

# Safety Data Sheet

**Manufacturer** : Heraeus Ltd. **Date Sheet no.:** SDS-PGC  
**Product code** : 85100295 (50gm salt/bot), 85100297 (73.2gm salt/bot), 81013782 & 85100291 (100gm salt/bot), 85100292 (146.41gm salt/bot), 81013780 & 85100294(500gm salt/bot), 81033006 (1.5kg salt/bot), 85100296 (5kg salt/bag), 81036358 (1kg salt/bot)  
**Technical name** : POTASSIUM GOLD CYANIDE OR POTASSIUM DICYANOAUATE (I)  
**Version no.:** 2.0 **Reviewed on** : 1-11-2012 **Page 1 of 5**

## I IDENTIFICATION

**Technical name:** POTASSIUM GOLD CYANIDE OR POTASSIUM DICYANOAUATE(I)

**IUPAC name:** POTASSIUM GOLD(+1) DICYANIDE

**Recommended use and restriction on use:** Potassium Gold cyanide is used in decorative gold plating and custom jewellery & watch, functional gold plating in PCB, connector & leadframe and electroless gold plating.

**Manufacturer:** Heraeus Ltd.

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**Phone:** (852) 2675 1200



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**E-mail Address:** [heraeus@heraeus.com.hk](mailto:heraeus@heraeus.com.hk)

**Emergency contact:** (65) 6423 9119 (24hrs) (Singapore - Drug & Poison Information Centre),  
(020) 8419 8181 (Guangdong Poison control Centre)  
(852) 2635 1111 (24hrs) (Hong Kong Poison Information Centre)

**Date Sheet no.:** SDS-PGC

## II HAZARDS IDENTIFICATION

**Hazardous designation:**  T+ Very toxic  N Dangerous for the environment

**GHS Classification:** Acute toxicity Category 2

**Hazard statements:**



**Danger**

H301 Toxic if swallowed  
H311 Toxic in contact with skin  
H330 Fatal if inhaled



**Warning**

H400 Very toxic to aquatic life  
H410 Very toxic to aquatic life with long lasting effects

**Precautionary statements:** P260 Do not breath dust/fume/gas/mist/vapours/spray

**Response:**

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.  
P320 Specific treatment is urgent (see on this label)  
P361 Remove/Take off immediately all contaminated clothing.

**Storage:** P405 Store locked up.

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**Disposal:** P501 Dispose of contents/containers in accordance with local/regional/national and international regulations.

### III COMPOSITION/INFORMATION ON INGREDIENTS

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**Chemical identification :** Potassium Gold Cyanide

**Chemical formula:**  $K[Au(CN)_2]$

**CAS No.:** 13967-50-5

**Au%:** 68.3 [85100295 (50gm salt/bot), 85100297 (73.2gm salt/bot), 81013782 & 85100291 (100gm salt/bot), 85100292 (146.41gm salt/bot), 81013780 & 85100294(500gm salt/bot), 81033006 (1.5kg salt/bot), 85100296 (5kg salt/bag)]

68.0 [81036358 (1kg salt/bot)]

**Hazardous components:** —

### IV FIRST AID MEASURES

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**General:** After oral ingestion, seek medical help  
Code word: Poisoning with hydrocyanic acid

**Inhalation:** Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persists. Seek immediate medical advice.

**Skin contact:** Wash away with soap and water and rinse

**Eye Contact:** Rinse opened eye for several minutes under running water. Then consult doctor.

**Ingestion:** Do not induce vomiting; instantly call for medical help.  
Seek immediate medical advice.

### V FIRE-FIGHTING MEASURES

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**Suitable Extinguishing media**

- CO<sub>2</sub>, extinguishing powder or water jet. Fight target fires with water jet.

**Specific hazards arising from the chemical**

- Hydrogen Cyanide (HCN) can be released in case of fire.

**Special protective actions for fire fighters**

- Wear self-contained breathing apparatus.
- Wear full protective suit.

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## VI ACCIDENTAL RELEASE MEASURES

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**Personal precautions:**

- Provide for sufficient ventilation
- On evolution of hydrogen cyanide gas use respiratory filter B. grey.

**Environmental precautions:** Do not empty into drains without proper governmental permits.

### Methods and materials for containment and cleaning up:

- Disposed of contaminated material as waste.
- Ensure adequate ventilation.

## VII HANDLING AND STORAGE

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### Precautions for safe handling:

- Keep away from food, drink and animal feeding stuffs
- Keep containers tightly sealed.
- Store in cool, dry place in tightly closed containers.
- Ensure good ventilation/exhaustion at the workplace

### Conditions for safe storage, including any incompatibilities:

- Store away from oxidizing agents.
- Store in cool, dry conditions in well sealed containers.
- Protected against heat and light
- Store it separately from acids.

