency Response plan for the facility. Internal and external emergency contact information is also contained in the Cyanide Emergency Information sheet. Notification numbers are checked at least annually. Extensive notification information is also contained in the "Cyanides Global Response Plan for Off-Site Incidents." For on-site emergencies at San Luis Potosi, notifications are made to personnel within DuPont first and to emergency responders, when necessary. The emergency response plans were last updated in 2013.

Production Practice 5.5: *Incorporate into response plans and remediation measures monitoring elements that account for the additional hazards of using cyanide treatment chemicals.*

The operation is **☑ in full compliance with Production Practice 5.5**

Summarize the basis for this Finding:

DuPont maintains detailed procedures for the neutralization and decontamination of solids and contaminated debris. Additional details regarding the remediation, neutralization, decontamination, and disposal of clean-up debris are contained within the DuPont Global Emergency Response Procedures. Extensive descriptions of necessary action steps, depending on the incident scenario, are clearly outlined in the procedures.

The emergency response plan prohibits the use of treatment chemicals such as sodium hypochlorite, ferrous sulfate and hydrogen peroxide. Interviews with DuPont personnel during this and previous ICMI Cyanide Code audits showed a high level of awareness that the use of treatment chemicals is prohibited if cyanide spills into surface waters.

Production Practice 5.6: *Periodically evaluate response procedures and capabilities and revise them as needed.*

The operation is **☑ in full compliance with Production Practice 5.6**

Summarize the basis for this Finding:

Emergency plans are checked at least annually. Many emergency drills are conducted at DuPont on an on-going basis. The DuPont Mexico team conducts drills with the San Luis Potosi operation, its transportation partners, warehouse partners, and customers. Audit records were reviewed for the drills held in 2011 through 2013. Drill critiques were available and improvement opportunities were acted upon. Full incident investigations are conducted in the event that an actual emergency occurs.