

## 1. PRODUCT AND COMPANY IDENTIFICATION

### 1.1 Product identifiers

Product name : Cobalt Sulphate 31.8%  
 Other names : Cobalt sulphate monohydrate, Cobaltous sulfate  
 Formula :  $\text{CoSO}_4 \cdot \text{H}_2\text{O}$   
 CAS-No. : 60459-08-7

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

Identified uses : For use as an animal feed nutrient, fertilizer nutrient, or other specialty functions.  
 Uses not recommended : Not for human consumption.

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

Company : Pestell Minerals & Ingredients  
 141 Hamilton Rd  
 New Hamburg, ON  
 CANADA N3A 2H1  
 Telephone : +1 519 662-2877

### 1.4 Emergency telephone number

Emergency Phone # : +1-703-527-3887 (CHEMTREC)  
 +1-613-996-6666 (CANUTEC)

## 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

#### GHS Classification in accordance with Hazardous Products Regulations (HPR) (SOR/2015-17)

Acute toxicity – Oral – Category 4  
 Serious eye damage/eye irritation – Category 2A  
 Skin sensitisation – Category 1  
 Respiratory sensitisation – Category 1  
 Carcinogenicity – Category 1B  
 Reproductive toxicity – Category 2  
 Specific target organ toxicity – single exposure – Category 3  
 Specific target organ toxicity – repeated exposure – Category 2  
 Hazardous to the aquatic environment – Acute – Category 1  
 Hazardous to the aquatic environment – Chronic – Category 1

### 2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H302 Harmful if swallowed.  
 H317 May cause an allergic skin reaction.  
 H319 Causes serious eye irritation.  
 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
 H335 May cause respiratory irritation.

H350i May cause cancer by inhalation.

H361 Suspected of damaging fertility or the unborn child.

H373 May cause damage to lungs, heart, thyroid and bone marrow through prolonged or repeated exposure.

H410 Very toxic to aquatic life with long lasting effects.

**Precaution Statement Prevention:**

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P260 Do not breathe dust.

P264 Wash hands thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area.

P272 Contaminated work clothing should not be allowed out of the workplace.

P273 Avoid release to the environment.

P280 Wear protective gloves, protective clothing, eye protection, face protection.

P281 Use personal protective equipment as required.

P285 In case of inadequate ventilation wear respiratory protection.

**Precaution Statement Response:**

P301 + P312 IF SWALLOWED: Call a POISON CENTRE or doctor if you feel unwell.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P304 + P341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

P308 + P313 IF exposed or concerned: Get medical advice/attention.

P312 Call a POISON CENTRE or doctor if you feel unwell.

P314 Get medical advice/attention if you feel unwell.

P321 Specific treatment (see on label).

P330 Rinse mouth.

P333 + P313 If skin irritation or rash occurs: Get medical attention.

P337 + P313 If eye irritation persists: Get medical attention.

P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER or a doctor.

**2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none**

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**3.1 Substances**

Synonyms : Cobaltous sulfate

Formula :  $\text{CoO}_4\text{S} \cdot \text{H}_2\text{O}$

Molecular weight : 281.10 g/mol

**Hazardous components**

Component	CAS-No.	EC-No.	Concentration*
<b>Cobalt(II) sulfate monohydrate</b>	10124-43-3	233-334-2	<= 100 %

\* Weight percent

For the full text of the H-Statements mentioned in this Section, see Section 16.

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**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. Move out of dangerous area.

**If inhaled**

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

**In case of skin contact**

Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact**

Flush eyes with water as a precaution.

**If swallowed**

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**

Harmful if swallowed. causes eye irritation with tearing and redness. May cause allergic dermatitis and pruritis. Inhalation can cause respiratory irritation with coughing and sneezing. Repeated exposure causes damage to heart, lungs, thyroid and bone marrow.

**4.3 Indication of any immediate medical attention and special treatment needed**

No data available

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**5. FIREFIGHTING 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**

May form toxic and irritating gases such as sulphur, cobalt oxides, carbon monoxide and carbon dioxide.

**5.3 Advice for firefighters**

Wear self-contained breathing apparatus for firefighting if necessary.

**5.4 Further information**

No data available

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**6. ACCIDENTAL RELEASE MEASURES****6.1 Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment. 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. Keep in suitable, closed containers for disposal.

**6.4 Reference to other sections**

For disposal see section 13.

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**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**

Keep container tightly closed in a dry and well-ventilated place.

