VOLUNTARY PURCHASING GROUPS, INC.

Safety Data Sheet
Hi-Yield® Root Killer

SECTION 1: Identification

Product identifier

Product name	Hi-Yield® Root Killer
Product number	33481

Supplier's details

Name	Voluntary Purchasing Groups, Inc.
Address	230 FM 87 Bonham, TX 75418 USA
Telephone	855-270-4776

Emergency phone number(s)

In the event or a medical or chemical emergency contact ChemTel, Inc.
North American 1-800-255-3924 or worldwide Intl. + 01-813-248-0585

SECTION 2: Hazard identification

Classification of the substance or mixture

- Acute toxicity, oral (chapter 3.1), Cat. 4
- Acute toxicity, dermal (chapter 3.1), Cat. 5
- Skin corrosion/irritation (chapter 3.2), Cat. 2
- Eye damage/irritation (chapter 3.3), Cat. 2A
- Hazardous to the aquatic environment - acute hazard (chapter 4.1), Cat. 1
- Hazardous to the aquatic environment - long-term hazard (chapter 4.1), Cat. 1

GHS label elements, including precautionary statements

Pictogram

Signal word **Danger**

Hazard statement(s)

H302	Harmful if swallowed
H313	May be harmful in contact with skin
H315	Causes skin irritation
H319	Causes serious eye irritation
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

Precautionary statement(s)

P102	Keep out of reach of children.

Other hazards which do not result in classification

SECTION 3: Composition/information on ingredients

Substances

Hazardous components

Component	Concentration
Copper (II) sulfate (CAS no.: 7758-98-7; EC no.: 231-847-6; Index no.: 029-004-00-0)	**90 - 100 %**

SECTION 4: First-aid measures

Description of necessary first-aid measures

General advice	Call a poison control center or doctor for treatment advice. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment. Never give fluids or induce vomiting if a patient is unconscious or convulsing regardless of cause of injury. If breathing difficulties occur, seek medical attention immediately.
If inhaled	Move person to fresh air. If person is not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Call a poison control center or doctor for treatment advice.
In case of skin contact	Wash skin with soap and plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice.
In case of eye contact	Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control center or doctor for treatment advice.
If swallowed	Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a poison control center or doctor for treatment advice.

Indication of immediate medical attention and special treatment needed, if necessary
First Aid: Notes to Physician
Provide general supportive measures and treat symptomatically. Basic Treatment: Establish a patent airway. Suction if necessary. Watch for signs of respiratory insufficiency and assist ventilations if necessary. Administer oxygen by non-rebreather mask at 10 to 15 L/minutes. Monitor for shock and treat if necessary. For eye contamination, flush eyes immediately with water. Irrigate each eye continuously with normal saline during transport. Do not use emetics. For ingestion, rinse mouth and administer 5 mL/kg up to 200 mL of water for dilution if the patient can swallow, has a strong gag reflex, and does not drool. Administer activated charcoal. Advanced Treatment: Consider orotracheal or nasotracheal intubation for airway control in the patient who is unconscious. Start an IV with lactated Ringer's SRP: "To keep open", minimal flow rate. Watch for signs of fluid overload. For hypotension with signs of hypovolemia, administer fluid cautiously. Consider vasopressors if hypotensive with a normal fluid volume. Watch for signs of fluid overload. Use proparacaine, hydrochloride to assist eye irrigation.

SECTION 5: Fire-fighting measures

Suitable extinguishing media
Dry chemical, CO2, Halon, water spray or standard form

Specific hazards arising from the chemical
Copper Sulfate Pentahydrate is not combustible, but may decompose in the heat of a fire to produce corrosive and/or toxic fumes.
Hazardous Combustion Products - Sulfur oxides and copper fumes.
Avoid breathing vapors or dusts.

Special protective actions for fire-fighters
Firefighters should wear full protective clothing including self-contained breathing apparatus. Move containers from fire area if possible. Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution. Do not scatter spilled material with high-pressure water streams. Dike fire control water for later disposal.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures
Evacuate the area promptly and keep upwind of the spilled material. Isolate the spill area to prevent people from entering. Keep materials which can bum away from spilled material. In case of large spills, follow all facility emergency response procedures. Remove soiled clothing and launder before reuse. A void all skin contact with the spilled material. Have emergency equipment readily available.

Methods and materials for containment and cleaning up
Stop the flow of material, if this can be done without risk. Contain the discharged material. If sweeping of a contaminated area is necessary use a dust suppressant agent, which does not react with product (see Section 10 for incompatibility information). Wear appropriate protective equipment and clothing during clean-up. Shovel the material into waste container. Thoroughly wash the area after a spill or leak clean-up. Prevent spill rinsate from contamination of storm drains, sewers, soil or groundwater.

