Safety Data Sheet

In accordance with CFR 1910.1200 (OSHA HCS)

SDS No. 635 Date of review: June 30, 2020

1 Identification of substance and company

Product name: ***Copper (I) chloride***

Product code: 11220, 13704, 90359, C2283

Relevant use and restrictions on use: Research and product development

Manufacturer/Supplier: Noah Technologies Corporation
1 Noah Park
San Antonio, Texas 78249-3419
Phone: 210-691-2000
Fax: 210-691-2600
Web site: www.noahtech.com

Emergency information: CHEMTREC
800-424-9300

2 Hazards identification

Emergency Overview:

Pictogram(s):

Signal word(s): Danger

Hazard statements:

H302 Harmful if swallowed
H315 Causes skin irritation
H318 Causes serious eye damage
H410 Very toxic to aquatic life with long lasting effects

Precautionary statements:

P264 Wash skin thoroughly after handling
P270 Do not eat, drink or smoke when using this product
P273 Avoid release to the environment
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection
P301+312+330 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.
P302+352 IF ON SKIN: Wash with plenty of soap and water
P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/ doctor
P332+313 If skin irritation occurs: Get medical advice/ attention
P362 Take off contaminated clothing and wash before reuse
P391 Collect spillage
P501 Dispose of contents/ container to an approved waste disposal plant

Hazards not otherwise classified: None

GHS Classification: Acute toxicity, oral - 4
Skin irritation - 2
Serious eye damage - 1
Acute aquatic toxicity - 1
Chronic aquatic toxicity - 1

HMIS ratings (scale 0-4):

Health hazard:	2
Flammability:	0
Physical hazard:	0

3 Composition/Information on ingredients

Chemical name: Copper (I) chloride

Designation:

CAS number: 7758-89-6

EC number: 231-842-9

Formula: CuCl

Synonyms:	Cuprous chloride, copper monochloride

4 First aid measures

After inhalation:	Move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
After skin contact:	Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.
After eye contact:	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes.
After ingestion:	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
Information for doctor:	Show this safety data sheet to the doctor in attendance
Symptoms/effects; acute and delayed:	Exposure can cause gastrointestinal disturbances, damage to the eyes, damage to the liver, damage to the kidneys and damage to the lungs. Depending on the intensity and duration of exposure, effects may vary from mild irritation to severe destruction of tissue. Ingestion may cause nausea and vomiting. Symptoms of exposure may include but are not limited to irritation of the nose and throat, coughing, dizziness, difficulty breathing, capillary damage, headache, cold sweat, weak pulse, kidney and liver damage, convulsions, paralysis and coma. Death may occur from shock or renal failure. Chronic copper poisoning is typified by hepatic cirrhosis, brain damage and demyelination, kidney defects, and copper deposition in the cornea as exemplified by humans with Wilson's disease. It has also been reported that copper poisoning has lead to hemolytic anemia and accelerates arteriosclerosis.
Immediate medical attention and special treatment needed:	See above

5 Fire-fighting measures

Suitable and unsuitable extinguishing agents:	Water spray, alcohol-resistant foam, dry chemical or carbon dioxide
Special hazards caused by the material, its products of combustion or resulting gases:	Oxides of copper, hydrogen chloride
Special fire fighting procedures:	Wear self-contained breathing apparatus and fully protective fire fighting equipment/clothing
Unusual fire and explosion hazard:	No available data

6 Accidental release measures

Person-related safety precautions:	Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation.
Measures for environmental protection:	Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
Measures for cleaning/collecting:	Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for proper disposal.
Additional information:	See Section 7 for information on safe handling See Section 8 for information on personal protective equipment See Section 13 for information on disposal See Section 15 for regulatory information

7 Handling and storage

Information for safe handling:	Avoid contact with skin and eyes. Avoid dust formation. Provide appropriate exhaust ventilation.
Information about protection against explosions and fires:	No data available
Storage requirements to be met by storerooms and containers:	Keep container tightly closed in a dry and well-ventilated place
Incompatibility (avoid contact with):	Strong oxidizers, heat, moisture, alkali metals, light, air, potassium Water/moisture

8 Exposure controls/personal protection

Ventilation requirements:	Local exhaust, chemical fume hood
Components with exposure limits that require monitoring:	OSHA PEL: TWA 1 mg(Cu)/m3:8H ACGIH TLV: TWA 1 mg(Cu)/m3
General protective and hygienic measures:	The usual precautionary measures for handling chemicals should be adhered to Keep away from foodstuffs, beverages and food Instantly remove any soiled and impregnated garments Wash hands during breaks and at the end of the work Avoid contact with the eyes and skin
Personal protective equipment:	
Respiratory protection: **(Use only NIOSH or CEN approved Equipment)**	Filter-dust, fume, mist; respirator equipped with HEPA
Hand protection:	Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique.
Eye protection:	Safety glasses, goggles
Skin protection:	Completely covering work attire with full length apron
Additional protective equipment:	Sufficient to prevent contact. Emergency eyewash and safety shower
Precautionary labeling:	Wash thoroughly after handling

Do not get in eyes, on skin or on clothing
Do not breathe dust, vapor, mist, gas
Keep away from heat, sparks, and open flames
Empty container may contain hazardous residues

