SHU POWDERS

CORPORATE SUSTAINABILITY REPORT

2019

Contents

Introduction

3

Shu Powders produces various fine Cobalt powders for the global hard metals, diamond tools and battery industries. Shu Powders manufacturing site is located at Cato Ridge, near Durban, South Africa, since 2008.

This is Shu Powders' fifth Corporate Sustainability Report in South Africa. This report highlights our corporate sustainability performance in consecutive years since 2012. Our reporting focuses on the health and safety, environmental, and social responsibilities critical to our key stakeholders including shareholders, customers, employees, local communities, governments and suppliers.

We are a reputable manufacturer - committed to continual improvement in safety, health and environmental performance. This is non-negotiable in our drive towards Zero Harm.

- We believe that all injuries and environmental incidents are preventable;
- The safety of our employees, visitors and contractors is a non-negotiable value;
- We are committed to the protection of the environment, including the prevention of pollution, and
- Leaders at all levels in the organization are role models in the management of safety and environmental matters.

Shu Powders affirms the central importance of sustainability for communities, in the present and the future, for the integrity of human beings, culture, society, economic wellbeing, environmental responsibility and the way of life of the people.

In October 2016, Jingmen GEM Co Ltd. from Hubei China became the leading shareholder in Shu Powders Ltd. GEM was founded in 2001 and is the first stock listed recycling company in China employing over 5000 people in 16 circular economy industrial parks. The Jingmen plant is a certified national education centre for circular economy and open to the public. GEM's philosophy is "Limited Resources, Unlimited Recycling". GEM actively advocates "Urban Mining".

Facing the reality of limited resources and environmental degradation, GEM is eager to build more recycling factories to reduce more waste and recycle more resources. Shu Powders is GEM's first overseas investment. GEM has plans for China-Africa Circular Economy Industrial Park in South Africa in a second step. GEM signed a Memorandum of Understanding with the local authorities, Trade and Investment Kwa Zulu Natal (TIKZN) in Dec 2016.

The Coronavirus pandemic reached South Africa in Feb 2020, resulting in a country wide lockdown end of March. Shu Powders resumed operations under a special permit and with skeleton staff mid April. The company established a special risk assessment and emergency plan. Nine Cardinal Rules have been set out to prevent the company from infections, among them are social distancing, wearing of masks, ventilation and sanitizing. Shu Powders is well prepared for two reasons. Since Shu is constantly dealing with dust, the company's hygiene and PPE (full face masks) standards are very high. Secondly, Shu's shareholding company GEM is from Wuhan, Hubei, China, where COVID-19 was first discovered. As a result, Shu Powders learned from GEM first-hand on how to best protect the company and its employees. GEM had no infections among the 3000 employees from the affected province of Hubei. To the date of issuing this report, Shu Powders Africa had also no confirmed cases of COVID-19.

Executive Summary

4

Shu Powders maintains an integrated SHEQ management system based on ISO 9001:2015 for Quality, ISO 14001:2015 for Environment, and OHSAS 18001:2007 for Occupational Health and Safety. Apart from the international standards, Shu Powders is a four-star company according to the NOSA star grading system in South Africa. In 2019, Shu Powders transitioned from OHSAS 18001 to ISO 45001. This process was completed early 2020.

Shu Powders have got a vision for a dust- free work environment - to attain this goal, substantial investments in automated machinery have been made, this includes the automated feeding machinery, the automated packaging process, and the state-of-the-art pneumatic powder transfer technology, which is awaiting installation early 2020. The combination of these technologies is aimed at reducing dust levels to below the legal Occupational Exposure limit of 0.1 mg/m^3. A move towards cleaner manufacturing will significantly reduce exposure of employees to dust; this would allow for the use of more comfortable paper dust masks rather than the current full face masks – thus improving the operators quality of work life.

Shu Powders Ltd has been sourcing Cobalt raw materials through its related companies GEM Co. and SMR Ltd. SMR is sourcing from Ambatovy, Madagascar (owner: Sherritt, Sumitomo, Kores) and Goro, New Caledonia (owner: Vale Inco). GEM Co is sourcing from Glencore's Mutanda's operation in the DRC and from Cobalt scraps. GEM is a world leader in Cobalt recycling. The Glencore - GEM supply has been reported in a Metal Bulletin article on March15, 2018 and Oct 7, 2019. GEM has signed another long-term strategic procurement contract with Glencore, securing more than 61,000 MT of cobalt in form or intermediates for the following five years.

Highlights	Previous priorities
• Zero exceedances in Cobalt in Blood. This is one of the corporate HSE Objectives. • Zero Lost Time Injuries. This is one of the corporate HSE Objectives. • Zero environmental incidents. This is one of the corporate HSE Objectives. • Maintaining the NOSA 4 - Stars. • Successful ISO transition to ISO 9001-2015 and 14001-2015 • Successful implement of the Zero Tolerance/ Zero Harm project, including cardinal rules for health and safety on site. • Successful completion of customer's code of conduct compliance audit.	• Zero exceedances in Cobalt in Blood and in Urine • Zero Lost Time Injuries. Zero environmental incidents. • Successful implement of the Zero Tolerance/ Zero Harm project, including cardinal rules for health and safety on site. • Successful completion of customers' code of conduct audits • Treatment of Co containing wash water.
Lowlights	**Priorities for 2020**
• The recycling of Cobalt-containing waste water was put on hold due to budgetary constraints. • There were 16 non-conformances for Co in urine until Feb 2019, but there were none from March to Dec 2019.	• Maintaining Zero exceedances in Cobalt in Blood and in Urine • Zero Lost Time Injuries. Zero environmental incidents. • Commissioning of pneumatic powder transfer. • Treatment of Co containing wash water. • Establishing Carbon footprint. • Usage of thermal energy in furnace off-gas. • Developing plans for renewable energy sources.

Key Performance Indicators (KPI)

Health & Safety
Environmental
Social

5

Description	Targets / Limits		Year 5 Actual	Year 4 Actual	Year 3 Actual	Year 2 Actual	Year 1 Actual	5 Year Trend
Bio monitoring (No. of Co in blood non-conformances)	0		0	1	2	1	3	
Dust monitoring between work stations (mg/m^3)	<0.1*		0.001	0.001	0.006	0.01	0.02	
Dust monitoring at work stations (mg/m^3)	<10*		0.01	0.01	0.01	0.4	0.6	
Dust fall out – general ($mg/m^2/day$)	<1200*		7	13	15	22	135	
Dust fall out - Cobalt ($mg/m^2/mth$)	<2		0.07	0.13	0.08	0.2	1.3	
Lost time incidents (No.)	0		0	1	0	1	0	
Noise (dB)	<85*		n.a.	78	n.a.	78	81	
Water consumption (l/kg Co)	≦10		12.7	8.3	7.8	7.2	8.1	
Electricity consumption (kWh/kgCo)	≦7		8.3	8.7	7.7	6.8	7.3	
Fuel consumption (ml/kg Co)	≦5		7.3	1.1	4.4	0.0	10.1	
Hazardous waste (g/kg Co)	≦30		16	19	22	38	55	
Environmental incidents & complaints (No.)	0 0		0 0	0 0	0 0	0 0	1 0	
Employment permanent (%) Employment temporary (%)	≧90 ≦10		92 8	100 0	92 8	100 0	100 0	
Training (hrs per employee)	≧20		16	20	29	84	67	
Contribution to community (% of EBITDA)	≧0.4		0.7	0.5	0.45	0.4	0.4	

