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REVISION N°.: 1		
ISSUED DATE: 2 September 2025	WORK PROCEDURE TASK	SAFETY DATA SHEET – COBALT POWDER
	SECTION:	NICKEL
	DOCUMENT N°.:	SDS 001

DISTRIBUTION CONTROL SHEET

N°	LOCATION	TITLE
1	SHEQ Manger	SHEQ Manager (Electronic)
2	Despatch	Process Supervisor (Electronic)
3	Plant Manager’s Office	Plant Manager – Nickel (Electronic)
4	Manager PMR	Manager PMR Snr (Electronic)
5	Lab Manager’s Office	Laboratory Manager (Electronic)
6	Marketing	Head of Sales (Electronic)
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Product code	:	Not applicable
Version	:	1
Date of issue	:	12/11/2025
Date of previous issue	:	No previous validation

SECTION 1: Identification of the substance / mixture and of the company /. undertaking

1.1. Product Identifier

Product name	:	Cobalt Powder
Synonyms	:	Cobalt Metal Powder, Impala Cobalt Powder, Cobalt ACGIH OSHA, Cobalt Metallic, Cobalt – 59, Kobalt (German), Super Cobalt.
EC number	:	Not Applicable
UK (GB) REACH Registration number	:	UK-01-8768321759-7-0001
Legal Identity	:	Not Applicable
CAS number	:	Not Applicable
Product code	:	Not Applicable

1.2. Relevant identified uses of the substance or mixture and uses advised against Specific uses

Process Reagent, Industrial Applications, Paint Additive, alloy manufacturer, flame spraying.

1.3. Details of the supplier of the safety data sheet

Supplier Name	:	Impala Platinum Ltd – Refineries
Address	:	Base Metals Refinery P.O. Box 222 SPRINGS 1560 GAUTENG Republic of South Africa
Contact Person (s)	:	Element coordinator, BMR Tel: +27 11 360 3176 E-mail: georg.langenhoven@implats.co.za
	:	Nickel Section Manager – Sakhumzi Ndlebe Tel: +27 11 360 3317 E-mail: Sakhumzi.ndlebe@implats.co.za

1.4. Emergency telephone number

See above for Refineries contacts.
South Africa Poisons Information Centre 0861-555-777 (South Africa only)

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SECTION 2: Hazard Identification

2.1. Classification of the substance or mixture

Product definition : GHS Classification (SANS 10234)

Classification according to GHS (SANS10234):

Health hazards:

Acute toxicity, oral	Category 4	H301 - May be harmful if swallowed.
Respiratory sensitisation	Category 1	H334 - May be harmful if inhaled.
Skin sensitisation	Category 1	H317 - Prolonged skin contact may cause an allergic skin reaction.

Environmental hazards: Category 4 H413 - May cause long lasting harmful effects in aquatic life.


Hazard Summary: Not classified for physical hazards.

Health hazards: May be harmful if swallowed and/or inhaled. May cause skin irritation during dust generation.

Environmental hazards: May cause long lasting adverse effects in aquatic environment.

Specific hazards: If dissolved, ensure adequate enclosure or ventilation; do not breathe the mists and avoid solution contact with eyes, skin and clothing – may cause sensitization or allergic reaction. If melted do not inhale furnace fumes.

2.2. Label elements

Hazard Pictograms	:	
Signal word	:	Danger
Hazard health statements	:	H301 - May be harmful if swallowed. H317- May cause an allergic skin reaction. H333- May be harmful if inhaled.
Precautionary statements Prevention	:	P201- Obtain special instruction before use. P202- Do not handle until all safety precautions have been read and understood. P261- Avoid breathing dust/fume. P264- Wash thoroughly after handling. P270- Do not eat, drink or smoke when using this Product. P273- Avoid release to the environment. P280- Wear protective gloves, protective clothing and eye protection. P285- In case of inadequate ventilation wear respiratory protection.
Response	:	P330- Rinse mouth. P363- Wash contaminated clothing before re-use. P302+P352- IF ON SKIN: Wash well with plenty of soap and water

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P308+P313- If exposed or concerned get medical advice / attention.

