**Safety Data Sheet**

## Section 1: Identification

### Product identifier

**Product Name** • **BLACK ON SILVER**

### Relevant identified uses of the substance or mixture and uses advised against

**Recommended use** • Metal coloring solution

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

**Manufacturer** • Triple-S Chemical Products, Inc.
3464 Union Pacific Avenue
Los Angeles, CA 90023
United States

**Telephone (General)** • (323) 261-7301

### Emergency telephone number

**Manufacturer** • (800) 535-5053 - INFOTRAC

**Manufacturer** • (352) 323-3500 - Outside US INFOTRAC

## Section 2: Hazard Identification

### UN GHS Revision 3

**According to: UN Globally Harmonized System of Classification and Labelling of Chemicals (GHS): Third Revised Edition**

### Classification of the substance or mixture

**UN GHS** • Acute Toxicity Oral 4
Skin Corrosion 1C
Serious Eye Damage 1
Carcinogenicity 1A
Specific Target Organ Toxicity Repeated Exposure 1
Hazardous to the aquatic environment Acute 2
Hazardous to the aquatic environment Chronic 2

### Label elements

**UN GHS**

**DANGER**

**Hazard statements:**

Harmful if swallowed
Causes severe skin burns and eye damage.
Causes serious eye damage
Causes damage to organs through prolonged or repeated exposure.
Toxic to aquatic life
Toxic to aquatic life with long lasting effects
May cause cancer.
Causes damage to organs through prolonged or repeated exposure.

**Precautionary statements**

**Prevention**
- Do not breathe mists, vapours, and/or spray.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.

**Response**
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Immediately call a POISON CENTER or doctor/physician.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
Specific treatment, see supplemental first aid information.
Wash contaminated clothing before reuse.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
Call a POISON CENTER or doctor/physician.
Get medical advice/attention if you feel unwell.
Collect spillage.

**Storage/Disposal**
- Store locked up.
Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

**Supplemental information**
- <10 percent of this product consists of an ingredient of unknown toxicity.

## Other hazards

**UN GHS**
- According to the Globally Harmonized System for Classification and Labeling (GHS) this product is considered hazardous

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## United States (US)

**According to: OSHA 29 CFR 1910.1200 HCS**

## Classification of the substance or mixture

**OSHA HCS 2012**
- Acute Toxicity Oral 4
Skin Corrosion 1C
Serious Eye Damage 1
Carcinogenicity 1A
Reproductive Toxicity 2
Specific Target Organ Toxicity Repeated Exposure 1

## Label elements

**OSHA HCS 2012**

**DANGER**

**Hazard statements**
- Causes severe skin burns and eye damage.
Causes serious eye damage
Causes damage to organs through prolonged or repeated exposure.

**Precautionary statements**

**Prevention**
- Do not breathe mists, vapours, and/or spray.
Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.
Wear protective gloves/protective clothing/eye protection/face protection.

**Response** • IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Immediately call a POISON CENTER or doctor/physician.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
Specific treatment, see supplemental first aid information.
Wash contaminated clothing before reuse.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
Call a POISON CENTER or doctor/physician.
Get medical advice/attention if you feel unwell.

**Storage/Disposal** • Store locked up.
Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

**Supplemental information** • <10 percent of this product consists of an ingredient of unknown toxicity.

## Other hazards

**OSHA HCS 2012** • Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

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## Canada

**According to: WHMIS 2015**

## Classification of the substance or mixture

**WHMIS 2015** • Acute Toxicity Oral 4
Skin Corrosion 1
Skin Sensitization 1
Serious Eye Damage 1
Respiratory Sensitization 1
Carcinogenicity 1A
Reproductive Toxicity 2
Specific Target Organ Toxicity Repeated Exposure 1

## Label elements

**WHMIS 2015**

**DANGER**

**Hazard statements** • Harmful if swallowed
Causes severe skin burns and eye damage.
May cause an allergic skin reaction
Causes serious eye damage
May cause allergy or asthma symptoms or breathing difficulties if inhaled
May cause cancer.
Suspected of damaging fertility or the unborn child.
Causes damage to organs through prolonged or repeated exposure.

**Precautionary statements**

**Prevention** • Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.

Do not breathe mist, vapours and/or spray.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves/protective clothing/eye protection/face protection.
In case of inadequate ventilation wear respiratory protection.

**Response** • IF INHALED: Remove person to fresh air and keep comfortable for breathing.
If experiencing respiratory symptoms: Call a POISON CENTER/doctor/ .
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
Specific treatment, see supplemental first aid information.
Wash contaminated clothing before reuse.
If skin irritation or rash occurs: Get medical advice/attention.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER/doctor/ .
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF SWALLOWED: Call a POISON CENTER/doctor/ if you feel unwell.

