ICMI CYANIDE CODE
SUMMARY AUDIT REPORT
RE-CERTIFICATION AUDIT
CYANIDE PRODUCTION

CYPLUS GMBH
SITE WESSELING
BRÜHLER STRASSE 2
50389 WESSELING
GERMANY

Submitted to:
International Cyanide Management Institute
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(Signature Lead Auditor Dr. Steinweg)

Name of Cyanide Production Facility:	CyPlus GmbH (Röhm Group), Wesseling Plant
Name of Facility Owner:	CyPlus GmbH (Röhm Group)
Name of Facility Operator:	CyPlus GmbH (Röhm Group)
Name of Responsible Manager:	Stefan Welbers, Managing Director
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Location detail and Description of operation:

The CyPlus facility is located within the industrial area of Evonik Industries AG in Wesseling near Cologne, Germany. The facility specializes in the production of sodium cyanide (NaCN). The production of alkali cyanides involves multiple steps. The facility relies on various tasks and services provided by Evonik Industrial Park Site Services in Wesseling. These services, rendered by the site operator Evonik Industries, are governed by relevant Service Level Agreements.

CyPlus maintains its own emergency plan ("BAGAP") and is fully integrated into the site-specific emergency plan ("AGAP") of Evonik Industries, including participation in corresponding drills.

This report outlines the results of the seventh evaluation of the organization based on the current ICMC production protocol (initially conducted in 2006, with subsequent evaluations every three years).

(Signature Lead Auditor Dr. Steinweg)

Auditor's Finding

This operation is

- ☒ in full compliance
- ☐ in substantial compliance *(see below)
- ☐ not in compliance

with the International Cyanide Management Code.

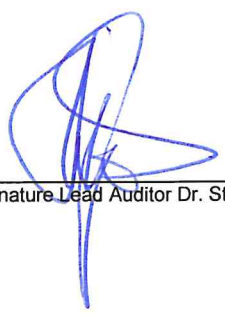
This operation has maintained full compliance with the International Cyanide Management Code throughout the previous three – year audit cycle.

* For cyanide production operations seeking Code certification, the Corrective Action Plan to bring an operation in substantial compliance into full compliance must be enclosed with this Summary Audit Report. The plan must be fully implemented within one year of the date of this audit.

Audit Company	LULU Intelligent Organization
Audit Team Leader	Dr. Benno Steinweg
Email	Benno.Steinweg@hs-kempten.de
Names / Signatures of other auditors ...	n/a
Date of audit	Dec, 02. – 03, 2024 (on site)

I attest that I meet the criteria for knowledge, experience and conflict of interest for Code Verification 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 this Summary Audit Report accurately describes the findings of the verification audit. I further attest that the verification audit was conducted in a professional manner in accordance with the International Cyanide Management Code Verification Protocol for Cyanide Production Operations and using standard and accepted practices for health, safety and environmental audits.



(Signature Lead Auditor Dr. Steinweg)

PRINCIPLE 1 – OPERATIONS:

Design, construct and operate cyanide production facilities to prevent release of Cyanide

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

This operation is
- ☒ in full compliance with
- ☐ in substantial compliance with Production Practice 1.1
- ☐ not in compliance with

Summarize the basis for this Finding:

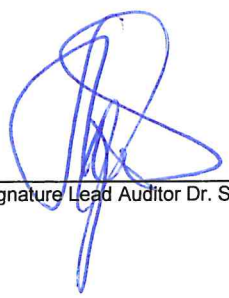
The CyPlus facility was constructed using robust, recognized technical procedures and quality control processes. Extensive QC and QA records for the construction of production, packaging, and storage facilities were reviewed and deemed satisfactory. Adequate quality assurance and quality control measures, change documentation management, drawing control, equipment approvals, and the use of a computerized data control system (DCS) are in place to ensure compliance with the Code's requirements.

