SAFETY DATA SHEET

BLACK C-33

Section 1. Identification

GHS product identifier : Black C-33

Product code : Not available.

Other means of identification : Not available.

Product type : Liquid.

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

Product use : Metal coloring solution.

Area of application : Consumer applications, Industrial applications, Professional applications.

Manufacturer : Triple-S Chemical Products Inc.
3464 Union Pacific Avenue
Los Angeles, CA 90023
Local tel #: 323-261-7301

e-mail address of person responsible for this SDS : info@ssschemical.com

Emergency telephone number (with hours of operation) : 800-535-5053 INFOTRAC
352-323-3500 (outside US)

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture :

H302	ACUTE TOXICITY (oral) - Category 4
H314	SKIN CORROSION - Category 1B
H318	SERIOUS EYE DAMAGE - Category 1
H350	CARCINOGENICITY - Category 1B
H360	TOXIC TO REPRODUCTION - Category 1B
H371	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 2
H372	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1

GHS label elements

Hazard pictograms :



Signal word : Danger

Section 2. Hazards identification

Hazard statements : H302 - Harmful if swallowed.
H314 - Causes severe skin burns and eye damage.
H350 - May cause cancer.
H360 - May damage fertility or the unborn child.
H371 - May cause damage to organs. (blood system)
H372 - Causes damage to organs through prolonged or repeated exposure. (bones, heart, kidneys, liver, spleen, teeth)

Precautionary statements

Prevention : P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P280 - Wear protective gloves, protective clothing and eye or face protection.
P260 - Do not breathe vapor.
P270 - Do not eat, drink or smoke when using this product.
P264 - Wash thoroughly after handling.

Response : P308 + P311 - IF exposed or concerned: Call a POISON CENTER or doctor.
P304 + P340, P310 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor.
P301 + P310, P330, P331 - IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353, P310 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor.
P363 - Wash contaminated clothing before reuse.
P305 + P351 + P338, P310 - 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 or doctor.

Storage : P405 - Store locked up.

Disposal : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements : Keep container tightly closed. Do not breathe vapor or spray. Do not taste or swallow. Use only with adequate ventilation. Wash thoroughly after handling.

Hazards not otherwise classified : Causes respiratory tract burns. Causes digestive tract burns.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Other means of identification : Not available.

Ingredient name	Other names	%	CAS number
copper nitrate (trihydrate)	-	≤5	10031-43-3
Phosphoric acid, solution	-	≤5	7664-38-2
selenium dioxide	-	≤3	7446-08-4
Proprietary	-	Proprietary	-
Proprietary	-	Proprietary	-
boric acid	Boric acid	≤3	10043-35-3

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

Inhalation : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact : Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : May cause damage to organs following a single exposure if inhaled. Corrosive to the respiratory system.

Skin contact : Causes severe burns. May cause damage to organs following a single exposure in contact with skin.

Ingestion : May cause burns to mouth, throat and stomach. Harmful if swallowed. Corrosive to the digestive tract. Causes burns. May cause damage to organs following a single exposure if swallowed.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing
reduced fetal weight
increase in fetal deaths
skeletal malformations

Section 4. First aid measures

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
stomach pains
reduced fetal weight
increase in fetal deaths
skeletal malformations

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
nitrogen oxides
phosphorus oxides
halogenated compounds
metal oxide/oxides
sulfur

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Remark : None.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use. Can produce strong reactionary sulfur / rotten egg smells when in contact with metal.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
copper nitrate	None.
Phosphoric acid, solution	**ACGIH TLV (United States, 1/2022).** TWA: 1 mg/m³ 8 hours. STEL: 3 mg/m³ 15 minutes. **NIOSH REL (United States, 10/2020).** TWA: 1 mg/m³ 10 hours. STEL: 3 mg/m³ 15 minutes. **OSHA PEL (United States, 5/2018).** TWA: 1 mg/m³ 8 hours.
selenium dioxide	**ACGIH TLV (United States, 1/2022). [Selenium and compounds]** TWA: 0.2 mg/m³, (as Se) 8 hours. **NIOSH REL (United States, 10/2020). [selenium]** TWA: 0.2 mg/m³ 10 hours. **OSHA PEL (United States, 5/2018). [Selenium compounds]** TWA: 0.2 mg/m³, (as Se) 8 hours.
Proprietary	**ACGIH TLV (United States, 1/2022). [Zinc chloride]** TWA: 1 mg/m³ 8 hours. Form: Fume STEL: 2 mg/m³ 15 minutes. Form: Fume **NIOSH REL (United States, 10/2020). [ZINC CHLORIDE FUME]** TWA: 1 mg/m³ 10 hours. Form: Fume STEL: 2 mg/m³ 15 minutes. Form: Fume **OSHA PEL (United States, 5/2018).** TWA: 1 mg/m³ 8 hours. Form: Fume
Proprietary	**ACGIH TLV (United States, 1/2022). [Fluorides]** TWA: 2.5 mg/m³, (as F) 8 hours. **OSHA PEL Z2 (United States, 2/2013). [Fluoride as dust]** TWA: 2.5 mg/m³ 8 hours. Form: Dust **OSHA PEL (United States, 5/2018). [Fluorides]** TWA: 2.5 mg/m³, (as F) 8 hours.
boric acid	**ACGIH TLV (United States, 1/2022). [Borate compounds, Inorganic]** TWA: 2 mg/m³ 8 hours. Form: Inhalable fraction STEL: 6 mg/m³ 15 minutes. Form: Inhalable fraction

