Safety Data Sheet

Section 1: Identification

Product identifier

Product Name • **BLACK C-55**

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

Toll free • (800) 535-5053 - INFOTRAC
Outside USA • (352) 323-3500 - 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
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
Toxic to aquatic life
Toxic to aquatic life with long lasting effects

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 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. Get medical advice/attention.
IF SWALLOWED: Immediately call a Poison center or a doctor/physician. Rinse mouth. Do NOT induce vomiting.
If exposed or concerned: Get medical advice/attention.
Get medical advice/attention if you feel unwell.

Storage/Disposal • Store locked up in a safe, cool location. Refer to Section 7 for more complete storage instructions. Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Supplemental information • <1 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

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

Label elements

OSHA HCS 2012

DANGER



Hazard statements • Harmful if swallowed
Causes severe skin burns and eye damage.
Causes serious eye damage

Precautionary statements

Prevention • Obtain special instructions before use.
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 person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
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. Get medical advice/attention.
IF SWALLOWED: Immediately call a Poison center or a doctor/physician. Rinse mouth. Do NOT induce vomiting.
If exposed or concerned: Get medical advice/attention.
Get medical advice/attention if you feel unwell.

Storage/Disposal • Store locked up in a safe, cool location. Refer to Section 7 for more complete storage instructions. Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Supplemental information • <1 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.

Canada

According to: WHMIS 2015

Classification of the substance or mixture

WHMIS 2015

- Acute Toxicity Oral 4
  Skin Corrosion 1C
  Serious Eye Damage 1

Label elements

WHMIS 2015

DANGER



Hazard statements

- Harmful if swallowed
  Causes severe skin burns and eye damage.
  Causes serious eye damage

Precautionary statements

Prevention

- Obtain special instructions before use.
  Do not breathe mist, 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 person to fresh air and keep comfortable for breathing.
  Immediately call a POISON CENTER/doctor.
  IF ON SKIN (or hair):Take off immediately all contaminated clothing. Rinse skin w/ water. 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. Get medical advice/attention.
  IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a Poison center or a doctor/physician.
  If exposed or concerned: Get medical advice/attention.
  Get medical advice/attention if you feel unwell.

Storage/Disposal

- Store locked up in a safe, cool location. Refer to Section 7 for more complete instructions. Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Supplemental information

- < 1 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	87% TO 100%	Ingestion/Oral-Rat LD50 • >90 mL/kg	**UN GHS Revision 3:** Nonhazardous **OSHA HCS 2012:** Nonhazardous **WHMIS 2015:** Nonhazardous	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); Skin Irrit. 2; Eye Irrit. 2; Aquatic Acute 1; Aquatic Chronic 1 **OSHA HCS 2012:** Acute Tox. 3 (Orl); Skin Irrit. 2; Eye Irrit. 2 **WHMIS 2015:** Acute Tox. 3 (Orl); Skin Irrit. 2; Eye Irrit. 2	NDA
Phosphoric acid	**CAS:**7664-38-2	< 4%	Ingestion/Oral-Rat LD50 • 1.25 g/kg	**UN GHS Revision 3:** Acute Tox. 4 (Orl); Acute Tox. 5 (Skn); Skin Corr. 1C; Eye Dam. 1; Aquatic Acute 3; Aquatic Chronic 3 **OSHA HCS 2012:** Acute Tox. 4 (Orl); Skin Corr. 1C; Eye Dam. 1 **WHMIS 2015:** Acute Tox. 4 (Orl); Skin Corr. 1C; Eye Dam. 1	NDA
Selenium(IV) dioxide (1:2)	**CAS:**7446-08-4	< 3%	Ingestion/Oral-Rat LD50 • 68100 µg/kg	**UN GHS Revision 3:** Acute Tox. 3 (Orl); Skin Corr. 1; Eye Dam. 1; Aquatic Acute 1; Aquatic Chronic 2 **OSHA HCS 2012:** Acute Tox. 3 (Orl); Skin Corr. 1; Eye Dam. 1 **WHMIS 2015:** Acute Tox. 3 (Orl); Skin Corr. 1; Eye Dam. 1	NDA
Sulfuric acid, zinc salt (1:1), monohydrate	**CAS:**7446-19-7	< 1%	NDA	**UN GHS Revision 3:** Not Classified **OSHA HCS 2012:** Not Classified **WHMIS 2015:** Not Classified	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) **OSHA HCS 2012:** Skin Corr. 1; Eye Dam. 1; Acute Tox. 3 (Inhl) **WHMIS 2015:** Skin Corr. 1; Eye Dam. 1; Acute Tox. 3 (Inhl)	NDA
Sulfuric acid	**CAS:**7664-93-9	< 1%	Inhalation-Rat LC50 • 510 mg/m³ 2 Hour(s) Ingestion/Oral-Rat LD50 • 2140 mg/kg	**UN GHS Revision 3:** Skin Corr. 1B; Eye Dam. 1 **OSHA HCS 2012:** Skin Corr. 1B; Eye Dam. 1 **WHMIS 2015:** Skin Corr. 1B; Eye Dam. 1	NDA