P304+P340- if inhaled: Remove to fresh air and keep at rest in a comfortable position for breathing.

P305+P351+P338- If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

P337+P313- If eye irritation persists get medical advice/attention.

P333+P313- If skin irritation or rash occurs get medical advice/attention.

Storage : P405 - Stored locked up
: P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.

Disposal : P501-Dispose of contents/container in accordance with local/ regional/national/international regulations

Supplemental label elements : None

2.3. Other Hazards

No information provided.

SECTION 3: Composition / Information on Ingredients

3.1. Substances

Ingredients : Cobalt
Formula : Co
CAS N° : 7440-48-4
Poison Sched : Non allocated
Conc.Pd : ≥99.80%
RTECS N° : GT 87500000
EC No : 231-158-0
ICSC : 0782

SECTION 4: First aid measures

4.1. Description of first aid measures

Eye contact : Flush gently with running water for a minimum of 15 minutes. Seek medical attention if irritation develops.

Inhalation : If over exposure occurs leave exposure area immediately. If other than minor symptoms are displayed seek immediate medical attention. Apply artificial respiration if not breathing.

Skin contact : Remove contaminated clothing and gently flush affected areas with running water. Launder clothing before reuse. Seek medical attention if irritation develops. Launder clothing before reuse.

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Ingestion : If poisoning occurs, contact a Doctor or Poisonous Information Centre (24 hours) 0861 555 777 (South Africa only). Do not induce vomiting. Seek immediate medical attention.

First Aid Facilities: Eye wash and safety shower facilities should be available.

Most important symptoms and effects, both acute and delayed

May cause an allergic skin reaction. May cause allergy or asthma or breathing difficulties if inhaled.

Immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Flash Point	:	Not applicable
Flammable Limits	:	Not applicable
Auto-ignition Point	:	Not applicable
Fire Extinguishing Media	:	Non-flammable
Special Fire Fighting Procedures	:	None
Hazardous Chemical Code	:	None allocated

Note Non-flammable. Very fine dust (<3um) may burn when exposed to ignition sources or mixed with strong oxidising agent. May evolve toxic cobalt oxides when heated. May evolve explosive hydrogen gas on contact with water / acid.

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment (see spillage section 6.1 below) including Self Contained Breathing Apparatus (SCBA) when combating fire. Use water fog to cool intact containers and nearby storage areas.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions : Wear PPE as detailed in section 8 of this SDS.

6.2. Environmental precautions

Environmental precautions : Prevent product from entering drains and waterways.

6.3 Methods and material for containment and cleaning up

: Contain spillage and collect and place in suitable containers for disposal. Avoid generating dust.

SECTION 7: Handling and Storage

7.1. Precautions for safe handling

Packaging Material: : Packed in blue 250kg drums, loaded in 1000kg lots on a pallet, sealed with a numbered plastic seal and lead seal

Handling: : Before use, read the product label.

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Storage: : Use safe work practices to avoid eye or skin contact and inhalation of dust or fumes.
 Observe good personal hygiene.
 Prohibit eating, drinking and smoking in contaminated areas.
 Wash hands before eating or smoking.
 Store in tightly sealed containers in a cool, dry and well-ventilated area, from oxidising agents and food stuff.
 Ensure containers are adequately labelled, protected from physical damage and sealed when not in use.

SECTION 8: Exposure controls / personal protection

8.1. Control parameters

Occupational Exposure Limit:

- OHS Act South Africa - 0.1mg/m3
- TLV / TWA: ACGIH - 0.02mg/m3
- TWA ASCC (AUS) - 0.05mg/m3 metal dust and fume
- UK EH40 WELs TWA - 0.1mg/m3
- PEL (USA) - 0.01mg/m3 metal dust and fume
- REL (USA) - 0.05mg/m3 metal dust and fume
- TLV (USA) - 0.02mg/m3 BEI
- EL (Canada) - 0.02mg/m3 IARC 2B
- EV (Canada) - 0.1mg/m3

Biological Limits:

Reference	Determinant	Sampling Time	BEI
ACGIH BEI	Cobalt in urine	End of shift at end of work week	15 mg/L
ACGIH BEI	Cobalt in blood	End of shift at end of work week	1 mg/L

Exposure controls

Respiratory protection: : Where an inhalation risk exists, wear a Class P2 (Particulate) respirator. At high dust levels, wear a Full-Face Class P3 (Particulate) or Powered Air Purifying Respirator (PAPR).