Storage class (TRGS 510): 6.1D: Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

**7.3 Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

#### Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis
Cobalt(II) sulfate monohydrate	10124-43-3	TWA	0.02 mg/m <sup>3</sup>	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
Remarks				
		TWAEV	0.02 mg/m <sup>3</sup>	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
	Sensitizer Carcinogenic effect detected in animals. Results of studies relating to the carcinogenicity of these substances in animals are not necessarily applicable to humans.			
		TWA	0.02 mg/m <sup>3</sup>	Canada. British Columbia OEL
	IARC '2B' applies to substances deemed possibly carcinogenic to humans.			
		TWA	0.02 mg/m <sup>3</sup>	USA. ACGIH Threshold Limit Values (TLV)

### 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 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.

##### 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).

### Control of environmental exposure

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

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

a) Appearance	Form: crystalline Colour: red/pink
b) Odour	No data available
c) Odour Threshold	No data available
d) pH	4 at 100 g/l at 20 °C (68 °F)
e) Melting point/freezing point	Melting point/range: 98 °C (208 °F)
f) Initial boiling point and boiling range	735 °C (735 °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	2.03 g/cm <sup>3</sup> at 25 °C (77 °F)
n) Water solubility	No data available
o) Partition coefficient: n-octanol/water	No data available
p) Auto-ignition temperature	No data available
q) Decomposition temperature	> 735 °C (>1355 °F)
r) Viscosity	No data available
s) Explosive properties	No data available
t) Oxidizing properties	No data available

### 9.2 Other safety information

Bulk density	No data available
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## 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

May catalyze organic reactions.

### 10.4 Conditions to avoid

High temperatures, contact with incompatible materials.

### 10.5 Incompatible materials

Strong oxidizing agents and tert-butyl hydroperoxide.

## 10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Sulphur oxides, Cobalt metal.  
Other decomposition products - No data available

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## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - 424 mg/kg

Remarks: Behavioral:Somnolence (general depressed activity). Behavioral:Ataxia. Diarrhoea

Inhalation: No data available

Dermal: No data available

Eye: No data available

#### Skin corrosion/irritation

No data available

#### Serious eye damage/eye irritation

No data available

#### Respiratory or skin sensitisation

#### Germ cell mutagenicity

Not expected

#### Carcinogenicity

This is or contains a component that has been reported to be carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification.

Possible human carcinogen

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Cobalt(II) sulfate monohydrate)

2B - Group 2B: Possibly carcinogenic to humans (Cobalt(II) sulfate monohydrate)

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Cobalt(II) sulfate monohydrate)

2B - Group 2B: Possibly carcinogenic to humans (Cobalt(II) sulfate monohydrate)

#### Reproductive toxicity

Presumed human reproductive toxicant

No data available

#### Specific target organ toxicity - single exposure

May cause respiratory irritation with coughing and sneezing.

#### Specific target organ toxicity - repeated exposure

May cause damage to lungs by repeated or prolonged exposure with apathy, anorexia, hypothermia and dyspnea. It can cause damage to the hearth, thyroid and bone marrow by repeated or prolonged exposure with cardiomyopathy, goiter and polycythemia.

#### Aspiration hazard

No data available

#### Additional Information

RTECS: Not available

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## 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

Toxicity: Very toxic to aquatic life with long lasting effects.  
EC50 (Selenastrum capricornutum, 72h) = 0.04 – 0.72 mg/L

### 12.2 Persistence and degradability

Biodegradability

### 12.3 Bioaccumulative potential

No data available

### 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

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.  
Very toxic to aquatic life with long lasting effects.

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## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

#### Product

Offer surplus and non-recyclable solutions to a licensed disposal company. 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.

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## 14. TRANSPORT INFORMATION

### TDG (Canada)

UN number: 3077      Class: 9      Packing group: III  
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Cobalt(II) sulfate)  
Marine pollutant:yes

### DOT (US)

UN number: 3077      Class: 9      Packing group: III  
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Cobalt(II) sulfate)  
Not regulated if shipped within US in non-bulk packaging.

### IMDG

UN number: 3077      Class: 9      Packing group: III      EMS-No: F-A, S-F  
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Cobalt(II) sulfate)  
Marine pollutant:yes

### IATA

UN number: 3077      Class: 9      Packing group: III  
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Cobalt(II) sulfate)

### Further information

EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

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## 15. REGULATORY INFORMATION

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

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## 16. OTHER INFORMATION

Acute toxicity – Oral – Category 4  
Serious eye damage/eye irritation – Category 2A  
Skin sensitisation – Category 1  
Respiratory sensitisation – Category 1  
Carcinogenicity – Category 1B  
Reproductive toxicity – Category 2  
Specific target organ toxicity – single exposure – Category 3  
Specific target organ toxicity – repeated exposure – Category 2  
Hazardous to the aquatic environment – Acute – Category 1  
Hazardous to the aquatic environment – Chronic – Category 1

### Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Pestell Minerals & Ingredients and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product.

Version 2.0

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