**Storage/Disposal** • Store locked up.
Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

**Supplemental information** • <5 percent of this product consists of an ingredient of unknown toxicity.

## Other hazards

**WHMIS 2015** • In Canada, the product mentioned above is considered hazardous under the Workplace Hazardous Materials Information System (WHMIS).

## Section 3 - Composition/Information on Ingredients

### Substances

Material does not meet the criteria of a substance.

### Mixtures

| Composition | | | | | |
|---|---|---|---|---|---|
| **Chemical Name** | **Identifiers** | **%** | **LD50/LC50** | **Classifications According to Regulation/Directive** | **Comments** |
| Water | **CAS:**7732-18-5 | 80% TO 85% | Ingestion/Oral-Rat LD50 • >90 mL/kg | **UN GHS Revision 3:** Nonhazardous<br>**OSHA HCS 2012:** Nonhazardous | NDA |
| Phosphoric acid | **CAS:**7664-38-2 | < 10% | Ingestion/Oral-Rat LD50 • 1.25 g/kg<br>Inhalation-Rat LC50 • 25.5 mg/m³ | **UN GHS Revision 3:** Skin Corr. 1C; Eye Dam. 1; Acute Tox. 4 (Orl); Aquatic Acute 3; Aquatic Chronic 3<br>**OSHA HCS 2012:** Skin Corr. 1C; Eye Dam. 1; Acute Tox. 4 (Orl); | NDA |
| Selenious acid | **CAS:**7783-00-8 | < 5% | Skin-Rabbit LD50 • 4 mg/kg | **UN GHS Revision 3:** Skin Corr. 1A, Acute Tox. 1 (Skn); Acute Tox. 2 (Orl); Aquatic Acute 1; Aquatic Chronic 1<br>**OSHA HCS 2012:** Skin Corr. 1A; Acute Tox. 1 (Skn); Acute Tox. 2 (Orl) | NDA |
| Copper(II) sulfate, pentahydrate (1:1:5) | **CAS:**7758-99-8 | < 5% | Ingestion/Oral-Rat LD50 • 300 mg/kg | **UN GHS Revision 3:** Acute Tox. 3 (Orl); STOT RE 1 (Liver); Skin Irrit. 2; Eye Irrit. 2; STOT SE 3: Resp. Irrit.; Aquatic Acute 1; Aquatic Chronic 1<br>**OSHA HCS 2012:** Acute Tox. 3 (Orl); STOT RE 1 (Liver); Skin Irrit. 2; Eye Irrit. 2; STOT SE 3: Resp. Irrit.; | NDA |
| Zinc sulfate (1:1) | **CAS:**7733-02-0 | < 1% | NDA | **UN GHS Revision 3:** Eye Irrit. 2; Acute Tox. 4 (Orl); Aquatic Acute 1; Aquatic Chronic 1<br>**OSHA HCS 2012:** Eye Irrit. 2; Acute Tox. 4 (Orl) | NDA |

| | | | | | |
|---|---|---|---|---|---|
| Hydrochloric acid | **CAS:**7647-01-0 | <1% | Inhalation-Rat LC50 • 3124 ppm 1 Hour(s) | **UN GHS Revision 3:** Skin Corr. 1; Eye Dam. 1; Acute Tox. 3 (Inhl)<br>**OSHA HCS 2012:** Skin Corr. 1; Eye Dam. 1; Acute Tox. 3 (Inhl)<br>**WHMIS 2015:** Skin Corr. 1; Eye Dam. 1; Acute Tox. 3 (Inhl) | NDA |

## Section 4: First-Aid Measures

### Description of first aid measures

**Inhalation**
- Move victim to fresh air. Administer oxygen if breathing is difficult. Do not use mouth-to-mouth method if victim inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Give artificial respiration if victim is not breathing. Get medical attention immediately.

**Skin**
- For minor skin contact, avoid spreading material on unaffected skin. In case of contact with substance, immediately flush skin with running water for at least 20 minutes. Remove and isolate contaminated clothing. Get medical attention immediately.

**Eye**
- In case of contact with substance, immediately flush eyes with running water for at least 20 minutes. Get medical attention immediately.

**Ingestion**
- If swallowed, rinse mouth with water (only if the person is conscious) Do NOT induce vomiting. Do not use mouth-to-mouth method if victim ingested the substance. Obtain medical attention immediately if ingested.

