

**Section 1: Identification**

**MANUFACTURER:** PACE Technologies  
 3601 E. 34<sup>th</sup> St.  
 Tucson, AZ 85713

**INFORMATION PHONE:** 520-882-6598

**EMERGENCY PHONE:** CHEMTREC 800-424-9300 (US) Day or night  
 Customer No. 16568

**TRADE NAME:** Copper Sulfate Passivation Solution


**CHEMICAL FAMILY:** Copper sulfate, sulfuric acid, mixture

**HMIS RATING:** HEALTH: 1 FLAMMABILITY: 0 REACTIVITY: 0

**HAZARD RATING:**

LEAST: 0 SLIGHT: 1 MODERATE: 2 HIGH: 3 EXTREME: 4

**Section 2: Hazard(s) Identification**

<p><b>GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)</b></p>	<p>Skin corrosion / irritation (Category 2), H315          Sensitisation, Skin (Category 1), H317          Serious eye damage (Category 1), H318          Germ cell mutagenicity (Category 2), H341          Carcinogenicity (Category 1), H350          Reproductive toxicity (Category 2), H361          Specific target organ toxicity, single exposure (Category 1), H370          Specific target organ toxicity, repeated exposure (Category 1), H372          Reproductive toxicity (Category 2), H401</p>
<p><b>PICTOGRAM(s):</b></p>	
<p><b>SIGNAL WORD:</b></p>	<p>Danger</p>
<p><b>HAZARD STATEMENTS:</b></p>	<p><b>Hazard Statement(s):</b>          H315- Causes skin irritation          H317 - May cause an allergic skin reaction          H318 - Causes serious eye damage</p>

	<p>H341- Suspected of causing genetic defects  H350 - May cause cancer  H361 - Suspected of damaging fertility or the unborn child  H370 - Causes damage to organs  H372- Causes damage to organs through prolonged or repeated exposure  H401- Hazardous to the aquatic environment, acute hazard</p>
<b>PRECAUTIONARY STATEMENTS:</b>	<p><b>Precautionary Statement(s):</b></p> <p><b>Preventions:</b>  P201- Obtain special instructions before use.  P202- Do not handle until all safety precautions have been read and understood.  P260- Do not breathe dust/fume/gas/mist/vapors/spray.  P261-Avoid breathing dust/fume/gas/mist/vapors/spray.  P264- Wash skin thoroughly after handling.  P270- Do not eat, drink or smoke when using this product.  P272- Contaminated work clothing should not be allowed out of the workplace.  P273- Avoid release to the environment.  P280- Wear protective gloves/protective clothing/eye protection/face protection.  P281- Use personal protective equipment as required.</p> <p><b>Response:</b>  P302+P352- IF ON SKIN: wash with plenty of soap and water.  P305+P351+P338- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  P307+P311- IF exposed: call a POISON CENTER or doctor/physician.  P308+P313- IF exposed or concerned: Get medical advice/attention.  P310- Immediately call a POISON CENTER or doctor/physician.  P314- IF exposed or concerned: Get medical advice/attention.  P321- Specific treatment (see Section 4 SDS)..  P332+P313- IF SKIN irritation occurs: Get medical advice/attention.  P333+P313- IF SKIN irritation or rash occurs: Get medical advice/attention.  P362- Take off contaminated clothing and wash before reuse.  P363- Wash contaminated clothing before reuse.</p> <p><b>Storage:</b>  P405- Store locked up.</p> <p><b>Disposal:</b>  P501- Dispose of contents/container to Federal, State and Local Regulations.</p>

### Section 3: Composition/Information on Ingredients

#### HAZARD INGREDIENTS

CHEMICAL	CAS NUMBER	% PRESENT	Hazardous
Water	7732-18-5	97-99%	No
Copper Sulfate Pentahydrate	76658-98-7	1-2%	Yes
Sulfuric Acid	7664-93-9	1-2%	Yes

---

## Section 4: First-Aid Measures

### **Inhalation:**

Not expected to require first aid. If necessary, remove to fresh air.

### **Ingestion:**

Dilute immediately with water or milk, Induce vomiting. Call a physician.

### **Skin Contact:**

IF ON SKIN: Wash with plenty of soap and water. May cause slight irritation.

### **Eye Contact:**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. May cause irritation, redness, pain, and tearing.

### **Most Important Symptoms and Effects, Acute and Delayed:**

Caution! Hazardous liquid. Avoid ingestion or contact with skin, eyes, or clothing. If ingested, dilute with water or milk and induce vomiting. Call a physician. Wash areas of contact with plenty of water for 15 minutes. For eyes, get medical attention.

EYE CONTACT: May cause irritation, redness, pain, and tearing.

SKIN CONTACT: May cause slight irritation.

### **Medical Attention or Special Treatment Needed:**

Immediately call a POISON CENTER or physician. Specific treatment (Wash areas of contact with water. If possible, wipe off areas of contact with dry cloth before flushing with water).

