

# ***INTERNATIONAL CYANIDE MANAGEMENT INSTITUTE***

## ***Cyanide Transportation Summary Audit Report***

***For the  
International Cyanide Management Code***


### **Africa Supply Chain**

**03 January 2018**

Samsung C & T Corporation

03 January 2018

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Name of Supply Chain Operator

  
Lead Auditor Signature

Date

**Name of Cyanide Supply Chain : Africa Supply Chain**  
**Name of Supply Chain Owner : Samsung C&T Corporation**  
**Name of Supply Chain Operator : Samsung C&T Corporation**  
**Name of Responsible Manager : Mr. Hoyoung Jung / General Manager of Fine & Specialty Chemicals Team, Trading & Investment Group, Samsung C & T Corporation**  
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**State/Province : Seoul, 05510      Country : South Korea**  
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**Location detail and description of operation:**

The head office of Samsung C & T Corporation is located in Seoul, Korea. They have four groups named as Trading & Investment Group, Engineering & Construction Group, Fashion Group and Resort Group. Related to supplying the sodium cyanide, the main jobs of Trading & Investment Group are making agreement with mining company, receiving customer order, review of customer order and arrangement of shipping. Those were conducted by Fine & Specialty Chemicals Team in Trading & Investment Group of Samsung C & T Corporation.

The Africa Supply Chain of Samsung C & T Corporation was last ICMC re-certified during November 2014 year. Since almost three years were elapsed, re-certification audit for the Africa Supply Chain was conducted during 09~31 October 2017 year.

There were some changes in Africa Supply Chain as organized below.

- 1. Sodium cyanide manufacture : TaeKwang Industrial Co., Ltd. and TongSuh Petrochemical Co., Ltd. in Korea
- 2. Transportation from sodium cyanide manufactures to Pusan New Port in Korea : SAM IK Logistics Co., Ltd. and Hae Dong Logistics in Korea

Road transporter in Korea	Recent ICMC certification date
SAM IK Logistics Co., Ltd.	February 09, 2017
Hae Dong Logistics	December 19, 2016

- 3. Marine transportation from Pusan New Port in Korea to Africa : Maersk, MSC and Safmarine
- 4. The ports and road transporters in Africa and final destinations were as below.

Departing port	Arriving ports in Africa	Final Destination	Road transporter in Africa	Recent ICMC certification date
Pusan New Port in Korea	Tema Port in Ghana	Mining in Ghana, Burkina Faso, Niger, Mali and Guinea	Vehrad Transport and Haulage Limited	January 26, 2015
	Conakry Port in Guinea	Mining in Guinea	Transport Terrassement Minier (T.T.M)	September 19, 2016
	Dakar Port in Senegal	Mining in Mali	Bollore Africa Logistics SDV Senegal	October 14, 2016

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	Abidjan Port in Cote D'Ivoire	Mining in Mali and Burkina Faso	Bollore Africa Logistics SDV Senegal	October 14, 2016
	Monrovia Port in Liberia	Monrovia Port in Liberia	Not Applicable	Not Applicable
	Mombasa Port in Kenya	Mining in Tanzania	Alistair James Company Ltd.	September 30, 2015
	Dar Es Salaam Port in Tanzania	Mining in Tanzania	Alistair James Company Ltd.	September 30, 2015

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Auditor's Finding

This operation is

☒ **X in full compliance**

- ☐ in substantial compliance \*(see below) with the International Cyanide Management Code
- ☐ not in compliance

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

Audit Company : 3Points Co., Ltd  
Audit Team Leader : Mr. Sang-Ho Ahn  
E-mail: triplepoint@naver.comg  
Date(s) of Audit : 09, 10, 30 and 31 October 2017 Year

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 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 Transportation Operations and using standard and accepted practices for health, safety and environmental audits.

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1. **TRANSPORT: Transport cyanide in a manner that minimizes the potential for accidents and releases.**

Transport Practice 1.1: Select cyanide transport routes to minimize the potential for accidents and releases.

The operation is

X in full compliance with

in substantial compliance

not in compliance with

with Transport Practice 1.1

Summarize the basis for this Finding/Deficiencies Identified:

During 2011 and 2014, the Samsung C & T Corporation considered overall transportation route from sodium cyanide manufactures (TaeKwang Industrial Co., Ltd. and TongSuh Petrochemical Co., Ltd. in South Korea) to customer mining sites in Africa countries such as Ghana, Burkina Faso, Niger, Guinea, Mali and Tanzania according to their hazardous chemical transportation manual in which route evaluation process defined.

