

Copper Reagent #2

R-0861

SDS Revision Date (mm/dd/yyyy): 08/19/2019

Page 1 of 11

SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Product identifier used on the label

: **Copper Reagent #2**

Other means of identification : R-0861

Recommended use of the chemical and restrictions on use

: Use as directed by manufacturer for purposes directly related to water testing.
Restriction on use: None known

Chemical family : Mixture

Name, address, and telephone number of the supplier:

Lowry & Associates, Div. of Chem-Aquascience, Inc.

5-1151 Gorham Street
Newmarket, ON, Canada
L3Y 8Y1

Supplier's Telephone # : (905) 836-0505, Hours 09:00 to 16:30

24 Hr. Emergency Tel # : Not available.

Name, address, and telephone number of the manufacturer:

Refer to supplier

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Dark blue liquid. Alcohol odour.

This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Hazard classification:

Flammable Liquids - Category 3

Serious eye damage/eye irritation - Category 2A

Specific target organ toxicity, single exposure - Category 3 (narcotic effects)

Specific target organ toxicity, single exposure - Category 3 respiratory tract irritation

Label elements

Hazard pictogram(s)



Signal Word

WARNING!

Hazard statement(s)

Flammable liquid and vapour.

Causes serious eye irritation.

May cause respiratory irritation.

May cause drowsiness or dizziness.

Copper Reagent #2

R-0861

SDS Revision Date (mm/dd/yyyy): 08/19/2019

Page 2 of 11

SAFETY DATA SHEET

Precautionary statement(s)

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources - No smoking.
 Keep container tightly closed.
 Ground and bond container and receiving equipment.
 Use explosion-proof electrical and ventilating equipment.
 Use only non-sparking tools.
 Take precautionary measures against static discharge.
 Do not breathe mists, vapours or sprays.
 Wash thoroughly after handling.
 Do not eat, drink or smoke when using this product.
 Use only outdoors or in a well-ventilated area.
 Wear protective gloves and eye/face protection.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 If eye irritation persists: get medical advice/attention.
 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 Call a POISON CENTER or doctor/physician if you feel unwell.
 In case of fire: Use water fog, dry chemical, CO2 or 'alcohol' foam to extinguish.

Store locked up.
 Store in a well-ventilated place. Keep cool.
 Keep container tightly closed.

Dispose of contents/container in accordance with local regulation.

Other hazards

Other hazards which do not result in classification: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

<u>Chemical name</u>	<u>Common name and synonyms</u>	<u>CAS #</u>	<u>Concentration (% by weight)</u>
Isopropanol	Isopropyl alcohol 2-Propanol	67-63-0	30.0 - 60.0
Water	H2O	7732-18-5	45.0 - 70.0

Nonhazardous and other components below reportable levels.

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

- Ingestion* : Call a physician or poison control centre immediately. Do not induce vomiting. If vomiting occurs spontaneously, keep victim's head lowered (forward) to reduce the risk of aspiration. Never give anything by mouth to an unconscious person.
- Inhalation* : If inhaled, move to fresh air. If breathing is difficult, give oxygen by qualified medical personnel only. If breathing has stopped, give artificial respiration. Get medical attention if symptoms persist.
- Skin contact* : Wash off with soap and plenty of water. If irritation or symptoms develop, seek medical attention. Wash contaminated clothing before re-use.

Copper Reagent #2

R-0861

SDS Revision Date (mm/dd/yyyy): 08/19/2019

Page 3 of 11

SAFETY DATA SHEET

Eye contact : Immediately flush eyes with running water for at least 15 minutes. Obtain medical attention if irritation persists.

Most important symptoms and effects, both acute and delayed

: Causes serious eye irritation. Symptoms may include redness, pain, tearing and conjunctivitis. Direct skin contact may cause slight or mild, transient irritation. May cause respiratory irritation. Symptoms may include upper respiratory irritation, coughing and breathing difficulties. May cause central nervous system effects. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Indication of any immediate medical attention and special treatment needed

: Treat symptomatically. This product is a CNS depressant.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

: Use water fog or fine spray, foams, carbon dioxide or dry chemical. Do not use a solid water stream as it may scatter and spread fire.

Unsuitable extinguishing media

: Do not use a solid water stream as it may scatter and spread fire.

Special hazards arising from the substance or mixture / Conditions of flammability

: Flammable liquid and vapor. Vapors may travel considerable distance to a source of ignition and flash back. Vapors are heavier than air and may spread along floors. Static discharge, impact, friction, and heat may ignite exposed chemical material.

Flammability classification (OSHA 29 CFR 1910.106)

: Flammable Liquids - Category 3

Hazardous combustion products

: Carbon dioxide, carbon monoxide and other unidentified organic compounds.