---

## Section 5: Fire-Fighting Measures

### **Fire:**

Not considered to be a fire hazard. May react with metals or heat to release flammable hydrogen gas.

### **Explosion:**

Not considered to be an explosion hazard.

### **Fire Extinguishing Media:**

Use any means suitable for extinguishing surrounding fire.

### **Special Information:**

Use protective clothing and NIOSH-approved breathing equipment appropriate for the surrounding fire.

---

## Section 6: Accidental Release Measures

### **Personal Precautions, Protective Equipment and Emergency Procedures:**

Wear protective gloves and eye protection.

### **Cleanup and Containment Methods and Materials:**

Absorb with suitable inert material (vermiculite, dry sand, et) and place in a chemical waste

container for proper disposal. Do not flush to sewer. Dispose of in accordance with local regulations.

---

## Section 7: Handling and Storage

### Precautions for Safe Handling and Storage Conditions:

Store locked up. As with all chemicals, wash hands thoroughly after handling. Avoid contact with eyes and skin. Protect from freezing and physical damage.

---

## Section 8: Exposure Controls/ Personal Protection

Chemical Name	Limit Type	Country	Exposure Limit	Information Source
Copper Sulfate Pentahydrate (7758-99-8)	TLV-TWA	USA	1 mg/m <sup>3</sup> TWA (dust and mist, as Cu)	ACGIH-Threshold Limit Values – Time Weighted Averages (TLV-TWA)
Sulfuric Acid (7664-93-9)	TWA	USA	1 mg/m <sup>3</sup> TWA	U.S. – OSHA – Final PELs – Time Weighted Averages (TWAs)
Sulfuric Acid (7664-93-9)	TLV-TWA	USA	0.2 mg/m <sup>3</sup> TWA (thoracic fraction)	ACGIH-Threshold Limit Values – Time Weighted Averages (TLV-TWA)

### Exposure Controls

Engineering Controls: No specific controls are needed. Normal room ventilation is adequate.

Respiratory Protection: Normal room ventilation is adequate.

Skin Protection: Wear protective gloves and eye protection. Chemical resistant gloves.

Eye Protection: Wear protective gloves and eye protection. Safety glasses or goggles.

### Personal Protective Equipment:

Wear protective gloves and eye protection. Normal room ventilation is adequate. Chemical resistant gloves. Safety glasses of goggles.

## Section 9: Physical and Chemical Properties

**Appearance:** Blue liquid

**Odor:** Data not available.

**Solubility:** Miscible.

**Physical State:** Liquid

**pH:** <2

**Relative Density:** 1.1

**Boiling Point:** Approximately 103C (212F)

**Melting Point:** Approximately 0C (32F) .

**Vapor Density (Air=1):**

No information found.

**Vapor Pressure (mm Hg):**

No information found.

**Evaporation Rate (BuAc=1):**

No information found.

---

## Section 10: Stability and Reactivity

### Stability:

Stable under ordinary conditions of use and storage.

### Hazardous Decomposition Products:

Will not occur.

### Possibility of Hazardous Reactions:

Data not available.

### Conditions to Avoid and Incompatible Materials:

Hydroxylamine, alkalis, phosphates, hydrazine, sulfuric acid, finely powdered metals, active metals (Potassium, Sodium, Magnesium and Zinc).

---

## Section 11: Toxicological Information

**Acute Toxicity – Oral Exposure:** Not applicable

**Acute Toxicity – Dermal Exposure:** Not applicable

**Acute Toxicity – Inhalation Exposure:** Not applicable

**Acute Toxicity – Other information** LD50, Oral, Rat: 300 mg/kg (Copper Sulfate), details of toxic effects not reported other than lethal dose value.

LD50, Oral, Rat: 2140 mg/kg (Sulfuric Acid), details of toxic effects not reported other than lethal dose value.

LC50, Inhalation, Rat: (Sulfuric Acid) 510 mg/m<sup>3</sup>/2H, no toxic effect noted.

