SAFETY DATA SHEET

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

1.1 *Product identifiers*

Product name: **COBALT (II) NITRATE HEXAHYDRATE**

CAS-No.: **10026-22-9**

Product Number: **A67106**

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

Identified uses: Laboratory chemicals, Manufacture of substances

1.3 *Details of the supplier of the safety data sheet*

Company : Philip Harris Ltd., 2 Gregory Street, Hyde, Cheshire, SK14 4HR, UNITED KINGDOM

Telephone: +44 (0)845 1200 506 Fax: +44 (0)161 367 2140

Email: enquiries@philipharris.co.uk

1.4 *Emergency telephone number*

Emergency Phone #: **+44 (0)845 1200 506**

2. HAZARDS IDENTIFICATION

2.1 *Classification of the substance or mixture*

According to Regulation (EC) No1272/2008: Oxidizing solids (Category 2); Acute toxicity, Oral (Category 4); Skin sensitization (Category 1); Carcinogenicity (Category 2); Acute aquatic toxicity (Category 1)

According to European Directive 67/548/EEC as amended: Contact with combustible material may cause fire. Harmful if swallowed. Limited evidence of a carcinogenic effect. May cause sensitization by skin contact. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

2.2 *Label elements*

Pictogram 

Signal word Danger

Hazard statement(s): H272 May intensify fire; oxidiser.; H302 Harmful if swallowed.;H317 May cause an allergic skin reaction.; H351 Suspected of causing cancer.; H400 Very toxic to aquatic life.

Precautionary statement(s): P220 Keep/Store away from clothing/ combustible materials; P273 Avoid release to the environment; P280 Wear protective gloves.

Hazard symbol(s): O Oxidising; Xn Harmful; N Dangerous for the environment

R-phrase(s): R8 Contact with combustible material may cause fire; R22 Harmful if swallowed; R40 Limited evidence of a carcinogenic effect; R43 May cause sensitization by skin contact; R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-phrase(s): S17 Keep away from combustible material; S36/37 Wear suitable protective clothing and gloves; S60 This material and its container must be disposed of as hazardous waste; S61 Avoid release to the environment. Refer to special instructions/ Safety data sheets.

2.3 *Other hazards* – no data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 *Substances*

Cobaltous nitrate, hexahydrate (Synonyms : Cobaltous nitratehexahydrate**)**

Formula:	$Co(NO_3)_2 \cdot 6H_2O$
Molecular Weight:	**291.03g/mol**
CAS-No.:	**10026-22-9**

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.

In case of skin contact: Wash off with soap and plenty of water.

In case of eye contact: Rinse thoroughly with plenty of water for at least 15 minutes.

If swallowed: Never give anything by mouth to an unconscious person. Rinse mouth with water.

4.2 *Most important symptoms and effects, both acute and delayed:* no data available

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

5. FIRE-FIGHTING MEASURES

5.1 *Extinguishing media:* Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 *Special hazards arising from the substance or mixture:* no data available

5.3 *Precautions for fire-fighters:* Wear self contained breathing apparatus for fire fighting if necessary.

5.4 *Further information:* Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 *Personal precautions, protective equipment and emergency procedures:* Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation. Evacuate personnel to safe areas.

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. 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 formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition. Keep away from combustible material.

7.2 ***Conditions for safe storage, including any incompatibilities:*** Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

7.3 ***Specific end uses:*** no data available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 ***Control parameters***

Components with workplace control parameters

Component	CAS No.	Value	Control Parameters	Update
Cobaltous nitrate, hexahydrate	10026-22-9	TWA	0.1mg/m^3	2007-08-01

UK. EH40 Occupational Exposure Limits.

Remarks:

Substances that can cause occupational asthma (also known as asthmagens and respiratory sensitisers) can induce a state of specific airway hyper-responsiveness via an immunological, irritant or other mechanisms. Once the airways have become hyperresponsive, further exposure to the substance, sometimes even to tiny quantities, may cause respiratory symptoms. These symptoms can range in severity from a runny nose to asthma. Not all workers who are exposed to a sensitiser will become hyper-responsive and it is impossible to identify in advance those who are likely to become hyperresponsive. Substances that can cause occupational asthma are classified under the "Chemicals (Hazard information and Packaging for supply) Regulations (CHIP)" and assigned the risk phrase 'R42 May cause sensitisation by inhalation' or 'R42/43 May cause sensitisation by inhalation and skin contact' in the "Approved supply list".

Wherever it is reasonably practicable, exposure to substances that can cause occupational; asthma should be prevented. Where this is not possible, the primary aim is to apply adequate standards of control to prevent workers from becoming hyperresponsive.

For substances that can cause occupational asthma, COSHH requires that exposure be reduced to as low as is reasonably practicable. Activities giving rise to short-term peak concentrations should receive particular attention when risk management is being considered. Health surveillance is appropriate for all employee's exposed or liable to be exposed to a substance which may cause occupational asthma and there should be appropriate consultation with an occupational health professional over the degree of risk and level of surveillance.