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

Special fire-fighting procedures

: Do not enter without wearing specialized protective equipment suitable for the situation. Firefighter's normal protective clothing (Bunker Gear) will not provide adequate protection. A full-body encapsulating chemical protective suit with positive pressure self-contained breathing apparatus (NIOSH approved or equivalent) may be necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

: Restrict access to area until completion of clean-up. Ensure clean-up is conducted by trained personnel only. Individuals involved in the cleanup must wear appropriate personal protective equipment. For personal protection see section 8.

Environmental precautions

: Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. For large spills, dike the area to prevent spreading.

Methods and material for containment and cleaning up

: Ventilate area of release. Stop spill or leak at source if safely possible. Dike for water control. Use only non-sparking tools and equipment in the clean-up process. Contain and absorb spilled liquid with inert, non-combustible absorbent material (e.g. sand, vermiculite), then place material into open, unsealed containers. For waste disposal, see Section 13 of the SDS.

Copper Reagent #2

R-0861

SDS Revision Date (mm/dd/yyyy): 08/19/2019

Page 4 of 11

SAFETY DATA SHEET

Special spill response procedures

- : If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8802).
- US CERCLA Reportable quantity (RQ): None.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

- : Use only in well-ventilated areas. Wear protective gloves and eye/face protection. Avoid breathing vapours. Avoid contact with skin, eyes and clothing. Wash thoroughly after handling. Keep away from heat, sparks and open flames. Use only non-sparking tools with this material. Avoid contact with incompatible materials. Keep containers tightly closed when not in use. Empty containers retain residue (liquid and/or vapour) and can be dangerous. Do not use pressure to empty drums. Do not cut, weld, drill or grind on or near this container. Follow labeled warnings even after container is emptied.

Conditions for safe storage

- : Store in a cool, dry, well-ventilated area. Store away from incompatible materials. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking in the area.

Incompatible materials

- : Strong oxidizing agents.; Alkali metals.; Strong acids; Aluminium.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<u>Chemical Name</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
	Isopropanol	200 ppm	400 ppm	400 ppm (980 mg/m ³)
Water	N/Av	N/Av	N/Av	N/Av

Exposure controls

Ventilation and engineering measures

- : Ensure adequate ventilation, especially in confined areas. Use general or local exhaust ventilation to maintain air concentrations below recommended exposure limits.

Respiratory protection

- : Respiratory protection is required if the concentrations exceed the TLV. NIOSH-approved respirators are recommended. Advice should be sought from respiratory protection specialists. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02.

Skin protection

- : Wear protective gloves. Advice should be sought from glove suppliers.

Eye / face protection

- : Wear eye/face protection. Chemical splash goggles are recommended. A full face shield may also be necessary.

Other protective equipment

- : An eyewash station and safety shower should be made available in the immediate working area. Depending on conditions of use, an impervious apron should be worn. Other equipment may be required depending on workplace standards.

General hygiene considerations

- : Avoid breathing vapour or mist. Avoid contact with skin, eyes and clothing. Do not ingest. Do not eat, drink or smoke when using this product. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove soiled clothing and wash it thoroughly before reuse.

Copper Reagent #2

R-0861

SDS Revision Date (mm/dd/yyyy): 08/19/2019

Page 5 of 11

SAFETY DATA SHEET

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Dark blue liquid.
Odour	: Alcohol odour.
Odour threshold	: Not available.
pH	: 4.3
Melting Point/Freezing point	: Not available.
Initial boiling point and boiling range	: 83.39°C (183°F)
Flash point	: 23.9°C (75°F)
Flashpoint (Method)	: Closed cup
Evaporation rate (BuAe = 1)	: Not available.
Flammability (solid, gas)	: Not applicable.
Lower flammable limit (% by vol.)	: 3.3%
Upper flammable limit (% by vol.)	: 18.9%
Oxidizing properties	: None.
Explosive properties	: Not explosive
Vapour pressure	: 22 mmHg
Vapour density	: 2.2
Relative density / Specific gravity	: 0.92
Solubility in water	: Soluble
Other solubility(ies)	: Not available.
Partition coefficient: n-octanol/water or Coefficient of water/oil distribution	: Not available.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not applicable.
Viscosity	: Not available.
Volatiles (% by weight)	: 99%
Volatile organic Compounds (VOC's)	: N/Av
Absolute pressure of container	: N/Av
Flame projection length	: N/Av
Other physical/chemical comments	: None known or reported by the manufacturer.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Not normally reactive.
Chemical stability	: Stable under the recommended storage and handling conditions prescribed.
Possibility of hazardous reactions	: Hazardous polymerization will not occur.
Conditions to avoid	: Keep away from excessive heat, open flames, sparks and other possible sources of ignition. Avoid contact with incompatible materials. Do not use in areas without adequate ventilation. Avoid heat, open flames, sparks, static electricity and electrical equipment.
Incompatible materials	: Incompatible materials (see Section 7).