9 Physical and chemical properties

Physical state:	Crystalline powder
Color:	grayish to pale green
Odor:	May have slight odor of hydrochloric acid
Odor threshold:	No data available
Molecular Weight (Calculated):	98.99
pH	5 @ 50 g/L @ 20 C
Melting point/freezing point/range:	430 C
Boiling point/range:	1,490 C
Sublimation temperature/start:	No data available
Decomposition temperature:	No data available
Flammability (solid, gas):	Non-flammable
Flash point:	No data available
Autoignition temperature:	No data available
Danger of explosion:	No data available
Flammable limits:	No data available
Lower:	No data available
Upper:	No data available
Evaporation Rate:	No data available
Vapor pressure (mm Hg):	1.3 mmHg @ 546 C
Vapor density:	No data available
Specific gravity:	4.14
Bulk density:	No data available
Solubility in/Miscibility with water:	0.062 g/L @ 20 C
Partition coefficient n-octanol/water:	No data available
Viscosity:	No data available
Other information:	No additional information

10 Stability and reactivity

Reactivity:	No data available
Chemical stability:	Stable under recommended storage conditions
Possibility of hazardous reactions:	Reacts violently with potassium, sodium
Conditions to be avoided:	Light sensitive, air sensitive, moisture sensitive
Materials to be avoided:	See section 7 for information on proper handling and storage
Hazardous decomposition products:	Oxides of copper, hydrogen chloride

11 Toxicological information

LD/LC50 values that are relevant for classification:	oral-rat LD_{50}: 336 mg/kg oral-mouse LD_{50}: 347 mg/kg Inhalation-mouse LC_{50}: 1,008 mg/m3
Irritation or corrosion of skin:	No data available
Irritation or corrosion of eyes:	No data available
Primary irritant or corrosive effect:	
on the skin:	No data available
on the eye:	No data available
Sensitization:	No data available
Potential health effects:	
Inhalation:	May cause irritation
Ingestion:	May cause gastrointestinal disorders
Skin:	May cause irritation
Eyes:	Risk of serious damage to eyes
Signs and symptoms of exposure:	Exposure can cause gastrointestinal disturbances, damage to the eyes, damage to the liver, damage to the kidneys and damage to the lungs. Depending on the intensity and duration of exposure, effects may vary from mild irritation to severe destruction of tissue. Ingestion may cause nausea and vomiting. Symptoms of exposure may include but are not limited to irritation of the nose and throat, coughing, dizziness, difficulty breathing, capillary damage, headache, cold sweat, weak pulse, kidney and liver damage, convulsions, paralysis and coma. Death may occur from shock or renal failure. Chronic copper poisoning is typified by hepatic cirrhosis, brain damage and demyelination, kidney defects, and copper deposition in the cornea as exemplified by humans with Wilson's disease. It has also been reported that copper poisoning has lead to hemolytic anemia and accelerates arteriosclerosis. To the best of our knowledge the acute and chronic toxicity of this substance is not fully known
Carcinogenicity:	Not listed as a carcinogen with NTP, IARC, OSHA or ACGIH

Additional information: No additional information

12 Ecotoxicological information

Toxicity:

Toxicity to fish: Rainbow trout LC_{50}: 0.05 - 0.36 mg/L:96H

Toxicity to daphnia and other aquatic invertebrates: No data available

Toxicity to algae: No data available

Persistence and degradability:

Biodegradability: No data available

Bioaccumulation: No data available

Mobility in soil: No data available

Other adverse effects: Very toxic to aquatic life with long lasting effects

13 Disposal considerations

Recommendation: Consult state, local or national regulation for proper disposal
Allow professional disposal company to handle waste
Must be specially treated under adherence to official regulations

Unclean packagings recommendation: Disposal must be made according to official regulations

14 Transport information

Land transport DOT

Proper shipping name: Copper chloride
DOT Hazard Class: 8
UN Identification number: UN2802
Label(s): Corrosive, Marine Pollutant
Packing group: III
Reportable quantity (RQ): 4.54 kg
North American Emergency Response Guidebook No.: 154

Air transport ICAO-TI and IATA-DGR:

Proper shipping name: Copper chloride
DOT Hazard Class: 8
UN Identification number: UN2802
Label(s): Corrosive, Marine Pollutant
Packing group: III
Reportable quantity (RQ): 4.54 kg
North American Emergency Response Guidebook No.: 154

UPS Ground / FedEx Ground

Proper shipping name: Copper chloride
DOT Hazard Class: 8
UN Identification number: UN2802
Label(s): Corrosive, Marine Pollutant
Packing group: III
Reportable quantity (RQ): 4.54 kg
North American Emergency Response Guidebook No.: 154

UPS Air

Proper shipping name:	Copper chloride
DOT Hazard Class:	8
UN Identification number:	UN2802
Label(s):	Corrosive, Marine Pollutant
Packing group:	III
Reportable quantity (RQ):	4.54 kg
North American Emergency Response Guidebook No.:	154

15 Regulatory information

SARA Section 302 Extremely Hazardous components and corresponding TPQs:	Not subject
SARA Section 311 / 312 hazards:	Acute Health Hazard, Chronic Health Hazard
SARA Section 313 components:	This product contains chemical(s) subject to the reporting requirements of Section 313 of the Emergency Planning & Community Right-to-know Act of 1986 and 40CFR372
California Proposition 65 components:	Not subject
TSCA:	Product is listed on TSCA Inventory

16 Other information

The above information is accurate to the best of our knowledge. However, since data, safety standards and government regulation are subject to change and the conditions of handling and use, or misuse are beyond our control. NOAH MAKES NO WARRANTY, EITHER EXPRESSED OR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN AND DISCLAIMS ALL LIABILITY FOR RELIANCE THEREON. User should satisfy himself that he has all current data relevant to his particular use.