Acceptable construction materials are formally defined in the Engineering Standards of Evonik and subsequently Röhm (or CyPlus's former parent companies). A review of records confirmed that the materials used meet these requirements. All operations and process equipment are housed in enclosed buildings or under the roof of open-air structures within lined, secondary containment areas made of concrete, equipped with concrete basins.

The production/packaging area features appropriate containment systems to ensure full retention capacity in case of an incident involving rain, ice, or snow. Automated alarms and interlock systems keep the production process under control in the event of a disruption or while a container is being loaded. CyPlus employs management system procedures and standard forms to regularly inspect its interlocks, collection systems, process equipment, and containment systems to ensure their functionality and integrity.

Measures to prevent and contain leaks are in place for all equipment handling cyanide solution, such as tanks and pipelines. All such equipment is installed within concrete-surfaced containment areas of adequate capacity. Cyanide detectors are installed at selected high-risk locations. All facilities (production, storage, pipelines, etc.) handling cyanide solution are located within secured areas.

The initial construction of the facility many years ago, as well as subsequent expansions and upgrades, has been and continues to be subject to German and European regulations, which are consistently monitored by authorities. Comprehensive monitoring results confirm that the facility has been constructed, maintained, and operated without any deficiencies.



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

This operation is
- ☒ in full compliance with
- ☐ in substantial compliance with Production Practice 1.2
- ☐ not in compliance with

Summarize the basis for this Finding:

The facility maintains a comprehensive set of standard operating procedures (SOPs) outlining the standard practices required for its safe and environmentally compliant operation, as well as contingency measures for potential disruptions that could lead to cyanide exposure or releases. Additional detailed operating procedures are regularly updated and validated. Preventive maintenance programs are in place for all installed equipment.

The facility follows a change management procedure with clearly traceable steps. Any planned changes or engineering projects require approval from relevant stakeholders before implementation. To ensure safe and continuous production, inline measurement devices such as HCN detectors, transmitters, and level sensors are installed. Cyanides are recycled within the process, generating no waste. Contaminated solids and other materials are pre-cleaned and collected in waste drums labeled according to German regulations, then transported and disposed of by authorized waste management companies.

Storage areas are designed with full protection against rain. Firefighting using water in the presence of cyanide is prohibited. Firefighting and fire prevention services are outsourced to the industrial park owner and operator, "Evonik Industries," which maintains a rigorous inspection and training system in which the CyPlus facility is fully integrated. HCN detectors and indicators are installed inside the building, and HVAC systems continuously ventilate storage areas for finished products.

The production and storage areas are located within an industrial park that is protected by a highly restricted access control system. The produced cyanide is packaged in containers that fully comply with international regulations for the transport of dangerous goods (ADR and UN regulations). There is no physical discharge from the collection or secondary containment systems into the external environment. Unauthorized or uncontrolled discharge of contaminated cyanide solution into the sewage system is prevented through monitoring, interlocks, and control by a digital management system.

<u>Production Practice 1.3:</u> Inspect cyanide production facilities to ensure their integrity and prevent accidental releases.

This operation is
- ☒ in full compliance with
- ☐ in substantial compliance with Production Practice 1.3
- ☐ not in compliance with

Summarize the basis for this Finding:

The facility's technical department conducts routine inspection and maintenance programs to ensure the functionality of all equipment. In addition to these inspections, additional routine checks for tanks, pipelines, containment systems, and valves are regularly performed by shift supervisors and operating personnel throughout the facility. Preventive controls, including mandatory checks such as measuring

the thickness of tank walls and container surfaces, are included as part of the defined maintenance program, with schedules and plans properly maintained.

These internal inspections are supplemented by evaluations carried out by accredited external entities or governmental institutions. Overall, the inspections are comprehensive and comply with local German and European regulations. Inspection frequencies are determined by legislation and/or risk assessments. The facility conducts routine inspection programs for tanks, valves, pipelines, containment systems, and other cyanide-related production and storage facilities. German and European requirements often meet or exceed the standards expected by the Code.