SECTION 7: Handling and storage

Precautions for safe handling
It is a violation of Federal Law to use this product in a manner inconsistent with its labeling, when used as a pesticide. Do not breathe dust. Avoid all contact with skin and eyes. Use this product only with adequate ventilation. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities
Keep in original container in locked storage area. Keep container tightly closed when not in use. Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Material should be stored in secondary containers or in a diked area, as appropriate. Store containers away from incompatible chemicals (see Section I 0, Stability and Reactivity). Storage areas should be made of fire-resistant materials. Post warning and "NO SMOKING" signs in storage and use areas, as appropriate. Use corrosion-resistant structural materials, lighting, and ventilation systems in the storage area. Floors should be sealed to prevent absorption of this material. Have appropriate extinguishing equipment in the storage area (i.e., sprinkler system, portable fire extinguishers).
Empty containers may contain residual particulates; therefore, empty containers should be handled with care. Do not cut, grind, weld, or drill near this container. Never store food, feed, or drinking water in containers that held this product. Keep this material away from food, drink and animal feed. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged.
Do not store this material in open or unlabeled containers. Limit quantity of material stored. Store in suitable containers that are corrosion-resistant.

SECTION 8: Exposure controls/personal protection

Appropriate engineering controls
Ventilation: General or local exhaust to maintain employee exposure below the TLV/PEL.
Wash hands thoroughly after handling material. Do not eat, drink or smoke in work areas. Have a safety shower or eye-wash fountain available. Use good hygiene practices when handling this material including changing and laundering work clothing after use. Discard contaminated shoes and leather goods.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection
Causes serious eye irritation. Splash-proof or dust-resistant safety goggles to prevent eye contact with this substance. Contact lenses should not be worn.

Skin protection
PVC or Neoprene gloves

Body protection
Apron, boots, long sleeved shirt and full-length pants may be worn when necessary to prevent skin contact.
Eye wash and shower facilities should be available.

Respiratory protection
NIOSH/MSHA approved respiratory devices to protect against dusts

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance/form	Blue crystalline powder
Initial boiling point and boiling range	1202 degrees F (650 degrees C)
Solubility(ies)	Appreciable (>10%)

Other safety information
SPECIFIC GRAVITY (H2O=1) - 3.6
Will not evolve flammable or toxic gases

SECTION 10: Stability and reactivity

Chemical stability
Copper Sulfate Pentahydrate is hygroscopic, but stable when kept dry, under normal temperature and pressures.

Possibility of hazardous reactions
Polymerization will not occur.

Conditions to avoid
Avoid high temperatures, exposure to air and incompatible materials.

Incompatible materials
Oxidizers, magnesium, strong bases, alkalines, phosphates, acetylene, hydrazine, and zirconium

Hazardous decomposition products
Carbon monoxide, Carbon dioxide, Sulfur oxides and Copper oxides

SECTION 11: Toxicological information

Acute toxicity
Harmful or fatal if swallowed. May cause gastrointestinal irritation with symptoms such as nausea, vomiting, and diarrhea. Ingestion may cause degeneration of liver, kidney, or renal failure. Persons who survive ingestion may develop granulomatous lesions of the kidney. Ingestion of large amounts may lead to convulsions, coma or death.

Skin corrosion/irritation
This product can cause irritation of the skin with pain, itching and redness.
Severe overexposure can cause skin bums.
Prolonged exposure may cause dermatitis and eczema.

Serious eye damage/irritation
Exposure to particulates or solution of this product may cause redness and pain.
Prolonged contact may cause conjunctivitis, ulceration and corneal abnormalities.

Respiratory or skin sensitization
May irritate the nose, throat and respiratory tract. Symptoms can include sore throat, coughing and shortness of breath. In severe cases, ulceration and perforation of the nasal septum can occur. If this material is heated, inhalation of fumes may lead to development of metal fume fever. This is a flu-like illness with symptoms of metallic taste, fever and chills, aches, chest tightness and cough. Repeated inhalation exposure can cause shrinking of the lining of the inner nose.

Germ cell mutagenicity
Human and animal mutation data are available for Copper Sulfate Pentahydrate; these data were obtained during clinical studies on specific human and animal tissues exposed to high doses of this compound.

Carcinogenicity
A: General Product Information
Copper Sulfate Pentahydrate (7758-99-8)
Cytogenetic Analysis-Rat/ast 300 mg/kg
B: Component Carcinogenicity
Copper dusts and mists, as Cu (7440-50-8)
EPA: EPA-D (Not Classifiable as to Human Carcinogenicity - inadequate human and animal evidence of carcinogenicity or no data available)

Reproductive toxicity
There are no reports ofteratogenicity in humans. Animal studies indicate that a deficiency or excess of copper in the body can cause significant harm to developing embryos. The net absorption of copper is limited and toxic levels are unlikely from industrial exposure.

Additional information
Individuals with Wilson's disease are unable to metabolize copper. Thus, persons with pre-existing Wilson's disease may be more susceptible to the effects of overexposure to this product.