During 2017 year, they considered the transportation from sodium cyanide manufacture in Korea and supplying to mining in Africa through Abidjan Port in Cote D'Ivoire and Monrovia Port in Liberia. They re-checked the existing transportation from cyanide manufactures to mining sites in Africa. They evaluated for such items as availability, security, transportation quantity and cost. And also considering the delivery and marketing strategy, they decided to maintain the use of Tema port in Ghana as interim storage area and repackaging plant. And then they finally decide the transportation routes as below.

- 1) From cyanide manufactures in Korea to Pusan New Port in Korea : Roadway transportation by truck
- 2) Pusan New Port in Korea to Africa Tema Port in Ghana, Conakry Port in Guinea, Dakar Port in Senegal, Mombasa Port in Kenya, Dar Es Salaam Port in Tanzania, Abidjan Port in Cote D'Ivoire and Monrovia Port in Liberia : Marine transportation by ship
- 3) From Tema Port, Conakry Port, Dakar Port, Mombasa Port and Dar Es Salaam Port to mining sites in Ghana, Burkina Faso, Niger, Guinea, Mali and Tanzania : Roadway transportation by truck
- 4) The road transportation from Monrovia Port in Liberia to mining sites shall be controlled by customer

During September 2017 year, according to the subcontractor evaluation procedure the Samsung C & T Corporation re-evaluated and chose sodium cyanide manufactures, transportation companies and shipping companies as below.

- 1) Sodium cyanide manufacture : TaeKwang Industrial Co., Ltd. and TongSuh Petrochemical Co., Ltd. in Korea
- 2) From cyanide manufactures to Pusan New Port in Korea
  - (1) From TaeKwang Industrial Co., Ltd. Ulsan Plant to Pusan New Port in Korea (Roadway transportation by truck) : Hae Dong Logistics
  - (2) From TongSuh Petrochemical Co., Ltd. Ulsan Plant to Pusan New Port in Korea (Roadway transportation by truck) : SAM IK Logistics Co., Ltd .
- 3) Pusan New Port in Korea to Africa Tema Port in Ghana, Conakry Port in Guinea, Dakar Port in Senegal, Mombasa Port in Kenya, Dar Es Salaam Port in Tanzania, Abidjan Port in Cote D'Ivoire and Monrovia Port in Liberia (Marine transportation by ship) : Maersk, MSC and Safmarine
- 4) Tema Port in Ghana to mining sites in Ghana, Burkina Faso, Niger, Mali and Guinea (Roadway transportation by truck) : Vehrad Transport and Haulage Limited



- 5) Conakry Port in Guinea to mining sites in Guinea (Roadway transportation by truck) : Transport Terrassement Minier (T.T.M)
- 6) Dakar Port in Senegal and Abidjan Port in Cote D'Ivoire to mining sites in Mali and Burkina Faso (Roadway transportation by truck) : Bollore Africa Logistics SDV Senegal
- 7) Mombasa Port in Kenya and Dar Es Salaam Port in Tanzania to mining sites in Tanzania (Roadway transportation by truck) : Alistair James Company Ltd.

The work scope of Africa Supply Chain includes repackaging plant operation in Tema Ghana. The Samsung C & T Corporation also evaluated and chose sub-contractor as below.

- Repackaging from woven bag to tank container in Tema Ghana : Operated by Vehard Transport and Haulage Limited

Vehard Transport and Haulage Limited is ICMC signatory and recently ICMC certified during December 24, 2014 year for the operation of cyanide repackaging plant.

The Samsung C & T Corporation decided the control method for each segment in Africa Supply Chain as below.

- 1) Cyanide manufactures (TaeKwang Industrial Co., Ltd. and Tonsuh Petrochemical Co., Ltd. in Korea)
  - (1) Periodic subcontractor evaluation by Samsung C & T Corporation
  - (2) Implementation and certification of ICMC by TaeKwang Industrial Co., Ltd. and TongSuh Petrochemical Co., Ltd.
- 2) Road transportation companies in Korea
  - (1) Periodic subcontractor evaluation by TaeKwang Industrial Co., Ltd., TongSuh Petrochemical Co., Ltd. and Samsung C & T Corporation
  - (2) Implementation and certification of ICMC by Hae Dong Logistics Co., Ltd. and SAM IK Logistics Co., Ltd.
- 3) Pusan New Port in Korea

The Korea National Port Agency has controlled the Pusan New Port.

  - (1) Periodic route evaluation by Samsung C & T Corporation
  - (2) Periodic due diligence investigation by Samsung C & T Corporation
- 4) Shipping companies
  - (1) Periodic route evaluation by Samsung C & T Corporation
  - (2) Periodic due diligence investigation by Samsung C & T Corporation
- 5) Tema Port in Ghana, Conakry Port in Guinea, Dakar Port in Senegal, Mombasa Port in Kenya, Dar Es Salaam Port in Tanzania, Abidjan Port in Cote D'Ivoire and Monrovia Port in Liberia

The national port agencies in each country have controlled the ports.

