



## SAFETY DATA SHEET COBALT-TUNGSTEN

### 1. Identification

#### Product identifier

**Product name** COBALT-TUNGSTEN

**Product number** 5230

#### Recommended use of the chemical and restrictions on use

**Application** Industrial Use

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

**Supplier** SIFCO Applied Surface Concepts  
5708 E. Schaaf Road  
Independence, Ohio 44131  
U.S.A.  
Tel.: +1 216-524-0099  
Fax: +1 216-524-6331  
E-Mail: info@sifcoasc.com

#### Emergency telephone number

**Emergency telephone** CHEMTREC (United States) (800) 424-9300; CHEMTREC (International) +1 703-527-3887

### 2. Hazard(s) identification

#### Classification of the substance or mixture

**Physical hazards** Not Classified

**Health hazards** Skin Corr. 1A - H314 Eye Dam. 1 - H318 Resp. Sens. 1 - H334 Skin Sens. 1 - H317 Muta. 2 - H341 Carc. 1B - H350 Repr. 1B - H360

**Environmental hazards** Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410

#### Label elements

##### Pictogram



##### Signal word

Danger

##### Hazard statements

H314 Causes severe skin burns and eye damage.  
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.

## COBALT-TUNGSTEN

<b>Precautionary statements</b>	<p>P260 Do not breathe vapor/ spray.</p> <p>P264 Wash contaminated skin thoroughly after handling.</p> <p>P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.</p> <p>P284 [In case of inadequate ventilation] wear respiratory protection.</p> <p>P302+P352 If on skin: Wash with plenty of water.</p> <p>P304+P340 If inhaled: Remove person to fresh air and keep comfortable for breathing.</p> <p>P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P501 Dispose of contents/ container in accordance with national regulations.</p> <p>P403+P233 Store in a well-ventilated place. Keep container tightly closed.</p> <p>P270 Do not eat, drink or smoke when using this product.</p> <p>P301+P310 If swallowed: Immediately call a poison center/ doctor.</p>
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**Contains** COBALT SULPHATE, 5.5%, COBALT CITRATE

### Other hazards

This product does not contain any substances classified as PBT or vPvB.

### 3. Composition/information on ingredients

#### Mixtures

<b>COBALT SULPHATE</b>	<b>5-10%</b>
CAS number: 10124-43-3	
M factor (Acute) = 10	M factor (Chronic) = 10
<b>Classification</b> Acute Tox. 4 - H302 Eye Irrit. 2A - H319 Resp. Sens. 1 - H334 Skin Sens. 1 - H317 Muta. 2 - H341 Carc. 1B - H350i Repr. 1B - H360F Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410	
<b>ACETIC ACID 5.5%</b>	<b>5-10%</b>
CAS number: 64-19-7	
<b>Classification</b> Flam. Liq. 3 - H226 Skin Corr. 1A - H314 Eye Dam. 1 - H318	
<b>SODIUM TUNGSTATE</b>	<b>1-5%</b>
CAS number: 10213-10-2	
<b>Classification</b> Acute Tox. 4 - H302	

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<b>COBALT CITRATE</b>	<b>1-5%</b>
CAS number: 866-81-9	
<b>Classification</b>	
Acute Tox. 4 - H302	
Eye Dam. 1 - H318	
Resp. Sens. 1 - H334	
Skin Sens. 1 - H317	
Muta. 2 - H341	
Carc. 1B - H350	
Repr. 1B - H360	
Aquatic Chronic 2 - H411	
<b>CITRIC ACID</b>	<b>1-5%</b>
CAS number: 77-92-9	
<b>Classification</b>	
Eye Irrit. 2 - H319	

The full text for all hazard statements is displayed in Section 16.

### 4. First-aid measures

#### Description of first aid measures

<b>Inhalation</b>	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Never give anything by mouth to an unconscious person. Get medical attention.
<b>Ingestion</b>	Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately.
<b>Skin Contact</b>	Remove contaminated clothing immediately and wash skin with soap and water. Continue to rinse for at least 15 minutes and get medical attention.
<b>Eye contact</b>	Remove affected person from source of contamination. Rinse immediately with plenty of water. Continue to rinse for at least 15 minutes and get medical attention.