Remaining composition is not hazardous according to OSHA 2012 and WHMIS 2015.

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
- Immediately call a poison control center or a doctor/physician. Do NOT induce vomiting. If swallowed, rinse mouth with water (only if the person is conscious). Do not use mouth-to-mouth method if victim ingested the substance. Give plenty of water to drink. Never give anything by mouth to an unconscious person. If vomiting occurs spontaneously, keep victim's head lowered (forward) to reduce the risk of aspiration.

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, CO_2, alcohol-resistant foam or water spray. SMALL FIRES: Dry chemical, CO_2 or water spray.

Unsuitable Extinguishing Media • CAUTION: Use of water spray when fighting fire may be inefficient.

Special hazards arising from the substance or mixture

Unusual Fire & Explosion Hazards • Containers may explode when heated.

Hazardous Combustion Products • No data available

Advice for firefighters

• Firefighters should wear appropriate protective clothing/equipment including a NIOSH/MSHA approved or equivalent positive pressure self-contained breathing apparatus (SCBA) and protective clothing. 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. It may provide little or no thermal protection.

SMALL FIRES: Move containers from fire area if you can do so without risk.

Fires should be fought from a safe distance. Prevent fire control runoff from entering sewers, drains, drinking water supply and/or natural waterways.

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 sewers, drains, drinking water supply and/or natural waterways.

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: Isolate spill w/ minimal risk. Dike far ahead of liquid spill for later disposal. Recover as much liquid as possible & collect in acid resistant containers. Use absorbent to pick up residue.

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.
Wear appropriate personal protective equipment, avoid direct contact. Do not breathe mists, vapours and/or spray. 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 • Use & store in acid resistant containers in a cool, dry, well ventilated location (e.g. local exhaust ventilation, fans) away from heat & direct sunlight. Avoid temperatures above 100° F Keep container tightly closed. Empty containers may retain hazardous product residue. Do not reuse empty containers for other purposes.

Section 8 - Exposure Controls/Personal Protection

Control parameters

Exposure Limits/Guidelines				
	Result	**ACGIH**	**NIOSH**	**OSHA**
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
Copper(II) sulfate, pentahydrate (1:1:5)	TWAs	1 mg/m3 TWA (dust and mist, as Cu) *as Copper compounds*	1 mg/m3 TWA (dust and mist, as Cu) *as Copper compounds*	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
Sulfuric acid (7664-93-9)	TWAs	0.2 mg/m3 TWA (thoracic particulate matter)	1 mg/m3 TWA	1 mg/m3 TWA

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 w/ full or ½ face N95 cartridge masks if exposure limits are exceeded or symptoms are experienced.

Eye/Face

- Wear tight fitting chemical splash safety goggles to protect eyes. A protective face shield is recommended.

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.

General Industrial Hygiene Considerations

- Minimize exposure in accordance with good hygiene practice. Wash with soap and water after handling product.

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. Provide eyewash stations close to work area and adequate ventilation when using 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 w/ 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	.8-1.0

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 under normal temperatures and pressures.

Possibility of hazardous reactions

- Hazardous polymerization will not occur.

Conditions to avoid

- Excess heat.

Incompatible materials

- Avoid contact with strong Alkali metals, cyanides, chlorinated cleaners, water reactive substances, combustible organic materials. This product may react with strong acids & strong bases.

Hazardous decomposition products

- May produce copper oxides, carbon oxides & sulfur oxides.

