



# SAFETY DATA SHEET

## SECTION 1 PRODUCT AND COMPANY INFORMATION

Product Name(s): pHin™ Mineral Purifier for Pools & Hot Tubs  
 Product Code(s): #CMP6201, #CMP6202, #CMP6203  
 Uses: Antimicrobial pesticide additive for pool and hot tub waters.  
 Company: ConnectedYard Inc.  
 Address: 380 Portage Avenue, Palo Alto, CA 94306, USA  
 Telephone Number: (408) 686-9466  
 Emergency Telephone Number: (800) 222-1222  
 Date Issued: June 13, 2016

This SDS complies with the OSHA Hazard Communication Standard 29CFR1910.1200 as revised in May 2012 (GHS). It may not meet requirements in other countries.

**NOTE: The hazards and information contained in this SDS are for the product, as delivered. The product is intended to be diluted into large amounts of water, where the dissolved solution will not pose the same hazards or concerns.**

## SECTION 2 HAZARDS IDENTIFICATION

GHS Classification: **DANGER**  
 Acute Toxicity – Oral (Category 4)  
 Eye Irritation (Category 1)  
 Skin Irritation (Category 2)  
 Aquatic Acute Toxicity (Category 1)  
 Aquatic Chronic Toxicity (Category 1)



GHS Hazard Statements: Harmful if swallowed  
 Causes serious eye damage  
 Causes skin irritation  
 Very toxic to aquatic life with long lasting effects

GHS Precautionary Statements: Prevention:  
 Wash hands/skin thoroughly after handling.  
 Wear protective gloves/ eye protection/face protection.  
 Do not eat, drink or smoke when using this product.  
 Avoid release to the environment  
 (Keep out of reach of children.)

Response:  
 Immediately call a poison center/doctor/hospital.  
 If swallowed: Rinse mouth.  
 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 If on skin: Wash with plenty of water/soap.  
 If skin irritation occurs: Get medical advice/attention.  
 Specific treatment (see FIRST AID on this SDS).  
 Take off contaminated clothing and wash it before reuse.  
 Collect spillage.

**SECTION 2 HAZARDS IDENTIFICATION**Storage:

None.

Disposal:

Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazards Not  
Otherwise  
Classified:

None.

GHS  
Assessment:

Approximately 0% of this mixture consists of ingredient(s) of unknown acute toxicity.

Approximately 4% of the mixture consists of ingredient(s) of unknown hazards to the aquatic environment.

**SECTION 3 COMPOSITION / INGREDIENTS**

Component	CAS Number	EC Number	Concentration
Water	7732-85-1	231-791-2	30 - 45%
Copper sulfate	7758-99-8	231-847-6	35 - 50%
Chelating agent	Proprietary	---	5 - 15%
Zinc sulfate	6813-94-5	272-333-1	1.0 - 5.0%

Trade Secret Claims: Specific chemical identity and/or exact percentage (concentration) of components has been withheld as a trade secret.

**SECTION 4 FIRST AID MEASURES**

- First Aid - Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately, if irritation develops.
- First Aid - Skin: In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately if irritation develops and/or persists. Wash contaminated clothing before reuse.
- First Aid - Ingestion: If swallowed and feel unwell, immediately call a physician or poison control center. DO NOT induce vomiting unless directed to do so by a physician or poison control center. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.
- First Aid - Inhalation: If respiratory symptoms or other symptoms of exposure develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek immediate medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.
- Important Symptoms / Effects – Acute and Delayed: Tissue redness/irritation, nausea, difficulty breathing.
- Advice to Physician: Treat symptomatically.

**SECTION 5 FIRE FIGHTING MEASURES**

- Extinguishing Media: Treat surrounding material. Water spray, dry chemical, carbon dioxide, or foam is recommended. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces.
- Specific Hazards: This product is not flammable. This product may give rise to hazardous

**SECTION 5 FIRE FIGHTING MEASURES**

	vapors in a fire. Vapors/fumes may be irritating, corrosive and/or toxic.
Protective equipment and procedures for fire-fighters:	Wear full protective clothing and self-contained breathing apparatus.
Additional Advice:	None.