#### Most important symptoms and effects, both acute and delayed

<b>Inhalation</b>	Coughing, chest tightness, feeling of chest pressure.
<b>Ingestion</b>	May cause chemical burns in mouth and throat. May cause stomach pain or vomiting.
<b>Skin contact</b>	May cause serious chemical burns to the skin.
<b>Eye contact</b>	Causes severe burns. May cause serious eye damage.

#### Indication of immediate medical attention and special treatment needed

<b>Notes for the doctor</b>	No specific recommendations.
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### 5. Fire-fighting measures

#### Extinguishing media

**Suitable extinguishing media** The product is not flammable. Use fire-extinguishing media suitable for the surrounding fire.

#### Special hazards arising from the substance or mixture

**Specific hazards** Toxic and corrosive gases or vapors.

#### Advice for firefighters

## COBALT-TUNGSTEN

**Protective actions during firefighting**      Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

**Special protective equipment for firefighters**      Use protective equipment appropriate for surrounding materials.

### 6. Accidental release measures

#### Personal precautions, protective equipment and emergency procedures

**Personal precautions**      Follow precautions for safe handling described in this safety data sheet. Avoid inhalation of vapors. Provide adequate general and local exhaust ventilation.

#### Environmental precautions

**Environmental precautions**      Do not discharge into drains or watercourses or onto the ground. Inform the relevant authorities if environmental pollution occurs (sewers, waterways, soil or air).

#### Methods and material for containment and cleaning up

**Methods for cleaning up**      Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate. Flush contaminated area with plenty of water. Avoid the spillage or runoff entering drains, sewers or watercourses. Collect and dispose of spillage as indicated in Section 13. Wash thoroughly after dealing with a spillage.

**Reference to other sections**      Wear protective clothing as described in Section 8 of this safety data sheet. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

### 7. Handling and storage

#### Precautions for safe handling

**Usage precautions**      Avoid spilling. Avoid contact with skin and eyes. Avoid inhalation of vapors and spray/mists. Provide adequate general and local exhaust ventilation.

#### Conditions for safe storage, including any incompatibilities

**Storage precautions**      Store in tightly-closed, original container in a dry, cool and well-ventilated place. Protect from freezing and direct sunlight.

**Storage class**      Toxic storage. Corrosive storage.

#### Specific end uses(s)

**Specific end use(s)**      The identified uses for this product are detailed in Section 1.

### 8. Exposure Controls/personal protection

#### Control parameters

#### Occupational exposure limits

#### **ACETIC ACID 5.5%**

Long-term exposure limit (8-hour TWA): ACGIH 10 ppm 25 mg/m<sup>3</sup>

Long-term exposure limit (8-hour TWA): OSHA 10 ppm 25 mg/m<sup>3</sup>

Short-term exposure limit (15-minute): ACGIH 15 ppm 37 mg/m<sup>3</sup>

ACGIH = American Conference of Governmental Industrial Hygienists.

OSHA = Occupational Safety and Health Administration.

#### Exposure controls

## COBALT-TUNGSTEN

### Protective equipment



### Appropriate engineering controls

As this product contains ingredients with exposure limits, process enclosures, local exhaust ventilation or other engineering controls should be used to keep worker exposure below any statutory or recommended limits, if use generates dust, fumes, gas, vapor or mist.

### Eye/face protection

Tight-fitting safety glasses.

### Hand protection

It is recommended that chemical-resistant, impervious gloves are worn. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. It is recommended that gloves are made of the following material: Nitrile rubber.

### Other skin and body protection

Appropriate footwear and additional protective clothing complying with an approved standard should be worn if a risk assessment indicates skin contamination is possible.

### Hygiene measures

Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet.

### Respiratory protection

If ventilation is inadequate, suitable respiratory protection must be worn. Respiratory protection must be used if the airborne contamination exceeds the recommended occupational exposure limit.

## 9. Physical and Chemical Properties

### Information on basic physical and chemical properties

Appearance	Liquid.
Color	Red.
Odor	No characteristic odor.
pH	pH (concentrated solution): 2.0-3.1
Relative density	1.241-1.246 @ 20°C
Other information	Not available.
Volatile organic compound	This product contains a maximum VOC content of ACETIC ACID 7 g/l.

