Cobaltous Chloride, Hexahydrate
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Date of issue: 03/20/2014 Revision date: 04/05/2017 Supersedes: 04/05/2017 Version: 1.2

SECTION 1: Identification

1.1. Identification
Product form : Substance
Substance name : Cobaltous Chloride, Hexahydrate
CAS No : 7791-13-1
Product code : LC13190
Formula : CoCl2.6H2O
Synonyms : cobalt dichloride, hexahydrate

1.2. Relevant identified uses of the substance or mixture and uses advised against
Use of the substance/mixture : For laboratory and manufacturing use only.
Recommended use : Laboratory chemicals
Restrictions on use : Not for food, drug or household use

1.3. Details of the supplier of the safety data sheet
LabChem Inc
Jackson's Pointe Commerce Park Building 1000, 1010 Jackson's Pointe Court
Zelienople, PA 16063 - USA
T 412-826-5230 - F 724-473-0647
info@labchem.com - www.labchem.com

1.4. Emergency telephone number
Emergency number : CHEMTREC: 1-800-424-9300 or 011- 703-527-3887

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification
Acute toxicity (oral) Category 4 H302
Respiratory sensitisation Category 1 H334
Skin sensitization Category 1 H317
Germ cell mutagenicity Category 2 H341
Carcinogenicity Category 1B H350
Reproductive toxicity Category 1B H360
Hazardous to the aquatic environment - Acute Hazard Category 1 H400
Hazardous to the aquatic environment - Chronic Hazard Category 1 H410
Full text of H statements : see section 16

2.2. Label elements

GHS-US labeling
Hazard pictograms (GHS-US)

Signal word (GHS-US) : Danger
Hazard statements (GHS-US) : H302 - Harmful if swallowed
H317 - May cause an allergic skin reaction
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
H341 - Suspected of causing genetic defects
H350 - May cause cancer
H360 - May damage fertility or the unborn child
H410 - Very toxic to aquatic life with long lasting effects

Precautionary statements (GHS-US) : P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P264 - Wash exposed skin thoroughly after handling
P265 - Avoid breathing dust
P270 - Do not eat, drink or smoke when using this product
P272 - Contaminated work clothing should not be allowed out of the workplace
P273 - Avoid release to the environment
Cobaltous Chloride, Hexahydrate
Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

P280 - Wear protective gloves, protective clothing, eye protection, face protection
P284 - Wear respiratory protection
P311 - Call a POISON CENTER or doctor/physician
P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P330 - If swallowed, rinse mouth
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention
P342+P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician
P391 - Collect spillage
P405 - Store locked up
P501 - Dispose of contents/container to comply with local, state and federal regulations

If inhaled: Remove person to fresh air and keep comfortable for breathing

2.3. Other hazards
Other hazards not contributing to the classification: None under normal conditions.

2.4. Unknown acute toxicity (GHS US)
Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances
Substance type: Mono-constituent

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cobaltous Chloride, Hexahydrate (Main constituent)</td>
<td>(CAS No): 7791-13-1</td>
<td>100</td>
<td>Acute Tox. 4 (Oral), H302, Resp. Sens. 1, H334, Skin Sens. 1, H317, Muta. 2, H341, Carc. 1B, H350, Repr. 1B, H360, Aquatic Acute 1, H400, Aquatic Chronic 1, H410</td>
</tr>
</tbody>
</table>

Full text of hazard classes and H-statements: see section 16

3.2. Mixtures
Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation: Remove the victim into fresh air.

First-aid measures after skin contact: Wash immediately with lots of water. Soap may be used. Do not apply (chemical) neutralizing agents. Take victim to a doctor if irritation persists.

First-aid measures after eye contact: Rinse with water. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.


4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation: Slight irritation. AFTER INHALATION OF DUST: Coughing. Respiratory difficulties.
Symptoms/injuries after skin contact: Slight irritation.
Symptoms/injuries after eye contact: Slight irritation.