**SECTION 6 ACCIDENTAL RELEASE MEASURES**

Spill Procedures:	Sweep up spilled material and transfer into suitable containers for recovery or disposal. Finally flush area with water.
Personal Precautions:	Wear suitable protective clothing.
Environmental Precautions:	Prevent the material from entering drains or water courses. Do not discharge directly to a water source. Advise Authorities if spillage has entered watercourse or sewer or has contaminated soil or vegetation.

**SECTION 7 HANDLING AND STORAGE**

Handling:	Wear appropriate personal protection (See Section 8) when handling this material. If exposed to the solid, avoid contact with skin and eyes. Wash thoroughly after handling. Avoid breathing dust. Use in a well-ventilated area.  It is a violation of Federal Law to use this product in a manner inconsistent with its labeling, when used as a pesticide.
Storage:	Keep container(s) tightly closed. Use and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight and hot metal surfaces. Keep away from any incompatible materials (see Section 10). Protect container(s) against physical damage.
Additional Advice:	Store in original container. Store as directed by the manufacturer.

**SECTION 8 EXPOSURE CONTROLS AND PERSONAL PROTECTION**

Occupational Exposure Standards:	Exposure limits are listed below, if they exist.
Water:	None.
Copper sulfate:	(as copper – inorganic compounds) German MAK: 0.1 mg/m <sup>3</sup> TWA. German MAK: 0.2 mg/m <sup>3</sup> STEL. (as copper – soluble inorganic compounds) ACGIH TLV-NIC: 0.05 mg/m <sup>3</sup> TWA (respirable).
Chelating agent:	ACGIH TLV: 3 mg/m <sup>3</sup> STEL.
Zinc sulfate:	None.
Engineering Control Measures:	Engineering methods to prevent or control exposure are preferred. Methods include process or personnel enclosure, mechanical ventilation (local exhaust), and control of process conditions.
Respiratory Protection:	A NIOSH certified air purifying respirator with an dust cartridge may be used under conditions where airborne concentrations are expected to exceed exposure limits.
Hand Protection:	The use of gloves impervious to the specific material handled is advised to prevent skin contact, possible irritation and skin damage (see glove manufacturer literature for information on permeability).
Eye Protection:	Approved eye protection (safety glasses with side-shields or goggles) to

**SECTION 8 EXPOSURE CONTROLS AND PERSONAL PROTECTION**

safeguard against potential eye contact, irritation, or injury is recommended. Depending on conditions of use, a face shield may be necessary.

Body Protection: Impervious clothing should be worn as needed to prevent skin contact.

**SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**

Physical State:	Crystalline solid
Color:	Deep blue
Odor:	Odorless
Odor Threshold:	Not available.
pH:	7.2 - 7.3
Melting Point/Range (°C/°F):	Not available.
Boiling Point/Range (°C/°F):	> 100°C / 212°F
Flash Point (PMCC) (°C/°F):	Not flammable.
Evaporation Rate:	Not available.
Flammability / Explosivity Limits in Air (%):	Not available.
Vapor Pressure:	Not available.
Vapor Density (Air = 1):	Not available.
Relative Density:	ca. 3.6
Solubility in Water:	Completely soluble
Partition Coefficient:	Not available.
Autoignition Temperature (°C/°F):	Not available.
Decomposition Temperature (°C/°F):	Not available.
Viscosity:	Not available.
Explosive Properties:	None.
Oxidizing Properties:	None.
Volatile Organic Content (VOC) (g/l):	< 1 g/l (as defined by 40CFR51.100)

**SECTION 10 STABILITY AND REACTIVITY**

Reactivity:	Product will not undergo additional reaction.
Stability:	Stable under normal storage conditions.
Hazardous Polymerization:	Will not occur.
Conditions to Avoid:	Contact with incompatible materials, excessive heat.
Incompatibilities:	Oxidizing agents, reducing agents, magnesium, strong bases, alkalines, phosphates, acetylene, ammonia, hydrazine, chlorosulfonic acid, zirconium, sodium hydroxide, charcoal, phosphorus, sulfur. Anhydrous copper sulfate causes hydroxylamine to ignite & the hydrated salt is vigorously reduced. Solutions of sodium hypobromite are decomposed by powerful catalytic action of cupric ions, even as impurities. Copper salts, including copper sulfate may react with acetylene or nitromethane to form explosive acetylides.
Hazardous Decomposition	Oxides of carbon, oxides of nitrogen, oxides of sulfur, metal oxides,

**SECTION 10 STABILITY AND REACTIVITY**

Products: amines, aliphatic compounds, toxic by-products.