Biological exposure indices

Ingredient name	Exposure indices
Proprietary	**ACGIH BEI (United States, 1/2022) [FLUORIDES]** BEI: 2 mg/l, fluoride [in urine]. Sampling time: prior to shift. BEI: 3 mg/l, fluoride [in urine]. Sampling time: end of shift.

United States

Section 8. Exposure controls/personal protection

Appropriate engineering controls : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state	: Liquid.
Color	: Blue.
Odor	: Slight/Odorless.
Odor threshold	: Not available.
pH	: 2 to 2.2
Melting point/freezing point	: Not available.
Boiling point, initial boiling point, and boiling range	: >100°C (>212°F)
Flash point	: Not available.

Section 9. Physical and chemical properties

Evaporation rate : <1 (butyl acetate = 1)

Flammability : Not available.

Lower and upper explosion limit/flammability limit : Not available.

Vapor pressure :

Ingredient name	Vapor Pressure at 20°C			Vapor pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
water	23.8	3.2		92.258	12.3	

Relative vapor density : Not available.

Relative density Density : 1 to 1.5

: Not available.

Solubility(ies) : Not available.

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

SADT : Not available.

Viscosity : Not available.

Flow time (ISO 2431) : Not available.

Particle characteristics

Median particle size : Not applicable.

Other information

Physical/chemical properties comments : VOC content: 0%

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.
Under normal conditions of storage and use, hazardous polymerization will not occur.

Conditions to avoid : Keep away from extreme heat.

Incompatible materials : Cyanides
Alkali metals
Chlorinated compounds
strong acids
strong bases

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
copper nitrate	LD50 Oral	Rat	794 mg/kg	-
Phosphoric acid, solution	LD50 Dermal	Rabbit	2740 mg/kg	-
	LD50 Oral	Rat	1.25 g/kg	-
selenium dioxide	LD50 Oral	Rat	68100 µg/kg	-
Proprietary	LD50 Oral	Rat	350 mg/kg	-
Proprietary	LD50 Oral	Rat	130 mg/kg	-
boric acid	LD50 Dermal	Rabbit - Male, Female	>2000 mg/kg	-
	LD50 Oral	Rat - Male	>2600 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Proprietary	Skin - Severe irritant	Rabbit	-	120 hours 1 %	-

Sensitization

Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
copper nitrate	-	2A	-
selenium dioxide	-	3	-

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
copper nitrate	Category 2	-	blood system
selenium dioxide	Category 3	-	Respiratory tract irritation
Proprietary	Category 3	-	Respiratory tract irritation
Proprietary	Category 3	-	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
selenium dioxide	Category 2	-	heart, kidneys, liver, spleen
Proprietary	Category 1	-	bones, teeth

Aspiration hazard

Section 11. Toxicological information

Not available.

Information on the likely routes of exposure : Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : May cause damage to organs following a single exposure if inhaled. Corrosive to the respiratory system.

Skin contact : Causes severe burns. May cause damage to organs following a single exposure in contact with skin.

Ingestion : May cause burns to mouth, throat and stomach. Harmful if swallowed. Corrosive to the digestive tract. Causes burns. May cause damage to organs following a single exposure if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
stomach pains
reduced fetal weight
increase in fetal deaths
skeletal malformations

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : Causes damage to organs through prolonged or repeated exposure.

Carcinogenicity : May cause cancer. Risk of cancer depends on duration and level of exposure.

