

Fisher

DATE: 03/14/05 ACCY: 419643001 PAGE: 1
 INDEX: CS0545233 CAT NO: S93179 PO NBR: K-07384C

**** MATERIAL SAFETY DATA SHEET ****

Cobalt(II) Chloride Hexahydrate
 05345

**** SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION ****

MSDS Name: Cobalt(II) Chloride Hexahydrate
 Catalog Numbers: S71930, S72893, S75089, C371-100, C371-500
 Synonyms: Cobaltous chloride hexahydrate; Cobalt muriate hexahydrate.
 Company Identification: Fisher Scientific
 Fairlawn, NJ 07410
 For information, call: 201-796-7100
 Emergency Number: 201-796-7100
 For CHEMTREC assistance, call: 800-424-9300
 For International CHEMTREC assistance, call: 703-527-3887

**** SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS ****

CAS#	Chemical Name	%	BIINECS#
7646-79-9	Cobalt dichloride anhydrous	-	231-589-4
7791-13-1	Cobalt(II) chloride hexahydrate	100	unlisted

Hazard Symbols: T N
 Risk Phrases: 22 42/43 49 50/53

**** SECTION 3 - HAZARDS IDENTIFICATION ****

EMERGENCY OVERVIEW
 Appearance: purple solid.
 Skin: Prolonged and/or repeated contact may cause irritation and/or dermatitis. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material.
 Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May be harmful if swallowed.
 Inhalation: Causes delayed lung injury. Causes respiratory tract irritation. May cause asthmatic attacks due to allergic sensitization of the respiratory tract. May cause asthma and shortness of breath.
 Chronic: Cobalt compounds may cause cancer based upon animal studies.
 **** SECTION 4 - FIRST AID MEASURES ****
 Eyes: Immediately flush eyes with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing occasionally lifting the upper and lower eyelids. Get medical aid.
 Skin: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.
 Ingestion: Do NOT induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid.
 Inhalation: Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Get medical aid. Do NOT use mouth-to-mouth resuscitation.
 Notes: Treat symptomatically and

**** SECTION 5 - FIRE FIGHTING MEASURES ****

General Information:
 As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear during a fire. Irritating and highly toxic gases may be generated by thermal decomposition at or above normal boiling point. Non-combustible, substance itself does not burn but may decompose

DATE: 03/14/05 ACCY: 419643001 PAGE: 2
 INDEX: CS0545233 CAT NO: S93179 PO NBR: K-07384C

upon heating to produce irritating, corrosive and/or toxic fumes. Extinguishing Media: Substances are noncombustible; use agent most appropriate to extinguish surrounding fire. Auto-ignition temperature: Not available. Flash point: Not available. Explosion Limits, lower: Not available. Explosion Limits, upper: Not available. NFPA Rating: (estimated) Health: 2; Flammability: 0; Instability: 0

**** SECTION 6 - ACCIDENTAL RELEASE MEASURES ****

General Information: Use proper personal protective equipment as indicated in section 8.
 Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation.

**** SECTION 7 - HANDLING AND STORAGE ****

Handling: Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with skin and eyes. Keep container tightly closed. Avoid ingestion and inhalation.
 Storage: Store in a cool, dry, well-ventilated area away from incompatible substances.

**** SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION ****

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.
 Exposure Limits
 Chemical Name ACGIH NIOSH OSHA - Final PELs
 Cobalt dichloride anhydrous 0.02 mg/m3 TWA (as Co) (listed under ** no name) none listed none listed
 Cobalt(II) Chloride hexahydrate 0.02 mg/m3 TWA (listed under ** no name) none listed none listed

**** SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ****

Physical State: Solid
 Color: none reported
 Odor: 4.6 g M solution.
 Vapor Pressure: Negligible.
 Vapor Density: Not available.
 Evaporation Rate: Negligible.
 Viscosity: Not available.
 Boiling Point: 1520 deg F
 Freezing/Melting Point: 87 deg C
 Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
 Skin: Wear appropriate gloves to prevent skin exposure.
 Clothing: Wear appropriate protective clothing to prevent skin exposure.
 Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 and the NIOSH or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.
 OSHA Vacated PELs:
 Cobalt dichloride anhydrous: No OSHA vacated PELs are listed for this chemical.
 Cobalt(II) Chloride hexahydrate: No OSHA vacated PELs are listed for this chemical.
 Personal Protective Equipment

DATE: 03/14/05
INDEX: G50545233

ACCT: 419543001
CAT NO: 593179

PAGE: 3

PO NBR: K 07384C

Decomposition Temperature: 230 deg F
Solubility in water: 77 g/100ml (0 C)
Specific Gravity/Density: 1.924
Molecular Formula: C6Cl2.6H2O
Molecular Weight: 237.9196

*** SECTION 10 - STABILITY AND REACTIVITY ***

Chemical Stability:
Stable at room temperature in closed containers under normal storage and handling conditions.
Conditions to Avoid: Moisture, excess heat.
Incompatibilities with Other Materials: Oxidizers, acids, alkalis.
Strong oxidizers and alkali metals. Absorbs NH3 from air.
Hazardous Decomposition Products:
Hydrogen chloride, irritating and toxic fumes and gases, cobalt/cobalt oxides.
Hazardous Polymerization: Has not been reported.