In cases where no local requirements exist, or where they are less stringent, the respective requirements of the ICMC (International Cyanide Management Code) are considered valid. All verified inspections were completed without any issues. A system is in place to implement technical measures to address any deficiencies identified during inspections or technical reviews.

PRINCIPLE 2 – WORKER SAFETY

Protect workers' health and safety from exposure to cyanide

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

This operation is
- ☒ in full compliance with
- ☐ in substantial compliance with Production Practice 2.1
- ☐ not in compliance with

Summarize the basis for this Finding:

Under German and European legislation, the CyPlus organization is required to conduct a Hazard and Operability Study (HAZOP), addressing all relevant aspects of workplace and facility safety. This analysis evaluates all workplaces and the impacts on all personnel, including plant managers, shift supervisors, shift workers, and contractor staff.

As a result of this analysis, various technical and organizational measures and actions have been implemented regarding personal protective equipment (PPE), monitoring devices, technical equipment, inspection routines, and procedures. In collaboration with medical experts, physicians, and safety engineers, training sessions, emergency plans, warning signs, and medical preventive examinations have been developed and executed.

The documentation of the hazard and risk analysis is routinely reviewed by an expert team comprising medical personnel, safety engineers, and plant managers. It is periodically updated through drills, internal and external audits, and inspections, sometimes in collaboration with employees.

In addition to this analysis, a workplace safety analysis is conducted in accordance with German law. All production employees, and in some cases storage personnel, are required to carry portable HCN detectors. These procedures comprehensively address all points of the verification protocol, Chapter 2.1.

<u>Production Practice 2.2</u>: Develop and implement plans and procedures for rapid and effective response to cyanide exposure.

This operation is
- ☒ in full compliance with
- ☐ in substantial compliance with Production Practice 2.2
- ☐ not in compliance with

Summarize the basis for this Finding:

The cyanide plant has developed and implemented an operational alarm and emergency response plan (BAGAP) in compliance with German and European legislation, as well as the ICMC. This plan includes specific conditions and measures at the production site, such as a summary of key emergency responsibilities, actions to be taken during an emergency, and collaboration with the Cyanide Sector of the CEFIC organization and the "Mutual Aid Scheme." An antidote management system and the handling of standard operating procedures are in place. Safety Data Sheets (SDS) for all products are available in German.

In accordance with German regulations, additional written instructions specify the locations where hazardous materials, including cyanides, are handled. These serve as the basis for routine training programs. Hazardous materials, including cyanides and other associated dangerous goods, are appropriately labeled on storage and process tanks, pipelines, containers, transport equipment, etc., with arrows indicating flow direction for pipelines.

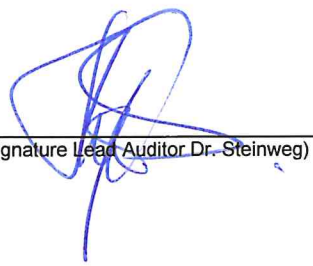
First-aid equipment is available throughout the facility, and emergency facilities are regularly inspected, with records maintained. Medical care is provided with all necessary instruments and equipment. First-aid and emergency equipment is stored and maintained as recommended by experts (physicians and manufacturers). Decontamination methods are established and integrated into various work instructions within the facility's documentation.

All programs and procedures maintained at the cyanide plant are defined in controlled documents. Emergency response programs and procedures are reviewed and updated based on two triggers: scheduled intervals and specific events. A professional medical center is located at the Evonik Industries site, collaborating with local hospitals and the industrial community. Routine drills are conducted on the industrial park premises in cooperation with the site operator Evonik and local fire departments.

Showers, suitable eyewash stations, fire extinguishers, and other first-aid equipment are strategically positioned throughout the operational area where cyanide exposure to employees could occur. These are inspected and tested in accordance with the maintenance schedule. Fire extinguishers and fire detection and alarm systems are mandatorily monitored and checked by the local site fire brigade.