  - (1) Periodic route evaluation by Samsung C & T Corporation
  - (2) Periodic due diligence investigation by Samsung C & T Corporation
- 6) Road transportation companies in Africa
  - (1) Periodic subcontractor evaluation by Samsung C & T Corporation
  - (2) Implementation and certification of ICMC by Vehrad Transport and Haulage Limited, Transport Terrassement Minier (T.T.M), Bollore Africa Logistics SDV Senegal and Alistair James Company Ltd.
- 7) Repackaging plant operation in Tema Ghana
  - (1) Periodic subcontractor evaluation by Samsung C & T Corporation
  - (2) Implementation and certification of ICMC by Vehard Transport and Haulage Limited

The Samsung C & T Corporation have checked the overall routes of Africa Supply Chain and re-evaluated the risks again according to their hazardous chemical transportation manual. They identified risks almost same as before.

- Release to land and water, toxic gas leakage to air in sodium cyanide manufacturing process

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- Release to road, land and surface water during roadway transportation by transporters
- Damage to sodium cyanide container in ports
- Release to sea water during marine transportation by shipping companies
- Robbery during road transportation, storage in ports and marine transportation.
- Taken away by criminal suspect during roadway and marine transportation

The Samsung C & T Corporation evaluated possibility and consequence for above risks according to their hazardous chemical transportation manual.

Considering the risk evaluation results, no accident and incident, they concluded that the current control methods are effective. So they will maintain the current control methods as below.

- 1) Cyanide manufactures
  - Completed subcontractor evaluation
  - Maintain ICMC certification by manufactures
- 2) Road transportation companies in Korea
  - Completed subcontractor evaluation
  - Maintain ICMC certification by road transportation companies
- 3) Pusan New Port in Korea
  - Completed route evaluation
  - Due diligence investigations
- 4) Shipping companies
  - Complete route evaluation
  - Due diligence investigations
- 6) Tema Port in Ghana, Conakry Port in Guinea, Dakar Port in Senegal, Mombasa Port in Kenya, Dar Es Salaam Port in Tanzania, Abidjan Port in Cote D'Ivoire and Monrovia Port in Liberia
  - Completed route evaluation
  - Due diligence investigation
- 7) Road transportation companies in Africa
  - Completed subcontractor evaluation
  - Maintain ICMC certification by road transporters
- 8) Repackaging plant operation
  - Completed subcontractor evaluation
  - Maintain ICMC certification for repackaging plant operation

The Samsung C & T Corporation completed the route evaluation during 2014 year. Almost three year were elapsed since last route evaluation for Africa Supply Chain, they have re-evaluated the routes of Africa Supply Chain during September and October 2017 year. According to the re-valuation results, there was no severe change and difference since 2014 year except some changes as supplying sodium cyanide to mining in Africa through Abidjan Port in Cote D'Ivoire and Monrovia Port in Liberia and no use of Takoradi Port in Ghana any more.

According to hazardous chemical transportation manual, the Samsung C & T Corporation will receive information related to cyanide transportation routes from manufactures, road transporters, shipping companies and other sub-contractors. And the review of information to identify any other safety issues was defined in hazardous chemical transportation manual. Since 2014 year, there is no special information from manufactures, roadway transporters, ports and shipping companies.

The Samsung C & T Corporation documented the measures to address risks in Africa Supply Chain. They also established emergency response plan for sodium cyanide release, robbery and taken away by criminal suspect. The communication channel with government body, safety agency, police, manufactures and transporters was defined in emergency response plan. And also the due diligence actions can be taken by the Samsung C & T Corporation as defined in emergency response plan.

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According to route evaluation and risk assessment results, the Samsung C & T Corporation informed the sodium cyanide transportation route to relevant bodies defined in emergency response plan.

They received some question and general comments and considered during route selection and development of control measures. During the due diligence investigation, they informed the manual, emergency response plan and MSDS to ports and shipping companies included in Africa Supply Chain.

The Samsung C & T Corporation reviewed periodically the overall route for Africa Supply Chain. According to the review results, they decided that convoys and escorts are necessary for road transportation from Tema Port in Ghana, Conakry Port in Guinea, Dakar Port in Senegal, Abidjan Port in Cote D'Ivoire, Mombasa Port in Kenya and Dar Es Salaam Port in Tanzania to mining sites in Ghana, Burkina Faso, Niger, Mali, Guinea and Tanzania.

And decide that convoys, escorts or additional measures are unnecessary for other segments with justification. For road transportation from Monrovia Port in Liberia to mining sites shall be controlled by customers.