(*) -referring to legal limits

Health and Safety

6

Bio-Monitoring

Bio-Monitoring of chemical exposure in the workplace is of critical importance in the assessment of health risks and forms an integral part of the company overall occupational health strategy. We consider biological monitoring as an important tool in the prevention of occupational diseases related to those exposed to chemicals on a regular basis. A complete medical programme is in place consisting of Pre-employment, Annual, and Exit medicals for all employees – on contract and permanent. All the medicals consist of the following examinations:

- Physical examination
- Eye Test
- Audiometric Testing
- Chest X-ray
- Lung Function
- Cobalt in Urine and Blood samples

No employee had his Cobalt in Blood exceeding the recommended levels of 25mg/L.. This is a new record set and is a great achievement.

In the event that an employee got an exceedance of Cobalt in Urine or Blood, the employee is removed from exposure for minimum of two weeks and a thorough Root Cause Analysis comprising of the Occupational medical practitioner, the area's Health and Safety Representative and the area's Manager. The Root Cause Analysis is followed by a review of current control measures, safe work procedures, and a refresher training on proper PPE use and hygiene.

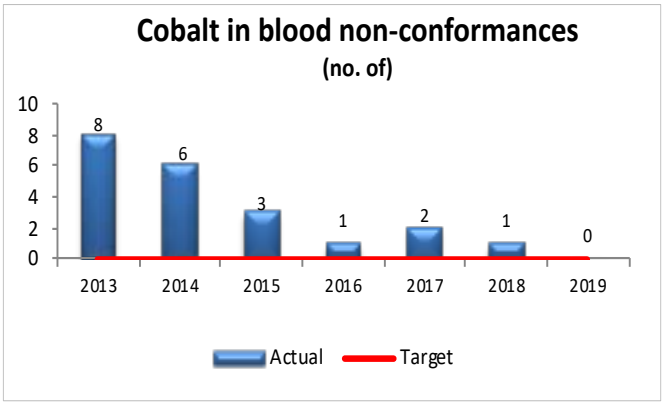


Fig 1. Cobalt in blood non-conformances: Number of non-conformances has decreased over the years. The year 2019 is a great success – with zero cobalt in Blood exceedance. This is the first time ever in eleven years of the existence. There were no recorded Cobalt in urine cases from March to December.

Health and Safety

7

Occupational Hygiene Surveys

The following hygiene surveys were conducted by an approved Inspection authority (AIA):

- Hazardous Chemical Substances Monitoring (HCSM),
- Hazardous Chemical Substances Risk Assessment (HCSR),
- Illumination, Noise, and Ventilation.

No major findings were raised; a Corrective Action Plan was developed to address the findings.

Dust Monitoring

On the Cobalt dust monitoring, we apply the **Plan Do Check Act** methodology in order to ensure continuous dust reduction in the factory. This systematic approach provides a lot of useful information to ensure the effectiveness of the dust reduction efforts.

- Workstations generating fugitive dust are identified.

- Baseline measurements of dust levels are taken.
- Areas are prioritized according to the levels of dust.

- Additional control measures are put in place

- Dust control measures are put in place.
- A second set of measurements is collected to compare with the baseline in order to determine the effectiveness of control measures

Pic 1. PDCA cycle.

Health and Safety

Dust Monitoring

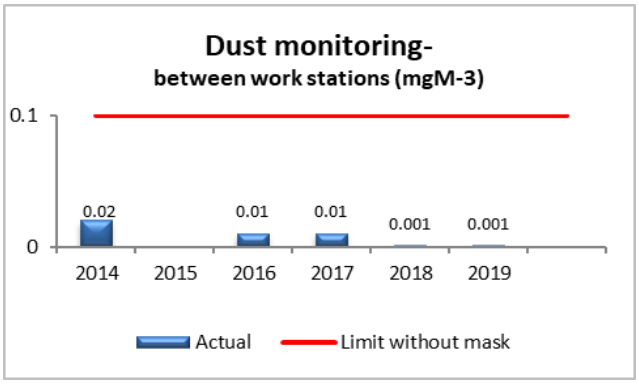


Fig 2: Dust Monitoring between Work Stations: The 2019 figure is from internal monitoring and shows dust levels at as low as less than 1.0 % of the OEL between work stations. The daily dust monitoring made it easy to establish Cause and Effect relationships between the different factors and the levels of dust. This facilitates easy identification of control measures.

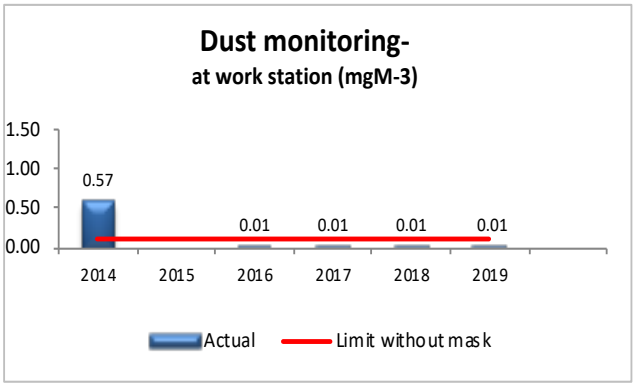


Fig 3: Dust Monitoring at Work Stations: The dust level at work stations is reducing year on year. The 2019 figure is from internal monitoring – the levels are 10% of the OEL. The Action threshold is 50% of the OEL.

There are instances whereby the dust levels exceed the recommended levels resulting in outliers in the data. These are investigated and corrective actions are put in place.

Health and Safety

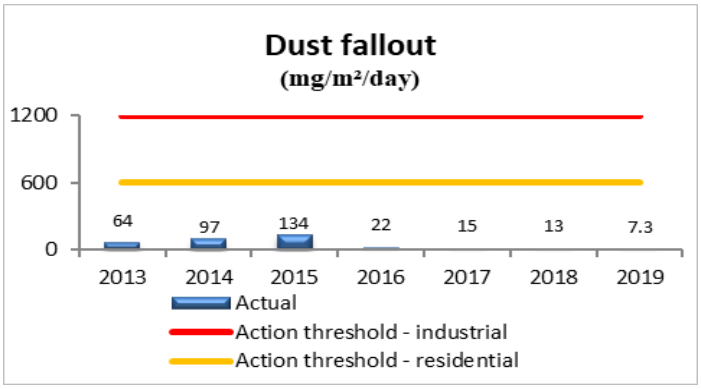
Dust Fallout

Gravimetric analysis of the exposed dust fallout buckets for dust deposition rates are completed by an accredited laboratory – Chemtech Laboratory Services and sent through to ROHS Environmental Engineering (Pty) Ltd for interpretation. Exposed dust fallout buckets are collected at the end of each month and the dust filtered through a sub-micronic, pre-weighed filter using a vacuum filter bench. The filters are oven dried for about 90 min before cooling in a desiccator for at least an hour (SANS 1137:2012) and then reweighed to ascertain the collected mass (insoluble particulate). For this monitoring period, the exposure period does comply with the standard operating procedure of 30±2 days (SANS 1137:2012) - data recovery was 100 %.