An antidote management system is in place, along with access to medical oxygen and resuscitation aids (e.g., defibrillators), which are readily accessible within the facility. Antidotes, such as Cyanokit (hydroxocobalamin for injection), are quickly available during emergencies. Both fire brigade vehicles and ambulances are equipped with injection kits. The administration and handling of medications are carried out exclusively by qualified medical professionals, including doctors and nursing staff.

The Wesseling site provides direct access to Evonik's highly qualified on-site medical center, specializing in chemical accidents and emergencies, making it the primary facility for addressing such incidents. In cases of special medical needs, the transfer of employees to a more specialized or advanced clinic or hospital is arranged by the on-site medical center based on medical recommendations.



(Signature Lead Auditor Dr. Steinweg)

PRINCIPLE 3 – MONITORING

Ensure that process controls are protective of the environment

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

This operation is
- ☒ in full compliance with
- ☐ in substantial compliance with Production Practice 3.1
- ☐ not in compliance with

Summarize the basis for this Finding:

The CyPlus production facility in Wesseling does not discharge directly into surface water, particularly the adjacent Rhine River. Production facilities, including the CyPlus cyanide plant at the Evonik Wesseling site, route their wastewater through Evonik's infrastructure sewer system. Process wastewater is first treated in an on-site detoxification or wastewater treatment plant. Monitoring and control systems are in place to prevent any unplanned overflow into the Rhine.

Groundwater quality is continuously and thoroughly monitored as per the valid permit and its stipulated conditions. According to the auditor, the monitoring frequencies for groundwater, process water (including surface water), and gas phase processes are sufficient to characterize the respective medium and detect changes promptly.

CyPlus adheres to the requirements of an EHS (Environment, Health, and Safety) management system compliant with ISO 14001 and is a member of the chemical industry's Responsible Care Initiative. The CyPlus operation is governed by several permits under the Federal Immission Control Act and the Water Resources Act, as documented in the current permit overview.

Typically, all filling operations are controlled by extraction units located near the source of emissions. Emissions are treated in a gas scrubber. Based on a report, it was concluded that the currently permissible workplace concentrations are safely maintained. The site operates in compliance with the regulatory requirements for air emissions permits.

The wastewater from the cyanide facility undergoes the following treatment steps:

- Detoxification of wastewater, directed to the industrial park's treatment plant.
- Mechanical wastewater treatment.
- Biological wastewater treatment.
- Post-treatment conditioning.
- Discharge into surface water, provided it meets wastewater specifications.

Continuous measurements after final conditioning and before discharge into surface water consistently show levels of free cyanide well below 1 ppb.

(Signature Lead Auditor Dr. Steinweg)

PRINCIPLE 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 facility in a manner that minimizes the potential for cyanide exposures and releases.

This operation is
- ☒ in full compliance with
- ☐ in substantial compliance with Production Practice 4.1
- ☐ not in compliance with

Summarize the basis for this Finding:

The operational staff are qualified as chemical specialists through formal vocational training. This training typically spans a three-year period, including extensive on-the-job training, and concludes with an examination leading to a certified qualification issued by the German Chamber of Industry and Commerce. This vocational foundation supports a continuous training and development concept tailored to the specific functional requirements of each employee.

Before commencing work, all employees receive instruction on the risks associated with handling cyanide and operating within the facility. New employees are integrated into their roles through a defined onboarding process.

A key aspect of professional development includes mandatory safety training, as required by German and European legislation or as indicated by risk assessments. These training programs cover topics such as:

- Handling hazardous substances.
- Use of personal protective equipment (PPE).
- Alarm and emergency response protocols.
- Emergency drills.
- Cyanide exposure procedures and response actions.
- Operational guidelines and instructions.

These courses are often mandatory and must be conducted annually by specially qualified trainers. The training emphasizes the specific hazards associated with substances such as cyanides and hydrogen cyanide (HCN).