Since 2010 year, for road transportation from Tema Port, Conakry Port in Guinea, Dakar Port in Senegal, Abidjan Port in Cote D'Ivoire, Mombasa port in Kenya and Dar Es Salaam Port in Tanzania to mining sites in Ghana, Burkina Faso, Niger, Mali, Guinea and Tanzania, the transportation companies (Vehrad Transport and Haulage Limited, Transport Terrassement Minier (T.T.M), Bollore Africa Logistics SDV Senegal and Alistair James Company Ltd.) have used escort and convoy for their transportation by trucks. The Samsung C & T Corporation checked road transportation by ICMC certified transporters and also found that some segments were curved, near the high population density and surface water areas. But they concluded that those risks can be controlled by ICMC certified transporters.

The Samsung C & T Corporation established emergency response plan for sodium cyanide release and human exposure. In the emergency response plan, role and mutual aid with sodium cyanide manufactures, transporters, ports, safety agency, police, fire fighting agency, hospital and local government offices were defined. During October 2017 year, the emergency response plan was revised to include additionally the Abidjan Port in Cote D'Ivoire, Monrovia Port in Liberia and transporter Alistair James Company Ltd. in Tanzania. They advised the emergency response plan to relevant bodies.

*Transport Practice 1.2: Ensure that personnel operating cyanide handling and transport equipment can perform their jobs with minimum risk to communities and the environment.*

X in full compliance with

The operation is

☐ in substantial compliance

☐ not in compliance with

with Transport Practice 1.2

Summarize the basis for this Finding/Deficiencies Identified:

The Samsung C & T Corporation is trading company. So they do not actually operate cyanide handling and transport equipment. During the subcontractor evaluation, they checked and evaluated sodium cyanide transporters whether the sodium cyanide operators were trained, qualified and licensed. They confirmed that the sodium cyanide operators were trained, qualified and licensed. The Samsung C & T Corporation have prepared and communicated sodium cyanide handling manual



as pocket book to manufacture, transporters, ports and shipping companies to use in training, daily operation and emergency situation.

*Transport Practice 1.3: Ensure that transport equipment is suitable for the cyanide shipment.*

The operation is

☒ in full compliance with

☐ in substantial compliance

☐ not in compliance with

with Transport Practice 1.3

*Summarize the basis for this Finding/Deficiencies Identified:*

The Samsung C & T Corporation is trading company. So they do not actually use transport equipment. During the subcontractor evaluation, they checked and evaluated sodium cyanide transporters whether the transport equipment is suitable for sodium cyanide shipment. And also during the due diligence investigation, they checked the ports and shipping companies whether the transport equipment is suitable or not. According to the subcontractor evaluation and due diligence investigation results, the transporters, ports and shipping companies have used suitable equipment. And transporter, ports and shipping company have preventive maintenance procedure to control the transport equipment. And container itself designated to prevent overloading.

*Transport Practice 1.4: Develop and implement a safety program for transport of cyanide.*

The operation is

☒ in full compliance with

☐ in substantial compliance

☐ not in compliance with

with Transport Practice 1.4

*Summarize the basis for this Finding/Deficiencies Identified:*

The Samsung C & T Corporation is a trading company. So they do not actually need the detail safety program for transport of sodium cyanide. During the subcontractor evaluation and due diligence investigation, they checked and evaluated sodium cyanide transporters, ports and shipping companies whether the safety program was developed and implemented. According to the subcontractor evaluation and due diligence investigation results, the transporters, ports and shipping companies developed and implemented the safety program. As a consigner, they requested to transporters for the compliance of local regulation, international standards and safety program.

*Transport Practice 1.5: Follow international standards for transportation of cyanide by sea and air.*

The operation is

☒ in full compliance with

☐ in substantial compliance

☐ not in compliance with

with Transport Practice 1.5

*Summarize the basis for this Finding/Deficiencies Identified:*

Samsung C & T Corporation is a trading company. So they do not actually perform the transportation



of sodium cyanide by sea. They evaluated periodically the shipping companies according to subcontractor evaluation procedure and hazardous chemical transportation manual for such items as compliance with IMDG Code and legal requirement. After the evaluation, they selected Maersk, MSC and Safmarine as shipping companies for sodium cyanide transportation. They have completed the due diligence investigation every three year. According to the due diligence investigation, those shipping companies were comply with IMDG Code. Transportation of sodium cyanide by air is not applicable at this point. The due diligence investigation results were reviewed during this ICMC audit and described as in section of due diligence report.

Transport Practice 1.6: Track cyanide shipments to prevent losses during transport.