The dust deposition records observed are compared against the relevant standard.

Band Number	Band Description Level	Dust fall rate (D) (mg.m2.day, 30-day average)	Comment
1	Residential	D < 600	Permissible for residential and light commercial.
2	Industrial	600< D <1,200	Permissible for heavy commercial and industrial.
3	Action	1,200< D <2,400	Requires investigation and remediation if two sequential months lie in this band, or more than three occur in a year.
4	Alert	2,440 < D	Immediate action and remediation required following the first incidence of dust fall rate being exceeded. Incident report to be submitted to the relevant authority.

Table 1. shows the specifications/ restrictions with regards to dustfallout.
Reference: SANS 1137:2012. Standard test method for collection and measurement of dustfall (settleable particulate matter).



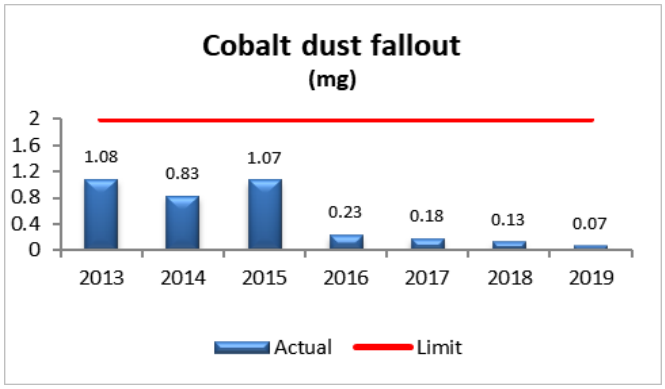


Fig 4 & 5: General Dust Fallout: Dust Fallout is well below the established limits. The dust levels have dropped as construction work at neighboring sites is completed.
Cobalt dust fallout is controlled from the source, that is, by eliminating and reducing fugitive dust generation at work-stations and ensuring high efficacy of emission control measures.

Health and Safety

10

Lost Time Incidents

Shu Powders is committed to the health and safety of its employees, visitors and contractors, this includes the protection of the environment and the prevention of pollution, and the protection of property against damage. The target for SHEQ incidences is Zero. This commitment is demonstrated by various ways among them, leading by example, formal training given to employees; awareness through tool box talks, posters, the safety day. For every incident which occurs, a Root Cause Analysis is carried out to find a lasting solution to the incident.

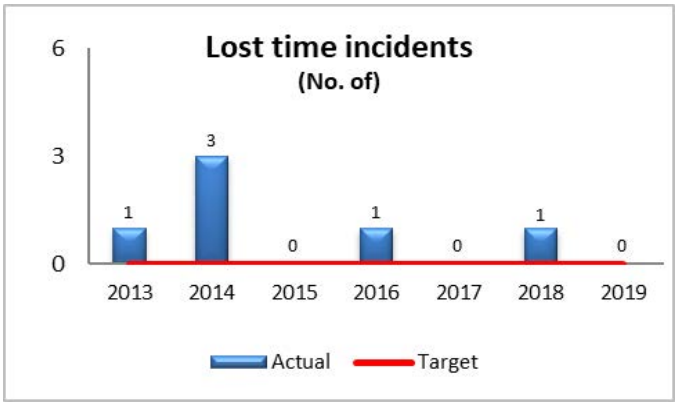


Fig 6, LTI: The year 2019 was a great year. No Lost Time Incident was recorded. Now efforts are being ramped up to sustain the gain so that its consistent over the years.

Lost Time Incidents since 2013:
In 2016, Shu Powders started monitoring the number of days free from lost time injuries as one of the indicators of SHE performance.

- On 28 November 2016 an employee experienced some eye irritation. He was taken to a medical Doctor and the Doctor confirmed that the employee was alleged to Ammonia vapour. The employee was booked off-sick for a single day.
- There was no Lost Time Injury recorded in 2017, setting days without an LTI at 398 , since the incident on Nov. 2016.
- In June 2018, an employee fell from height in the course of doing work. He was taken to hospital and booked off sick.

Health and Safety – NOSA Performance

Lost Time Incidents

In addition to the OHSAS 18001 system that forms part of the Integrated Management System, Shu Powders also implements the NOSA CMB 253N Standard of Health and Safety. South Africa is the origin of this standard and it is spreading across the globe as one of the flagships in H&S. Performance is a function of the Effort Score and the DFR (Disabling Frequency Rate) and is given a rating on a Five –Star scale. The 5-Star is the highest ranking, and an organization that achieves consistently the 5-Star is elevated to the NOSCAR – which is the highest grade an organization can achieve.

Shu Powders has scored 4-star for three straight years since the year 2016. There is an improvement in the Effort score year on year from 81% in 2017 to 87% in 2018 and to 88% in 2019. The final score is a function of the Effort score and the disabling Incident Frequency Rate (DIFR). Shu Powders is confidently targeting a five star ranking early 2020 based on the achievements during 2019.

Pic 2. A board at the site entrance of displaying SHE statistics and the 4 Stars.

We pride ourselves with our current 4 Star grading – having had one Lost Time Injury in the year and looking forward to a 5 Star in the year 2020.

Environmental

Water consumption

The importance of saving water cannot be over emphasised, South Africa faces significant water challenges due to the combination of its rapidly growing population and increasingly unreliable rainfall patterns due to climate change. The water problem is further exacerbated by the fact that South Africa is a relatively dry country, with an average annual rainfall of about 464mm (compared to a world average of about 860mm).

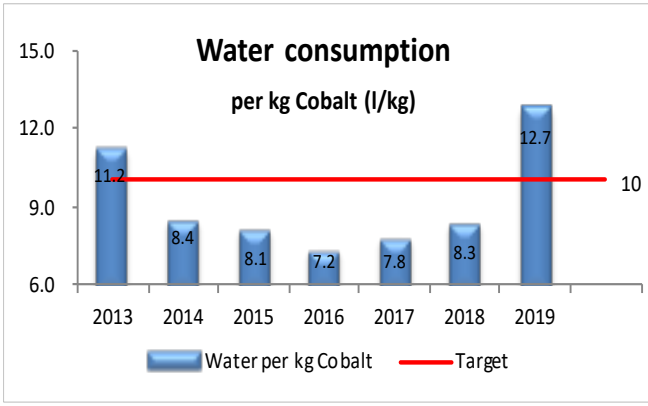


Fig 7, Water consumption:

- Water consumption increased significantly due to an underground leak on the piping. The leak was detected and fixed.
- Water is also used in high-pressure cleaning of waste empty raw material bags and pallets.
- The recycling efforts are in effect to contribute in the reduction of landfill usage since South Africa is running out of landfill space.

