

SAFETY DATA SHEET

Preparation Date: 7/31/15

Revision Date: 5/16/2018

Revision Number: G2

1. IDENTIFICATION

Product identifier

Product code: C3070
Product Name: COBALT SULFATE, CRYSTAL, REAGENT

Other means of identification

Synonyms: Cobalt monosulfate heptahydrate
Cobalt(II) sulphate heptahydrate
Cobaltous sulfate heptahydrate
Sulfuric acid, cobalt(2+) salt (1:1), heptahydrate (8Cl,9Cl)
CAS #: 10026-24-1
RTECS # GG3200000
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: In cobalt-electroplating baths. In storage batteries. As a drier for lithographic inks, paints, varnishes. In ceramics, pigments, glazes, enamels to prevent discoloration.
Uses advised against No information available

Supplier: Lab Alley LLC
22111 Highway 71 West, Suite 601
Spicewood, Texas 78669
Tel.: 512-668-9918

Order Online At: <https://www.laballey.com>

Emergency telephone number InfoTrac: 800-535-5053

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous according to the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Acute toxicity - Oral	Category 4
Serious eye damage/eye irritation	Category 2B
Respiratory sensitization	Category 1
Skin sensitization	Category 1

Label elements

Danger

Hazard statements
Harmful if swallowed

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Causes eye irritation
May cause allergy or asthma symptoms or breathing difficulties if inhaled
May cause an allergic skin reaction



Hazards not otherwise classified (HNOC)

Not Applicable

Other hazards

Not available

Precautionary Statements - Prevention

Do not eat, drink or smoke when using this product
Wear respiratory protection
Wear protective gloves
Wear eye/face protection
Avoid breathing dust/fume/gas/mist/vapors/spray
Wash face, hands and any exposed skin thoroughly after handling
Contaminated work clothing must not be allowed out of the workplace

Precautionary Statements - Response

Specific treatment (see .? on this label)

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

IF ON SKIN: Wash with plenty of water

If skin irritation or rash occurs: Get medical advice/attention

Wash contaminated clothing before reuse

IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

Rinse mouth

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %
Cobalt Sulfate heptahydrate	10026-24-1	100

4. FIRST AID MEASURES

First aid measures

General Advice:

National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call 1-800-222-1222.

Skin Contact:

Wash off immediately with soap and plenty of water removing all contaminated clothing and shoes. Get medical attention if irritation develops.

Eye Contact:

Flush eyes with water for 15 minutes. Get medical attention.

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Obtain medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms Causes eye irritation
Mild eye irritation
May cause an allergic skin reaction
May cause allergy or asthma symptoms or breathing difficulties if inhaled
Abdominal pain
Vomiting
May cause diarrhea
May cause central nervous system effects
It may affect the kidneys

Indication of any immediate medical attention and special treatment needed

Notes to Physician: Treat symptomatically.

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste.

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: The product is not flammable. The product itself does not burn. If it is involved in a fire, extinguish the fire using an agent suitable for the type of surrounding fire.

Unsuitable Extinguishing Media: No information available.

Specific hazards arising from the chemical

Hazardous Combustion Products: No information available.

Specific hazards: This material is an inorganic dust/powder and will not create nor support conditions that would result in a dust explosion or fire.

Special Protective Actions for Firefighters

Specific Methods: No information available.

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions:	Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Use personal protective equipment. Avoid dust formation. Avoid dispersal of dust in the air.
Environmental precautions	Prevent entry into waterways, sewers, basements or confined areas. Prevent product from entering drains. Prevent further leakage or spillage if safe to do so.

Methods and material for containment and cleaning up

Methods for containment	Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading.
Methods for cleaning up	Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:

Provide sufficient air exchange and/or exhaust in work rooms. Avoid dust formation. Keep away from incompatible materials.

Safe Handling Advice

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid dust formation. Do not ingest. Do not breathe vapors/dust. Keep away from heat and sources of ignition. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:

Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store away from incompatible materials.