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

- Refer to Section 11 - Toxicological Information.

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

**Notes to Physician**
- All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

## Section 5: Fire-Fighting Measures

### Extinguishing media

**Suitable Extinguishing Media**
- LARGE FIRES: Dry chemical, CO2, alcohol-resistant foam or water spray.
  SMALL FIRES: Dry chemical, CO2 or water spray.

**Unsuitable Extinguishing Media**
- No data available

### Special hazards arising from the substance or mixture

**Unusual Fire and Explosion Hazards**
- May react with metals to release hydrogen gas, which can form explosive mixtures in the air.
  Can also produce highly toxic Selenium fumes in case of fire.
  Containers may explode when heated.

**Hazardous Combustion Products**
- Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive fumes.

### Advice for firefighters

- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.
  Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
  Wear positive pressure self-contained breathing apparatus (SCBA).
  SMALL FIRES: Move containers from fire area if you can do it without risk.

## Section 6 - Accidental Release Measures

### Personal precautions, protective equipment and emergency procedures

**Personal Precautions**
- Ventilate enclosed areas. Do not walk through spilled material. Wear appropriate personal protective equipment, avoid direct contact. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

**Emergency Procedures**
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions. Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Do not get water inside container.

### Environmental precautions

- Avoid run off to waterways and sewers.

### Methods and material for containment and cleaning up

**Containment/Clean-up Measures**
- SMALL SPILLS: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.
  LARGE SPILLS: Dike far ahead of liquid spill for later disposal.

## Section 7 - Handling and Storage

### Precautions for safe handling

**Handling**
- Handle and open container with care. Use only with adequate ventilation. Use caution when combining with water; DO NOT add water to corrosive liquid, ALWAYS add corrosive liquid to water while stirring to prevent release of heat, steam and fumes. Do not breathe mists, vapours and/or spray. Wear appropriate personal protective equipment, avoid direct contact. Do not get in eyes, on skin, or on clothing. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco. Keep out of reach of children.

### Conditions for safe storage, including any incompatibilities

**Storage**
- Keep material in an acid resistant container. Keep container tightly closed. Store in a cool, dry, well-ventilated place.

## Section 8 - Exposure Controls/Personal Protection

### Control parameters

| Exposure Limits/Guidelines | | | | |
|---|---|---|---|---|
| | **Result** | **ACGIH** | **NIOSH** | **OSHA** |
| Selenious acid | TWAs | 0.2 mg/m3 TWA (as Se)<br>*as Selenium compounds* | 0.2 mg/m3 TWA (except Selenium hexafluoride, as Se)<br>*as Selenium compounds* | 0.2 mg/m3 TWA (as Se)<br>*as Selenium compounds* |
| Copper(II) sulfate, pentahydrate (1:1:5) | TWAs | 1 mg/m3 TWA (dust and mist, as Cu)<br>*as Copper compounds* | 1 mg/m3 TWA (dust and mist, as Cu)<br>*as Copper compounds* | Not established |
| Phosphoric acid (7664-38-2) | TWAs | 1 mg/m3 TWA | 1 mg/m3 TWA | 1 mg/m3 TWA |
| | STELs | 3 mg/m3 STEL | 3 mg/m3 STEL | Not established |
| Hydrochloric acid (7647-01-0) | Ceilings | 2 ppm Ceiling | 5 ppm Ceiling; 7 mg/m3 Ceiling | 5 ppm Ceiling; 7 mg/m3 Ceiling |

### Exposure controls

**Engineering Measures/Controls**
- Good general ventilation 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.

**Personal Protective Equipment**

**Pictograms**

- 

**Respiratory**
- Wear a properly fitted respirator with acid gas canisters and mist/particulate filters. Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or symptoms are experienced.

**Eye/Face**
- Wear tight fitting chemical splash safety goggles to protect eyes.

**Skin/Body**
- Wear chemical/acid resistant (neoprene) impervious gloves to protect hands. Wear a chemical/acid resistant rubber apron, rubber jacket and boots and/or protective coveralls to protect skin.

**Environmental Exposure Controls**
- Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways. Follow best practice for site management and disposal of waste.

**General Industrial Hygiene Considerations**
- Minimize exposure in accordance with good hygiene practice. Wash with soap and water after handling product.