Copper Reagent #2

R-0861

SDS Revision Date (mm/dd/yyyy): 08/19/2019

Page 6 of 11

SAFETY DATA SHEET

Hazardous decomposition products

: None known, refer to hazardous combustion products in Section 5.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation : YES

Routes of entry skin & eye : YES

Routes of entry Ingestion : YES

Routes of exposure skin absorption

: NO

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

: May cause irritation of the nose, throat, mucous membranes, and respiratory tract. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects.

Sign and symptoms ingestion

: Ingestion can cause gastrointestinal irritation, nausea, and diarrhea.

Sign and symptoms skin

: May cause mild skin irritation.

Sign and symptoms eyes

: May cause severe eye irritation. Symptoms may include severe pain, tearing, redness, swelling and blurred vision.

Potential Chronic Health Effects

: Prolonged or repeated skin contact may cause drying and irritation.

Mutagenicity

: Not expected to be mutagenic in humans.

Carcinogenicity

: No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.

Reproductive effects & Teratogenicity

: Not expected to cause reproductive effects.

Sensitization to material

: Not expected to be a skin or respiratory sensitizer.

Specific target organ effects

: This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015). Classification:
Specific target organ toxicity, single exposure - Category 3 (respiratory)
Specific target organ toxicity, single exposure - Category 3 (narcotic effects)

May cause respiratory irritation.

May cause drowsiness or dizziness.

Not classified as specific target organ toxicity-repeated exposure.

Medical conditions aggravated by overexposure

: Pre-existing skin, eye and respiratory disorders.

Synergistic materials

: None known or reported by the manufacturer.

Toxicological data

: There is no available data for the product itself, only for the ingredients. See below for individual ingredient acute toxicity data.

Copper Reagent #2

R-0861

SDS Revision Date (mm/dd/yyyy): 08/19/2019

Page 7 of 11

SAFETY DATA SHEET

<u>Chemical name</u>	<u>LC₅₀(4hr)</u> <u>inh, rat</u>	<u>LD₅₀</u>	
		<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Isopropanol	17 000 ppm (41.8 mg/L) (vapour)	4720 mg/kg	12 890 mg/kg
Water	N/Av	>90 mL/kg	N/Av

Other important toxicological hazards

: None known or reported by the manufacturer.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

: Not expected to be harmful to aquatic organisms. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. See the following tables for individual ingredient ecotoxicity data. Do not allow material to contaminate ground water system.

Ecotoxicity data:

<u>Ingredients</u>	<u>CAS #</u>	<u>Toxicity to Fish</u>		
		<u>LC₅₀ / 96h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
Isopropanol	67-63-0	9640 mg/L (Fathead minnow)	N/Av	None.
Water	7732-18-5	No information available.	No information available.	Not applicable.

<u>Ingredients</u>	<u>CAS #</u>	<u>Toxicity to Daphnia</u>		
		<u>EC₅₀ / 48h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
Isopropanol	67-63-0	> 10 000 mg/L/24hr (Daphnia magna)	30 mg/L	None.
Water	7732-18-5	No information available.	No information available.	Not applicable.

<u>Ingredients</u>	<u>CAS #</u>	<u>Toxicity to Algae</u>		
		<u>EC₅₀ / 96h or 72h</u>	<u>NOEC / 96h or 72h</u>	<u>M Factor</u>
Isopropanol	67-63-0	N/Av	N/Av	None.
Water	7732-18-5	No information available.	No information available.	Not applicable.

Persistence and degradability

: Readily biodegradable

Bioaccumulation potential

: No data is available on the product itself.

<u>Components</u>	<u>Partition coefficient n-octanol/water (log K_{ow})</u>	<u>Bioconcentration factor (BCF)</u>
Isopropanol (CAS 67-63-0)	0.05	1.0
Water (CAS 7732-18-5)	N/Av	

Mobility in soil

: No data is available on the product itself.

Copper Reagent #2

R-0861

SDS Revision Date (mm/dd/yyyy): 08/19/2019

Page 8 of 11

SAFETY DATA SHEET

Other Adverse Environmental effects

: No data is available on the product itself.



SECTION 13. DISPOSAL CONSIDERATIONS

Handling for Disposal : See Section 7 (Handling and Storage) for further details. Empty containers retain residue (liquid and/or vapour) and can be dangerous. Do not cut, weld, drill or grind on or near this container.

Methods of Disposal : Dispose in accordance with all applicable federal, state, provincial and local regulations.

RCRA : If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method.