Section 11 - Toxicological Information

Information on toxicological effects

Components		
Phosphoric acid (< 4%)	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**; Ingestion/Oral-Rat LD50 • 1400 mg/kg; Inhalation-Rat LC50 • 25.5 mg/m³; *Lungs, Thorax, or Respiration*: **Acute pulmonary edema**; *Liver*:**Changes in liver weight**; Skin-Rabbit LD50 • 2740 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; **Multi-dose Toxicity:** Ingestion/Oral-Rat TDLo • 24 g/kg 13 Week(s)-Continuous; *Gastrointestinal*: **Other changes**; *Blood*: **Pigmented or nucleated red blood cells**; *Biochemical:Enzyme inhibition, induction, or change in blood or tissue levels*:**Transaminases**; **Mutagen:** Cytogenetic analysis • Ingestion/Oral-Chicken, adult (male or female) • 10 mg/kg
Selenium(IV) dioxide (1:2) (< 3%)	7446-08-4	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 68100 µg/kg; *Behavioral*: **Somnolence (general depressed activity)**; *Behavioral*: **Convulsions or effect on seizure threshold**; **Multi-dose Toxicity:** Ingestion/Oral-Rat TDLo • 160 mg/kg 40 Day(s)-Intermittent; *Kidney, Ureter, and Bladder*: **Changes in tubules (including acute renal failure, acute tubular necrosis)**; *Blood*: **Pigmented or nucleated red blood cells**; *Blood*: **Changes in erythrocyte (RBC) count**
Hydrochloric acid (< 1%)	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**; **Irritation:** Eye-Rabbit • 5 mg 30 Second(s)-Rinse • Mild irritation; Skin-Human • 4 % 24 Hour(s) • Mild irritation; **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**

Sulfuric acid (< 1%)	7664-93-9	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 2140 mg/kg; Inhalation-Rat LC50 • 510 mg/m³ 2 Hour(s); Inhalation-Guinea Pig LCLo • 65 mg/m³ 30 Minute(s); *Lungs, Thorax, or Respiration*:**Bronchiolar constriction**; Inhalation-Human TCLo • 3 mg/m³ 5 Minute(s); *Lungs, Thorax, or respiration*: **Dyspnea**, **Irritation:** Eye-Rabbit • 250 µg • Severe irritation; **Reproductive:** Inhalation-Rabbit TCLo • 20 mg/m³ 7 Hour(s)(6-18D preg); *Reproductive Effects:Specific Developmental Abnormalities*: **Musculoskeletal system**

GHS Properties	Classification
Acute toxicity	**UN GHS 3**•Acute Toxicity - Oral 4 - ATEmix (oral) = 1578 mg/kg **OSHA HCS 2012**•Acute Toxicity - Oral 4 - ATEmix (oral) = 1578 mg/kg **WHMIS 2015**•Acute Toxicity - Oral 4 - ATEmix (oral) = 1578 mg/kg
Skin corrosion/Irritation	**UN GHS 3**•Skin Corrosion 1C **OSHA HCS 2012**•Skin Corrosion 1C **WHMIS 2015**•Skin Corrosion 1C
Serious eye damage/Irritation	**UN GHS 3**•Serious Eye Damage 1 **OSHA HCS 2012**•Serious Eye Damage 1 **WHMIS 2015**•Serious Eye Damage 1
Skin sensitization	**UN GHS 3**•No data available **OSHA HCS 2012**•No data available **WHMIS 2015**•No data available
Respiratory sensitization	**UN GHS 3**•No data available **OSHA HCS 2012**•No data available **WHMIS 2015**•No data available
Aspiration Hazard	**UN GHS 3**•No data available **OSHA HCS 2012**•No data available **WHMIS 2015**•No data available
Carcinogenicity	**UN GHS 3**•No data available **OSHA HCS 2012**•No data available **WHMIS 2015**•No data available
Germ Cell Mutagenicity	**UN GHS 3**•No data available **OSHA HCS 2012**•No data available **WHMIS 2015**•No data available
Toxicity for Reproduction	**UN GHS 3**•No data available **OSHA HCS 2012**•No data available **WHMIS 2015**•No data available
STOT-SE	**UN GHS 3**•No data available **OSHA HCS 2012**•No data available **WHMIS 2015**•No data available
STOT-RE	**UN GHS 3**•No data available **OSHA HCS 2012**•No data available **WHMIS 2015**•No data available

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. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin

Acute (Immediate) • Causes severe skin burns and eye damage. May cause skin sensitization. Symptoms include redness, and skin rash.

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) • Harmful if swallowed. May cause irreversible damage to mucous membranes.