**SECTION 11 TOXICOLOGICAL INFORMATION**

*If available, toxicity data for the product is given; otherwise component data is listed.*

Acute Toxicity:	Oral LD50 (female rat) 1030 mg/kg Dermal LD50 (rat) > 5000 mg/kg
Skin Corrosion / Irritation:	The product is irritating to the skin in testing on rabbits. Animals exhibited well-defined erythema and very slight edema. Dermal irritation cleared by 72 hours.
Serious Eye Damage / Irritation:	The product is severely irritating to the eye with potential damage in testing on rabbits. Animals exhibited corneal opacity, iritis, pannus and positive conjunctivitis.
Respiratory or Skin Sensitization:	The product is not dermally sensitizing in testing on guinea pigs. (Copper sulfate) Limited human exposure data suggests that certain sensitive individuals may develop allergic responses.
Mutagenicity:	This product is not expected to be mutagenic. (Water) No data. (Copper sulfate) No evidence of mutagenicity by Ames testing. Limited evidence of cell transformations in Syrian hamster embryo. (Chelating agent) No evidence of mutagenicity by Ames testing. (Zinc sulfate) Not mutagenic (Ames test with and without activation and in vivo micronucleus assay).
Carcinogenicity:	This product is not expected to be carcinogenic. (Water) No data. (Copper sulfate) No evidence of carcinogenicity. (Chelating agent) No data. (Zinc sulfate) No carcinogenic effects were detected in mice exposed through inhalation at up to 22 g/l over 12 months.
Reproductive / Developmental Toxicity:	This product may be developmentally harmful, but evidence is insufficient for classification. (Water) No data. (Copper sulfate) Copper compounds possess spermatocidal activity, which irreversibly immobilizes spermatozoa. Mice fetuses showed an increase in skeletal and other malformations with increased dose. (Chelating agent) No data. (Zinc sulfate) In orally-dosed rats, there was no effects to offspring (up to 4000 ppm). No adverse effects were noted in rabbits and their fetuses up to 50 mg/kg.
Chronic/Subchronic Toxicity: Specific Target Organ/Systemic Toxicity – Single Exposure:	(Water) No data. (Copper sulfate) No data. (Chelating agent) Acute exposure caused central nervous system effects in rabbits and mice. (Zinc sulfate) No data.
Chronic/Subchronic Toxicity: Specific Target Organ/Systemic Toxicity – Repeated Exposure:	(Water) No data. (Copper sulfate) Severe hepatic and renal necrosis was noted in feeding studies in rats. Damage to blood and subsequently to the liver and spleen resulted when orally administered to sheep. (Chelating agent) Large or repeated doses may cause kidney injury. (Zinc sulfate) No data.
Aspiration Hazard:	This product is not expected to be an aspiration hazard.
Additional Information:	Individuals with Wilson's disease are unable to metabolize copper. Therefore,

## SECTION 11 TOXICOLOGICAL INFORMATION

persons with this condition may be more susceptible to effects of overexposure to this product.

## SECTION 12 ECOLOGICAL INFORMATION

*If available, ecological data for the product is given; otherwise component data is listed.*

Acute Ecotoxicity:	This product may be very toxic to aquatic species. (Water) No data. (Copper sulfate) LC50 (rainbow trout) 0.75-0.84 mg/l; EC50 (green algae) 85 µg/l/14 days; EC50 (daphnia magna) 6.5 µg/l/48 hr; LC50 (daphnia magna) 18.5 µg/l/48 hr. (Chelating agent) LC50 (bluegill) 486 mg/L/96 hr; EC50 (Daphnia magna) 610 mg/l/24 hr; EC50 (algae) 1.01 mg/l/72 hr. (Zinc sulfate) LC50 (Fathead minnow) 0.33 - 0.78 mg/l/96 hr; LC50 (Daphnia magna) 0.13 - 1.06 mg/l/48 hr; EC10 (algae) 0.011 mg/l/3 day.
Mobility:	This product consists of inorganic salts, which in soil may be partly washed down to lower levels, partly bound by soil components and partly oxidatively transformed. (Chelating agent) Expected to be highly mobility based upon an estimated Koc value of 98.
Persistence/Degradability:	This product consists of inorganic salts, which are not expected to biodegrade. (Chelating agent) Not readily biodegradable (< 20% in 28 days).
Bioaccumulation:	This product consists of inorganic salts, which may bioaccumulate in aquatic species to a limited extent, based on data contained in a study of common carp exposed to copper sulfate. (Chelating agent) An estimated BCF of 13 suggests the potential for bioconcentration in aquatic organisms is low.
Other adverse effects:	None.