Electricity consumption

The year 2016 recorded the lowest electricity consumption per kg cobalt produced since 2013. This is attributed to mainly to SHU9 - a Lean project aimed at exploiting the '*opportunity to reduce conversion costs by reducing energy cost & consumption through improved process control, better demand management, power factor correction*'. In addition, annual production out reached a record high.

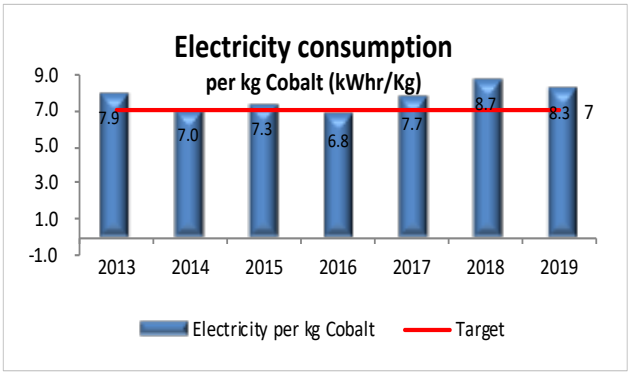


Fig 8, Electricity consumption: The electricity consumption is increased in 2018 due to poor production efficiency. This was corrected in 2019, but higher SMS than the EF Cobalt Powder production caused higher energy consumption. SMS is a lower throughput and therefore higher energy consumer product.

Environmental

Fuel consumption

Diesel fuel is used as an alternative energy source to power a stand-by generator due to persistent load shading on the national electricity grid.

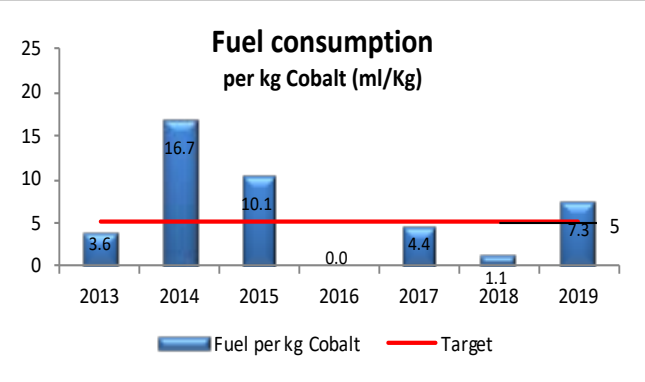
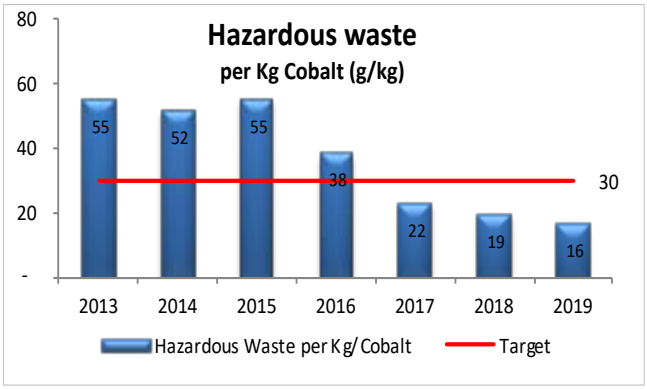


Fig 9, Fuel consumption: The year 2019 was the worst year in recent years in terms of load shedding. The country's sole power utility, Eskom, was battling to provide the national grid. Shu had to rely on the standby Diesel generator.

Waste Managemet

Separation-at-source is the heart of recycling. Shu Powders has done just that in an effort to improve recycling and avoid waste to the landfill.



Pict 10. General waste: Hazardous waste quantities decreased significantly due to efforts invested in the Reduce, Recycle, and Reuse initiative.

Environmental

Incidents and Complains

Shu Powders has an obligation to ensure that we comply to all legal requirements and satisfy expectations – from both the authorities and other interested parties. Our environmental friendly operations have seen us being in peaceful co-existence with communities around us, neighbours, the authorities and employees, registering zero complaints since 2016.

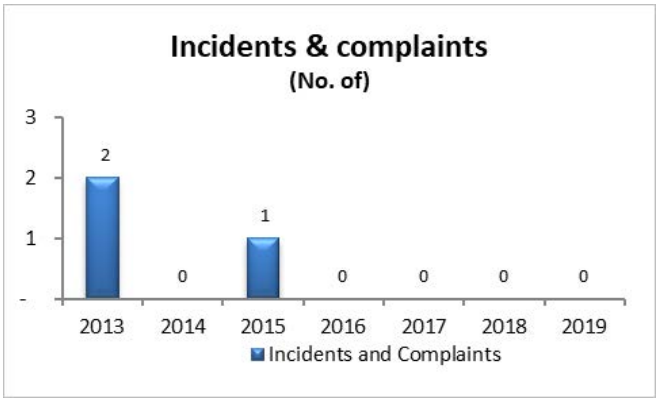


Fig 11, Incidents and complaints: The overall trend is positive as there was no complaint since 2016.

Incidents:

- 2019 – there was no environmental incident or complaint.
- 2018 – there was no environmental incident or complaint.
- 2017 – there was no environmental incident or complaint.
- 2016 – there was no environmental incident or complaint.
- 2015 - Jun, a valve on the ammonia surge tank was mistakenly open leading to the release of some ammonia vapour.
- 2014 - no environmental incidents.
- 2013 – Dec, the lab conservancy tank was full and as a result the drains were filling up. 5000 Litres of the contents were pumped into a bulk plastic tank. The liquid effluent was eventually collected by an accredited waste removal company.
- 2013 – Feb, a maintenance operator was decanting used oil into a 210 Litre drum and spilled a small amount of oil which ran along the storm water drain. The oil was later cleaned and Corrective and Preventive Action plan was implemented.

Corrective and Preventative Action Reports were raised for each incident.

Social

Employment

The year 2019 experienced decreased employment. This was due to restructuring in the Administration department.

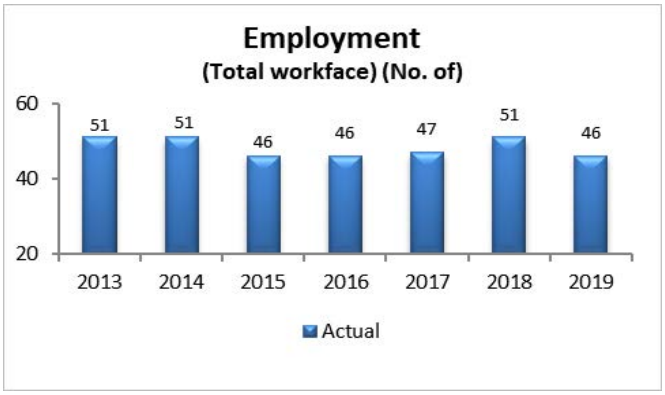


Fig 12, Total workforce: total work has decreased due to restructuring of the admin department.