*** SECTION 11 - TOXICOLOGICAL INFORMATION ***

RTCS#:
CAS# 7646-79-9: GF9800000
CAS# 7791-13-1: G60300000
LD50/LC50: 7646-79-9: Oral, mouse: LD50 = 80 mg/kg; Oral, rat: LD50 = 80 mg/kg
7791-13-1: Oral, rat: LD50 = 766 mg/kg; Skin, rat: LD50 = >2 gm/kg
Carcinogenicity:
Cobalt dichloride anhydrous -
ACGR: A3 - Animal Carcinogen (as Co) (listed as ** undefined **)
IARC: Group 2B carcinogen (listed as ** undefined **)
ACGIH: Chloride hexahydrate -
ACGIH: Group 2B carcinogen (listed as ** undefined **)
IARC: Group 2B carcinogen (as Co) (listed as ** undefined **)

Epidemiology:
IARC: Group 2B: Proven animal carcinogenic substance of potential relevance to humans. IARC Group 2B: No data available on human carcinogenicity, however sufficient evidence of carcinogenicity in animals.
Teratogenicity:
No information found.
Reproductive Effects:
No information found.
Neurotoxicity:
No information found.
Mutagenicity:
No information found.
Other Studies:
See actual entry in RTECS for complete information.

*** SECTION 12 - ECOLOGICAL INFORMATION ***

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste.
US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA Series: None listed.
RCRA U-Series: None listed.

*** SECTION 13 - DISPOSAL CONSIDERATIONS ***

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA Series: None listed.
RCRA U-Series: None listed.

*** SECTION 14 - TRANSPORT INFORMATION ***

US DOT
No information available
Canadian TDG
No information available.
US FEDERAL TSCA
CAS# 7646-79-9 is listed on the TSCA inventory.
CAS# 7791-13-1 is not listed on the TSCA inventory.
None of the chemicals are on the Health & Safety Reporting List.
None of the chemicals are on the Chemical Reporting List.
None of the chemicals in this product are under a Chemical Test Rule.
None of the chemicals are listed under TSCA Section 12b.
None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule

*** SECTION 15 - REGULATORY INFORMATION ***

MSDS Creation Date: 12/12/1997
Revision #9 Date: 11/13/2002
The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to the information, and we assume no liability resulting from its use. Users should inform us of any changes in regulatory requirements that may affect the information for their particular purposes. In no way shall the company be

1, 679

DATE: 03/14/05
INDEX: G50545233

ACCT: 419543001
CAT NO: 593179

PAGE: 4

PO NBR: K 07384C

SARA None of the chemicals in this material have a SNUR under TSCA.
CERCLA Hazardous Substances and Corresponding RQs
None of the chemicals in this material are listed in the
SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a TPO.
SARA Codes
CAS # 7646-79-9: acute, chronic, reactive.
CAS # 7791-13-1: acute, chronic.

Section 313
This chemical is not at a high enough concentration to be reportable under Section 313.
This material contains Cobalt(II) chloride hexahydrate (listed as ** undefined **), 100%. (CAS# 7791-13-1) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 372.
Clean Air Act
CAS# 7646-79-9 listed as ** no name ** is listed as a hazardous air pollutant (HAP)
CAS# 7791-13-1 listed as ** no name ** is listed as a hazardous air pollutant (HAP).
This material does not contain any Class 1 Ozone Depletors.
This material does not contain any Class 2 Ozone Depletors.

Clean Water Act
None of the chemicals in this product are listed as Hazardous Substances under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.
OSHA
None of the chemicals in this product are considered highly hazardous by OSHA.

STATE
Cobalt dichloride anhydrous can be found on the following state right to know lists: Minnesota, (listed as ** no name **)
Cobalt(II) chloride hexahydrate can be found on the following state right to know lists: Minnesota, (listed as ** no name **)
California No Significant Risk Level:
None of the chemicals in this product are listed.
European Labeling Regulations
European Symbols: T N
Hazard Symbols: T N
Risk Phrases:
R 22 Harmful if swallowed.
R 42/43 May cause sensitization by inhalation and skin contact.
R 49 May cause cancer by inhalation.
R 50/53 Very toxic to aquatic organisms; may cause long-term adverse effects in the aquatic environment.

Safety Phrases:
S 53 Avoid exposure - obtain special instructions before use.
S 22 Do not breathe dust.
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S 61 Avoid release to the environment. Refer to special instructions/Safety data sheets.

WGK (Water Danger/Protection)
CAS# 7646-79-9: 2
CAS# 7791-13-1: 2
United Kingdom Occupational Exposure Limits
United Kingdom Maximum Exposure Limits
CAS# 7646-79-9: MEL-United Kingdom, TWA (listed as ** undefined **): 0.1 mg/m3 TWA (as Co)

Canada
CAS# 7646-79-9 is listed on Canada's DSL List.
This material does not have a WHMIS classification.
CAS# 7646-79-9 is listed on Canada's Ingredients Disclosure List.
CAS# 7791-13-1 is not listed on Canada's Ingredients Disclosure List.
Exposure Limits
CAS# 7646-79-9: Not available.
CAS# 7791-13-1: Not available.

*** SECTION 16 - ADDITIONAL INFORMATION ***
MSDS Creation Date: 12/12/1997
Revision #9 Date: 11/13/2002

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1, 680

DATE: 03/14/05 ACCT: 419643001 PAGE: 5
INDEX: G50545233 CAT NO: 593179 PO NBR: K.07384C

liable for any claims, losses, or damages of any third party or for lost
profits or any special, indirect, incidental, consequential or exemplary
damages ever arising, even if the company has been advised of
the possibility of such damages

3