The operation is

X in full compliance with

☐ in substantial compliance

☐ not in compliance with

with Transport Practice 1.6

Summarize the basis for this Finding/Deficiencies Identified:

The Samsung C & T Corporation is trading company. So they do not actually perform the transportation of cyanide. During the subcontractor evaluation, they checked and evaluated the sodium cyanide transporters whether the transport vehicles have means to communication with relevant bodies. According to the evaluation results, the vehicles have pager, mobile phone and communication channel sheet in which telephone numbers of transportation companies, the manufacture, mining and emergency responders defined.

And also during the subcontractor evaluation, they checked and evaluated the transports whether they periodically test the communication equipment or not. They confirmed that the transporters have periodically tested their communication equipment.

The Samsung C & T Corporation checked again during 2017 year the overall routes of Africa Supply Chain. And found no blackout area. They have requested to transporters to identify blackout area and alternative procedure to control the blackout area. Until now they have not received any identified blackout area from transporters.

The Samsung C&T Corporation have implemented the process of inventory control and custody documentation for the export of sodium cyanide products.

According to annual sales plan of sodium cyanide in Africa, the Samsung C & T Corporation requested to sodium cyanide manufactures to dispatch the sodium cyanide and nominate the shipping company Maersk, MSC and Safmarine. The individual dispatch order (order number, target delivery and amount), dispatched date and quantity of sodium cyanide from manufactures to shipping companies were registered in computer network system of Samsung C & T Corporation. And also the progress of marine transportation by shipping companies can be checked for individual dispatch order in web-site of Maersk, MSC and Safmarine.

As the local office of Samsung C & T Corporation in Africa was informed the arrival of sodium cyanide in ports in Africa, they conducted the customs clearance and requested transportation to roadway transporters from ports to repackaging plant and interim storage facility in Tema Ghana or mining sites. The input, output, current stock and transportation quantity of sodium cyanide are controlled in computer network system of Samsung C & T Corporation.

The Samsung C & T Corporation receive purchasing orders from mining customers in Africa, they review the delivery target date and quantity and input the orders in computer network system. And then they requested to repackaging plant and interim storage facility to dispatch and to roadway



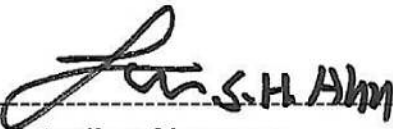
transporters to transport sodium cyanide as purchasing orders from customers. The individual customer order (order number, target delivery and amount), dispatched date from repackaging plant and interim storage facility and quantity of sodium cyanide were registered in computer network system of Samsung C & T Corporation.

And also the progress of roadway transportation from repackaging plant and interim storage facility to mining sites in Africa can be tracked by contact with roadway transporters.  
According to the subcontractor evaluation results, the Samsung C & T Corporation confirmed that the sodium cyanide manufactures, roadway transporters and shipping companies controlled the Material Safety Data Sheet properly.

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2. INTERIM STORAGE: Design, construct and operate cyanide trans-shipping depots and interim storage sites to prevent releases and exposures.

Transport Practice 2.1: Store cyanide in a manner that minimizes the potential for accidental releases.

The operation is

X in full compliance with

☐ in substantial compliance

☐ not in compliance with

with Transport Practice 2.1

Summarize the basis for this Finding/Deficiencies Identified:

The Samsung C & T Corporation do not actually control the interim storage areas. However they checked overall route of Africa Supply Chain and considered the several ports as interim storage areas as below.

- 1) Pusan New Port in Korea, Tema Port in Ghana, Conakry Port in Guinea, Dakar Port in Senegal, Mombasa Port in Kenya, Dar Es Salaam Port in Tanzania, Abidjan Port in Cote D'Ivoire and Monrovia Port in Liberia
- 2) Repackaging plant and interim storage facility in Tema Ghana

Those ports are controlled by national port agency and interim storage areas in ports are rent and controlled by shipping companies. The site visits and due diligence investigation for those ports as interim storage areas were conducted during 2017 year.

The due diligence investigation activities are site visits and web site check for those ports, national port agency, interim storage areas and shipping companies. They found the interim storage areas in ports were controlled properly in compliance with legal requirements and ICMC code requirements. The Samsung C & T Corporation have conducted subcontractor evaluation and chose the Vehard Transport and Haulage Limited to control the repackaging plant and interim storage facility in Tema Ghana. The Vehard Transport and Haulage Limited is ICMC certified for both transportation and production to operate the repackaging plant and interim storage facility in Tema Ghana.

During the due diligence investigation for ports and subcontractor evaluation for repackaging plant and interim storage facility, the Samsung C & T Corporation have found the interim storage areas were controlled properly as security measures in place, the sodium cyanide storage areas were fenced and locked to prevent unauthorized access, the interim storage areas were separated from explosives with burn and fence to prevent mixing, the sodium cyanide maintained in container itself in ports as dispatched from manufactures and maintained in warehouse used only for sodium cyanide in repackaging plant and interim storage facility, the sodium cyanide was stored to prevent the contact with water.