Hand protection: : Wear suitable gloves (PVC or rubber).

Eye protection: : Wear dust-proof goggles.

Skin protection: : Safety shoes, overalls or similar full-body work clothes should be worn and laundered daily.
 This protective clothing should not be worn at home.

Personal Hygiene: : Practice good housekeeping and personal hygiene procedures.
 No eating, drinking or smoking in work areas.
 Wash hands thoroughly before eating, drinking or smoking.
 Avoid ingestion, inhalation and skin and eye contact.
 Medical examinations, monitoring, record keeping and hygiene facilities are recommended.

Exposure Controls: : Do not inhale dust / powder.
 Use with adequate natural ventilation.
 Where a dust inhalation hazard exists, mechanical extraction ventilation is recommended.
 Maintain dust / fume levels below the recommended exposure standard.

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SECTION 9: Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

9.1. Information on basic physical and chemical properties

Appearance	:	Grey metallic powder
Physical state	:	Solid
Odour	:	Odourless
Boiling point	:	2927°C (5300.6°F)
Melting point	:	1495°C (2719.4°F)
Flammability (solid, gas)	:	Non flammable
Lower Explosion Limit	:	Not relevant
Upper Explosion Limit	:	Not relevant
Flash point	:	Not relevant
Auto-ignition temperature	:	Not relevant
Evaporation Rate	:	Not relevant
pH	:	Not relevant
% Volatiles	:	Not relevant
Specific Gravity	:	8.92
Vapour pressure	:	Not relevant
Solubility in water	:	Insoluble
Molecular weight	:	58.93g/mole
Co concentration	:	≥99.80%

SECTION 10: Stability and reactivity

10.1. Reactivity

Carefully review all information in sections 10.2 to 10.6.

10.2. Chemical stability

Stable under recommended conditions of storage.

10.3. Possibility of hazardous reactions

No reactions expected, except if exposed to incompatible materials – see section 10.5

10.4. Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources (fine particles, <3µm, can combust when exposed to ignition sources), as well as incompatible materials (section 10.5)

10.5. Incompatible materials

Incompatible violently/explosively with strong oxidising agents (e.g. peroxides ammonium nitrate, bromine tetrafluoride and nitryl fluoride.) Attacked slowly by ammonia and sodium hydroxide. Incompatible with reactive metals (e.g. potassium and sodium) and with acids (e.g. hydrochloric acid). May spontaneously ignite on contact with air or acetylene in finely ground form. May evolve EXPLOSIVE hydrogen gas on contact with water/acids.

10.6. Decomposition Products

May evolve toxic cobalt oxides when heated to decomposition.

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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity – Acute Toxicity

LDLo (Ingestion)	:	750mg/kg (rabbit)
LDLo (Intraperitoneal)	:	100mg/kg (mouse)
LDLo (Intravenous)	:	100mg/kg (mouse)
LD50 (Ingestion)	:	6170mg/kg (rat)
LD50 (Intaperitoneal)	:	100mg/kg (rat)