**Key to abbreviations**

ACGIH = American Conference of Governmental Industrial Hygiene
NIOSH = National Institute of Occupational Safety and Health
OSHA = Occupational Safety and Health Administration
STEL = Short Term Exposure Limits are based on 15-minute exposures
TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

## Section 9 - Physical and Chemical Properties

### Information on Physical and Chemical Properties

| | | | |
|---|---|---|---|
| **Material Description** | | | |
| Physical Form : | Liquid | Appearance/Description : | Clear light blue liquid with no odor. |
| Color : | Clear light blue. | Odor : | No odor. |
| Odor Threshold : | No data available | | |
| **General Properties** | | | |
| Boiling Point : | > 212 °F(> 100 °C) | Melting Point/Freezing Point : | No data available |
| Decomposition Temperature : | No data available | pH : | 0.8 (± .1) |
| Specific Gravity/Relative Density : | 1 to 1.5 Water=1 | Water Solubility : | Soluble 100 % |
| Viscosity : | No data available | | |
| **Volatility** | | | |
| Vapor Pressure : | No data available | Vapor Density : | < 1 Air=1 |
| Evaporation Rate : | < 1 n-Butyl Acetate = 1 | VOC (Wt.) : | 0 % |
| VOC (Vol.) : | 0 % | | |
| **Flammability** | | | |
| Flash Point : | No data available | UEL : | No data available |
| LEL : | No data available | Autoignition : | No data available |
| Flammability (solid, gas) : | No data available | | |
| **Environmental** | | | |
| Octanol/Water Partition coefficient : | No data available | | |

## Section 10: Stability and Reactivity

### Reactivity

- No dangerous reaction known under conditions of normal use.

### Chemical stability

- Stable

### Possibility of hazardous reactions

- Hazardous polymerization will not occur.

### Conditions to avoid

- Excess heat.

### Incompatible materials

- Cyanides, chlorinated cleaners, strong alkali metals, water reactive substances, combustible organic materials.

### Hazardous decomposition products

- Cyanides, chlorinated cleaners, strong alkali metals, water reactive substances, combustible organic materials.

## Section 11 - Toxicological Information

### Information on toxicological effects

| Components | | |
|---|---|---|
| Phosphoric acid (< 10%) | 7664-38-2 | **Acute Toxicity:** Ingestion/Oral-Rat LD50 • 1.25 g/kg; *Lungs, Thorax, or Respiration*:**Acute pulmonary edema**; *Liver*:**Changes in liver weight**; Inhalation-Rat LC50 • 25.5 mg/m³; *Lungs, Thorax, or Respiration*:**Acute pulmonary edema**; *Liver*:**Changes in liver weight** |
| Selenious acid (< 5%) | 7783-00-8 | **Acute Toxicity:** Skin-Rabbit LD50 • 4 mg/kg |
| Copper(II) sulfate, pentahydrate (1:1:5) (< 5%) | 7758-99-8 | **Acute Toxicity:** Ingestion/Oral-Rat LD50 • 300 mg/kg; Ingestion/Oral-Human TDLo • 272 mg/kg; *Liver*:**Other changes**; *Kidney, Ureter, and Bladder*:**Other changes**; *Blood*:**Other hemolysis with or without anemia**; Skin-Rat LD50 • >2 g/kg |
| Zinc sulfate (1:1) (< 1%) | 7733-02-0 | **Acute Toxicity:** Ingestion/Oral-Rabbit LD50 • 2 g/kg;<br>**Irritation:** Eye-Rabbit • 420 µg • Moderate irritation;<br>**Multi-dose Toxicity:** Ingestion/Oral-Mouse TDLo • 36 mg/kg 10 Day(s)-Intermittent; *Behavioral*:**Food intake (animal)**; *Nutritional and Gross Metabolic:Changes in Chemistry or Temperature*:**Other changes**; *Biochemical:Metabolism (intermediary)*:**Other proteins**;<br>**Reproductive:** Ingestion/Oral-Rat TDLo • 333 mg/kg (1-18D preg); *Reproductive Effects:Effects on Fertility*:**Post-implantation mortality** |
| Hydrochloric acid (< 5%) | 7647-01-0 | **Acute Toxicity:** Inhalation-Mouse LC50 • 3940 mg/m³ 30 Minute(s); *Lungs, Thorax, or Respiration*:**Acute pulmonary edema**; Inhalation-Rat LC50 • 3124 ppm 1 Hour(s); *Sense Organs and Special Senses:Olfaction*:**Other changes**; *Sense Organs and Special Senses:Eye*:**Iritis**;<br>**Irritation:** Eye-Rabbit • 5 mg 30 Second(s)-Rinse • Mild irritation; Skin-Human • 4 % 24 Hour(s) • Mild irritation;<br>**Reproductive:** Inhalation-Rat TCLo • 450 mg/m³ 1 Hour(s)(1D pre); *Reproductive Effects:Effects on Embryo or Fetus*:**Fetotoxicity (except death, e.g., stunted fetus)**; *Reproductive Effects:Specific Developmental Abnormalities*:**Homeostasis** |