Fig 12a, Employment full time: All Shu Powders employees are on permanent basis. There is no casual labor or labor brokers.

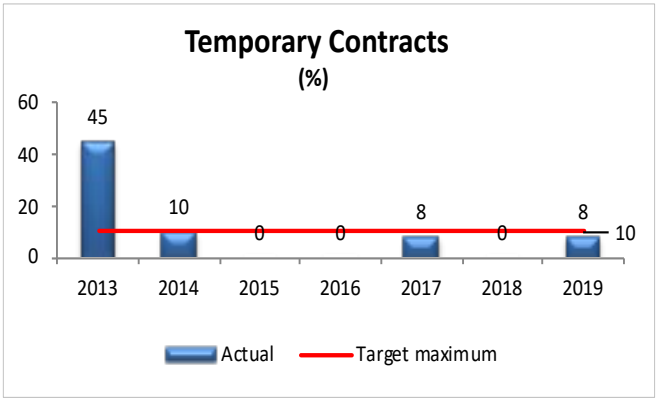


Fig 12b, Employment contract: The temporary contracts represent students from the Universities on internship.

Social

16

Training

Shu Powders maintains a robust training and development program that ensures that employees have a consistent experience and background knowledge. Shu Powders is enjoying these benefits out of training;

- Improved employee performance
- Improved employee satisfaction and morale
- Addressing of weaknesses
- Increased productivity and adherence to quality standards
- Increased innovation in new strategies and products
- Reduced employee turnover
- Enhanced company reputation and profile

Apart from HSE compliance training, Shu Powders has changed its approach to more strategic, long term courses, which empowers employees with higher skills. This empowers employees, giving them more control over their jobs, especially machine operators. This addresses such issues as breakdowns, and call outs.

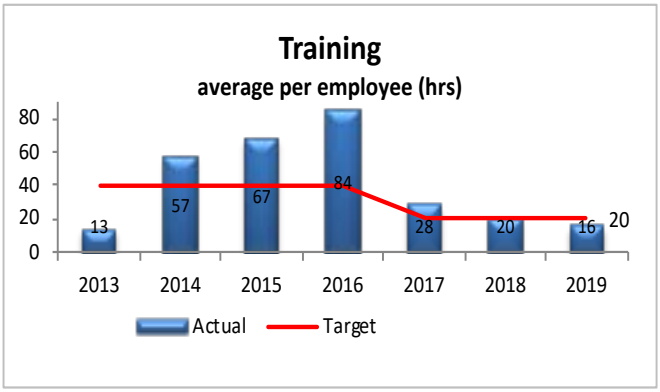


Fig 13, Training: There is a gradual decrease in training hours due to focus on strategic training - this involves enrolling selected employees to tertiary institutions of learning in order to acquire higher skills.

Social

Contribution to the local community

On the 31st of July, the entire Shu Powders workforce descended onto a creche located at the heart of a nearby community, uTweba. Shu Powders contributed by giving the creche a facelift by painting, renovations to the roofing, laying of a new wastewater reticulation piping, installing gutters, installing structures for kids to play, and feeding the children.

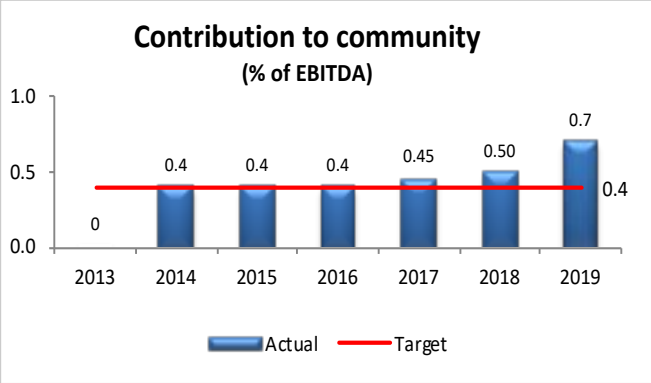


Fig 14, Contribution to the community : Shu's contribution to the community as a share of earnings increased in spite of difficult economic circumstances.

Pic 3. Happy moments: Lunch is distributed amongst the kids from the creche.

Pic 3a. Shu Powders employees putting the final touches on the paint work.

Raw Material Sourcing

DR Congo issues

On January 19, 2016, Amnesty International published a report titled "This is What We Die For", outlining allegations against companies directly involved in the trade of cobalt sourced from artisanal mining as well as against some of the world's largest technology firms down the supply chain. [Ref 4] In the report Amnesty documents human rights abuses in DRC's artisanal cobalt mining sector such as child labour and hazardous and unhealthy working conditions (Fig 23).

In November 2018, Amnesty International published a follow-up report: "Time to Recharge" – Corporate action and inaction to tackle abuses in the cobalt supply chain. Many downstream companies have been slow or resistant to adopt clear policies for due diligence in their cobalt supply chains.

Pic 4, Amnesty International Report: A video clip is available under http://youtu.be/7x4ASxHIrE

Pic 5, Amnesty International Follow Up Report: Some corporations have taken action since 2016 but many others have not.

Note:

- On March 29, 2016, the London Metal Bulletin published articles stating that China's refineries imported almost a quarter of million tonnes of cobalt concentrate from the DRC in 2015, according to China import statistics. [Ref 5]
- These concentrates have been produced in dangerous conditions or by children in artisanal mines in the DRC.
- Six companies from China have been identified to import at total of over 10000 MT of cobalt concentrate in 2016.
- Among these six companies is the cobalt powder producer **Nanjing Hanrui**. [Ref 5]
- Note that the company GEM was the only larger Chinese Cobalt refinery not listed in above article [Ref 5].

Raw Material Sourcing

DR Congo issues

Throughout the cobalt supply chain an increasing number of companies have started to focus on responsible sourcing and supply chain due diligence. The battery supply chain in particular has been faced with growing pressure directed at its responsible sourcing practices, not just from NGOs like Amnesty International but also from the media, regulatory and legislative bodies and consumer organizations. Efforts by the cobalt industry to create a more responsible supply chain have resulted in progress on several fronts during 2019.

Fig 18, Initiatives ensure materials are mined and sourced in accordance with the due diligence guidance on human rights as set forth by the OECD (Organization for Economic Co-Operation and Development)

- The Responsible Sourcing Blockchain Network (**RSBN**): formed in January 2019 by Huayou Cobalt, Ford Motors, LG Chem, IBM and RCS Global. The consortium initiated a pilot project which, using the IBM Blockchain Platform, traced and validated ethically sourced cobalt to demonstrate the responsible production and processing of cobalt in the mine to battery supply chain. The pilot run traced cobalt from Huayou's mine in the DRC, via Huayou's refinery in China, to LG Chem's battery plant in Korea and finally to the Ford plant in the United States. In November it was announced that the pilot had been completed successfully and that it would move beyond pilot phase, progressing toward use in live production environments starting spring 2020. Since November, Fiat Chrysler, Glencore and Volvo Cars have joined the consortium.