A structured training plan is followed, which aligns with workplace requirements (as informed by the HAZOP study) and the skills of each individual. Modern methods, such as eLearning tools and video presentations hosted on an intranet portal, are used to enhance the learning experience.

The effectiveness of training is evaluated according to ISO 9001 Section 7.2.c requirements. Evaluation methods include:

- Supervisory observation of employee performance.
- Evaluations incorporating dialogue between employees and supervisors.
- Practical tests.
- Team discussions.
- Written exams, if necessary.

(Signature Lead Auditor Dr. Steinweg)

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

This operation is
- ☒ in full compliance with
- ☐ in substantial compliance with Production Practice 4.2
- ☐ not in compliance with

Summarize the basis for this Finding:

All employees at the CyPlus plant receive regular training on safety issues related to the handling of cyanide. This includes potential exposures and releases. The training content is largely based on the emergency plan. Hazard scenarios (HAZOP assessments) are practiced through routine exercises. Corrective actions are derived, defined, and implemented. The personnel at the CyPlus plant are involved throughout the mock drill activities to enhance their skills and refresh/optimize their awareness. In accordance with the specific requirements of ISO 9001/14001, Chapter 7.5, the training is documented as needed: traceable to each individual, including the trainer, topic, date, duration, and the method used to assess understanding or effectiveness.

PRINCIPLE 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.

This operation is
- ☒ in full compliance with
- ☐ in substantial compliance with Production Practice 5.1
- ☐ not in compliance with

Summarize the basis for this Finding:

All relevant and potential failure scenarios are covered by both emergency plans: the BAGAP plan from CyPlus and the AGAP plan from Evonik Industries, the operator of the industrial park at the Wesseling site, where CyPlus's NaCN plant is located. Both plans work together in a handshake system. Crisis and emergency management is detailed and well-established. Local response teams, such as the TUIS-qualified fire brigade and medical personnel, are involved in the development of these emergency plans. The objectives and content of the two ERP (Emergency Response Plans) are defined and described. In all emergency situations, the on-site plant fire brigade and the medical center are alerted; they are on-site within minutes to control potential releases, extinguish fires, assist with first aid measures, and provide cyanide antidotes.

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

This operation is
- ☒ in full compliance with
- ☐ in substantial compliance with Production Practice 5.2
- ☐ not in compliance with

Summarize the basis for this Finding:

In addition to the ERP-based process, there is a documentation and emergency system in place to respond to transportation accidents involving cyanides within Europe. This system, the Alkalicyanides Mutual Aid Scheme (MAS), was initiated by CEFIC, and CyPlus's cyanide production facility participates in it. According to the European Seveso III Directive, all companies at the Evonik site in Wesseling are required to inform the local community about potential hazards, emissions, and other safety risks. The involved companies regularly meet for a so-called "Domino" meeting. The risks associated with cyanide releases are a mandatory component of these assessments.

Additionally, potentially affected communities, as well as local government and environmental authorities, fire departments, police, and hospitals, are involved and informed about the risks posed by the CyPlus plant. The ERP includes a list of industrial neighbors who may be impacted in the event of a cyanide release, detailing their activities, addresses, contact information, and contact persons. Communication measures are implemented with interested parties and stakeholders to ensure that relevant information and updates regarding the current status of the emergency plans are considered. Among other things, the regular "Domino" meeting is a key driver for disseminating up-to-date and accurate information to the relevant parties

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

This operation is
- ☒ in full compliance with
- ☐ in substantial compliance with Production Practice 5.3
- ☐ not in compliance with

Summarize the basis for this Finding:

Crisis and emergency management is clearly defined and regularly trained. The ERPs (Emergency Response Plans) are the core documents used to describe the relevant activities in the event of incidents. These documents include the assignment of tasks and responsibilities, as well as the description of specific functions such as security personnel, fire brigade, medical department, 24-hour on-call service, and site crisis management team. The specific members of these teams are named, listed, and kept up to date. The responsible coordinators and functional leaders are also defined, call-out procedures are included, and 24-hour contact information for the response team members is ensured. Alarm chains and internal/external reporting lines are implemented.