| GHS Properties | Classification |
|---|---|
| Acute toxicity | **UN GHS 3**•Acute Toxicity - Oral 4<br>**OSHA HCS 2012**•Acute Toxicity - Oral 4<br>**WHMIS 2015**•Acute Toxicity - Oral 4 |
| Skin corrosion/Irritation | **UN GHS 3**•Skin Corrosion 1C<br>**OSHA HCS 2012**•Skin Corrosion 1C<br>**WHMIS 2015**•Skin Corrosion 1 |
| Serious eye damage/Irritation | **UN GHS 3**•Serious Eye Damage 1<br>**OSHA HCS 2012**•Serious Eye Damage 1<br>**WHMIS 2015**•Serious Eye Damage 1 |

| | |
|---|---|
| Skin sensitization | **UN GHS 3**•No data available<br>**OSHA HCS 2012**•No data available<br>**WHMIS 2015**•Skin Sensitizer 1 |
| Respiratory sensitization | **UN GHS 3**•No data available<br>**OSHA HCS 2012**•No data available<br>**WHMIS 2015**•Respiratory Sensitizer 1 |
| Aspiration Hazard | **UN GHS 3**•No data available<br>**OSHA HCS 2012**•No data available<br>**WHMIS 2015**•No data available |
| Carcinogenicity | **UN GHS 3**•Carcinogenicity 1A<br>**OSHA HCS 2012**•Carcinogenicity 1A<br>**WHMIS 2015**•Carcinogenicity 1A |
| Germ Cell Mutagenicity | **UN GHS 3**•No data available<br>**OSHA HCS 2012**•No data available<br>**WHMIS 2015**•No data available |
| Toxicity for Reproduction | **UN GHS 3**•No data available<br>**OSHA HCS 2012**•Toxic to Reproduction 2<br>**WHMIS 2015**•Toxic to Reproduction 2 |
| STOT-SE | **UN GHS 3**•No data available<br>**OSHA HCS 2012**•No data available<br>**WHMIS 2015**•No data available |
| STOT-RE | **UN GHS 3**•Specific Target Organ Toxicity Repeated Exposure 1<br>**OSHA HCS 2012**•Specific Target Organ Toxicity Repeated Exposure 1<br>**WHMIS 2015**•Specific Target Organ Toxicity Repeated Exposure 1 |

## Potential Health Effects

### Inhalation

**Acute (Immediate)**
- May cause corrosive burns - irreversible damage.

**Chronic (Delayed)**
- Repeated or prolonged exposure to corrosive fumes may cause bronchial irritation with chronic cough.

### Skin

**Acute (Immediate)**
- Causes severe skin burns and eye damage.

**Chronic (Delayed)**
- Repeated or prolonged exposure to corrosive materials will cause dermatitis.

### Eye

**Acute (Immediate)**
- Causes serious eye damage.

**Chronic (Delayed)**
- Repeated or prolonged exposure to corrosive materials or fumes may cause conjunctivitis.

### Ingestion

**Acute (Immediate)**
- May cause irreversible damage to mucous membranes.

**Chronic (Delayed)**
- Repeated or prolonged exposure to corrosive materials or fumes may cause gastrointestinal disturbances.