## SECTION 13 DISPOSAL CONSIDERATION

Environmental precautions:	Prevent the material from entering drains or water courses. Do not discharge directly to a water source. Advise Authorities if spillage has entered watercourse or sewer or has contaminated soil or vegetation.
Product Disposal:	Dispose in accordance with all local, state (provincial), and federal regulations. Under RCRA, it is the responsibility of the product's user to determine at the time of disposal, whether the product meets RCRA criteria for hazardous waste. This is because the product uses, transformations, mixtures, processes, etc. may render the resulting materials hazardous.  Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide is a violation of Federal Law. If this product cannot be used in accordance to labeling contact your state pesticide or environmental control agency.
Container Disposal:	Do not remove label until container is thoroughly cleaned. Empty containers may contain hazardous residues. This material and its container must be disposed of in a safe way.  Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available. Rinse thoroughly before recycling or discarding in trash.

**SECTION 14 TRANSPORT INFORMATION**

## DOT (US):

Proper Shipping Name: Environmentally hazardous substance, solid, n.o.s. (Copper sulfate, Zinc sulfate)  
 UN Number: UN3077  
 Class: 9  
 Packaging Group: III  
 Reportable Quantity: Copper sulfate (10 pounds), Zinc sulfate (1000 pounds)  
 Marine Pollutant: Copper sulfate (severe marine pollutant)  
**Exceptions:** If the packaging of this product does not contain a reportable quantity amount of 10 lbs of Copper sulfate (which is a hazardous substance only in this quantity as defined in 49 CFR 171.8) and is in a non bulk packaging (not exceeding 400 kg) shipped by ground, then it is non-regulated for transportation. Additionally, the Marine Pollutant classification does not apply if this product is packaged in a non bulk packaging (not exceeding 400 kg each) for ground shipments per 49 CFR 171.4(c).

## IATA:

Proper Shipping Name: Environmentally hazardous substance, solid, n.o.s. (Copper sulfate, Zinc sulfate)  
 UN Number: UN3077  
 Class: 9  
 Packing Group: III  
**Exception:** The dangerous goods classification does not apply for air shipments if this product is packaged in single or inner packaging of :55 kg per IATA special provision A197 provided that the packaging meets the general provisions of IATA 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.

## IMDG:

Proper Shipping Name: Environmentally hazardous substance, solid, n.o.s. (Copper sulfate, Zinc sulfate)  
 UN Number: UN3077  
 Class: 9  
 Packing Group: III  
 Marine Pollutant: Copper sulfate (severe marine pollutant)  
**Exception:** The dangerous goods classification does not apply for vessel shipments if this product is packaged in single or inner packaging of :55 kg per IMDG 2.10.2.7 provided that the packaging meets the general provisions of IMDG Code 4.1.1.1, 4.1.1.2 and 1.1.1.4 through 4.1.1.8.

***This product is NOT RESTRICTED as a hazardous substance or dangerous good as packaged. The product contains less than 10 lbs or 5 kg of Copper Sulfate as packaged therefore is not regulated as a hazardous substance for transport by air, land or sea.***

**SECTION 15 REGULATORY INFORMATION**

US Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA):

This product has been registered under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).

US FIFRA Label Information:

EPA Registration Number: 79817-3

The chemical (mixture) is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals.

Following is the hazard information as required on the pesticide label:

**DANGER**

Corrosive. Causes irreversible eye damage and skin burns.

Harmful if swallowed.

This pesticide is toxic to fish.

Hazards to humans and domestic animals.

KEEP OUT OF REACH OF CHILDREN.

