

MATERIAL SAFETY DATA SHEET — 16 Sections

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identifier Copper Standard Solution 0.77 ppm, 0.77 mg/L as Cu ²⁺				[WHMIS Classification] Not applicable	
Product Use Standard solution for calibration					
Manufacturer's Name ANDalyze, Inc.			Supplier's Name ANDalyze, Inc.		
Street Address 2109 South Oak Street Suite 102			Street Address 2109 South Oak Street Suite 102		
City Champaign		Province IL		City Champaign	
Postal Code 61820		+1 (217) 328 0045		Postal Code 61820	
Date MSDS Prepared November 8 th , 2017		MSDS Prepared By ANDalyze, Inc		Phone Number +1 (217) 328 0045	

SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredients (<i>specific</i>)	%	CAS Number	LD ₅₀ of Ingredient (<i>specify species and route</i>)	LC ₅₀ of Ingredient (<i>specify species</i>)
Copper dinitrate	< 0.001	221-838-5	Oral rat LDLo = 794 mg/kg	None reported
Nitric Acid	0.05	7697-37-2	Oral human LDLo = 430 mg/kg	Inhalation rat LC50 = 625 ppm/4h
Demineralized water	>98	7732-18-5	None reported	None reported

SECTION 3 — HAZARDS IDENTIFICATION

WHMIS Symbols Health: 3 Flammability: 0 Reactivity: 0
Potential Health Effects Eye Contact: May cause eye burns.
Ingestion: May cause burns.
Medical conditions aggravated: None reported.
Chronic Effects: None reported.

SECTION 4 — FIRST AID MEASURES

Skin Contact: Wash off with soap and plenty of water.
Eye Contact: Immediately flush eyes with water for 15 minutes. Call physician.
Inhalation: Remove to fresh air.
Ingestion: Rinse mouth with water. Call physician.

SECTION 5 — FIRE FIGHTING MEASURES

Flammable This product will not burn	If yes, under which conditions? Not applicable	
Means of Extinction Not applicable		
Flashpoint (° C) and Method Not applicable	Upper Flammable Limit (% by volume) Not applicable	Lower Flammable Limit (% by volume) Not applicable
Autoignition Temperature (°C) Not applicable	Explosion Data — Sensitivity to Impact Not applicable	Explosion Data — Sensitivity to Static Discharge Not applicable
Hazardous Combustion Products Not applicable		
[NFPA] Flammability:0; Reactivity:0		

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Leak and Spill Procedures
Containment technique: Absorb spilled liquid with non-reactive sorbent material. Stop spilled material from being released into the environment.

SECTION 7 — HANDLING AND STORAGE

Handling Procedures and Equipment - Avoid contact with eyes. Wash your hands after use. Do not ingest.
Storage Requirements - Keep container tightly closed when not in use.

SECTION 8 — EXPOSURE CONTROL / PERSONAL PROTECTION

Exposure Limits	<input type="checkbox"/> ACGIH TLV	<input type="checkbox"/> OSHA PEL	<input type="checkbox"/> Other (<i>specify</i>)
Specific Engineering Controls (such as ventilation, enclosed process)			
None required			
Personal Protective Equipment	<input checked="" type="checkbox"/> Gloves	<input type="checkbox"/> Respirator	<input type="checkbox"/> Eye <input type="checkbox"/> Footwear <input type="checkbox"/> Clothing <input type="checkbox"/> Other
Gloves are recommended for repeated use.			

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Physical State Liquid	Odour and Appearance Colorless	Odour Threshold (ppm) Odorless
Specific Gravity ~1	Vapour Density (air = 1) Not determined	Vapour Pressure (mmHg) Not determined
Evaporation Rate ~1	Boiling Point (° C) 100C	Freezing Point (° C) 0
pH 2	Coefficient of Water/Oil Distribution Not applicable	[Solubility in Water] Soluble

SECTION 10 — STABILITY AND REACTIVITY

Chemical Stability Stable	If no, under which conditions? Not applicable
Incompatibility with Other Substances Possible	If yes, which ones? Metals
Reactivity, and under what conditions? Gives off hydrogen by reaction with metals	
Hazardous Decomposition Products: Heating to decomposition releases nitrogen oxides	

SECTION 11 — TOXICOLOGICAL INFORMATION

Effects of Acute Exposure	
None reported	
Effects of chronic exposure	
None reported	
Irritancy of Product: None reported	
Skin sensitization: None reported	Respiratory sensitization: None reported
Carcinogenicity-IARC: None reported	Carcinogenicity – ACGIH: None reported
Reproductive toxicity: None reported	Teratogenicity: None reported
Embrototoxicity: None reported	Mutagenicity: None reported
Name of synergistic products/effects: None reported	

SECTION 12 — ECOLOGICAL INFORMATION

[Aquatic Toxicity] - None reported

SECTION 13 — DISPOSAL CONSIDERATIONS

Waste disposal - Dispose copper waste according to state or local requirements.

SECTION 14 — TRANSPORT INFORMATION

Special Shipping information	
<p>I.M.O. Proper Shipping Name: Corrosive Liquid, Acidic, Inorganic, N.O.S. (Nitric Acid/Copper Nitrate Solution)</p> <p>I.M.O. Hazard Class: 8 I.M.O. Subsidiary Risk: NA I.M.O. ID Number: UN3264 I.M.O. Packing Group: III</p>	<p>Additional Information: Typically this product is shipped in quantities under 30 mL and is not considered hazardous for transport per 49 CFF 173.4 Small quantity exceptions.</p> <p>There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is NOT in a set or kit, the classification given above applies. If the item IS part of a set or kit, the classification would change to the following: UN3316 Chemical Kit, Class 9, PG II or III. If the item is not regulated, the Chemical Kit classification does not apply.</p>
<p>I.C.A.O. Proper Shipping Name: Corrosive Liquid, Acidic, Inorganic, N.O.S. (Nitric Acid/Copper Nitrate Solution)</p> <p>ICAO Hazard Class: 8 ICAO Subsidiary Risk: NA ICAO ID Number: UN3264 ICAO Packing Group: III</p>	<p>D.O.T. Proper Shipping Name: Corrosive Liquid, Acidic, Inorganic, N.O.S. (Nitric Acid/Copper Nitrate Solution)</p> <p>DOT Hazard Class: 8 DOT Subsidiary Risk: NA DOT ID Number: UN3264 DOT Packing Group: III</p>

SECTION 15 — REGULATORY INFORMATION

[OSHA]	U.S. Federal Regulations: O.S.H.A.: Target Organ Effect, Corrosive
[EPA]	<p>E.P.A.: S.A.R.A. Title III Section 311/312 Categorization (40 CFR 370): Immediate (Acute) Health Hazard Delayed (Chronic) Health Hazard S.A.R.A. Title III Section 313 (40 CFR 372): This product contains a chemical(s) subject to the reporting requirements of Section 313 of Title III of SARA. Nitric Acid 302 (EHS) TPQ (40 CFR 355): Nitric acid: 1000 lbs.</p>
[TSCA]	TSCA CAS Number: Not applicable
US State	California Prop. 65: This product does not contain any chemicals known to the State of California to cause cancer, birth defects Regulations: or any other reproductive harm.

SECTION 16 — OTHER INFORMATION

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

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