### Other

**Chronic (Delayed)**
- Repeated and prolonged exposure to copper(II) sulfate, pentahydrate may affect the liver.

**Key to abbreviations**

LC = Lethal Concentration
LD = Lethal Dose
TD = Toxic Dose

## Section 12 - Ecological Information

### Toxicity

| | CAS | |
|---|---|---|
| Phosphoric Acid | 7664-38-2 | **Aquatic Toxicity-Fish:** 96 Hour(s) LC50 *Bluegill* 60000 µg/L Comments: Phosphoric Acid (7664-38-2)<br>96 Hour(s) LC50 *Rainbow trout* 87000 µg/L Comments: Phosphoric Acid (7664-38-2)<br>48 Hour(s) EC50 Water Flea 105000 µg/L Comments: Phosphoric Acid (7664-38-2) |
| Selenious Acid | 7783-00-8 | **Aquatic Toxicity-Fish:** 96 Hour(s) LC50 *Bluegill* 0.98 mg/L Comments: Selenious Acid (7783-00-8) |
| Copper(II) sulfate, pentahydrate | 7758-99-8 | **Aquatic Toxicity-Fish:** 4 Day(s) LC50 *Rainbow trout* 0.09-0.19 mg/L Comments: Copper(II) sulfate, pentahydrate (1:1:5) (7758-99-8)<br>**Aquatic Toxicity-Crustacea:** 2 Day(s) EC50 Water Flea 0.147-0.227 mg/L Comments: Copper(II) sulfate, pentahydrate (1:1:5) (7758-99-8) |
| Zinc Sulfate | 7733-02-0 | **Aquatic Toxicity-Fish:** 4 Day(s) LC50 *Fathead Minnow* 0.218-0.42 mg/L Comments: (7733-02-0)<br>**Aquatic Toxicity-Algae and Other Aquatic Plant(s):** 28 Day(s) NOEC Algae *Diatom* 1 mg/L Comments: Zinc Sulfate (7733-02-0) 4 Day(s) EC50 Algae *Diatom* 0.271 mg/L Comments: Zinc Sulfate (7733-02-0) |
| Hydrochloric acid (< 5%) | 7647-01-0 | **Aquatic Toxicity-Fish:** 96 Hour(s) LC50 *Gambusia affinis (Western Mosquitofish)* 282 mg/L<br>**Aquatic Toxicity-Crustacea:** 48 Hour(s) LC50 *Carcinus maenas (Green Crab)* 240 mg/L |

- Toxic to aquatic life. Toxic to aquatic life with long lasting effects.

### Persistence and degradability

- Material data lacking.

### Bioaccumulative potential

- Material data lacking.

### Mobility in Soil

- Material data lacking.

### Other adverse effects

- No studies have been found.

## Section 13 - Disposal Considerations

### Waste treatment methods

**Product waste** • Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

**Packaging waste** • Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

## Section 14 - Transport Information

| | UN number | UN proper shipping name | Transport hazard class(es) | Packing group | Environmental hazards |
|---|---|---|---|---|---|
| **DOT** | UN1760 | Corrosive Liquids, N.O.S., (Phosphoric Acid) | 8 | III | NDA |
| **TDG** | UN1760 | Corrosive Liquids, N.O.S., (Phosphoric Acid) | 8 | III | NDA |
| **IMO/IMDG** | UN1760 | Corrosive Liquids, N.O.S., (Phosphoric Acid) | 8 | III | NDA |
| **IATA/ICAO** | UN1760 | Corrosive Liquids, N.O.S., (Phosphoric Acid) | 8 | III | NDA |

**Special precautions for user** • None specified.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** • No data available

## Section 15 - Regulatory Information

### Safety, health and environmental regulations/legislation specific for the substance or mixture

**SARA Hazard Classifications**

- Acute, Chronic

| Inventory | | | | |
|---|---|---|---|---|
| **Component** | **CAS** | **Canada DSL** | **Canada NDSL** | **TSCA** |
| Copper(II) sulfate, pentahydrate (1:1:5) | 7758-99-8 | No | No | No |
| Phosphoric acid | 7664-38-2 | Yes | No | Yes |
| Selenious acid | 7783-00-8 | Yes | No | Yes |
| Water | 7732-18-5 | Yes | No | Yes |
| Zinc sulfate (1:1) | 7733-02-0 | Yes | No | Yes |
| Hydrochloric acid | 7647-01-0 | Yes | No | Yes |

### Canada

#### Labor

**Canada - WHMIS - Classifications of Substances**

| | | |
|---|---|---|
| •Copper(II) sulfate, pentahydrate (1:1:5) | 7758-99-8 | D2B |
| •Selenious acid | 7783-00-8 | D2B |
| •Zinc sulfate (1:1) | 7733-02-0 | Uncontrolled product according to WHMIS classification criteria |
| •Phosphoric acid | 7664-38-2 | E (including <=85%) |
| •Water | 7732-18-5 | Uncontrolled product according to WHMIS classification criteria |
| •Hydrochloric acid | 7647-01-0 | A, D1A, E (listed under Hydrogen chloride); D1A, E; E (0.036% in aqueous solution, 0.36% in aqueous solution, 3.6% in aqueous solution); D1B, E (28% in aqueous solution); D1A, E (31.45% in aqueous solution, 35.2% in aqueous solution) |

**Canada - WHMIS - Ingredient Disclosure List**

| | | |
|---|---|---|
| •Copper(II) sulfate, pentahydrate (1:1:5) | 7758-99-8 | Not Listed |
| •Selenious acid | 7783-00-8 | 1 % |
| •Zinc sulfate (1:1) | 7733-02-0 | 1 % |
| •Phosphoric acid | 7664-38-2 | 1 % |
| •Water | 7732-18-5 | Not Listed |
| •Hydrochloric acid | 7647-01-0 | 1 % |