Incompatible Materials:

Oxidizing agents

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Components	CAS-No.	OSHA	NIOSH	ACGIH	AIHA WEEL
Cobalt Sulfate heptahydrate	10026-24-1	None	None	0.02 mg/m ³ TWA (as Co)	None

Canada

Components	CAS-No.	Canada - Alberta	Canada - British Columbia	Canada - Ontario	Canada - Quebec
Cobalt Sulfate heptahydrate	10026-24-1	0.02 mg/m ³ TWA (as Co)	0.02 mg/m ³ TWA (as Co)	0.02 mg/m ³ TWA (as Co)	0.02 mg/m ³ TWAEV (as Co)

Australia and Mexico

Components	CAS-No.	Australia	Mexico
Cobalt Sulfate heptahydrate	10026-24-1	None	None

Appropriate engineering controls

Engineering measures to reduce exposure:

Ensure adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

Eye protection: Safety glasses with side-shields

Skin and body protection: Long sleeved clothing
Chemical resistant apron
Gloves

Respiratory protection: Wear respirator with dust filter.

Hygiene measures: Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:
Solid

Appearance:
Crystals.

Color:
Red.

Odor:
Odorless.

Taste
No information available.

Formula:
CoSO₄.7H₂O

Molecular/Formula weight:
281.10 g/mole

Flammability:
No information available

Flashpoint (°C/°F):
No information available.

Flash Point Tested according to:
Not applicable

Autoignition Temperature (°C/°F):
No information available

Lower Explosion Limit (%):
No information available

Upper Explosion Limit (%):
No information available

Melting point/range(°C/°F):
96.7-98 °C/206.06-208 °F

Decomposition temperature(°C/°F):
No information available

Boiling point/range(°C/°F):
No information available

Bulk density:
No information available

Density (g/cm³):
No information available

Specific gravity:
1.95

pH:
No information available

Vapor pressure @ 20°C (kPa):
No information available

Evaporation rate:
No information available

Vapor density:
No information available

VOC content (g/L):
No information available

Odor threshold (ppm):
No information available

**Partition coefficient
(n-octanol/water):**
No information available

Viscosity:
No information available

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Miscibility:
No information available

Solubility:
Soluble in Water
Slightly soluble in Methanol
Slightly soluble in Ethanol

10. STABILITY AND REACTIVITY

Reactivity

Reactive with oxidizing agents

Chemical stability

Stability: Stable under recommended storage conditions.

Possibility of Hazardous Reactions: Reacts violently with strong oxidants causing fire and explosion hazard

Conditions to avoid: Heat. Ignition sources. Incompatible materials. Avoid dust formation.

Incompatible Materials: Oxidizing agents

Hazardous decomposition products: Sulfur oxides.

Other Information

Corrosivity: No information available

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:
Ingestion. Inhalation.

Acute Toxicity

Component Information

Cobalt Sulfate heptahydrate	
CAS-No.	10026-24-1

LD50/oral/rat = 582 mg/kg (for cobalt sulfate, heptahydrate) (RTECS)
768 mg/kg (European Commission IUCLID Dataset for cobalt sulfate, anhydrous CAS no 10124-43-3)

LD50/oral/mouse = No information available

LD50/dermal/rabbit = No information available

LD50/dermal/rat = No information available

LC50/inhalation/rat = No information available

LC50/inhalation/mouse = No information available

Other LD50 or LC50 information = No information available

Product Information

LD50/oral/rat =
VALUE- Acute Tox Oral = 582 mg/kg

LD50/oral/mouse =
Value - Acute Tox Oral = No information available

LD50/dermal/rabbit
VALUE-Acute Tox Dermal = No information available

LD50/dermal/rat
VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat
VALUE-Vapor = No information available
VALUE-Gas = No information available
VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse
VALUE-Vapor = No information available
VALUE - Gas = No information available
VALUE - Dust/Mist = No information available

