1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifiers
Product name: Potassium cyanide
Product Number: 207810
Brand: Sigma-Aldrich

1.2 Other means of identification
no data available

1.3 Relevant identified uses of the substance or mixture and uses advised against
Identified uses: Laboratory chemicals, Manufacture of substances

1.4 Details of the supplier of the safety data sheet
Company: Sigma-Aldrich Pty. Ltd.
12 Anella Avenue
CASTLE HILL NSW 2154
AUSTRALIA
Telephone: +61 2 9841 0555 (1800 800 097)
Fax: +61 2 9841 0500 (1800 800 096)

1.5 Emergency telephone number
Emergency Phone #: +44 (0)8701 906777 (1800 448 465)

2. HAZARDS IDENTIFICATION

2.1 GHS Classification
Corrosive to metals (Category 1)
Acute toxicity, Oral (Category 2)
Acute toxicity, Inhalation (Category 2)
Acute toxicity, Dermal (Category 1)
Specific target organ toxicity - single exposure (Category 1)
Specific target organ toxicity - repeated exposure (Category 1)
Acute aquatic toxicity (Category 1)

2.2 GHS Label elements, including precautionary statements
Pictogram
Signal word: Danger
Hazard statement(s)
H290 May be corrosive to metals.
H300 Fatal if swallowed.
H310 Fatal in contact with skin.
H330 Fatal if inhaled.
2.3 **Other hazards**

Contact with acids liberates very toxic gas.

3. **COMPOSITION/INFORMATION ON INGREDIENTS**

### 3.1 Substances

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium cyanide</td>
<td>Met. Corr. 1; Acute Tox. 2; Acute Tox. 1; STOT SE 1; STOT RE 1; Aquatic Acute 1; H290, H300, H310, H330, H370, H372, H400</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Formula</th>
<th>CKN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molecular Weight</td>
<td>65.12 g/mol</td>
</tr>
<tr>
<td>CAS-No.</td>
<td>151-50-8</td>
</tr>
<tr>
<td>EC-No.</td>
<td>205-792-3</td>
</tr>
<tr>
<td>Index-No.</td>
<td>006-007-00-5</td>
</tr>
</tbody>
</table>
4. **FIRST AID MEASURES**

4.1 **Description of first aid measures**

**General advice**
Consult a physician. Show this safety data sheet to the doctor in attendance.

**If inhaled**
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact**
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

**In case of eye contact**
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**If swallowed**
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 **Most important symptoms and effects, both acute and delayed**
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 **Indication of any immediate medical attention and special treatment needed**
no data available

5. **FIREFIGHTING MEASURES**

5.1 **Extinguishing media**

**Suitable extinguishing media**
Dry chemical Dry sand Alcohol-resistant foam

**Unsuitable extinguishing media**
Water Carbon dioxide (CO2)

5.2 **Special hazards arising from the substance or mixture**
Carbon oxides, nitrogen oxides (NOx), Potassium oxides, Hydrogen cyanide (hydrocyanic acid)

5.3 **Advice for firefighters**
Wear self contained breathing apparatus for fire fighting if necessary.

5.4 **Further information**
no data available

6. **ACCIDENTAL RELEASE MEASURES**

6.1 **Personal precautions, protective equipment and emergency procedures**
Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

6.2 **Environmental precautions**
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 **Methods and materials for containment and cleaning up**
Pick up and arrange disposal without creating dust. Sweep up and shovel. Do not flush with water. Keep in suitable, closed containers for disposal.

6.4 **Reference to other sections**
For disposal see section 13.
7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Never allow product to get in contact with water during storage. Do not store near acids.

7.3 Specific end use(s)
A part from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
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</thead>
<tbody>
<tr>
<td>Potassium cyanide</td>
<td>151-50-8</td>
<td>TWA</td>
<td>5 mg/m3</td>
<td>Australia. Workplace Exposure Standards for Airborne Contaminants.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Remarks: Skin absorption</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>5 mg/m3</td>
<td>Australia. Workplace Exposure Standards for Airborne Contaminants.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Skin absorption</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

Appropriate engineering controls
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

**Eye/face protection**
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin protection**
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

**Full contact**
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: Dermatri® (KCL 740 / Aldrich Z677272, Size M)

**Splash contact**
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: Dermatri® (KCL 740 / Aldrich Z677272, Size M)
Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance
   Form: solid
   Colour: white

b) Odour
   no data available

c) Odour Threshold
   no data available

d) pH
   11.5 at 20 g/l at 20 °C

e) Melting point/freezing point
   Melting point/range: 634 °C - lit.

f) Initial boiling point and boiling range
   1,625 °C

g) Flash point
   no data available

h) Evaporation rate
   no data available

i) Flammability (solid, gas)
   no data available

j) Upper/lower flammability or explosive limits
   no data available

k) Vapour pressure
   no data available

l) Vapour density
   no data available

m) Relative density
   1.520 g/cm³

n) Water solubility
   400 g/l at 20 °C - soluble

o) Partition coefficient: n-octanol/water
   log Pow: 0.44

p) Auto-ignition temperature
   no data available

q) Decomposition temperature
   no data available

r) Viscosity
   no data available
s) Explosive properties  no data available

9.2 Other safety information
no data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
Contact with acids liberates very toxic gas.

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
no data available

10.4 Conditions to avoid
Avoid moisture.

10.5 Incompatible materials
Acids, Strong oxidizing agents, Iodine, permanganates, e.g. potassium permanganate, Peroxides, Metallic salts, Chloral hydrate, Alkaloids, Chlorates

10.6 Hazardous decomposition products
Other decomposition products - no data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LDLO Oral - Human - 2.857 mg/kg
LD50 Oral - mouse - 8.5 mg/kg
LD50 Oral - rabbit - 5 mg/kg
LD50 Oral - rat - 6 mg/kg
Inhalation: no data available
Dermal: no data available
LD50 Intraperitoneal - rat - 4 mg/kg
Remarks: Lungs, Thorax, or Respiration: Other changes.
LD50 Subcutaneous - rat - 7.814 mg/kg
LD50 Intravenous - rat - 3.6 mg/kg
LD50 Intraperitoneal - mouse - 5.991 mg/kg
Remarks: Behavioral: Convulsions or effect on seizure threshold. Lungs, Thorax, or Respiration: Respiratory stimulation.
LD50 Subcutaneous - mouse - 6.5 mg/kg
LD50 Intravenous - mouse - 2.6 mg/kg
LD50 Subcutaneous - dog - 6 mg/kg
Remarks: Behavioral: Convulsions or effect on seizure threshold.
LD50 Intravenous - cat - 2.2 mg/kg
LD50 Intraperitoneal - rabbit - 3.972 mg/kg
Remarks: Blood:Other changes.
LD50 Subcutaneous - rabbit - 4 mg/kg
Remarks: Lungs, Thorax, or Respiration:Other changes.
LD50 Intramuscular - rabbit - 3.256 mg/kg
LD50 Ocular - rabbit - 7.87 mg/kg
LD50 Intramuscular - Pigeon - 4 mg/kg

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitisation
no data available

Germ cell mutagenicity
Hamster fibroblast
Result: negative

Carcinogenicity
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity
no data available

Specific target organ toxicity - single exposure
Ingestion - Causes damage to organs. - Heart, Testes

Specific target organ toxicity - repeated exposure
Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard
no data available

Additional Information
Repeated dose toxicity - rat - male - Oral - No observed adverse effect level - 40 mg/kg
RTECS: TS8750000
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Lung irritation, Cyanosis, Central nervous system depression, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated., May cause argyria (a slate-gray or bluish discoloration of the skin and deep tissues due to the deposit of insoluble albuminate of silver)., Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Inhalation may provoke the following symptoms:, spasm, inflammation and edema of the bronchi, Aspiration or inhalation may cause chemical pneumonitis., pulmonary edema, Lungs, CNS depression with hypertension or circulatory failure, and respiratory depression.
Liver - Irregularities - Based on Human Evidence
12. **ECOLOGICAL INFORMATION**