#### Environment

**Canada - CEPA - Priority Substances List**

| | | |
|---|---|---|
| •Copper(II) sulfate, pentahydrate (1:1:5) | 7758-99-8 | Not Listed |
| •Selenious acid | 7783-00-8 | Not Listed |
| •Zinc sulfate (1:1) | 7733-02-0 | Not Listed |
| •Phosphoric acid | 7664-38-2 | Not Listed |
| •Water | 7732-18-5 | Not Listed |
| •Hydrochloric acid | 7647-01-0 | Not Listed |

### United States

#### Labor

**U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals**

| | | |
|---|---|---|
| •Copper(II) sulfate, pentahydrate (1:1:5) | 7758-99-8 | Not Listed |
| •Selenious acid | 7783-00-8 | Not Listed |
| •Zinc sulfate (1:1) | 7733-02-0 | Not Listed |
| •Phosphoric acid | 7664-38-2 | Not Listed |

| | | |
|---|---|---|
| •Water | 7732-18-5 | Not Listed |
| •Hydrochloric acid | 7647-01-0 | 5000 lb TQ; 5000 lb TQ (anhydrous) |

**U.S. - OSHA - Specifically Regulated Chemicals**

| | | |
|---|---|---|
| •Copper(II) sulfate, pentahydrate (1:1:5) | 7758-99-8 | Not Listed |
| •Selenious acid | 7783-00-8 | Not Listed |
| •Zinc sulfate (1:1) | 7733-02-0 | Not Listed |
| •Phosphoric acid | 7664-38-2 | Not Listed |
| •Water | 7732-18-5 | Not Listed |
| •Hydrochloric acid | 7647-01-0 | Not Listed |

## Environment

**U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants**

| | | |
|---|---|---|
| •Copper(II) sulfate, pentahydrate (1:1:5) | 7758-99-8 | Not Listed |
| •Selenious acid | 7783-00-8 | Not Listed |
| •Zinc sulfate (1:1) | 7733-02-0 | Not Listed |
| •Phosphoric acid | 7664-38-2 | Not Listed |
| •Hydrochloric acid | 7647-01-0 | •Hydrochloric acid |
| •Water | 7732-18-5 | Not Listed |

**U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities**

| | | |
|---|---|---|
| •Copper(II) sulfate, pentahydrate (1:1:5) | 7758-99-8 | Not Listed |
| •Selenious acid | 7783-00-8 | 10 lb final RQ; 4.54 kg final RQ |
| •Zinc sulfate (1:1) | 7733-02-0 | 1000 lb final RQ; 454 kg final RQ |
| •Phosphoric acid | 7664-38-2 | 5000 lb final RQ; 2270 kg final RQ |
| •Hydrochloric acid | 7647-01-0 | 5000 lb final RQ; 2270 kg final RQ |
| •Water | 7732-18-5 | Not Listed |

**U.S. - CERCLA/SARA - Radionuclides and Their Reportable Quantities**

| | | |
|---|---|---|
| •Copper(II) sulfate, pentahydrate (1:1:5) | 7758-99-8 | Not Listed |
| •Selenious acid | 7783-00-8 | Not Listed |
| •Zinc sulfate (1:1) | 7733-02-0 | Not Listed |
| •Phosphoric acid | 7664-38-2 | Not Listed |
| •Hydrochloric acid | 7647-01-0 | Not Listed |
| •Water | 7732-18-5 | Not Listed |

**U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs**

| | | |
|---|---|---|
| •Copper(II) sulfate, pentahydrate (1:1:5) | 7758-99-8 | Not Listed |
| •Selenious acid | 7783-00-8 | 10 lb EPCRA RQ |
| •Zinc sulfate (1:1) | 7733-02-0 | Not Listed |
| •Phosphoric acid | 7664-38-2 | Not Listed |
| •Hydrochloric acid | 7647-01-0 | 5000 lb EPCRA RQ (gas only) |
| •Water | 7732-18-5 | Not Listed |

**U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs**

| | | |
|---|---|---|
| •Copper(II) sulfate, pentahydrate (1:1:5) | 7758-99-8 | Not Listed |
| •Selenious acid | 7783-00-8 | 1000 lb lower TPQ; 10000 lb upper TPQ |
| •Zinc sulfate (1:1) | 7733-02-0 | Not Listed |
| •Phosphoric acid | 7664-38-2 | Not Listed |
| •Hydrochloric acid | 7647-01-0 | 500 lb TPQ (gas only) |
| •Water | 7732-18-5 | Not Listed |