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

Key to abbreviations
LC = Lethal Concentration
LD = Lethal Dose
TD = Toxic Dose

Section 12 - Ecological Information

Toxicity

Components		
Phosphoric acid (< 4%)	7664-38-2	**Aquatic Toxicity-Fish:** 96 Hour(s) LC50 *Bluegill* 60000 µg/L Comments: Phosphoric Acid (7664-38-2) 96 Hour(s) LC50 *Rainbow trout* 87000 µg/L Comments: Phosphoric Acid (7664-38-2). **Aquatic Toxicity-Crustacea:** 48 Hour(s) EC50 Water Flea 105000 µg/L Comments: Phosphoric Acid (7664-38-2)
Copper(II) sulfate, pentahydrate (1:1:5) (< 5%)	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) **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)
Selenium(IV) dioxide (1:2) (< 3%)	7446-08-4	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • 68100 µg/kg; *Behavioral*:**Somnolence (general depressed activity)**; *Behavioral*:**Convulsions or effect on seizure threshold**
Sulfuric acid, zinc salt (1:1), monohydrate	7446-19-7	**Aquatic Toxicity-Fish:** 4 Day(s) LC50 *Fathead Minnow* 0.218-0.42 mg/L Comments: Zinc Sulfate (7733-02-0) **Aquatic Toxicity-Algae and Other Aquatic Plant(s):** 28 Day(s) NOEC Algae *Diatom* 1 mg/L Comments: Zinc Sulfate (7733-02-0) **Aquatic Toxicity-Algae and Other Aquatic Plant(s):** 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 **Aquatic Toxicity-Crustacea:** 48 Hour(s) LC50 *Carcinus maenas (Green Crab)* 240 mg/L
Sulfuric acid (< 1%)	7664-93-9	**Aquatic Toxicity-Fish:** 96 Hour(s) LC50 *Gambusia affinis (Western Mosquitofish)* 42 mg/L **Aquatic Toxicity-Crustacea:** 48 Hour(s) LC50 *Carcinus maenas (Green Crab)* 70-80 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.

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
Selenium(IV) dioxide (1:2)	7446-08-4	Yes	No	Yes
Sulfuric acid, zinc salt (1:1), monohydrate	7446-19-7	Yes	No	No
Sulfuric acid	7664-93-9	Yes	No	Yes
Hydrochloric acid	7647-01-0	Yes	No	Yes
Water	7732-18-5	Yes	No	Yes

Canada

Labor

Canada - WHMIS 1988 - Classifications of Substances

•Copper(II) sulfate, pentahydrate (1:1:5)	7758-99-8	D2B
•Phosphoric acid	7664-38-2	E (including 5-35% in aqueous solution, 35%, aqueous solution 35-80%, 85% or less)
•Selenium(IV) dioxide (1:2)	7446-08-4	E
•Sulfuric acid	7664-93-9	D1A, E (including 50% (14.2N), more than 51%, 85% (30.8)); E (2% (0.4N), 4.9% (1N))
•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)
•Water	7732-18-5	Uncontrolled product according to WHMIS classification criteria

Canada - WHMIS 1988 - Ingredient Disclosure List

•Copper(II) sulfate, pentahydrate (1:1:5)	7758-99-8	Not Listed
•Phosphoric acid	7664-38-2	1 %
•Selenium(IV) dioxide (1:2)	7446-08-4	1 %
•Sulfuric acid	7664-93-9	1 %
•Sulfuric acid, zinc salt (1:1), monohydrate	7446-19-7	1%
•Hydrochloric acid	7647-01-0	1 %
•Water	7732-18-5	Not Listed

Environment

Canada - CEPA - Priority Substances List

•Copper(II) sulfate, pentahydrate (1:1:5)	7758-99-8	Not Listed
•Phosphoric acid	7664-38-2	Not Listed
•Selenium(IV) dioxide (1:2)	7446-08-4	Not Listed
•Sulfuric acid, zinc salt (1:1), monohydrate	7446-19-7	Not Listed
•Sulfuric acid	7664-93-9	Not Listed
•Hydrochloric acid	7647-01-0	Not Listed

•Water	7732-18-5	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
•Phosphoric acid	7664-38-2	Not Listed
•Selenium(IV) dioxide (1:2)	7446-08-4	Not Listed
•Sulfuric acid, zinc salt (1:1), monohydrate	7446-19-7	Not Listed
•Sulfuric acid	7664-93-9	Not Listed
•Hydrochloric acid	7647-01-0	5000 lb TQ; 5000 lb TQ (anhydrous)
•Water	7732-18-5	Not Listed