Skin	Irritant. Cobalt has been reported to cause dermatitis and skin sensitisation. Chronic over exposure may result in “Cobalt itch” or “carboly-itch” (“measle like” red spotty rash). Prolonged and repeated contact may result in skin rash, dermatitis and hypersensitivity with allergic response.
Eye	Irritant. Contact may result in irritation, lacrimation, pain, redness and conjunctivitis. Prolonged contact may cause corneal burns and possible permanent damage.
Mutagenicity	Insufficient data available to classify as a mutagen. Cobalt salts (not metal) have been reported to cause chromosomal damage in experimental animals.
Carcinogenicity	Cobalt and cobalt compounds may cause cancer to humans (IARC Group 2B).
Reproductive	Insufficient data available to classify as a reproductive toxin.
STOT – SE	Irritant. Over exposure to cobalt has been reported to cause respiratory sensitisation, with asthma like symptoms. Over exposure may result in upper respiratory and mucous membrane irritation, coughing and, at high levels, breathing difficulties with asthma like symptoms, with wheezing and shortness of breath. Potential respiratory sensitiser. Chronic exposure may result in lung fibrosis, hypersensitivity and asthma. DEAFNESS: Bilateral nerve deafness has been described following chronic occupational exposure to cobalt powder or during chronic treatment of anaemia with cobalt chloride. Deafness typically resolves completely after discontinuation of exposure (Gardner, 1953; Schirmacher, 1967; Meecham & Humphrey, 1991). RHINITIS: Rhinitis has been described in diamond polishers with exposure to fine cobalt dust and symptoms of bronchoconstriction (Gheysens et al, 1985). Metallic cobalt may be retained in and slowly absorbed from the lungs, with an estimated half-life of 5 to 15 years (HSDB).
STOT - RE	Low to moderate toxicity. Ingestion may result in nausea, vomiting, abdominal pain, diarrhoea, fatigue, dizziness and drowsiness, and with large doses unconsciousness. Ingestion of cobalt salts may cause reproductive effects. Thyroid damage, liver and kidney damage and heart failure may occur.
Aspiration	This product does not present an aspiration hazard.
Sensitisation	Sufficient data from human studies exists to warrant classification of cobalt as a dermal sensitiser via skin contact, and a respiratory sensitiser via inhalation

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SECTION 12: Ecological information

12.1 Toxicity

: Only if reacted with acids under specially applied conditions.
 Limited eco toxicity data was available for this product at the time this report was prepared. Ensure appropriate measures are taken to prevent this product from entering the environment and reacting with strong acids.

Cobalt is absorbed to a great extent by hydrolysis or oxidate sediments. Cobalt may be taken into solution in small amounts through bacteriological activity.

12.2 Persistence and degradability

: No information available.

12.3 Bioaccumulate potential

: No information available.

12.4 Mobility in soil

: The availability of cobalt is primarily regulated by pH and is usually found in soils as divalent cobalt. At low pH it is oxidised to trivalent cobalt and often found associated with iron. Adsorption of divalent cobalt on soil colloids is high between pH 6 & 7, whereas leaching and plant uptake of cobalt are enhanced by a lower pH (HSDB).

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product Methods of disposal: : Collect and reuse where possible. Minimise dust generation.
 Contact Impala Refineries for additional specific information (section 1.3).

Legislation: : Dispose of in accordance with relevant local legislation.

SECTION 14: Transport information

14.1. Not classified as a dangerous good by the criteria of the ADG, IMDG OR IATA

	Land Transport (ADG)	Sea Transport (IMDG/IMO)	Air Transport (IATA/ICAO)
UN #	None Allocated	None Allocated	None Allocated
UN proper shipping name	None Allocated	None Allocated	None Allocated
Transport hazard class			

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D.G Class	None Allocated	None Allocated	None Allocated
Subsidiary risk(s)	None Allocated	None Allocated	None Allocated
<u>Packing Group</u>	None Allocated	None Allocated	None Allocated
<u>Environmental hazards</u>	None Allocated	None Allocated	None Allocated
Special precautions for user			
Hazchem code	None Allocated	None Allocated	None Allocated