And also the Samsung C & T Corporation found in the interim storage areas that the sodium cyanide containers were stored in open port yards as no need the ventilation for hydrogen cyanide gas from solid sodium cyanide in ports, the warehouse in repackaging plant and interim storage facility in Tema Ghana designed and maintained with ventilation to prevent the build-up of hydrogen cyanide das, the interim storage areas in ports were controlled properly by national port agency and shipping companies to contain the spilled sodium cyanide in storage areas, bunds were installed around interim storage areas in ports and the sodium cyanide maintained in containers in ports so the spilled sodium cyanide can't release out of the containers.

During subcontractor evaluation, the Samsung C & T Corporation confirmed that the warehouse in repackaging plant and interim storage facility in Tema Ghana designed and maintained with enough capacity to contain any spilled sodium cyanide.



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

Transport Practice 3.1: Prepare detailed emergency response plans for potential cyanide releases.

The operation is

☒ X in full compliance with

☐ in substantial compliance

☐ not in compliance with

with Transport Practice 3.1

Summarize the basis for this Finding/Deficiencies Identified:

The Samsung C & T Corporation have identified possible emergency situations as sodium cyanide release to road, land, surface water and sea water, robbery during transportation and interim storage and taken away by criminal suspect during transportation. And define the emergency response plan in hazardous chemical transportation manual. They defined what they should do, communication channel and relevant external responders such as sodium cyanide manufacture, transporters, shipping companies, mining, safety agency, police and hospitals. During October 2017 year, the communication channel and external responders were revised to include some changes as Abidjan Port in Cote D'Ivoire, Monrovia Port in Liberia and transporter Alistair James Company Ltd. in Tanzania.

Detail emergency response plans were already prepared by sodium cyanide manufactures and road transporters. And the plans were checked by Samsung C & T Corporation during subcontractor evaluation. And also they checked that shipping companies issued commitment to comply with IMDG Code in which the emergency response plan required. For interim storage ports areas, they have informed the sodium cyanide handling manual as pocket book in which handling and treatment for released sodium cyanide defined.

The Samsung C & T Corporation have prepared the emergency response plan appropriate to over all emergency situations possibly expected in Africa Supply Chain. The emergency response plan considered the transportation route and interim storage area. And they confirmed that shipping companies maintained emergency response plan appropriate for release accident during marine transportation to comply with IMDG Code. For Africa Supply Chain, the Samsung C & T Corporation arranged the transportation of solid sodium cyanide. The plan considered the solid sodium cyanide packaged in film and box and transported in container. The emergency plan considered the transportation method, interim storage area and infrastructure as road condition, ports and marine transportation.

Transport Practice 3.2: Designate appropriate response personnel and commit necessary resources for emergency response.

The operation is

☒ X in full compliance with

☐ in substantial compliance

☐ not in compliance with

with Transport Practice 3.2

Summarize the basis for this Finding/Deficiencies Identified:

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The Samsung C & T Corporation have responsibility for the overall emergency response and cyanide handling within the Africa Supply Chain. Related to emergency response training, they implemented their role as training their team member, encouraging cyanide manufactures and transporters implementing emergency response training.

They implemented the training for their team members for the overall emergency response plan and cyanide handling manual during March and September every year. They also have training plan in which the emergency trainings are scheduled. The communication channel, duties of relevant external agency and main activities of Fine & Specialty Chemicals Team were trained and records were maintained.

The use of personnel protective equipment, first aid and control method of released sodium cyanide were trained with sodium cyanide handling manual. The road transporters have trained their employee as yearly training program and also shipping companies have implemented training for their employee to comply with IMDG Code.

For interim storage ports areas, they have informed the sodium cyanide handling manual in which handling and treatment for released sodium cyanide defined. For interim storage ports areas, the training or introduction with that manual is enough for emergency situations in ports.

In the emergency response plan prepared by Fine & Specialty Chemicals Team, the roles and responsibilities of team leader, team member, other relevant team and external agency defined.

The Samsung C & T Corporation is trading company. So they do not actually implement the transportation works. They do not need the list of emergency response equipment. But in the sodium cyanide handling manual, the emergency response equipment defined. The Samsung C & T Corporation have checked that the road transporters delineated the roles and responsibilities to subcontractors as individual vehicle driver. They found that road transporters applied the emergency response procedure including roles and responsibilities to subcontractor as the same level of transporters.

Transport Practice 3.3: Develop procedures for internal and external emergency notification and reporting.