**U.S. - CERCLA/SARA - Section 313 - Emission Reporting**

| | | |
|---|---|---|
| •Copper(II) sulfate, pentahydrate (1:1:5) | 7758-99-8 | Not Listed |
| •Selenious acid | 7783-00-8 | Not Listed |
| •Zinc sulfate (1:1) | 7733-02-0 | Not Listed |
| •Phosphoric acid | 7664-38-2 | Not Listed |
| •Hydrochloric acid | 7647-01-0 | 1.0 % de minimis concentration (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size) |
| •Water | 7732-18-5 | Not Listed |

**U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing**

| | | |
|---|---|---|
| •Copper(II) sulfate, pentahydrate (1:1:5) | 7758-99-8 | Not Listed |

| | | |
|---|---|---|
| •Selenious acid | 7783-00-8 | Not Listed |
| •Zinc sulfate (1:1) | 7733-02-0 | Not Listed |
| •Phosphoric acid | 7664-38-2 | Not Listed |
| •Hydrochloric acid | 7647-01-0 | Not Listed |
| •Water | 7732-18-5 | Not Listed |

## United States - California

### Environment

**U.S. - California - Proposition 65 - Carcinogens List**

| | | |
|---|---|---|
| •Copper(II) sulfate, pentahydrate (1:1:5) | 7758-99-8 | Not Listed |
| •Selenious acid | 7783-00-8 | Not Listed |
| •Zinc sulfate (1:1) | 7733-02-0 | Not Listed |
| •Phosphoric acid | 7664-38-2 | Not Listed |
| •Hydrochloric acid | 7647-01-0 | Not Listed |
| •Water | 7732-18-5 | Not Listed |

**U.S. - California - Proposition 65 - Developmental Toxicity**

| | | |
|---|---|---|
| •Copper(II) sulfate, pentahydrate (1:1:5) | 7758-99-8 | Not Listed |
| •Selenious acid | 7783-00-8 | Not Listed |
| •Zinc sulfate (1:1) | 7733-02-0 | Not Listed |
| •Phosphoric acid | 7664-38-2 | Not Listed |
| •Hydrochloric acid | 7647-01-0 | Not Listed |
| •Water | 7732-18-5 | Not Listed |

**U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)**

| | | |
|---|---|---|
| •Copper(II) sulfate, pentahydrate (1:1:5) | 7758-99-8 | Not Listed |
| •Selenious acid | 7783-00-8 | Not Listed |
| •Zinc sulfate (1:1) | 7733-02-0 | Not Listed |
| •Phosphoric acid | 7664-38-2 | Not Listed |
| •Hydrochloric acid | 7647-01-0 | Not Listed |
| •Water | 7732-18-5 | Not Listed |

**U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)**

| | | |
|---|---|---|
| •Copper(II) sulfate, pentahydrate (1:1:5) | 7758-99-8 | Not Listed |
| •Selenious acid | 7783-00-8 | Not Listed |
| •Zinc sulfate (1:1) | 7733-02-0 | Not Listed |
| •Phosphoric acid | 7664-38-2 | Not Listed |
| •Hydrochloric acid | 7647-01-0 | Not Listed |
| •Water | 7732-18-5 | Not Listed |

**U.S. - California - Proposition 65 - Reproductive Toxicity - Female**

| | | |
|---|---|---|
| •Copper(II) sulfate, pentahydrate (1:1:5) | 7758-99-8 | Not Listed |
| •Selenious acid | 7783-00-8 | Not Listed |
| •Zinc sulfate (1:1) | 7733-02-0 | Not Listed |
| •Phosphoric acid | 7664-38-2 | Not Listed |
| •Hydrochloric acid | 7647-01-0 | Not Listed |
| •Water | 7732-18-5 | Not Listed |

**U.S. - California - Proposition 65 - Reproductive Toxicity - Male**

| | | |
|---|---|---|
| •Copper(II) sulfate, pentahydrate (1:1:5) | 7758-99-8 | Not Listed |
| •Selenious acid | 7783-00-8 | Not Listed |
| •Zinc sulfate (1:1) | 7733-02-0 | Not Listed |
| •Phosphoric acid | 7664-38-2 | Not Listed |
| •Hydrochloric acid | 7647-01-0 | Not Listed |
| •Water | 7732-18-5 | Not Listed |

## Section 16 - Other Information

**Revision Date** • 14/December/2015

**Preparation Date** • 20/October/2016

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**Key to abbreviations**

NDA = No Data Available