12.1 **Toxicity**

Toxicity to fish
- LC50 - Oncorhynchus mykiss (rainbow trout) - 0.052 mg/l - 96.0 h
- LC50 - Lepomis macrochirus - 0.45 mg/l - 96.0 h

Toxicity to daphnia and other aquatic invertebrates
- EC50 - Daphnia magna (Water flea) - 2 mg/l - 48 h
- EC50 - Daphnia magna (Water flea) - 0.53 mg/l - 24 h
- EC50 - Daphnia magna (Water flea) - 2 mg/l - 48 h
- EC50 - Daphnia magna (Water flea) - 0.53 mg/l - 24 h

Toxicity to algae
- IC50 - Scenedesmus quadricauda (Green algae) - 0.03 mg/l - 192 h

Toxicity to bacteria
- Bacteria - 0.6 - 2.3 mg/l - 0.5 h

12.2 **Persistence and degradability**

Biodegradability
- aerobic - Exposure time 42 d
- Result: 99 % - Readily biodegradable.

Chemical Oxygen Demand (COD)
- < 1 mg/g

12.3 **Bioaccumulative potential**

Bioaccumulation
- Oncorhynchus mykiss (rainbow trout) - 16 Weeks
  - 20.8 µg/l
  - Bioconcentration factor (BCF): 170

12.4 **Mobility in soil**
- no data available

12.5 **Results of PBT and vPvB assessment**
- PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 **Other adverse effects**
- Very toxic to aquatic life with long lasting effects.

13. **DISPOSAL CONSIDERATIONS**

13.1 **Waste treatment methods**

**Product**
Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company.

**Contaminated packaging**
Dispose of as unused product.

14. **TRANSPORT INFORMATION**

14.1 **UN number**

- ADR/RID: 1680
- IMDG: 1680
- IATA-DGR: 1680

14.2 **UN proper shipping name**

- ADR/RID: POTASSIUM CYANIDE, SOLID
- IMDG: POTASSIUM CYANIDE, SOLID
- IATA-DGR: Potassium cyanide, solid

14.3 **Transport hazard class(es)**

- ADR/RID: 6.1
- IMDG: 6.1
- IATA-DGR: 6.1
14.4 Packaging group
ADR/RID: I  IMDG: I  IATA-DGR: I

14.5 Environmental hazards
ADR/RID: yes  IMDG Marine pollutant: yes  IATA-DGR: no

14.6 Special precautions for user
no data available

15. REGULATORY INFORMATION

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

Standard for the Uniform Scheduling of Medicines and Poisons
Schedule 7 (All States)

Carcinogen classification under WHS Regulation 2011, Schedule 10
Not listed

Notification status
AICS: On the inventory, or in compliance with the inventory
DSL: All components of this product are on the Canadian DSL.
ENCS: On the inventory, or in compliance with the inventory
IECSC: On the inventory, or in compliance with the inventory
ISHL: Not in compliance with the inventory - Potassium cyanide
KECI: On the inventory, or in compliance with the inventory
NZIoC: On the inventory, or in compliance with the inventory
PICCS: On the inventory, or in compliance with the inventory

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.  Acute toxicity
Aquatic Acute  Acute aquatic toxicity
H290  May be corrosive to metals.
H300  Fatal if swallowed.
H310  Fatal in contact with skin.
H330  Fatal if inhaled.
H370  Causes damage to organs.
H372  Causes damage to organs through prolonged or repeated exposure.
H400  Very toxic to aquatic life.
STOT RE  Specific target organ toxicity - repeated exposure
STOT SE  Specific target organ toxicity - single exposure

Further information
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