US Toxic Substance Control Act:

All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

**SECTION 15 REGULATORY INFORMATION**

Canadian Domestic Substance List:	All components of this product are listed on the Canadian Domestic List.	
EU REACh:	All components of this product are in compliance with the inventory listing requirements of the E.U. Existing Inventory of Chemical Substances (EINECS). All components of this product have been pre-listed under REACh.	
TSCA Sec.12(b) Export Notification:	This product does not contain a chemical at or above de minimis concentrations which requires reporting.	
Canadian WHMIS Classification:	D.2.B	This product has been classified in accordance with the hazard criteria of the CPR and the SDS contains all of the information required by the CPR.
Massachusetts Right-To-Know:	This product contains materials subject to disclosure under the Massachusetts' Right-To-Know Law: - Copper sulfate - Zinc sulfate	
New Jersey Right-To-Know:	This product contains materials subject to disclosure under the New Jersey's Right-To-Know Law: - Copper sulfate (0549) - Zinc sulfate (2044)	
Pennsylvania Right-To-Know:	This product contains materials subject to disclosure under the Pennsylvania's Right-To-Know Law: - Copper sulfate - Zinc sulfate	
California Proposition 65:	This product does not contain materials which the State of California has found to cause cancer, birth defects or other reproductive harm.	
SARA TITLE III-Section 311/312 Categorization (40 CFR 370):	Immediate (acute) hazard	
SARA TITLE III-Section 313 (40 CFR 372):	This product contains materials which are listed in Section 313 at or above de minimis concentrations: - Copper sulfate (as copper compounds) - Zinc sulfate (as zinc compounds)	
CERCLA Hazardous Substance (40 CFR 302)	This product contains materials subject to reporting under CERCLA and Section 304 of EPCRA: - Copper sulfate (10 pounds) - Zinc sulfate (1000 pounds)	
Water Hazard Class (WGK):	This product is severely water-endangering (WGK=3).	
Other Chemical Inventories:	Australia (AICS):	All compounds listed.
	China (IECSC):	All compounds listed.
	Japan (ENCS):	All compounds listed.
	Korea (KCI):	All compounds listed.
	Philippines (PICCS):	All compounds listed.

**SECTION 16 OTHER INFORMATION**

NFPA Rating - HEALTH:	3
NFPA Rating - FIRE:	0



**SECTION 16 OTHER INFORMATION**

NFPA Rating - REACTIVITY: 0  
 NFPA Rating - SPECIAL: NONE  
 SDS Date Issued: June 13, 2016  
 SDS Current Version: 1.0 Version Date: June 13, 2016  
 SDS Revision History: v1.0 Update to GHS version.

Abbreviations:

GHS: Globally Harmonized System of Classification and Labeling of Chemicals  
 CAS#: Chemical Abstract Services Number  
 ACGIH: American Conference of Governmental Industrial Hygienists  
 OSHA: Occupational Safety and Health Administration  
 NFPA: National Fire Protection Association  
 DOT: US Department of Transportation  
 RCRA: US Resource Conservation and Recovery Act  
 TLV: Threshold Limit Value  
 TWA: Time-Weighted Average  
 PEL: Permissible Exposure Limit  
 STEL: Short Term Exposure Limit  
 WEEL: Workplace Environmental Exposure Levels  
 AIHA: American Industrial Hygiene Association  
 NTP: National Toxicology Program  
 IARC: International Agency for Research on Cancer  
 R: Risk  
 S: Safety  
 LD50: Lethal Dose 50%  
 LC50: Lethal Concentration 50%  
 EC50: Effective Concentration 50%  
 BCF: Bioconcentration Factor  
 BOD: Biological Oxygen Demand  
 Koc: Soil Organic Carbon Partition Coefficient.  
 TIm: Median Tolerance Limit

Key References: United States National Library of Medicine's TOXNET  
 Patty's Toxicology, 5<sup>th</sup> Edition  
 European Commission's Institute for Health and Consumer Protection  
 American Conference of Governmental Industrial Hygienists  
 International Agency for Research on Cancer  
 United States National Toxicology Program  
 United States Occupational Safety and Health Administration  
 United States Department of Transportation  
 Supplier Material Safety Data Sheets

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