Capable of causing occupational asthma. The identified substances are those which: - are assigned the risk phrase 'R42: May cause sensitisation by inhalation'; or 'R42/43: May cause sensitisation by inhalation and skin contact' or - are listed in section C of HSE publication 'Asthmagen? Critical assessments of the evidence for agents implicated in occupational asthma' as updated from time to time, or any other substance which the risk assessment has shown to be a potential cause of occupational asthma.

Capable of causing cancer and/or heritable genetic damage. The identified substances include those which: - are assigned the risk phrases 'R45: May cause cancer'; 'R46: may cause heritable genetic damage'; 'R49: May cause cancer by inhalation' or – a substance or process listed in Schedule 1 of COSHH.

Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used. Carcinogenic applies for cobalt dichloride and sulphate. The 'Sen' notation in the list of WELs has been assigned only to those substances which may cause occupational asthma in the listed categories.

8.2 *Exposure controls*

Appropriate engineering controls: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection: Face shield and safety glasses

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

Body Protection: Choose body protection according to the amount and concentration of the dangerous substance at the work place.

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**: Crystals with lumps **Colour**: Red

b) Odour: no data available

c) Odour Threshold: no data available

d) pH: 4.0 at 100 g/L at 20 °C

e) Melting/freezing point: 55 °C Melting point/range: no data available

f) Initial boiling point and boiling range: no data available

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: 1.88 g/cm^3

n) Water solubility: soluble

o) Partition coefficient: n-octanol/water: no data available

p) Autoignition temperature: no data available

q) Decomposition temperature: no data available

r) Viscosity: no data available

s) Explosive properties: no data available

t) Oxidizing properties: no data available

9.2 ***Other safety information:*** no data available

10. STABILITY AND REACTIVITY

10.1 ***Reactivity:*** no data available

10.2 ***Chemical stability:*** Stable under recommended storage conditions.

10.3 ***Possibility of hazardous reactions:*** no data available

10.4 ***Conditions to avoid:*** Heat. Exposure to moisture.

10.5 ***Incompatible materials:*** Organic materials, Reducing agents

10.6 ***Hazardous decomposition products:*** Hazardous decomposition products formed under fire conditions. - nitrogen oxides (NOx)

11. TOXICOLOGICAL INFORMATION

11.1 ***Information on toxicological effects***

Acute toxicity: LD50 Oral - rat - 691 mg/kg; LD50 Oral - rat - 434 mg/kg; Remarks: anhydrous

Skin corrosion/irritation: no data available

Serious eye damage/eye irritation: no data available

Respiratory or skin sensitization: May cause allergic skin reaction.

Germ cell mutagenicity: no data available

Carcinogenicity: Carcinogenicity – rabbit Tumourigenic: Tumours at site or application.

Limited evidence of carcinogenicity in animal studies.

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Cobaltous nitrate, hexahydrate)

Reproductive toxicity: no data available.

Specific target organ toxicity - single exposure: no data available

Specific target organ toxicity - repeated exposure: no data available

Aspiration hazard: no data available

Potential health effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion	Harmful if swallowed.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.

Signs and Symptoms of Exposure: no data available

Additional Information: RTECS: QU7355500

12. ECOLOGICAL INFORMATION

12.1 ***Toxicity:*** no data available

12.2 ***Persistence and degradability:*** no data available

12.3 ***Bioaccumulative potential:*** no data available

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

12.5 ***Results of PBT and vPvB assessment:*** no data available

12.6 ***Other adverse effects:*** Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATIONS

13.1 ***Waste treatment methods***

Product: Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging: Dispose of as unused product.

14. TRANSPORT INFORMATION

14.1 *UN-Number*

ADR/RID:	1477	IMDG:	1477	IATA:	1477

14.2 *UN proper shipping name*

ADR/RID: NITRATES, INORGANIC, N.O.S. (Cobaltous nitrate, hexahydrate)

IMDG: NITRATES, INORGANIC, N.O.S. (Cobaltous nitrate, hexahydrate)

IATA: NITRATES, INORGANIC, N.O.S. (Cobaltous nitrate, hexahydrate)

14.3 *Transport hazard class(es)*

ADR/RID:	5.1	IMDG:	5.1	IATA:	5.1

14.4 *Packaging group*

ADR/RID:	II	IMDG:	II	IATA:	II

14.5 *Environmental hazards*

ADR/RID: no IMDG Marine pollutant: no IATA: no

14.6 *Special precautions for users:* EMS-No: F-A, S-Q

15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

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

no data available

15.2 *Chemical Safety Assessment*

no data available

16. OTHER INFORMATION: Acute Tox. Acute toxicity; Aquatic Acute Acute aquatic toxicity; Carc. Carcinogenicity; H272 May intensify fire; oxidiser.; H302 Harmful if swallowed.; H317 May cause an allergic skin reaction.; H351 Suspected of causing cancer.; H400 Very toxic to aquatic life.; Ox. Sol. Oxidizing solids; Skin Sens. Skin sensitization; N Dangerous for the environment; O Oxidising

Xn Harmful; R 8 Contact with combustible material may cause fire.; R22 Harmful if swallowed.; R40 Limited evidence of a carcinogenic effect.; R43 May cause sensitization by skin contact.; R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.