4.3. Indication of any immediate medical attention and special treatment needed
No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media
Suitable extinguishing media : Adapt extinguishing media to the environment.
Unsuitable extinguishing media : No unsuitable extinguishing media known.

5.2. Special hazards arising from the substance or mixture
Fire hazard : DIRECT FIRE HAZARD. Non combustible.
Explosion hazard : DIRECT EXPLOSION HAZARD. No data available on direct explosion hazard. INDIRECT EXPLOSION HAZARD. No data available on indirect explosion hazard.
Reactivity : On burning: release of toxic and corrosive gases/vapours (hydrogen chloride, cobalt oxides, chlorine).

5.3. Advice for firefighters
Precautionary measures fire : Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.
Firefighting instructions : Dilute toxic gases with water spray. Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel
Emergency procedures : Mark the danger area. Prevent dust cloud formation. No naked flames. Wash contaminated clothes.
Measures in case of dust release : In case of dust production: keep upwind. Dust production: have neighbourhood close doors and windows.

6.1.2. For emergency responders
Protective equipment : Equip cleanup crew with proper protection. Do not breathe dust.
Emergency procedures : Stop release. Ventilate area. If a major spill occurs, all personnel should be immediately evacuated and the area ventilated.

6.2. Environmental precautions
Prevent soil and water pollution. Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up
For containment : Contain released substance, pump into suitable containers. Consult “Material-handling” to select material of containers. Plug the leak, cut off the supply. Dam up the solid spill. Knock down/dilute dust cloud with water spray.
Methods for cleaning up : Stop dust cloud by covering with sand/earth. Scoop solid spill into closing containers. See “Material-handling” for suitable container materials. Carefully collect the spill/leftovers. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

6.4. Reference to other sections
No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Precautions for safe handling : Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Avoid raising dust. Keep away from naked flames/heat. Observe very strict hygiene - avoid contact. Keep container tightly closed. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.
Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.
Cobaltous Chloride, Hexahydrate
Safety Data Sheet

7.2. Conditions for safe storage, including any incompatibilities

Incompatible products: Strong oxidizers.
Heat-ignition: KEEP SUBSTANCE AWAY FROM: heat sources.
Prohibitions on mixed storage: KEEP SUBSTANCE AWAY FROM: oxidizing agents. water/moisture.
Storage area: Store in a dry area. Store at ambient temperature. Keep container in a well-ventilated place. Unauthorized persons are not admitted. Meet the legal requirements.
Special rules on packaging: SPECIAL REQUIREMENTS: closing. watertight. dry. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
Packaging materials: SUITABLE MATERIAL: cardboard. synthetic material. glass.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th></th>
<th>ACGIH</th>
<th>OSHA PEL (TWA) (mg/m³)</th>
<th>IDLH</th>
<th>NIOSH REL (TWA) (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>ACGIH TWA (mg/m³)</td>
<td>0.02 mg/m³ (Cobalt, inorganic compounds, as Co; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OSHA</td>
<td></td>
<td>0.1 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IDLH</td>
<td>US IDLH (mg/m³)</td>
<td>20 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NIOSH</td>
<td></td>
<td>0.05 mg/m³</td>
<td></td>
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</tr>
</tbody>
</table>

8.2. Exposure controls

Appropriate engineering controls: Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation.

Materials for protective clothing: GIVE GOOD RESISTANCE: butyl rubber. PVC.
Hand protection: Gloves.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| Physical state | Solid          |
| Appearance     | Crystalline solid. Crystalline powder. |
| Color          | Rose to red   |
| Odor           | Mild odour Irritating/pungent odour |
| Odor threshold | No data available |
| pH             | 3 - 5.5 (5.0 %) |
| pH solution    | 5 %           |
| Melting point  | 86 °C         |
| Freezing point | No data available |
| Boiling point  | Not applicable |
| Flash point    | Not applicable |
| Relative evaporation rate (butyl acetate=1) | No data available |
| Flammability (solid, gas) | No data available |
| Vapor pressure | No data available |
| Relative vapor density at 20 °C | No data available |
Cobaltous Chloride, Hexahydrate
Safety Data Sheet