Section 11. Toxicological information

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : May damage fertility or the unborn child.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
Black C-33	1324.7	33911.0	N/A	N/A	14.2
copper nitrate	794	N/A	N/A	N/A	N/A
Phosphoric acid, solution	1250	2740	N/A	N/A	N/A
selenium dioxide	68.1	N/A	N/A	N/A	0.5
Proprietary	350	N/A	N/A	N/A	N/A
Proprietary	130	N/A	N/A	N/A	N/A
boric acid	2500	2500	N/A	N/A	N/A

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
copper nitrate	Acute LC50 9.5 µg/l Fresh water	Crustaceans - Ceriodaphnia dubia	48 hours
	Acute LC50 15 µg/l Fresh water	Fish - Pimephales promelas	96 hours
Phosphoric acid, solution	Acute EC50 >100 mg/l Fresh water	Algae	72 hours
	Acute EC50 105 ppm Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 60 ppm Fresh water	Fish - Lepomis macrochirus	96 hours
selenium dioxide	Acute EC50 100 µg/l Fresh water	Algae - Scenedesmus acutus var. acutus	3 days
	Acute LC50 5090 µg/l Marine water	Crustaceans - Cancer magister - Zoea	48 hours
	Acute LC50 4.8 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 0.03 mg/l Fresh water	Fish - Pimephales promelas	96 hours
	Chronic NOEC 0.625 ppm Fresh water	Fish - Heteropneustes fossilis	4 weeks
Proprietary	Acute EC50 34 µg/l Fresh water	Algae - Chlorella vulgaris - Exponential growth phase	72 hours
	Acute EC50 26 µg/l Marine water	Algae - Navicula incerta	96 hours
	Acute EC50 1.8 mg/l Fresh water	Aquatic plants - Lemna aequinoctialis	96 hours
	Acute EC50 100 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 49.99 µg/l Fresh water	Crustaceans - Moina irrasa - Neonate	48 hours
	Acute LC50 0.027 mg/l Marine water	Fish - Limanda punctatissima - Pre-larvae	96 hours
	Chronic NOEC 20 µg/l Marine water	Algae - Chlorella sp. - Exponential growth phase	72 hours
	Chronic NOEC 1000 µg/l Fresh water	Crustaceans - Procambarus clarkii - Intermolt	21 days
	Chronic NOEC 80 µg/l Fresh water	Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)	21 days

Section 12. Ecological information

boric acid	Chronic NOEC 31.5 µg/l Fresh water	Fish - Oncorhynchus mykiss	30 days
	Acute LC50 45.5 mg/l Fresh water	Crustaceans - Ceriodaphnia dubia	48 hours
	Acute LC50 133000 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 75 mg/l Marine water	Fish - Pagrus major	96 hours
	Chronic NOEC 6000 µg/l Fresh water	Daphnia - Daphnia magna	21 days
	Chronic NOEC 2100 µg/l Fresh water	Fish - Oncorhynchus mykiss	87 days

Conclusion/Summary : Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Proprietary	-	60960	high
boric acid	-1.09	-	low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	UN1760	UN1760	UN1760
UN proper shipping name	Corrosive liquids, n.o.s. (Phosphoric acid)	CORROSIVE LIQUID, N.O.S. (Phosphoric acid)	Corrosive liquid, n.o.s. (Phosphoric acid)
Transport hazard class(es)	8 	8 	8 

United States

Section 14. Transport information

Packing group	III	III	III
Environmental hazards	No.	Yes.	Yes. The environmentally hazardous substance mark is not required.

Additional information

DOT Classification : Reportable quantity 336.7 lbs / 152.86 kg [32.305 gal / 122.29 L]. Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.
Limited quantity Yes.
Packaging instruction Exceptions: 154. Non-bulk: 203. Bulk: 241.
Quantity limitation Passenger aircraft/rail: 5 L. Cargo aircraft: 60 L.
Special provisions IB3, T7, TP1, TP28

IMDG : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.
Emergency schedules F-A, S-B
Special provisions 223, 274
IMDG Code Segregation group SGG1 - Acids

IATA : The environmentally hazardous substance mark may appear if required by other transportation regulations.
Quantity limitation Passenger and Cargo Aircraft: 5 L. Packaging instructions: 852. Cargo Aircraft Only: 60 L. Packaging instructions: 856. Limited Quantities - Passenger Aircraft: 1 L. Packaging instructions: Y841.
Special provisions A3, A803

Special precautions for user : Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

U.S. Federal regulations : TSCA 8(a) CDR Exempt/Partial exemption: Not determined
Commerce control list precursor: Proprietary
United States inventory (TSCA 8b): All components are active or exempted.
Clean Water Act (CWA) 307: copper dinitrate; selenium dioxide; Proprietary
Clean Water Act (CWA) 311: copper dinitrate; Phosphoric acid, solution; selenium dioxide; Proprietary; Proprietary

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Section 15. Regulatory information

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : ACUTE TOXICITY (oral) - Category 4
SKIN CORROSION - Category 1B
SERIOUS EYE DAMAGE - Category 1
CARCINOGENICITY - Category 1B
TOXIC TO REPRODUCTION - Category 1B
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 2
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1
HNOC - Corrosive to digestive tract
HNOC - Corrosive to respiratory tract