The operation is

X in full compliance with

☐ in substantial compliance

☐ not in compliance with

with Transport Practice 3.3

Summarize the basis for this Finding/Deficiencies Identified:

The Samsung C & T Corporation prepared the emergency response plan appropriate to the overall emergency situations possibly expected in Africa Supply Chain. In the emergency plan, contact information as telephone number, relevant person name and address of sodium cyanide manufacture, road transporter, shipping company, safety agency, fire fighting agency and hospital were defined. During October 2017 year, the communication channel and external responders were revised to include some changes as Abidjan Port in Cote D'Ivoire, Monrovia Port in Liberia and transporter Alistair James Company Ltd. in Tanzania.

According to Samsung C & T Corporation's hazardous chemical transportation manual, they should check the emergency response plan twice per year and revise the contact information and detail process as needed. Current internal and external notification is revised during October 2017 year.



*Transport Practice 3.4: Develop procedures for remediation of releases that recognize the additional hazards of cyanide treatment chemicals.*

The operation is

X in full compliance with

☐ in substantial compliance

☐ not in compliance with

with Transport Practice 3.4

*Summarize the basis for this Finding/Deficiencies Identified:*

The Samsung C & T Corporation prepared the emergency response plan appropriate to the overall emergency situations possibly expected in Africa Supply Chain. And in the sodium cyanide handling manual, the remediation as recovery and protect for released sodium cyanide, decontamination of soil and water, control and disposal of wastes etc. were defined. The sodium cyanide handling manual as pocket book was informed to road transporters, shipping companies and ports. According to sodium cyanide handling manual, the prohibit of the use of sodium hypochlorite, ferrous sulfate and hydrogen peroxide to treat sodium cyanide that has been released into surface water was defined.

*Transport Practice 3.5: Periodically evaluate response procedures and capabilities and revise them as needed.*

The operation is

X in full compliance with

☐ in substantial compliance

☐ not in compliance with

with Transport Practice 3.5

*Summarize the basis for this Finding/Deficiencies Identified:*

According to the Samsung C & T Corporation’s hazardous chemical transportation manual, they should check the emergency response plan twice per year and revise the contact information and detail process with the reflection of changes in Africa Supply Chain. The emergency response plan was revised during October 2017 year. The communication channel and external responders were revised to include some changes as Abidjan Port in Cote D’Ivoire, Monrovia Port in Liberia and transporter Alistair James Company Ltd. in Tanzania.

According to the Samsung C & T Corporation’s hazardous chemical transportation manual, they should do the mock emergency drill once per year. The mock emergency drill was implemented in their office during March 2017. They checked the overall process and adequacy of emergency response plan and recorded the results. And also the Samsung C & T Corporation Fine & Specialty Chemicals Team member have participated the emergency mock drill and training conducted every year by TongSuh Petrochemical Co., Ltd. Ulsan plant.



Summary of Due Diligence Investigations

1. Background of due diligence investigation

- 1) Inability of consigner for ports and shipping companies to lead to ICMC implementation and certification  
As consigner the Samsung C & T Corporation control overall Africa Supply Chain and will lead the ICMC implementation and certification to sodium cyanide manufacture, road transporters, ports and shipping companies. So they successfully lead the sodium cyanide manufactures and transporters to ICMC implementation and certification.  
However they cannot lead the ports and shipping companies to ICMC implementation and certification due to their inability to affect change in operating practices of ports and shipping companies . So the Samsung C & T Corporation planned and implemented due diligence investigation for ports and shipping companies included in Africa Supply Chain.
- 2) Scope of due diligence investigation  
The ports and shipping companies in Africa Supply Chain are as below.
- Pusan New Port in Korea
  - Maersk, MSC and Safmarine as shipping companies
  - Tema Port in Ghana, Conakry Port in Guinea, Dakar Port in Senegal, Mombasa Port in Kenya, Dar Es Salaam Port in Tanzania, Abidjan Port in Cote D'Ivoire and Monrovia Port in Liberia

2. Progress of due diligence investigation

- 1) Development of checklist  
During 2014 year when Samsung C & T Corporation re-certified ICMC for Africa Supply Chain, the Fine & Specialty Chemical Team members reviewed the ICMC requirements, IMDG Code, Africa Supply Chain, property of sodium cyanide and information from TaeKwang Industrial Co., Ltd. and TongSuh Petrochemical Co., Ltd. And they developed checklist for due diligence investigation applicable to the control of sodium cyanide storage yard, loading to ship and marine transportation. They revised some contents in the checklist and used for due diligence investigation during 2017 year.
- 2) Nomination of investigation team leader and member  
Considering the work experience and knowledge of ICMC, General Manager of Fine & Specialty Chemicals Team nominated team leader and member for due diligence investigation.
- 3) Scheduling of due diligence investigation  
The Samsung C & T Corporation have implemented the due diligence investigation for shipping companies and ports every three year according to ICMC Protocol and their hazardous chemical transportation manual.  
According to the manual, they have implemented the due diligence investigation for shipping companies and ports in Africa Supply Chain during September and October 2017 year as below.
- 4) Implementation of due diligence investigation  
The team implemented due diligence investigations for ports and shipping companies every 3 year according to ICMC protocol and hazardous chemical transportation manual. They have used the checklist and record the investigation results in checklist and log sheet. After the due diligence investigation, they issued the completed checklist to ports and shipping companies and requested

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corrective actions for some nonconformities. Investigation team have checked the action results and confirmed the corrective actions by ports and shipping companies.