## VIII EXPOSURE CONTROLS/PERSONAL PROTECTION

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### Control parameter/Occupational exposure limits:

Country	Cyanide (as CN) mg/m <sup>3</sup>
United Kingdom	5-LTEL (skin)
Switzerland MAK-W	5:10-STEL(skin)
Germany MAK	5 (skin)
Austria MAK	5 (skin)
France VME	5 (skin)
Singapore PEL (short term)	5
OSHA PEL	5 (skin)

### Appropriate engineering control measures

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 ft./min.

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## PERSONAL PROTECTION

### INDIVIDUAL PROTECTION MEASURES, SUCH AS PERSONAL PROTECTIVE EQUIPMENT (PPE)

#### General protective and hygiene measures:

- Do not eat or drink during work – no smoking
- Avoid contact with the eyes and skin
- Keep working clothes separately
- Wash hands during breaks and at the end of the work.

**Respiratory equipment:** Respiratory filter (gas): B  
Respiratory filter (part): P2

**Skin protection:** Use protective impervious gloves

**Eye protection:** Use safety glasses

**Body protection:** Wear protective work clothing

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## IX PHYSICAL AND CHEMICAL PROPERTIES

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**Appearance and odor:** White crystalline solid, odourless

### RELEVANT SAFETY DATA

**Flash point:** N/A

**Melting point:** Not determined

**Boiling point:** Not determined

**Solubility in water:**  $\approx 220\text{g/l}$  (20°C)  $\approx 870\text{g/l}$  (60°C)

**pH value:** 12 (20°C)

**Viscosity:** N/A

**Solvent-separation test:** N/A

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## X STABILITY AND REACTIVITY

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**Reactivity:** React with acid and oxidizing agents.

**Chemical stability:** No decomposition if used and stored properly.

**Possibility of hazardous reactions:** Gold can form explosive compounds with ammonia, ammonium hydroxide + aqua regia, and hydrogen peroxide. Contact with acids liberates very toxic gas.

**Condition to avoid:** Thermal decomposition at about 200°C

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**Incompatible materials:** Acids and oxidizing agents

**Hazardous decomposition products:** Hydrogen cyanide (HCN) or Cyanogen

## XI TOXICOLOGICAL INFORMATION

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**Acute toxicity:**

**Primary irritant effect:**

**On skin:** Irritant for skin and mucous membranes.

**On eye:** Irritating effect.

**Sensitization:** No sensitizing effect known

**Additional toxicological information:**

- If properties are similar to KCN inhalation or 200ppm HCN or swallowing of 200—300mg KCN causes unconsciousness or death.
- Lowest published LD<sub>50</sub> value is 2.87mg KCN/kg weight.
- Resorption is possible.
- No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

## XII ECOLOGICAL INFORMATION

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**Ecotoxicological effects:** Against fishes and small creatures, KCN is very toxic.

**Additional ecological information:** Do not empty into waters or drains.

Danger to drinking water if even extremely small quantities leak into soil.

Do not allow material to be released to the environment without proper governmental permits.

## XIII DISPOSAL CONSIDERATION

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**Product:**

Recommendation

If recycling is impracticable, eliminate in accordance with locally valid waste disposal regulations (Notify authorities. if it is required.). Cyanide containing wastewater, salts or solutions must be treated (detoxified) according to regulations before release into public effluents.

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## XIV TRANSPORT INFORMATION

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### LAND TRANSPORT (ADR)



**ADR Class:** 6.1 (T5) Toxic substances

**UN number:** 1588

**Packing group:** II

**Proper shipping name:** CYANIDES, INORGANIC, SOLID, N.O.S. (Potassium Gold(I) Cyanide)

### MARITIME TRANSPORT (IMDG)



**IMDG Class:** 6.1

**UN-number** : 1588

**MARPOL** : P

**MFAG-Table** : 215

**EmS number** : 6.1-04

**Packing group:** II

**Proper shipping name:** CYANIDES, INORGANIC, SOLID, N.O.S. (Potassium Gold(I) Cyanide)

### AIR TRANSPORT (IATA)



**IATA Class** : 6.1

**UN-number** : 1588

**Packing group:** II

**Proper shipping name:** CYANIDES, INORGANIC, SOLID, N.O.S. (Potassium Gold(I) Cyanide)

### ADDITIONAL TRANSPORT INFORMATION

In form of a precious metal compound the product has a corrosive effect in direct contact with aluminum or steel

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## XV REGULATORY INFORMATION

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### Designation according to EC guidelines

**Code letter and hazard designation of Product:**



T+ Very Toxic



N Dangerous for the environment

**Risk-phrases:**

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26/27/28 Very toxic by inhalation, in contact with skin and if swallowed.  
32 Contact with acids liberates very toxic gas  
50/53 Very toxic to aquatic organisms, may cause long-term adverse effects (show the label where possible).

## Safety-phrases:

7 Keep container tightly closed.  
28 After contact with skin, wash immediately with plenty of water  
29 Do not empty into drains  
45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).  
60 This material and its container must be disposed of as hazardous waste.  
61 Avoid release to the environment.

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## XVI OTHER INFORMATION

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These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.
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