- The Responsible Cobalt Initiative (**RCI**): initiated in 2016 by the China Chamber of Commerce of Metals, Minerals and Chemicals Importers and Exporters (CCCMC), with support from OECD. Member companies work together to undertake collective action in addressing social and environmental risks in the cobalt supply chain as well as to collectively develop due diligence tools for risk assessment and supplier management for cobalt smelters and refiners. It aims to harmonize risk assessment tools and share compliance data from audits of smelters and refiners. RCI has over 30 members, including technology giants Apple Inc., HP, Huawei and Samsung, automakers like Volvo, Daimler and BMW and downstream refiners like Huayou Cobalt and GEM.

- The Responsible Minerals Initiative (**RMI**), founded in 2008 by members of the Responsible Business Alliance (RBA), formerly the Electronic Industry Citizenship Coalition, and the Global e-Sustainability Initiative, the Responsible Minerals Initiative, formerly the Conflict-Free Sourcing Initiative, has grown into one of the most utilized and respected resources for companies addressing issues related to the responsible sourcing of minerals in their supply chains. More than 380 companies from 10 different industries participate in the RMI today, contributing to a range of tools and resources. See http://www.responsiblemineralsinitiative.org/reporting-templates/cobalt-reporting-template/

- The Cobalt Industry Responsible Assessment Framework (**CIRAF**) was introduced by the Cobalt Institute (CI) in 2017. The project reached its pilot phase in August 2018 and seeks to identify material issues and risks within the cobalt sector from CI members as well as their customers. CIRAF aims to consolidate action being taken by companies across the industry to respond to increasing interest from civil society, the media, the cobalt market, and consumers in responsible sourcing and to create a unified approach towards sustainable and ethical production. Shu Powders is member of the Cobalt Institute and participating in CIRAF.

Raw Material Sourcing

Shu Powders' Raw Material Sources - Mines

Shu is sourcing Cobalt raw materials through its related companies GEM Co. and SMR Ltd. In turn, SMR is sourcing from Ambatovy and Goro. GEM Co is sourcing virgin Cobalt from Glencore's Mutanda's operation in the DRC and recycling Cobalt from battery scraps and other. GEM is a world leader in Cobalt recycling. The Glencore - GEM supply has been reported in a Metal Bulletin article on March 15, 2018 and its contract expansion on Oct 7, 2019. GEM has signed a five year strategic procurement contract with Glencore, securing more than 61,200 MT of cobalt in form of intermediates. On May 5, 2019, Glencore also concluded long term agreement on sustainable Cobalt supply with Umicore.

1. Goro in New Caledonia is owned and operated by Vale Inco www.vale.nc .
2. Ambatovy in Madagascar is owned and operated by a Sherritt, Sumitomo, Kores www.ambatovy.com
3. Mutanda in the DRC is owned and operated by Glencore www.glencore.com

Sources 1 and 2 are Nickel mines and source 3 is a Copper mine, where Cobalt is produced as a by-product in the range of several tens of thousand tonnes per annum. All companies are stock listed and compliant with OECD guidelines. There are detailed sustainability reports issued by all three companies.

Pic 6a, Goro: The facilities in New Caledonia are owned and operated by Vale Inco.

Pic 6b, Ambatovy: The facilities in Madagascar are owned by Sherritt, Sumitomo, Kores.

Pic 6c, Goro: Vale Inco issues a sustainability report every year, which is available on-line. Vale announced to sell the Goro facilities end of 2019.

Pic 6d, Ambatovy: A sustainability report is issued every year and readily available on-line.

Raw Material Sourcing

Shu Powders' Raw Material Sources - Mines

GEM signs five-year, 61200 MT cobalt hydroxide supply contract with Glencore (Metal Bulletin, Oct 7, 2019)
Glencore will supply GEM, including four of its wholly-owned subsidiaries, with at least 61,200 MT of cobalt (contained in hydroxide) between 2020 and 2024. According to the agreement, GEM will purchase 13,200 MT of cobalt in 2020, and 12,000 MT per year in the following four years. Production of cobalt is ramping up at Glencore's Katanga mine to a total of 14,000 MT in 2019. Mutanda, which produces about 25,000 MT of cobalt in 2019, will be placed on care and maintenance at the end of 2019.
Glencore became upstream member of the RMI (Responsible Mineral Initiative) in 2019. The Katanga mine is undergoing an RMI pilot audit program. Glencore repeatedly stated not to use artisanal mined Cobalt due to the link between child labor and artisanal small-scale mining (ASM) and has developed a due diligence process to ensure ASM material does not enter the supply chain. See: Glencore-statement-on-child-labour-allegations

Pic 7a, Mutanda, Katanga: The facilities in the DRC are owned and operated by Glencore.

Fig 7b, Mutanda, Katanga are the largest Cobalt mines in the DRC and worldwide.

Pic 7c, CSR: Glencore issues a sustainability report every year, which is available on-line. For compliance see pages 37ff, 42 and 65.

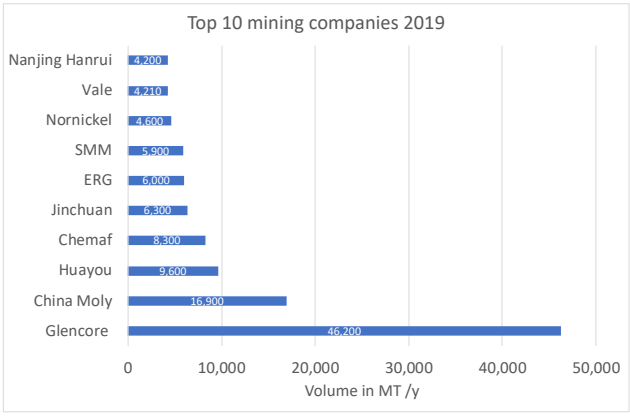


Fig 15, Glencore produced an estimated 46200 MT of cobalt at its DRC (Mutanda, Katanga), Australia and Canada mines. Meanwhile, the company has announced to temporarily shut down Mutanda end 2019 which will reduce output by 25000 MT in 2020.

Raw Material Sourcing

Shu Powders' Raw Material Sources - Recycling

GEM originated from a green dream

- On December 28, 2001, Professor Xu Kaihua founded GEM in Shenzhen.
- In 2003, the industrial concept of "limited resources and unlimited circulation" was put forward for the first time.
- On January 22, 2010, A shares were listed in Shenzhen Stock Exchange (stock code: 002340). the first stock of "urban mines," renewable resources industry and electronic waste recycling industry.
- GEM owns total share capital of 3.816 billion shares, net assets of more than 7 billion yuan, vast reproduction value of more than 12 billion yuan, employees of more than 5,000 people in 16 industrial parks.