First Aid: Notes to Physician
Provide general supportive measures and treat symptomatically. Basic Treatment: Establish a patent airway. Suction if necessary. Watch for signs of respiratory insufficiency and assist ventilations if necessary. Administer oxygen by non-rebreather mask at 10 to 15 L/minutes. Monitor for shock and treat if necessary. For eye contamination, flush eyes immediately with water. Irrigate each eye continuously with normal saline during transport. Do not use emetics. For ingestion, rinse mouth and administer 5 mL/kg up to 200 mL of water for dilution if the patient can swallow, has a strong gag reflex, and does not drool. Administer activated charcoal. Advanced Treatment: Consider orotracheal or nasotracheal intubation for airway control in the patient who is unconscious. Start an IV with lactated Ringer's SRP: "To keep open", minimal flow rate. Watch for signs of fluid overload. For hypotension with signs of hypovolemia, administer fluid cautiously. Consider vasopressors if hypotensive with a normal fluid volume. Watch for signs of fluid overload. Use proparacaine, hydrochloride to assist eye irrigation.

SECTION 12: Ecological information

Toxicity
Harmful to aquatic life in very low concentrations. Copper Sulfate Pentahydrate is toxic to fish and marine organisms when applied to streams, rivers, ponds or lakes.

Persistence and degradability
If released to soil, copper sulfate may leach to groundwater, be partly oxidized or bind to humic materials, clay or hydrous oxides of iron and manganese. In water, it will bind to carbonates as well as humic materials, clay and hydrous oxides of iron and manganese.
Copper is accumulated by plants and animals, but it does not appear to biomagnify from plants to animals. In air, copper aerosols have a residence time of 2 to 10 days in an unpolluted atmosphere and 0.1 to greater than 4 days in polluted, urban areas.
LC50 (Lepomis machochirus bluegill) wt 1.5 g = 884 mg/Lat 18°C, static bioassay (95% confidence limit 707-1,100 mg/L) (technical material, 100% (about 25% elemental copper); LC50 (Leopmis cyanellus, Green Sunfish)= 1.1 g, 3,510 µg/L at °C;
LC50 (Pimephales promelas, Fat-head minnow)= 1.2 g, 838 µg/L at 18°C; LC50 (Crassius auratus, Goldfish)= 0.9 g, 1380 µg/L at 18°C;
LC50 (Crassius auratus, Goldfish)= 0.1-2.5 mg/L; LC50 (EEL)= 0.1-2.5 mg/L; LC5o (Salmo gairdneri, Rainbow trout)= 1.6 g, 135 µg/L at 18°C;
LC50 (Salmo gairdneri, Rainbow trout) 48 hours =0.14 ppm; LC50 (Daphnia magna) no time specified= 0.182 mg/L; LC50 (Salmo gairdneri, Rainbow trout) no time specified = 0.17 mg/L; LC50 (Lepomis machochirus, Blue gill) no time specified= 1.5 g, 884 µg/L at 18°C; LC50 (Stripped Bass) 96 hours= 1 ppm or lower; LC50 (Prawn) 48 hours= 0.14; LC50 (Shrimp) 96 hours= 17.0 ppm copper; LC50 (Blue Crab) 96 hours= 28 ppm copper; LC50 (Oyster) 96 hours= 5.8 ppm copper; LC50 (Viviparus bengalensis snail) 96 hours= 0.060 ppm copper (at 32.5°C; 0.066 ppm copper static bioassay); LC50 (Viviparus bengalensis snail) 96 hours= 0.09 ppm copper (at 27.3°C; 0.066 ppm copper static bioassay); LC50 (Viviparus bengalensis snail) 96 hours= 0.39 ppm copper (at 20.3°C; 0.066 ppm copper static bioassay)

SECTION 13: Disposal considerations

Disposal of the product
All wastes must be handled in accordance with local, state and federal regulations or with regulations of Canada and its Provinces. This material can be converted to a less hazardous material by weak reducing agents followed by neutralization. Do not reuse empty containers. Do not rinse unless required for recycling. If partly filled, call local solid waste agency for disposal instructions. Never pour unused product down drains or on the ground.

Waste treatment
Pesticide wastes are acutely hazardous. Improper disposal of excess pesticides, spray mixtures, or rinsate is a violation of U.S. Federal and Canadian Law. If these wastes cannot be disposed of by use, according to product label instruction, contact your U.S. State, or Canadian Province Pesticide or Environmental Control Agency, or the hazardous waste representative at the nearest U.S. EPA Regional Office, or the offices of Environment Canada for guidance.

Other disposal recommendations
If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

SECTION 14: Transport information

Not regulated

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

Massachusetts Right To Know Components
Chemical name: Cupric sulfate
CAS number: 7758-98-7

New Jersey Right To Know Components
Common name: CUPRIC SULFATE
CAS number: 7758-98-7

Pennsylvania Right To Know Components
Chemical name: Sulfuric acid copper(2+) salt (1:1)
CAS number: 7758-98-7

NFPA Rating

SECTION 16: Other information

Further information/disclaimer

Voluntary Purchasing Groups, Inc. urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.