Symptoms

Skin Contact:	Causes skin irritation. May cause allergic skin reaction.
Eye Contact:	Causes eye irritation.
Inhalation	May cause irritation of respiratory tract. Can cause dyspnea (shortness of breath and difficulty breathing).
Ingestion	Harmful if swallowed. May cause abdominal pain. May cause vomiting. May cause hypermotility, diarrhea. May affect behavior/central nervous system (tremor, convulsions). May affect behavior/central nervous system (somnolence, ataxia). May affect urinary system (kidneys). May affect metabolism (weight loss or decreased weight gain).
Aspiration hazard	No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity	Prolonged or repeated ingestion may affect the blood (polycythemia). Prolonged or repeated ingestion may affect the bone marrow. Prolonged or repeated ingestion may affect the heart/cardiovascular system (cardiomyopathy, cardiomegaly, hypotension, low pulse rate, heart failure). Prolonged or repeated ingestion may cause edema of the ankles. Prolonged or repeated ingestion may cause cyanosis. Prolonged or repeated ingestion may affect respiration (dyspnea - shortness of breath and difficulty breathing). Prolonged or repeated ingestion may affect the thyroid (thyroid hypofunction). Prolonged or repeated inhalation may cause asthma-like allergy and asthma attacks with shortness of breath, difficulty breathing, wheezing, coughing, and/or chest tightness. Prolonged or repeated skin contact may cause allergic reaction. Prolonged or repeated inhalation may affect the blood (pigmented or nucleated red blood cells). Prolonged or repeated inhalation may affect the lungs, bronchi, trachea. Prolonged or repeated inhalation may affect the thymus gland.
Sensitization:	May cause sensitization by inhalation and skin contact.
Mutagenic Effects:	May affect genetic material Experiments with bacteria and/or yeast have shown mutagenic effects Animal experiments showed mutagenic effects Mutagenic effects on mammalian germ cells

Carcinogenic effects: Possibly carcinogenic to humans.

Components	CAS-No.	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances
Cobalt Sulfate heptahydrate	10026-24-1	Group 2B - Possibly Carcinogenic to Humans - Monograph 86 [2006] Monograph titled Metallic cobalt particles (with or without tungsten carbide) Cobalt sulfate and other soluble cobalt(II) salts	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans (listed under Cobalt inorganic compounds)	Evidence of Carcinogenicity	Present	Not listed	Not listed

ACGIH (American Conference of Governmental Industrial Hygienists)

IARC (International Agency for Research on Cancer)

NTP (National Toxicology Program)

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

Reproductive toxicity No data is available

Reproductive Effects: No information available

Developmental Effects: No information available

Teratogenic Effects: No information available

Specific Target Organ Toxicity

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Target Organs: Thyroid. Lungs. Bone Marrow. Heart. Blood.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: No data available.

Persistence and degradability: No information available

Bioaccumulative potential: No information available.

Mobility: No information available.

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:

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Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:

Empty containers should be taken for local recycling, recovery or waste disposal

Components	CAS-No.	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Cobalt Sulfate heptahydrate	10026-24-1	None	None	None	None

14. TRANSPORT INFORMATION

DOT

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Class: No information available
Packing group: No information available
Emergency Response Guide Number: No information available
Marine Pollutant: No data available
DOT RQ (lbs): No information available
Special Provisions: No Information available
Symbol(s): No information available
Description: No information available

TDG (Canada)

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available
Marine Pollutant: No Information available
Description: No information available

ADR

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Packing Group: No information available
Subsidiary Risk: No information available

IMO / IMDG

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available
Marine Pollutant: No information available

RID

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available

ICAO

UN-No: Not Regulated

Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available

IATA

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available
ERG Code: No information available
Special Provisions No information available

15. REGULATORY INFORMATION

International Inventories

Components	CAS-No.	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
<i>Cobalt Sulfate heptahydrate</i>	10026-24-1	Not Listed	Not present	Present	Not present	Present	Present	Not present

U.S. Regulations

Cobalt Sulfate heptahydrate

New Jersey RTK Hazardous Substance List: Present (listed under Cobalt compounds)
New Jersey (EHS) List: Present (listed under Cobalt compounds)
New Jersey - Discharge Prevention - List of Hazardous Substances: Present (listed under Cobalt compounds)
Pennsylvania RTK: Present (listed under Cobalt compounds)
Pennsylvania RTK - Environmental Hazard List Present (listed under Cobalt compounds)
Minnesota - Hazardous Substance List: Present (listed under Cobalt inorganic compounds)

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:

WARNING: This product contains a chemical known to the State of California to cause cancer. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	CAS-No.	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Cobalt Sulfate heptahydrate	10026-24-1	carcinogen	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CAS-No.	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting de minimis
<i>Cobalt Sulfate heptahydrate</i>	10026-24-1	None	None	None	N096 (Cobalt compounds)	0.1%

U.S. TSCA

Components	CAS-No.	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
Cobalt Sulfate heptahydrate	10026-24-1	Not Applicable	Not Applicable

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Canada

WHMIS 2015 - GHS Classifications

WHMIS 2015 Hazard Classification Information:

The WHMIS 2015 classification of this product has not been validated or reviewed yet.