According to the ERP and detailed procedures, corresponding training for fire brigade personnel is routinely conducted, and the crisis management team meets for training purposes at least once a year. All emergency resources, including their inspection, are listed as part of the EHS (Environment, Health, and Safety) management system in the relevant operating instructions. Cooperation with external response teams is also part of the ERP; phone numbers, addresses, and contacts (including internal

contacts and external contacts such as authorities, police, neighboring companies, public institutions, transport companies, hospitals, and medical care, as well as public media) are listed and kept up to date.

In addition to CyPlus's ERP, which relates to production activities, CyPlus also operates an ERP that outlines a documentation and emergency system to respond to transportation accidents involving cyanides.

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

This operation is
- ☒ in full compliance with
- ☐ in substantial compliance with Production Practice 5.4
- ☐ not in compliance with

Summarize the basis for this Finding:

The two ERPs from CyPlus and Evonik Industries describe the expected emergency situations in detail. As a result of this hazard assessment, the following processes and organizational steps are defined, among others:

- General alert measures (warning employees, internal reporting, communication processes depending on the severity of the incident, involvement of the local community, collaboration with the public media in coordination with the Evonik Industrial Park Organization).
- Quick definition: Who is responsible? What needs to be organized? (general tasks and behavior rules; description of specific functions such as security personnel, fire brigade, medical department, production facility staff, technical and environmental departments, 24-hour on-call team, site crisis management team, district fire brigade).
- Phone numbers, addresses, and contacts (including internal and external contacts such as ICMI, authorities, police, city administration, neighboring companies, public institutions, transport companies, hospitals and medical support, public media such as local radio stations).

According to the European Seveso-III Directive, all companies at the Evonik Industrial Park site in Wesseling are required to inform the local community about potential hazards, emissions, and other safety risks through a designated brochure that contains detailed instructions and action guidelines for emergencies. The involved companies regularly meet for the "Domino" meeting. The Seveso-III Directive also regulates the involvement of neighboring communities in permit matters and information about potential risks. This means that all interested parties will receive the official safety report of the cyanide plant. In all cases, the public relations of the site service in Wesseling are integrated into the external communication processes.

(Signature Lead Auditor Dr. Steinweg)

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

This operation is
- ☒ in full compliance with
- ☐ in substantial compliance with Production Practice 5.5
- ☐ not in compliance with

Summarize the basis for this Finding:

Both emergency plans – the BAGAP from CyPlus and the AGAP from Evonik Industries – include remediation measures as integrated processes. At the Wesseling site, these activities are supported by the analysis laboratory and, in the event of a spill, by the mobile environmental laboratory. Evonik Industries is qualified and certified according to technical standards (external validation). If necessary, specific activities related to environmental impacts are carried out. The use of chemicals is regulated in the procedures, and the treatment of cyanide with sodium hypochlorite, iron sulfate, or hydrogen peroxide is prohibited. Furthermore, in the event of negative environmental impacts from cyanide incidents, monitoring instruments, methods, parameters, and locations must be identified to assess the current situation and develop an appropriate action plan for remediation measures.

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

This operation is
- ☒ in full compliance with
- ☐ in substantial compliance with Production Practice 5.6
- ☐ not in compliance with

Summarize the basis for this Finding:

The routine and non-routine processes for the procedure to review the plan are described in the CyPlus emergency plan, BAGAP. Intensive and routinely conducted emergency exercises have been carried out with all necessary or interested parties (partly also involving other CEFIC member companies), as described in the previous chapters of this report. The resulting insights and the analysis of improvement opportunities are part of the systematic evaluation process of the emergency plans. This serves as the basis for the continuous improvement of the safety situation at the CyPlus site in the Wesseling industrial area.

(Signature Lead Auditor Dr. Steinweg)