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Poison schedule	A poison schedule number has not been allocated to this product.		
Classifications	N	:	Dangerous for the environment.
	Xi	:	Irritant
Risk phrases	R22	:	Harmful if swallowed
	R37	:	Irritating to respiratory system
	R42/43	:	May cause sensitisation by inhalation or skin contact
	R49	:	May cause cancer by inhalation
	R53	:	May cause long term adverse effects in the aquatic environment
Safety phrases	S2	:	Keep out of reach of children
	S22	:	Do not breathe dust
	S24	:	Avoid contact with skin
	S36/37/39	:	Wear suitable clothing, gloves, eye protection
	S61	:	Avoid release to the environment
Regulatory information	:	:	SA Hazardous Substances Act 15/1973
	:	:	SANS 10228:2012 SA National Standard – The identification and classification of dangerous goods for transportation by road and rail modes
	:	:	GHS of Classification and Labelling of Chemicals ST/SG/AC.10/3-/Rev.6
	:	:	Regulation (EC) No. 1907/2006 of the European Parliament and the Council of December 2006

SECTION 16: Other information

Abbreviations and acronyms :	mg/m ³	:	Milligrams per cubic metre
	ADG	:	European agreement on the International carriage of dangerous goods by road
	ppm	:	Parts Per Million
	TWA/ES	:	Time Weighted Average of Exposure Standard
	pH	:	Relates to hydrogen ion concentration

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		This value will relate to a scale of 0-14, where 0 is highly acidic and 14 is highly alkaline.
CAS N°	:	Chemical Abstract Service Number – used to uniquely identify chemical compounds.
M	:	Moles per litre, a unit of concentration.
IARC	:	International Agency for Research on Cancer.
RTECHS	:	The Registry of Toxic Effects of Chemical Substances.
ICSC	:	International Chemical Safety Card.
EC No	:	European Commission Number.
EU	:	European Union
AUS	:	Australia
CNS	:	Central Nervous System
GHS	:	Global Harmonized System of Classification and Labelling of Chemicals
IARC	:	International Agency for Research on Cancer
IATA	:	International Air Transport Association
ICAO	:	International Civil Aviation Organisation
ICSC	:	International Chemical Safety Card
IMDG	:	Inter Modal transport of Dangerous goods
IMO	:	International Maritime Organisation
OEL	:	Occupational Exposure Limit
PPE	:	Personal Protective Equipment
RTECS	:	The Registry of Toxic Effects of Chemical Substances
STEL	:	Short Term Exposure Limit
STOT-RE	:	Specific Target Organ Toxicity – repeated exposure
STOT-SE	:	Specific Target Organ Toxicity – single exposure
SWA	:	Safe Work Australia
TLV	:	Threshold Limit Value
TWA/ES	:	Time Weighted Average of Exposure Standard

Respirators: In general, the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

Colour Rating System: Amber, Chem Alert reports are assigned a colour rating of Green, Amber or Red for the purpose of providing users with a quick and easy means of determining the hazardous nature of a product. Safe handling recommendations are provided in all Chem Alert reports to clearly identify how users can control the hazards and thereby reduce the risk (or likelihood) of adverse effects.

Guideline:

Colour	Type of Hazard
Green	Low
Amber	Moderate
Red	High

Whilst all due care has been taken in the preparation of the Colour Rating System, it is intended as a guide only and does not provide any warranty in relation to the accuracy of the Colour Rating System. As far as is lawfully possible, Impala accepts no liability or responsibility whatsoever for the actions or omissions of any person in reliance on the Colour Rating System.

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Personal Protective Equipment Guidelines:

The recommendation for protective equipment contained within this Chem Alert report is provided as a guide only. Factors such as method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made. Information provided by Risk Management Technologies is summarised for ease of use. Additional technical information is available by calling +27 11 360 3255 or +27 11 360 3172.

Health Effects from Exposure:

It should be noted that the effects from exposure to this will depend on several factors including frequency and duration of use; quantity used, effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a Chem Alert report which encompasses all possible scenarios, it is anticipated that users will assess the risk and apply control methods where appropriate.

Report Status:

Impala Platinum Ltd. Have exercised reasonable care in the preparation of the information contained in this SDS, however, it assumes no responsibility or liability to the accuracy and suitability of such information, for application to the Buyer's intended purposes or consequences of its use. As regulatory standards and guideline recommendations are revised from time to time, Impala gives no assurance that the information contained in this SDS will be current at the time that the SDS is used. It is the responsibility of the Buyer/User to ensure that the most recent version of this document is available.

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