U.S. - OSHA - Specifically Regulated Chemicals

•Copper(II) sulfate, pentahydrate (1:1:5)	7758-99-8	Not Listed
•Phosphoric acid	7664-38-2	Not Listed
•Selenium(IV) dioxide (1:2)	7446-08-4	Not Listed
•Sulfuric acid, zinc salt (1:1), monohydrate	7446-19-7	Not Listed
•Sulfuric acid	7664-93-9	Not Listed
•Hydrochloric acid	7647-01-0	Not Listed
•Water	7732-18-5	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
•Phosphoric acid	7664-38-2	Not Listed
•Selenium(IV) dioxide (1:2)	7446-08-4	Not Listed
•Sulfuric acid, zinc salt (1:1), monohydrate	7446-19-7	Not Listed
•Sulfuric acid	7664-93-9	Not Listed
•Hydrochloric acid	7647-01-0	Not Listed
•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
•Phosphoric acid	7664-38-2	5000 lb final RQ; 2270 kg final RQ
•Selenium(IV) dioxide (1:2)	7446-08-4	10 lb final RQ; 4.54 kg final RQ
•Sulfuric acid, zinc salt (1:1), monohydrate	7446-19-7	Not Listed
•Sulfuric acid	7664-93-9	1000 lb final RQ; 454 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
•Phosphoric acid	7664-38-2	Not Listed
•Selenium(IV) dioxide (1:2)	7446-08-4	Not Listed
•Sulfuric acid, zinc salt (1:1), monohydrate	7446-19-7	Not Listed
•Sulfuric acid	7664-93-9	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
•Phosphoric acid	7664-38-2	Not Listed
•Selenium(IV) dioxide (1:2)	7446-08-4	Not Listed
•Sulfuric acid, zinc salt (1:1), monohydrate	7446-19-7	Not Listed
•Sulfuric acid	7664-93-9	1000 lb EPCRA RQ
•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
•Phosphoric acid	7664-38-2	Not Listed
•Selenium(IV) dioxide (1:2)	7446-08-4	Not Listed
•Sulfuric acid, zinc salt (1:1), monohydrate	7446-19-7	Not Listed
•Sulfuric acid	7664-93-9	1000 lb TPQ
•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
•Phosphoric acid	7664-38-2	Not Listed
•Selenium(IV) dioxide (1:2)	7446-08-4	Not Listed
•Sulfuric acid, zinc salt (1:1), monohydrate	7446-19-7	Not Listed
•Sulfuric acid	7664-93-9	1.0 % de minimis concentration (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)
•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
•Phosphoric acid	7664-38-2	Not Listed
•Selenium(IV) dioxide (1:2)	7446-08-4	Not Listed
•Sulfuric acid, zinc salt (1:1), monohydrate	7446-19-7	Not Listed
•Sulfuric acid	7664-93-9	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
•Phosphoric acid	7664-38-2	Not Listed
•Selenium(IV) dioxide (1:2)	7446-08-4	Not Listed
•Sulfuric acid, zinc salt (1:1), monohydrate	7446-19-7	Not Listed
•Sulfuric acid	7664-93-9	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
•Phosphoric acid	7664-38-2	Not Listed
•Selenium(IV) dioxide (1:2)	7446-08-4	Not Listed
•Sulfuric acid, zinc salt (1:1), monohydrate	7446-19-7	Not Listed
•Sulfuric acid	7664-93-9	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
•Phosphoric acid	7664-38-2	Not Listed
•Selenium(IV) dioxide (1:2)	7446-08-4	Not Listed
•Sulfuric acid, zinc salt (1:1), monohydrate	7446-19-7	Not Listed
•Sulfuric acid	7664-93-9	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
•Phosphoric acid	7664-38-2	Not Listed
•Selenium(IV) dioxide (1:2)	7446-08-4	Not Listed
•Sulfuric acid, zinc salt (1:1), monohydrate	7446-19-7	Not Listed
•Sulfuric acid	7664-93-9	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
•Phosphoric acid	7664-38-2	Not Listed
•Selenium(IV) dioxide (1:2)	7446-08-4	Not Listed
•Sulfuric acid, zinc salt (1:1), monohydrate	7446-19-7	Not Listed
•Sulfuric acid	7664-93-9	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
•Phosphoric acid	7664-38-2	Not Listed
•Selenium(IV) dioxide (1:2)	7446-08-4	Not Listed
•Sulfuric acid, zinc salt (1:1), monohydrate	7446-19-7	Not Listed
•Sulfuric acid	7664-93-9	Not Listed
•Hydrochloric acid	7647-01-0	Not Listed
•Water	7732-18-5	Not Listed

Section 16 - Other Information

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- 09/January/2019

Preparation Date
- 02/January/2014

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