Canada Hazardous Products Regulation This product has been classified according to the hazard criteria of the HPR (Hazardous Products Regulation) and the SDS contains all of the information required by the HPR

WHMIS 1988 Hazard Class

D2A Very toxic materials

D2B Toxic materials

Components

Cobalt Sulfate heptahydrate

WHMIS 1988

D2A D2B

Canada Controlled Products Regulation:

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Inventory

Components	CAS-No.	Canada (DSL)	Canada (NDSL)
Cobalt Sulfate heptahydrate	10026-24-1	Not Listed	Not Listed

Components	CAS-No.	CEPA Schedule I - Toxic Substances
Cobalt Sulfate heptahydrate	10026-24-1	Not listed
Components	CAS-No.	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Cobalt Sulfate heptahydrate	10026-24-1	Not listed

EU Classification

EU GHS - SV - CLP 1272/2008

Components	CAS-No.	EU GHS - SV - CLP (1272/2008)
Cobalt Sulfate heptahydrate	10026-24-1	No information for Cobalt sulfate heptahydrate (CAS no. 10026-24-1) Acute toxicity - Oral - Acute Tox. 4: H302 Harmful if swallowed. (Minimum classification); Respiratory sensitizers - Resp. Sens. 1: H334 May cause allergic or asthmatic symptoms or breathing difficulties if inhaled.; Skin sensitizers - Skin Sens. 1: H317 May cause allergic skin reaction.; Germ cell mutagenicity - Muta. 2: H341 Suspected of causing genetic defects.; Carcinogenicity - Inhalation - Carc. 1B: H350 May cause cancer by inhalation. (C >= 0.01 %); Reproductive Toxicity - Repr. 1B: H360F May damage fertility. (Hazard statements H360 and H361 indicate a general concern for effects on both fertility and development: May damage/Suspected of damaging fertility or the unborn child; According to the criteria, the general hazard statement can be replaced by the

		<p>hazard statement indicating the specific effect of concern in accordance with section 1.1.2.1.2; When the other differentiation is not mentioned, this is due to evidence proving no such effect, inconclusive data or no data and the obligations in Article 4(3) shall apply for that differentiation); Hazardous to aquatic environment - acute hazard - Aquatic Acute 1: H400 Very toxic to aquatic life. (M Factor: 10); Hazardous to aquatic environment - chronic hazard - Aquatic Chronic 1: H410 Very toxic to aquatic life with long lasting effects. (M Factor: 10)027-005-00-0</p> <p>Carcinogenicity - Inhalation - Carc. 1B: H350 May cause cancer by inhalation. (C >= 0.01 %)027-005-00-0 (for Cobalt Sulfate, anhydrous (CAS no. 10124-43-3))</p>
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EU - CLP (1272/2008)

R-phrases(s)

R22 - Harmful if swallowed.
R49 - May cause cancer by inhalation.
R60 - May impair fertility.
R68 - Possible risk of irreversible effects.
R50 - Very toxic to aquatic organisms.
R53 - May cause long-term adverse effects in the aquatic environment.
R42/43 - May cause sensitization by inhalation and skin contact.

S -phrase(s)

S53 - Avoid exposure - obtain special instructions before use.
S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
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.

Components	CAS-No.	Classification	Concentration Limits:	Safety Phrases
Cobalt Sulfate heptahydrate	10026-24-1	For Cobalt Sulfate, anhydrous (CAS no. 10124-43-3) R22 R42/43 Carc. Cat. 2; R49 Repro. Cat. 2; R60 Muta. Cat. 3; R68 N; R50-53	No information	For Cobalt Sulfate, anhydrous (CAS no. 10124-43-3) S53 S45 S60 S61

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:

Xn - Harmful.
N - Dangerous for the environment.

Xn**N****16. OTHER INFORMATION**

Preparation Date: 7/31/15
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Disclaimer:

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Lab Alley LLC. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Lab Alley assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet