

SAFETY DATA SHEET

1. Identification

Product identifier: COBALT SULFATE

Other means of identification

Synonyms: Cobaltous Sulfate Heptahydrate

Product No.: 1696

Recommended use and restriction on use

Recommended use: Not available.

Restrictions on use: Not known.

Details of the supplier of the safety data sheet

Manufacturer

Company Name: Avantor Performance Materials, Inc.
Address: 3477 Corporate Parkway, Suite 200
Center Valley, PA 18034

Telephone: Customer Service: 855-282-6867

Fax: 610-573-2610
Contact Person: Environmental Health & Safety
E-mail: info@avantormaterials.com

Emergency telephone number:

24 Hour Emergency: 908-859-2151
Chemtrec: 800-424-9300

2. Hazard(s) identification

Hazard Classification

Health Hazards

Acute toxicity (Oral)	Category 4
Respiratory sensitizer	Category 1
Skin sensitizer	Category 1
Germ Cell Mutagenicity	Category 2
Carcinogenicity	Category 1B
Toxic to reproduction	Category 1B

Environmental Hazards

Acute hazards to the aquatic environment	Category 1
Chronic hazards to the aquatic environment	Category 1

Label Elements

Hazard Symbol:



Signal Word: Danger

Hazard Statement: Harmful if swallowed.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
Suspected of causing genetic defects.
May cause cancer.
May damage fertility or the unborn child.
Very toxic to aquatic life with long lasting effects.

Precautionary Statement

Prevention: Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid breathing dust. Wear respiratory protection. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid release to the environment.

Response: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth. IF INHALED: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician. IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. IF exposed or concerned: Get medical advice/ attention. Collect spillage.

Storage: Store locked up.

Disposal: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in GHS classification: None.

3. Composition/information on ingredients

Substances

Chemical Identity	Common name and synonyms	CAS number	Content in percent (%)*
COBALT SULFATE HEPTAHYDRATE		10026-24-1	90 - 100%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

General information: Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.

Ingestion:	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Inhalation:	Move to fresh air. Call a physician or poison control center immediately. If breathing stops, provide artificial respiration.
Skin Contact:	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician or poison control center immediately. Wash contaminated clothing before reuse.
Eye contact:	Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention immediately.

Most important symptoms/effects, acute and delayed

Symptoms: Irritating to eyes, respiratory system and skin.

Indication of immediate medical attention and special treatment needed

Treatment: Treat symptomatically. Symptoms may be delayed.

5. Fire-fighting measures

General Fire Hazards: In case of fire and/or explosion do not breathe fumes.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media: None known.

Specific hazards arising from the chemical: Contact with strong oxidizers may cause fire. Fire may produce irritating, corrosive and/or toxic gases.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out.

Special protective equipment for fire-fighters: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Keep unauthorized personnel away. Use personal protective equipment. See Section 8 of the SDS for Personal Protective Equipment. Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Methods and material for containment and cleaning up: Sweep up and place in a clearly labeled container for chemical waste. Clean surface thoroughly to remove residual contamination. Dike far ahead of larger spill for later recovery and disposal.

Notification Procedures:	Dike for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Stop the flow of material, if this is without risk. Inform authorities if large amounts are involved.
Environmental Precautions:	Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling:	Use personal protective equipment as required. Do not breathe mist or vapor. Do not taste or swallow. Do not eat, drink or smoke when using the product. Use only with adequate ventilation. Wash hands thoroughly after handling. See Section 8 of the SDS for Personal Protective Equipment. Avoid contact with eyes. Avoid contact with skin.
Conditions for safe storage, including any incompatibilities:	Keep in a cool, well-ventilated place. Store in a dry place. Keep container tightly closed. Store away from incompatible materials.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Chemical Identity	type	Exposure Limit Values	Source
COBALT SULFATE HEPTAHYDRATE - as Co	TWA	0.02 mg/m ³	US. ACGIH Threshold Limit Values (2011)

Biological Limit Values

Chemical Identity	Exposure Limit Values	Source
COBALT SULFATE HEPTAHYDRATE (Cobalt: Sampling time: End of shift at end of work week.)	1 µg/l (Blood)	ACGIH BEL (03 2014)
	15 µg/l (Urine)	ACGIH BEL (03 2014)

Appropriate Engineering Controls	No data available.
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Individual protection measures, such as personal protective equipment

General information:	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area.
Eye/face protection:	Wear safety glasses with side shields (or goggles) and a face shield.
Skin Protection	
Hand Protection:	Chemical resistant gloves
Other:	Wear suitable protective clothing.
Respiratory Protection:	In case of inadequate ventilation use suitable respirator.

Hygiene measures:

Provide eyewash station and safety shower. Observe good industrial hygiene practices. Wash hands before breaks and immediately after handling the product. Do not eat, drink or smoke when using the product. Wash contaminated clothing before reuse.

9. Physical and chemical properties
Appearance
Physical state:

solid

Form:

Powder

Color:

Pink

Odor:

Odorless

Odor threshold:

No data available.

pH:

3.0 - 7.0 (25 °C) 5% solution

Melting point/freezing point:

96.8 °C

Initial boiling point and boiling range:

735 °C

Flash Point:

not applicable

Evaporation rate:

No data available.

Flammability (solid, gas):

No data available.

Upper/lower limit on flammability or explosive limits
Flammability limit - upper (%):

No data available.

Flammability limit - lower (%):

No data available.

Explosive limit - upper (%):

No data available.

Explosive limit - lower (%):

No data available.

Vapor pressure:

No data available.

Vapor density:

No data available.

Relative density:

1.95 (20 °C)

Solubility(ies)
Solubility in water:

604 g/l (3 °C)
670 g/l (70 °C)

Solubility (other):

methanol: 545 g/l (18 °C)

Partition coefficient (n-octanol/water):

No data available.

Auto-ignition temperature:

No data available.

Decomposition temperature:

No data available.

Viscosity:

No data available.

Other information
Molecular weight:

281.10 g/mol (Co.H₂O₄S.7H₂O)

10. Stability and reactivity
Reactivity:

No dangerous reaction known under conditions of normal use.

Chemical Stability:

Material is stable under normal conditions.

Possibility of Hazardous Reactions:

Hazardous polymerization does not occur.

Conditions to Avoid:

Excessive heat. Contact with incompatible materials.

Incompatible Materials:

Strong oxidizing agents. Peroxides.

Hazardous Decomposition Products:

Oxides of sulfur.

11. Toxicological information

Information on likely routes of exposure

Ingestion:	Harmful if swallowed.
Inhalation:	May be harmful if inhaled.
Skin Contact:	May cause irritation.
Eye contact:	May irritate eyes.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral	
Product:	LD 50 (Rat): calculated 769 mg/kg
Dermal	
Product:	LD 50 (Rabbit): > 2,000 mg/kg

Inhalation	
Product:	No data available.

Repeated dose toxicity	
Product:	No data available.

Skin Corrosion/Irritation	
Product:	May cause skin irritation.

Serious Eye Damage/Eye Irritation	
Product:	May irritate eyes.

Respiratory or Skin Sensitization	
Product:	May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Carcinogenicity	
Product:	May cause cancer.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

COBALT SULFATE Overall evaluation: 2B. Possibly carcinogenic to humans.
HEPTAHYDRATE

US. National Toxicology Program (NTP) Report on Carcinogens:

COBALT SULFATE Reasonably Anticipated to be a Human Carcinogen.
HEPTAHYDRATE

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

Germ Cell Mutagenicity

In vitro	
Product:	Suspected of causing genetic defects.

In vivo	
Product:	Suspected of causing genetic defects.

Reproductive toxicity

Product: May damage fertility or the unborn child.

Specific Target Organ Toxicity - Single Exposure

Product: None known.

Specific Target Organ Toxicity - Repeated Exposure

Product: None known.

Aspiration Hazard

Product: Not classified

Other effects: None known.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: No data available.

Specified substance(s):

COBALT SULFATE LC 50 (Fathead Minnow, 96 h): 3.61 mg/l
HEPTAHYDRATE

Aquatic Invertebrates

Product: No data available.

Specified substance(s):

COBALT SULFATE LC 50 (Water Flea, 48 h): 5.99 mg/l
HEPTAHYDRATE LC 50 (Water Flea, 96 h): 1.86 mg/l
LC 50 (Ceriodaphnia, 48 h): 0.605 mg/l

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Specified substance(s):

COBALT SULFATE NOEC (Fathead Minnow, 28 d): 0.81 mg/l
HEPTAHYDRATE

Aquatic Invertebrates

Product: No data available.

Toxicity to Aquatic Plants

Product: No data available.

Specified substance(s):

COBALT SULFATE LC 50 (Green algae (Selenastrum capricornutum), 72 h): estimated 0.4 mg/l
HEPTAHYDRATE

Persistence and Degradability

Biodegradation

Product: There are no data on the degradability of this product.

BOD/COD Ratio

Product: No data available.

Bioaccumulative Potential

Bioconcentration Factor (BCF)

Product: No data available on bioaccumulation.

Partition Coefficient n-octanol / water (log Kow)

Product: No data available.

Mobility in Soil: The product is water soluble and may spread in water systems.

Other Adverse Effects: Very toxic to aquatic life with long lasting effects.

13. Disposal considerations

Disposal instructions: Discharge, treatment, or disposal may be subject to national, state, or local laws. Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Contaminated Packaging: Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN Number: UN 3077
UN Proper Shipping Name: Environmentally hazardous substance, solid, n.o.s.(COBALT SULFATE)
Transport Hazard Class(es)
Class(es): 9
Label(s): 9
Packing Group: III
Marine Pollutant: Yes
Special precautions for user: –

IMDG

UN Number: UN 3077
UN Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.(COBALT SULFATE)
Transport Hazard Class(es)
Class(es): 9
Label(s): 9
EmS No.: F-A, S-F
Packing Group: III
Marine Pollutant: Yes
Special precautions for user: –

IATA

UN Number: UN 3077
Proper Shipping Name: Environmentally hazardous substance, solid, n.o.s.(COBALT SULFATE)
Transport Hazard Class(es)
Class(es): 9
Label(s): 9
Marine Pollutant: Yes
Packing Group: III
Special precautions for user: –

15. Regulatory information

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):
None present or none present in regulated quantities.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Acute (Immediate)
Chronic (Delayed)

SARA 302 Extremely Hazardous Substance
None present or none present in regulated quantities.

SARA 304 Emergency Release Notification
None present or none present in regulated quantities.

SARA 311/312 Hazardous Chemical

<u>Chemical Identity</u>	<u>Threshold Planning Quantity</u>
COBALT SULFATE	10000 lbs
HEPTAHYDRATE	

SARA 313 (TRI Reporting)

<u>Chemical Identity</u>	<u>Reporting threshold for other users</u>	<u>Reporting threshold for manufacturing and processing</u>
COBALT SULFATE	10000 lbs10000	25000 lbs. 25000 lbs. 25000
HEPTAHYDRATE	lbs10000 lbs	lbs.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)
None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):
None present or none present in regulated quantities.

US State Regulations

US. California Proposition 65

COBALT SULFATE Carcinogenic.
HEPTAHYDRATE

US. New Jersey Worker and Community Right-to-Know Act

Chemical Identity
COBALT SULFATE HEPTAHYDRATE

US. Massachusetts RTK - Substance List

No ingredient regulated by MA Right-to-Know Law present.

US. Pennsylvania RTK - Hazardous Substances

No ingredient regulated by PA Right-to-Know Law present.

US. Rhode Island RTK

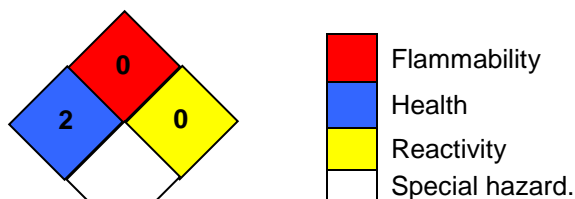
Chemical Identity
COBALT SULFATE HEPTAHYDRATE

Inventory Status:

Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
EINECS, ELINCS or NLP:	On or in compliance with the inventory
Japan (ENCS) List:	On or in compliance with the inventory
China Inv. Existing Chemical Substances:	On or in compliance with the inventory
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Canada NDSL Inventory:	Not in compliance with the inventory.
Philippines PICCS:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	Not in compliance with the inventory.
Japan ISHL Listing:	Not in compliance with the inventory.
Japan Pharmacopoeia Listing:	Not in compliance with the inventory.

16. Other information, including date of preparation or last revision

NFPA Hazard ID



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible

Issue Date:	04-22-2015
Revision Date:	No data available.
Version #:	1.0
Further Information:	No data available.

Disclaimer:

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