Composition/information on ingredients

Name	%	Classification
Copper Nitrate	≤5	OXIDIZING SOLIDS - Category 2 ACUTE TOXICITY (oral) - Category 4 SKIN CORROSION - Category 1B SERIOUS EYE DAMAGE - Category 1 CARCINOGENICITY - Category 1B SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 2 HNOC - Corrosive to digestive tract HNOC - Corrosive to respiratory tract
Phosphoric acid, solution	≤5	CORROSIVE TO METALS - Category 1 ACUTE TOXICITY (oral) - Category 4 SKIN CORROSION - Category 1B SERIOUS EYE DAMAGE - Category 1 HNOC - Corrosive to digestive tract
selenium dioxide	≤3	ACUTE TOXICITY (oral) - Category 3 ACUTE TOXICITY (inhalation) - Category 3 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
Proprietary	Proprietary	ACUTE TOXICITY (oral) - Category 4 SKIN CORROSION - Category 1B SERIOUS EYE DAMAGE - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 HNOC - Corrosive to digestive tract
Proprietary	Proprietary	ACUTE TOXICITY (oral) - Category 3 SKIN CORROSION - Category 1B SERIOUS EYE DAMAGE - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1 HNOC - Corrosive to digestive tract
boric acid	≤3	TOXIC TO REPRODUCTION - Category 1B

SARA 313

Section 15. Regulatory information

	Product name	CAS number	%
Form R - Reporting requirements	copper nitrate selenium dioxide Proprietary Proprietary	10031-43-3 7446-08-4 - -	≤5 ≤3 Proprietary Proprietary
Supplier notification	copper nitrate selenium dioxide Proprietary Proprietary	10031-43-3 7446-08-4 - -	≤5 ≤3 Proprietary Proprietary

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts : The following components are listed: CUPRIC NITRATE; PHOSPHORIC ACID; SELENIUM DIOXIDE; Proprietary; Proprietary

New York : The following components are listed: Cupric nitrate; Phosphoric acid; Selenium dioxide; Proprietary; Proprietary

New Jersey : The following components are listed: CUPRIC NITRATE; PHOSPHORIC ACID; SELENIUM OXIDE; Proprietary; Proprietary; BORATE COMPOUNDS, Inorganic

Pennsylvania : The following components are listed: NITRIC ACID, COPPER(2+) SALT; PHOSPHORIC ACID; SELENIUM OXIDE; Proprietary; Proprietary

California Prop. 65

This product does not require a Safe Harbor warning under California Prop. 65.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

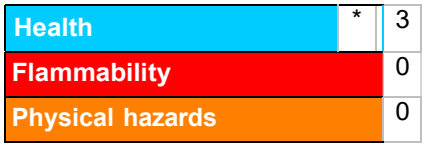
Section 16. Other information

Other special considerations : The information contained herein is provided in good faith and is believed to be correct as of the date hereof. However, Triple- S makes no representation as to the comprehensiveness or accuracy of the information. Since no control is exercised over product use, Triple- S represents and warrants only that its products are of consistent quality within manufacturing tolerances. It is expected that individuals receiving the information ill exercise their independent judgment in determining its appropriateness for a particular period. Accordingly, Triple- S will not be responsible for damages of any kind resulting from the use of or the reliance upon such information. No representations, or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made hereunder to which the informations refers. No oral or written representation or statement of any kind, express or implied, now or hereafter made is authorized or warranted by Triple- S, including those of merchantability or fitness

Section 16. Other information

for a particular purpose Triple- S will not be liable for special, incidental or consequential damages, including for delays or lost profits. Liability for breach of contract, negligence or on any other legal basis Is limited to the lesser of refund or replacement of defective material. The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide ad should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment.

Hazardous Material Information System (U.S.A.)



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The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)



Procedure used to derive the classification

Classification	Justification
ACUTE TOXICITY (oral) - Category 4	Calculation method
SKIN CORROSION - Category 1B	Calculation method
SERIOUS EYE DAMAGE - Category 1	Calculation method
CARCINOGENICITY - Category 1B	Calculation method
TOXIC TO REPRODUCTION - Category 1B	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 2	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1	Calculation method

History

Date of issue/Date of revision : 02/20/2023

Date of previous issue : No previous validation

Version : 1

Prepared by : Sphera Solutions

Key to abbreviations : ATE = Acute Toxicity Estimate
AMP = Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)

Section 16. Other information

N/A = Not available
UN = United Nations

References : HCS (U.S.A.) - Hazard Communication Standard
International transport regulations

Indicates information that has changed from previously issued version.

Notice to reader

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