Relative density: 1.9
Specific gravity / density: 1924 kg/m³
Molecular mass: 237.93 g/mol
  Water: 76 g/100ml (0 °C)
  Ether: 0.29 g/100ml
Log Pow: No data available
Auto-ignition temperature: No data available
Decomposition temperature: > 110 °C
Viscosity, kinematic: No data available
Viscosity, dynamic: No data available
Explosion limits: No data available
Explosive properties: No data available
Oxidizing properties: No data available

9.2. Other information
VOC content: 0 %
Other properties: Hygroscopic. Substance has acid reaction.

SECTION 10: Stability and reactivity

10.1. Reactivity
On burning: release of toxic and corrosive gases/vapours (hydrogen chloride, cobalt oxides, chlorine).

10.2. Chemical stability
Hygroscopic.

10.3. Possibility of hazardous reactions
Not established.

10.4. Conditions to avoid
Incompatible materials. Moisture.

10.5. Incompatible materials
Strong oxidizers.

10.6. Hazardous decomposition products
Hydrogen chloride.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Likely routes of exposure: Skin and eye contact; Inhalation
Acute toxicity: Oral: Harmful if swallowed.

<table>
<thead>
<tr>
<th>Cobaltous Chloride, Hexahydrate (7791-13-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
</tr>
<tr>
<td>LD50 dermal rat</td>
</tr>
<tr>
<td>ATE US (oral)</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation: Not classified
  pH: 3 - 5.5 (5.0 %)
Serious eye damage/irritation: Not classified
  pH: 3 - 5.5 (5.0 %)
Respiratory or skin sensitization: May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.
Germ cell mutagenicity: Suspected of causing genetic defects.
Carcinogenicity: May cause cancer.

<table>
<thead>
<tr>
<th>Cobaltous Chloride, Hexahydrate (7791-13-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IARC group</td>
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</tbody>
</table>
### Cobaltous Chloride, Hexahydrate Safety Data Sheet

**Reproductive toxicity**
- May damage fertility or the unborn child.

**Specific target organ toxicity – single exposure**
- Not classified

**Specific target organ toxicity – repeated exposure**
- Not classified

**Aspiration hazard**
- Not classified

**Symptoms/injuries after inhalation**
- Slight irritation. AFTER INHALATION OF DUST: Coughing. Respiratory difficulties.

**Symptoms/injuries after skin contact**
- Slight irritation.

**Symptoms/injuries after eye contact**
- Slight irritation.

**Symptoms/injuries after ingestion**

**Chronic symptoms**

### SECTION 12: Ecological information

#### 12.1. Toxicity

- **Ecology - general**: Dangerous for the environment.
- **Ecology - air**: Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009). TA-Luft Klasse 5.2.7.1.1/I.

#### 12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>Cobaltous Chloride, Hexahydrate (7791-13-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
</tr>
<tr>
<td>Threshold limit algae 1</td>
</tr>
</tbody>
</table>

#### 12.3. Bioaccumulative potential

No additional information available

#### 12.4. Mobility in soil

<table>
<thead>
<tr>
<th>Cobaltous Chloride, Hexahydrate (7791-13-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecology - soil</td>
</tr>
</tbody>
</table>

#### 12.5. Other adverse effects

No additional information available

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

**Waste disposal recommendations**
- Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Recycle/reuse. Precipitate/make insoluble. Remove to an authorized dump (Class I).