SECTION 14. TRANSPORT INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
TDG	UN1993	FLAMMABLE LIQUID, N.O.S. (Isopropanol)	3	III	
TDG Additional information	May be shipped as a Limited Quantity when transported in containers no larger than 5 L (1.3 gallons); in packages not exceeding 30 kg (66 pounds) gross mass.				
49CFR/DOT	UN1993	FLAMMABLE LIQUID, N.O.S. (Isopropanol)	3	III	
49CFR/DOT Additional information	Limited quantity exemption may be used if product is in containers of 5 Litres or less, per section 173.150 of 49 CFR.				

Special precautions for user : Keep away from heat, sparks and open flame - No smoking.

Environmental hazards : This product does not meet the criteria for an environmentally hazardous mixture, according to the IMDG Code. See ECOLOGICAL INFORMATION, Section 12.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

: Not available.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

Ingredients	CAS #	TSCA Inventory	CERCLA Reportable Quantity(RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical	
					Toxic Chemical	de minimus Concentration
Isopropanol	67-63-0	Yes	None.	None.	Yes	1%
Water	7732-18-5	Yes	N/Ap	N/Av	No	N/Ap

Copper Reagent #2

R-0861

SDS Revision Date (mm/dd/yyyy): 08/19/2019

Page 9 of 11

SAFETY DATA SHEET

SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: Fire Hazard; Immediate (Acute) health hazard; Chronic Health Hazard. Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

<u>Ingredients</u>	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
Isopropanol	67-63-0	No	N/Ap	Yes	Yes	Yes	Yes	Yes	Yes
Water	7732-18-5	No	N/Ap	No	No	No	No	No	No

Canadian Information:

WHMIS Classification: Refer to Section 2 for a WHMIS Classification for this product.

All ingredients are present on the DSL.

International Information:

Components listed below are present on the following International Inventory list:

<u>Ingredients</u>	CAS #	European EINECS	Australia AICS	Philippines PICCS	Japan ENCS	Korea KECI/KECL	China IECSC	NewZealand IOC
Isopropanol	67-63-0	200-661-7	Present	Present	(2)-207	KE-29363	Present	HSR001180
Water	7732-18-5	231-791-2	Present	Listed	Listed	KE-35400	Present	Listed

SECTION 16. OTHER INFORMATION

Legend

: ACGIH: American Conference of Governmental Industrial Hygienists
 CA: California
 CAS: Chemical Abstract Services
 CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
 CFR: Code of Federal Regulations
 CNS: Central Nervous System
 CSA: Canadian Standards Association
 DOT: Department of Transportation
 EPA: Environmental Protection Agency
 HMIS: Hazardous Materials Identification System
 HSDB: Hazardous Substances Data Bank
 IARC: International Agency for Research on Cancer
 Inh: Inhalation
 IUCLID: International Uniform Chemical Information Database
 LC: Lethal Concentration
 LD: Lethal Dose
 MA: Massachusetts
 MN: Minnesota
 N/Ap: Not Applicable
 N/Av: Not Available
 NFPA: National Fire Protection Association
 NIOSH: National Institute of Occupational Safety and Health

Copper Reagent #2

R-0861

SDS Revision Date (mm/dd/yyyy): 08/19/2019

Page 10 of 11

SAFETY DATA SHEET

NJ: New Jersey
 NTP: National Toxicology Program
 OSHA: Occupational Safety and Health Administration
 PA: Pennsylvania
 PEL: Permissible exposure limit
 RCRA: Resource Conservation and Recovery Act
 RI: Rhode Island
 RTECS: Registry of Toxic Effects of Chemical Substances
 SARA: Superfund Amendments and Reauthorization Act
 STEL: Short Term Exposure Limit
 TDG: Canadian Transportation of Dangerous Goods Act & Regulations
 TLV: Threshold Limit Values
 TWA: Time Weighted Average
 WHMIS: Workplace Hazardous Materials Identification System

- References** :
1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices for 2018.
 2. International Agency for Research on Cancer Monographs, searched 2019.
 3. Canadian Centre for Occupational Health and Safety, CCIInfoWeb databases, 2019 (Chempendium, HSDB and RTECs).
 4. Safety Data Sheets from manufacturer.
 5. US EPA Title III List of Lists - June 2019 version.
 6. California Proposition 65 List - June 2019 version.
 7. OECD - The Global Portal to Information on Chemical Substances - eChemPortal, 2019.

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Revision No. : 2

Revision Information : (M)SDS sections updated : All

Other special considerations for handling : Provide adequate information, instruction and training for operators.

<p><u>Prepared for:</u> Lowry & Associates, Div. of Chem-Aquascience, Inc. 5-1151 Gorham Street Newmarket, ON L3Y 8Y1 www.lowryassociates.ca</p>	
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Copper Reagent #2

R-0861

SDS Revision Date (mm/dd/yyyy): 08/19/2019

Page 11 of 11

SAFETY DATA SHEET

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