## 10. Stability and reactivity

Reactivity	There are no known reactivity hazards associated with this product.
Stability	Stable at normal ambient temperatures and when used as recommended.
Possibility of hazardous reactions	Not determined.
Conditions to avoid	Avoid excessive heat for prolonged periods of time.
Materials to avoid	Strong alkalis.
Hazardous decomposition products	None at ambient temperatures.

## 11. Toxicological information

## COBALT-TUNGSTEN

### Information on toxicological effects

#### Acute toxicity - oral

ATE oral (mg/kg) 3,676.47

**Inhalation** Vapor from this product may be hazardous by inhalation.

**Ingestion** Toxic if swallowed. Causes severe burns. May cause chemical burns in mouth, esophagus and stomach.

**Skin Contact** Product has a defatting effect on skin. May cause allergic contact eczema. May cause sensitisation by skin contact.

**Eye contact** Causes serious eye damage. Immediate first aid is imperative.

**Acute and chronic health hazards** Known or suspected carcinogen for humans.

**Route of entry** Ingestion Inhalation Skin and/or eye contact

### Toxicological information on ingredients.

#### COBALT SULPHATE

##### Acute toxicity - oral

Acute toxicity oral (LD<sub>50</sub> mg/kg) 768.0

Species Rat

ATE oral (mg/kg) 500.0

##### Acute toxicity - dermal

Acute toxicity dermal (LD<sub>50</sub> mg/kg) 2,000.0

Species Rat

ATE dermal (mg/kg) 2,000.0

##### Carcinogenicity

NTP carcinogenicity Reasonably anticipated to be a human carcinogen.

#### ACETIC ACID 5.5%

##### Acute toxicity - oral

Acute toxicity oral (LD<sub>50</sub> mg/kg) 3,310.0

Species Rat

ATE oral (mg/kg) 3,310.0

##### Acute toxicity - dermal

Acute toxicity dermal (LD<sub>50</sub> mg/kg) 1,060.0

Species Rabbit

#### SODIUM TUNGSTATE

**COBALT-TUNGSTEN**Acute toxicity - oral

Acute toxicity oral (LD<sub>50</sub>  
mg/kg) 1.19

Species Rat

ATE oral (mg/kg) 500.0

Acute toxicity - inhalation

Acute toxicity inhalation  
(LC<sub>50</sub> dust/mist mg/l) 5.01

Species Rat

ATE inhalation  
(dusts/mists mg/l) 5.01

COBALT CITRATEAcute toxicity - oral

ATE oral (mg/kg) 500.0

CITRIC ACIDAcute toxicity - oral

Acute toxicity oral (LD<sub>50</sub>  
mg/kg) 11,700.0

Species Rabbit

**12. Ecological Information**

**Ecotoxicity** The product contains a substance which may have hazardous effects on the environment.

**Toxicity** No data available.

Ecological information on ingredients.COBALT SULPHATEAcute aquatic toxicity

LE(C)<sub>50</sub> 0.01 < L(E)C50 ≤ 0.1

M factor (Acute) 10

Acute toxicity - fish LC<sub>50</sub>, : 1.5 ug/l, Freshwater fish

Acute toxicity - aquatic  
invertebrates LC<sub>50</sub>, : 0.61 mg/l, Freshwater invertebrates

Acute toxicity -  
microorganisms LC<sub>50</sub>, : 144 ug/l, Freshwater fish  
LC<sub>50</sub>, : 24.1 ug/l, Sea water

Chronic aquatic toxicity

M factor (Chronic) 10

Chronic toxicity - fish early  
life stage EC10, 351.4 : mg/l, Freshwater fish

**COBALT-TUNGSTEN****SODIUM TUNGSTATE**

**Acute toxicity - fish** , 48 hour: 89.4 mg/l, Daphnia magna

**CITRIC ACID**

**Acute toxicity - fish** LC<sub>50</sub>, 96 hour: 440-706 mg/l, Carassius auratus (Goldfish)

**Persistence and degradability**

**Persistence and degradability** No data available.

**Bioaccumulative potential**

**Bio-Accumulative Potential** The product does not contain any substances expected to be bioaccumulating.

**Ecological information on ingredients.****COBALT SULPHATE**

**Bio-Accumulative Potential** BCF: < 10, Freshwater fish BCF: < 10, Marinewater fish Not bioaccumulative in the aquatic environment.