GEM stands for "Green" "Eco" "Manufacturing"

Pic 8, GEM Sustainability report

A corporate sustainability report is issued every year, which is available on-line at www.gemchina.cn

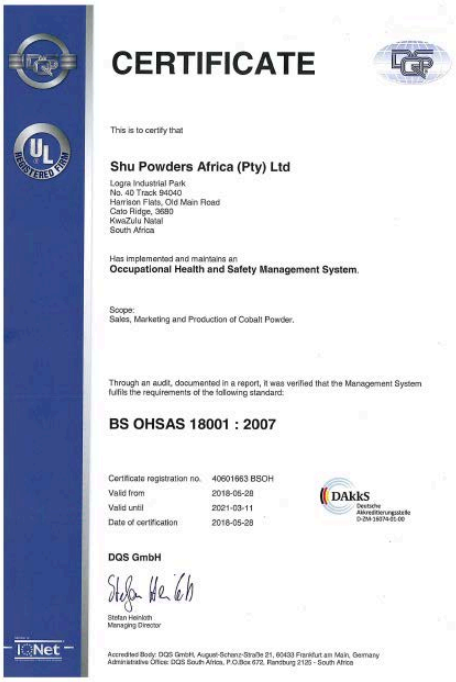
GEM is listed as an active Cobalt refiner by the Responsible Minerals Initiative and is undergoing its RMAP, responsible minerals assurance process.

Certifications

Shu Powders holds ISO 9001:2015, ISO 14001:2015, and OHSAS 18001:2007 international standards. On top of these we also hold Four Stars on the NOSA Integrated Five Star System, CMB253N Standard.

These Integrated Management Systems give guarantee and confidence to our customers, employees, suppliers, the community and all other stakeholders on the quality of the product, the preservation of their health and safety, care for the environment and sustainable business.

Certifications



CERTIFICATE

This is to certify that

Shu Powders Africa (Pty) Ltd

Logra Industrial Park
No. 40 Track 94040
Harrison Flats, Old Main Road
Cato Ridge, 3680
KwaZulu Natal
South Africa

Has implemented and maintains an
Occupational Health and Safety Management System.

Scope:
Sales, Marketing and Production of Cobalt Powder.

Through an audit, documented in a report, it was verified that the Management System fulfils the requirements of the following standard:

BS OHSAS 18001 : 2007

Certificate registration no.	40601663 BSOH
Valid from	2018-05-28
Valid until	2021-03-11
Date of certification	2018-05-28

DQS GmbH

Stefan Heinloth
Managing Director

Accredited Body: DQS GmbH, August-Schanz-Straße 21, 60433 Frankfurt am Main, Germany
Administrative Office: DQS South Africa, P.O.Box 672, Randburg 2125 - South Africa

CERTIFICATE

This is to certify that

Shu Powders Africa (Pty) Ltd

Logra Industrial Park,
No. 40 Track 94040
Harrison Flats, Old Main Road
Cato Ridge, 3680
KwaZulu Natal
South Africa

Has implemented and maintains an **Environmental Management System.**

Scope:
Sales, Marketing and Production of Cobalt Powder.

Through an audit, documented in a report, it was verified that the Management System fulfils the requirements of the following standard:

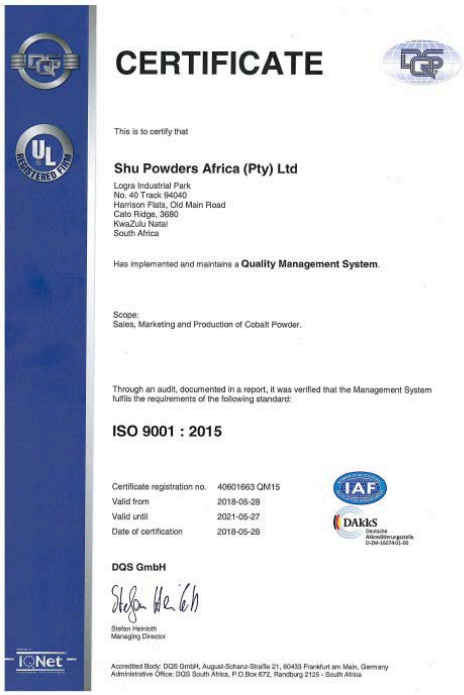
ISO 14001 : 2015

Certificate registration no.	40601663 UM15
Valid from	2018-05-28
Valid until	2021-05-27
Date of certification	2018-05-28

DQS GmbH

Stefan Heinloth
Managing Director

Accredited Body: DQS GmbH, August-Schanz-Straße 21, 60433 Frankfurt am Main, Germany
Administrative Office: DQS South Africa, P.O.Box 672, Randburg 2125 - South Africa



CERTIFICATE

This is to certify that

Shu Powders Africa (Pty) Ltd

Logra Industrial Park
No. 40 Track 94040
Harrison Flats, Old Main Road
Cato Ridge, 3680
KwaZulu Natal
South Africa

Has implemented and maintains a **Quality Management System.**

Scope:
Sales, Marketing and Production of Cobalt Powder.

Through an audit, documented in a report, it was verified that the Management System fulfils the requirements of the following standard:

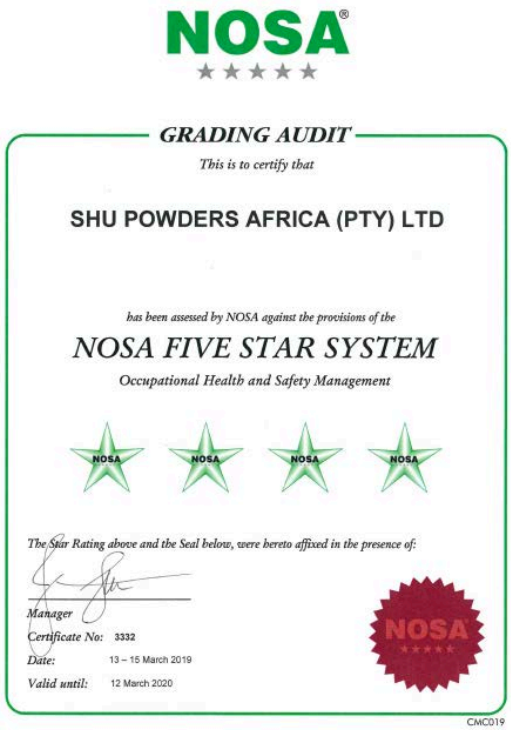
ISO 9001 : 2015

Certificate registration no.	40601663 QM15
Valid from	2018-05-28
Valid until	2021-05-27
Date of certification	2018-05-28

DQS GmbH

Stefan Heinloth
Managing Director

Accredited Body: DQS GmbH, August-Schanz-Straße 21, 60433 Frankfurt am Main, Germany
Administrative Office: DQS South Africa, P.O.Box 672, Randburg 2125 - South Africa



NOSA®
★★★★★

GRADING AUDIT

This is to certify that

SHU POWDERS AFRICA (PTY) LTD

has been assessed by NOSA against the provisions of the

NOSA FIVE STAR SYSTEM

Occupational Health and Safety Management

The Star Rating above and the Seal below, were hereto affixed in the presence of:

Manager

Certificate No: 3332

Date: 13 – 15 March 2019

Valid until: 12 March 2020

CMC019

Certifications

ETHEKWINI MUNICIPALITY
Community and Emergency Services
Cluster –Health Unit

9 Archie Gumede Place
Durban 4001
P O Box 2443
Durban 4001
Tel: (031) 311 3614
Fax: (031) 311 3530
Website: http://www.durban.org.za

DATE: 26 October 2016
REF: AEL092/W2

This Atmospheric Emission Licence is issued to **SHU POWDERS LIMITED,** in terms of section 47(1) of the National Environmental Management: Air Quality Act, 2004 (Act No.39 of 2004) ("the Act"), in respect of Listed Activity **Category 7, Sub-category 7.1 and 7.4.** The Atmospheric Emission Licence is issued on the basis of information provided in the company's application dated **22 September 2016** and information that became available during processing of the application.