### 3. Results of due diligence investigation

The Samsung C & T Corporation used the checklist, recorded the investigation results and prepared reports as below.

- 1) Due diligence investigation for Pusan New Port in Korea including shipping company Maersk, MSC and Safmarine
  - (1) Activities : Control of storage yard, handling and loading sodium cyanide in port and marine transportation
  - (2) Investigation Date : 05 and 19 September 2017
  - (3) Conclusion  
According to the due diligence investigation results, the Samsung C&T Corporation concluded that the Pusan New Port, Maersk, MSC and Safmarine comply with ICMC and national legal requirements.
- 2) Due diligence investigation of Tema Port in Ghana
  - (1) Activities : Control of storage yard, handling and loading sodium cyanide in port
  - (2) Investigation Date : 10~11 October 2017
  - (3) Conclusion  
According to the due diligence investigation results, the Samsung C&T Corporation concluded that the Tema Port comply with ICMC and national legal requirements.
- 3) Due diligence investigation of Conakry Port in Guinea
  - (1) Activities : Control of storage yard, handling and loading sodium cyanide in port
  - (2) Investigation Date : 10~11 October 2017
  - (3) Conclusion  
According to the due diligence investigation results, the Samsung C&T Corporation concluded that the Conakry Port comply with ICMC and national legal requirements.
- 4) Due diligence investigation of Dakar Port in Senegal
  - (1) Activities : Control of storage yard, handling and loading sodium cyanide in port
  - (2) Investigation Date : 19 October 2017
  - (3) Conclusion  
According to the due diligence investigation results, the Samsung C&T Corporation concluded that the Dakar Port comply with ICMC and national legal requirements.
- 5) Due diligence investigation of Abidjan Port in Cote D'Ivoire
  - (1) Activities : Control of storage yard, handling and loading sodium cyanide in port
  - (2) Investigation Date : 17 October 2017
  - (3) Conclusion  
According to the due diligence investigation results, the Samsung C&T Corporation concluded that the Abidjan Port comply with ICMC and national legal requirements.
- 6) Due diligence investigation of Monrovia Port in Liberia
  - (1) Activities : Control of storage yard, handling and loading sodium cyanide in port
  - (2) Investigation Date : 28 September 2017
  - (3) Conclusion

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According to the due diligence investigation results, the Samsung C&T Corporation concluded that the Monrovia Port comply with ICMC and national legal requirements.

7) Due diligence investigation of Mombasa Port in Kenya

- (1) Activities : Control of storage yard, handling and loading sodium cyanide in port
- (2) Investigation Date : 19 October 2017
- (3) Conclusion

According to the due diligence investigation results, the Samsung C&T Corporation concluded that the Mombasa Port comply with ICMC and national legal requirements.

8) Due diligence investigation of Dar Es Salaam Port in Tanzania

- (1) Activities : Control of storage yard, handling and loading sodium cyanide in port
- (2) Investigation Date : 06 October 2017
- (3) Conclusion

According to the due diligence investigation results, the Samsung C&T Corporation concluded that the Dar Es Salaam Port comply with ICMC and national legal requirements.

4. Review of the due diligence investigation results by ICMC audit team

During the ICMC re-certification audit 09~31 October 2017 year for the Africa Supply Chain, the auditor Mr. Sang-Ho Ahn reviewed the overall due diligence investigation processes and results implemented by Samsung C & T Corporation.

The Samsung C & T Corporation implemented the due diligence investigations comprehensively for several ports and shipping companies in Africa Supply Chain as below.

- Study and develop checklist applicable to sodium cyanide storage, handling and transportation
- Nominated competent personnel as due diligence investigation team leader and member
- Implement due diligence investigation with checklist for the control of sodium cyanide storage areas and shipping operation
- Issue corrective actions for some nonconformity identified during site visit
- Checked corrective action results from ports
- The due diligence investigations concluded that the ports and shipping companies in the Africa Supply Chain have appropriate measures in place for safe management and transport of cyanide.

The audit team finally concluded that the due diligence investigations for several ports and shipping companies in Africa Supply Chain implemented by Samsung C & T Corporation were comply with ICMC requirements.

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