**Mobility in soil**

**Mobility** The product is soluble in water.

**Other adverse effects**

**Other adverse effects** Not determined.

**13. Disposal considerations****Waste treatment methods**

**General information** Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements.

**14. Transport information****UN Number**

**UN No. (TDG)** 3082

**UN No. (IMDG)** 3082

**UN No. (ICAO)** 3082

**UN No. (DOT)** 3082

**UN proper shipping name**

**Proper shipping name (TDG)** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (COBALT SULPHATE)

**Proper shipping name (IMDG)** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (COBALT SULPHATE)

**Proper shipping name (ICAO)** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (COBALT SULPHATE)

**Proper shipping name (DOT)** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (COBALT SULPHATE)

**Transport hazard class(es)**

**TDG class** 9

**TDG label(s)** 9

**IMDG Class** 9



## COBALT-TUNGSTEN

ICAO class/division            9

### Transport labels



### Packing group

TDG Packing Group            III

IMDG packing group         III

ICAO packing group         III

DOT packing group          III

### Environmental hazards

Environmentally Hazardous Substance



### Special precautions for user

EmS                                F-A, S-F

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code    No information required.

## 15. Regulatory information

### US Federal Regulations

**SARA Section 302 Extremely Hazardous Substances Tier II Threshold Planning Quantities**

Exempt.

**CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA)**

Acetic Acid  
Final CERCLA RQ: 5000 lbs

**SARA Extremely Hazardous Substances EPCRA Reportable Quantities**

Exempt.

**SARA 313 Emission Reporting**

Cobalt Citrate  
Cobalt Sulphate

**CAA Accidental Release Prevention**

HAP  
Cobalt Citrate  
Cobalt Sulphate

**SARA (311/312) Hazard Categories**

Acute  
Chronic

**OSHA Highly Hazardous Chemicals**

Exempt.

## COBALT-TUNGSTEN

### US State Regulations

#### California Proposition 65 Carcinogens and Reproductive Toxins

Cobalt Citrate  
Cobalt Sulphate

#### California Directors List of Hazardous Substances

Acetic Acid

### Inventories

#### US - TSCA

All ingredients are present.

### 16. Other information

#### Classification abbreviations and acronyms

Acute Tox. = Acute toxicity  
Carc. = Carcinogenicity  
Eye Dam. = Serious eye damage  
Eye Irrit. = Eye irritation  
Flam. Liq. = Flammable liquid  
Muta. = Germ cell mutagenicity  
Repr. = Reproductive toxicity  
Resp. Sens. = Respiratory sensitisation  
Skin Corr. = Skin corrosion  
Skin Irrit. = Skin irritation  
Skin Sens. = Skin sensitisation  
STOT RE = Specific target organ toxicity-repeated exposure  
STOT SE = Specific target organ toxicity-single exposure

#### Revision date

6/1/2018

#### Revision

3

#### Hazard statements in full

H226 Flammable liquid and vapor.  
H302 Harmful if swallowed.  
H314 Causes severe skin burns and eye damage.  
H317 May cause an allergic skin reaction.  
H318 Causes serious eye damage.  
H319 Causes serious eye irritation.  
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
H341 Suspected of causing genetic defects.  
H350 May cause cancer.  
H350i May cause cancer by inhalation.  
H360 May damage fertility or the unborn child.  
H360F May damage fertility.  
H400 Very toxic to aquatic life.  
H410 Very toxic to aquatic life with long lasting effects.  
H411 Toxic to aquatic life with long lasting effects.

#### NFPA - instability hazard

Normally stable. (0)

#### NFPA - health hazard

Temporary incapacitation, injury. (2)

#### NFPA - flammability hazard

Will not burn. (0)

## COBALT-TUNGSTEN

The Information in this data sheet is believed to be correct but neither we nor our employees or agents give any warranty or make any representation to the accuracy thereof and accept no liability for any loss, injury or damage which may result in it's use. The sole purpose of this data sheet is to provide guidance on the safe handling and use of the products to which it relates. It does not form part of any product specification nor part of any contract. It is not practical for the guidance and information in this data sheet to cover every conceivable application of a product and as we may not be aware of the use to which the products covered by this data sheet are to be put it remains the responsibility of the user to conduct it's own tests and to satisfy itself as to the suitability of the product.