Licence Holder	**SHU POWDERS LIMITED**
Industry Sector	**Preparation of cobalt**
Physical Address	**Logra Industrial Park, 40 Track 94040, Harrison Flats, Old Main Road, Cato Ridge**
Validity Period	**1 November 2016 to 31 October 2021**

Air Quality Officer: eThekwini Municipality
Mr. B.G Dale

26/10/2016
Date

For Enquiries Contact Details: (031) 311 3575 Email: bruce.dale@durban.gov.za

Certifications

Health, Safety and Environmental Policy

SHU POWDERS T: +27 31 782 1061 F: +27 31 782 1160 W: www.shupowders.com

Shu Powders Africa PTY. LTD
Logra Industrial Park, No.40 Track 94040, Harrison Flats
Old Main Road, Cato Ridge, KwaZulu Natal 3680 South Africa
Postnet Suite 10015, Private Bag X7005, Hillcrest, 3650

Vat No: 4150236521 CK No: 2007/000865/07

SAFETY, HEALTH AND ENVIRONMENTAL POLICY

Shu Powders Africa is a reputable manufacturer of cobalt, and is committed to continual improvement in safety, health and environmental performance. This is non-negotiable in our drive towards a ZERO Tolerance/ ZERO Harm culture.

- We believe that all injuries, all adverse health effects resulting from work activities, and environmental incidents are preventable;
- The safety of our employees, visitors and contractors is a non-negotiable value;
- We are committed to the protection of the environment, including the prevention of pollution.
- Leaders at all levels in the organization are role models in the management of safety, health and environmental matters and shall lead by example in all situations.
- At-risk behaviors are not acceptable and are addressed when observed; and
- Excellent safety, health and environmental performance are recognized as good business practices.

To achieve our goal we are committed to:

- Meeting all applicable compliance obligations;
- Operate in accordance with industry and customer codes of practice and voluntary requirements to which we subscribe, including group policies, agreements with regulators and communities, REACH, CI (the Cobalt Institute); SANS 1929:2011; and NOSA CMB253N.
- Educate and train, motivate and support our staff and suppliers in the application of this policy and associated procedures;
- Reducing consumption and wastage of materials through recovery, rework and recycling where possible;
- Eliminating hazards and reducing OH&S risks;
- Continuously consult, seek and promote the participation of workers, and worker representatives.
- Continually improve our safety, health and environmental system and performance through monitoring, preventive action, education and training;
- Develop new business opportunities that provide a sustainable future;
- Create a framework for setting and reviewing objectives and targets as stated in this policy.

We therefore commit to being a socially responsible employer in the interests of the community, future generations, and all our other interested parties.

Signature: _____ **Date:** 12/11/2019

Managing Director

Rev 8

Managing Director: Dr Michael Oehlers

Certifications

Quality Policy

SHU POWDERS T: +27 31 782 1061 F: +27 31 782 1160 W: www.shupowders.com

Shu Powders Africa PTY. LTD
Logra Industrial Park, No.40 Track 94040, Harrison Flats
Old Main Road, Cato Ridge, KwaZulu Natal 3680 South Africa
Postnet Suite 10015, Private Bag X7005, Hillcrest, 3650

Vat No: 4150236521 CK No: 2007/000865/07

QUALITY POLICY

Shu Powders Africa is committed to establishing and maintaining ourselves as a quality manufacturer of cobalt. To achieve this goal, we will (1) totally satisfy our customers and other interested parties' requirements and expectations in the quality of product and service, and (2) seek to understand and address the relevant external and internal issues.

We are committed to establish, maintain and continually improve on a Quality Management System (QMS) that conforms to the ISO 9001:2015 requirements.

As Managing Director, I undertake to ensure that our Quality Management System is thus directed towards achieving the following objectives:

- Only accepting orders and contracts within our managing capacity
- Planning all business activities and improving on the planned time allocations
- Employing and developing people who have the necessary skills and experience to improve our product and service
- Supporting and developing external providers of products and services who are committed to Quality Improvement
- Reacting to problems quickly and systematically and fostering a team approach to problem solving
- Aiming to deliver on time; recognising that deadlines are a crucial part of our business
- Ensuring that we address compliance obligations that pertain to our product.

The SHEQ Officer has been appointed as the Management Representative regarding all aspects of the ISO 9001:2015 Quality Management System.

Signature: _____ **Date:** 17-April-2017

Managing Director

Rev. 8

Managing Director: Dr Michael Oehlers

CONTROLLED

Glossary

- **Biological monitoring:**

Is the measurement and assessment of workplace agents or their metabolites either in tissues, secreta, excreta, expired air or any combination of these to evaluate exposure and health risk compared to an appropriate reference. All the medicals consist of the following examinations:

- Audiometric Testing
- Eye Test
- Chest X-ray
- Lung Function
- Physical exam
- Cobalt vs Creatinine (urine testing)
- Cobalt in Blood

- **ASTM D1739-94:**

The standard test method for collection and measurement of dustfall (settleable particulate matter).

- **Lost time incident:**

Lost time injury is when an employee gets injured in the course of his employment and is unable for perform the regular duties for a complete shift. This is not just limited to one regular shift only, but it can extend up to all the shifts in which the employee is unable to perform the regular duties. So from the time of the initial injury until the time the employee is able to return to regular work duties. None of the LTI's caused interruption of production or business.

- **Risk Assessment:**

The evaluation of the risks of existing substances or conditions to man, including workers, and to the environment, in order to ensure better management of those risks.

Reference List

- [Ref 1] Concise International Chemical Assessment Document 69. Communication with Dr. Do Vale of CATOMED Clinique, in Cato Ridge, KZN, South Africa.
- [Ref 2] APEX study 2010, 2012, 2014, 2016
- [Ref 3] Dust detection device: SKC- Airchek sampler
- [Ref 4] Amnesty International Report, January 19,2016 www.amnesty.org/en/documents/afr62/3183/2016/en/
- [Ref 5] London Metal Bulletin Articles, March 29, 2016.