**Additional information**
- LWCA (the Netherlands): KGA category 05. Hazardous waste according to Directive 2008/98/EC.
SECTION 14: Transport information

Department of Transportation (DOT)
In accordance with DOT

Transport document description : UN3260 Corrosive solid, acidic, inorganic, n.o.s., 8, III
UN-No.(DOT) : UN3260
Proper Shipping Name (DOT) : Corrosive solid, acidic, inorganic, n.o.s.
Transport hazard class(es) (DOT) : 8 - Class 8 - Corrosive material 49 CFR 173.136
Packing group (DOT) : III - Minor Danger
Hazard labels (DOT) : 8 - Corrosive

Dangerous for the environment : Yes
Marine pollutant : Yes

DOT Packaging Non Bulk (49 CFR 173.xxx) : 213
DOT Packaging Bulk (49 CFR 173.xxx) : 240
DOT Symbols : G - Identifies PSN requiring a technical name
DOT Special Provisions (49 CFR 172.102) : IB8 - Authorized IBCs: Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1 and 31HZ2); Fiberboard (11G); Wooden (11C, 11D and 11F); Flexible (13H1, 13H2, 13H3, 13H4, 13L1, 13L2, 13L3, 13L4, 13M1 or 13M2).
IP3 - Flexible IBCs must be sift-proof and water-resistant or must be fitted with a sift-proof and water-resistant liner.
T1 - 1.5 178.274(d)(2) Normal............. 178.275(d)(2)
TP3 - The portable tank instruction assigned for this substance applies for granular and powdered solids and for solids which are filled and discharged at temperatures above their melting point which are cooled and transported as a solid mass. Solid substances transported or offered for transport above their melting point are authorized for transportation in portable tanks conforming to the provisions of portable tank instruction T4 for solid substances of packing group III or T7 for solid substances of packing group II, unless a tank with more stringent requirements for minimum shell thickness, maximum allowable working pressure, pressure-relief devices or bottom outlets are assigned in which case the more stringent tank instruction and special provisions shall apply. Filling limits must be in accordance with portable tank special provision TP3. Solids meeting the definition of an elevated temperature material must be transported in accordance with the applicable requirements of this subchapter.

DOT Packaging Exceptions (49 CFR 173.xxx) : 154
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 25 kg
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 100 kg
DOT Vessel Stowage Location : A - The material may be stowed “on deck” or “under deck” on a cargo vessel and on a passenger vessel.

Other information : No supplementary information available.

SECTION 15: Regulatory information

15.1. US Federal regulations

Cobaltous Chloride, Hexahydrate (7791-13-1)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
SARA Section 311/312 Hazard Classes
Immediate (acute) health hazard
Delayed (chronic) health hazard

04/05/2017 EN (English US) 7/8
Cobaltous Chloride, Hexahydrate
Safety Data Sheet

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

15.2. International regulations

**CANADA**

**Cobaltous Chloride, Hexahydrate (7791-13-1)**

Listed on the Canadian DSL (Domestic Substances List)

<table>
<thead>
<tr>
<th>WHMIS Classification</th>
<th>Class D Division 2 Subdivision A - Very toxic material causing other toxic effects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Class D Division 2 Subdivision B - Toxic material causing other toxic effects</td>
</tr>
</tbody>
</table>

**EU-Regulations**

No additional information available

**National regulations**

**Cobaltous Chloride, Hexahydrate (7791-13-1)**

Listed on the Canadian IDL (Ingredient Disclosure List)

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

**SECTION 16: Other information**

Revision date : 04/05/2017

Full text of H-phrases: see section 16:

- **H302** Harmful if swallowed
- **H317** May cause an allergic skin reaction
- **H334** May cause allergy or asthma symptoms or breathing difficulties if inhaled
- **H341** Suspected of causing genetic defects
- **H350** May cause cancer
- **H360** May damage fertility or the unborn child
- **H400** Very toxic to aquatic life
- **H410** Very toxic to aquatic life with long lasting effects

**NFPA health hazard** : 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

**NFPA fire hazard** : 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

**NFPA reactivity** : 0 - Material that in themselves are normally stable, even under fire conditions.

**HMIS III Rating**

- **Health** : 2 Moderate Hazard - Temporary or minor injury may occur
- **Flammability** : 0 Minimal Hazard - Materials that will not burn
- **Personal protection** : F
- F - Safety glasses, Gloves, Synthetic apron, Dust respirator

**SDS US LabChem**

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