<b>Skin Corrosion and Irritation:</b>	Causes skin irritation. Wash arms, hands and face thoroughly after handling. Wear protective gloves and eye protection. <b>IF ON SKIN:</b> Wash with plenty of soap and water. Specific treatment (Wash areas of contact with water. If possible, wipe off areas of contact with dry cloth before flushing with water). If skin irritation occurs: Get medical attention. Take off contaminated clothing and wash it before reuse.
<b>Serious Eye Damage and Irritation:</b>	Causes serious eye damage. Wear protective gloves and eye protection. <b>IF IN EYES:</b> Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.
<b>Respiratory Sensitization:</b>	Not applicable
<b>Skin Sensitization:</b>	May cause an allergic skin reaction. Avoid breathing dust, fumes or mist. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves and eye protection. <b>IS ON SKIN:</b> Wash with plenty of soap and water. If skin irritation occurs: Get medical attention. Specific treatment (Wash areas of contact with water. If possible, wipe off areas of contact with dry cloth before flushing with water). Wash contaminated clothing before reuse. Dispose of contents in accordance with local, state, federal and international regulations.
<b>Germ Cell Mutagenicity:</b>	Suspected of causing genetic defects. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves and eye protection. If exposed or concerned: Get medical attention. Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.
<b>Carcinogenicity:</b>	May cause cancer. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves and eye protection. If exposed or concerned: Get medical attention. Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.
<b>Reproductive Toxicity:</b>	Suspected of damaging fertility or the unborn child. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves and eye protection. If exposed or concerned: Get medical attention. Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.
<b>Specific Target Organ Toxicity from Single Exposure:</b>	Causes damage to organs. Do not breathe dust, fumes or mist. Wash arms, hands and face thoroughly after handling. Do not eat, drink or smoke when using this product. If exposed: Call a POISON CENTER or physician. Specific treatment (Wash areas of contact with water. If possible, wipe off areas of contact with dry cloth before flushing with water). Store locked up. Dispose of contents in accordance with local, state, federal and international regulations.
<b>Specific Target Organ Toxicity from Repeated Exposure:</b>	Causes damage to organs. Do not breathe dust, fumes or mist. Wash arms, hands and face thoroughly after handling. Do not eat, drink or smoke when using this product. Get medical attention if you feel unwell. Dispose of contents in accordance with local, state, federal and international regulations.

international regulations.

**Aspiration Hazard:** Not applicable

**Additional Toxicology Information:** Data not available

## Section 12: Ecological Information

**Ecotoxicity:** Toxic to aquatic life. Avoid release to the environment. Dispose of contents in accordance with local, state, federal and international regulations.

**Persistence and Degradability:** Data not available

**Bioaccumulative Potential:** Data not available

**Mobility in Soil:** Data not available

**Other Adverse Ecological Effects:** Data not available

---

## Section 13: Disposal Considerations

**Waste Treatment Methods:** Data not available

---

## Section 14: Transportation Information

### Domestic (Land, D.O.T.)

-----

**Proper Shipping Name:** CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (hydrochloric acid, copper sulfate, mixture)

**Hazard Class:** 8

**UN/NA:** UN 3264

**Packing Group:** II

**Label Codes:** 8

**NMFC:** 44155-06

Shipping Class CL100

### International (Air, I.C.A.O.)

-----

**Proper Shipping Name:** CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (hydrochloric acid, copper sulfate, mixture) **Hazard Class:** 8

**UN/NA:** UN 3264

**Packing Group:** II

**Label Codes:** 8

**Section 15: Regulatory Information**

-----\Chemical Inventory Status - Part 1\-----

Ingredient	TSCA	EC	Japan	Australia
Sulfuric Acid (7664-93-9)	Yes	Yes	Yes	Yes
Cupric Sulfate (7758-98-7)	Yes	Yes	Yes	Yes
Water (7732-18-5)	Yes	Yes	Yes	Yes

-----\Chemical Inventory Status - Part 2\-----

Ingredient	--Canada--			
	Korea	DSL	NDSL	Phil.
Sulfuric Acid (7664-93-9)	Yes	Yes	No	Yes
Cupric Sulfate (7758-98-7)	Yes	Yes	No	Yes
Water (7732-18-5)	Yes	Yes	No	Yes

-----\Federal, State & International Regulations - Part 1\-----

Ingredient	-SARA 302-		-----SARA 313-----	
	RQ	TPQ	List	Chemical Catg.
Sulfuric Acid (7664-93-9)	1000	1000	Yes	No
Cupric Sulfate (7758-98-7)	No	No	No	No
Water (7732-18-5)	No	No	No	No

-----\Federal, State & International Regulations - Part 2\-----

Ingredient	CERCLA	-RCRA-	-TSCA-
		261.33	8 (d)
Sulfuric Acid (7664-93-9)	1000	No	No
Cupric Sulfate (7758-98-7)	No	No	No
Water (7732-18-5)	No	No	No

Chemical Weapons Convention: No      TSCA 12 (b): No      CDTA: Yes  
SARA 311/312: Acute: Yes      Chronic: Yes      Fire: Yes      Pressure: No  
Reactivity: No      (Mixture / Liquid)



**Australian Hazchem Code:** 2R

**Poison Schedule:** None allocated.

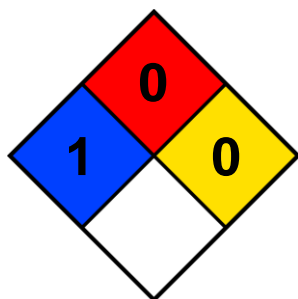
**WHMIS:**

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

---

**Section 16: Other Information**

**16.1 NFPA 704**



**Top, Flammability: 0 – Minimal Hazard**

**Left, Health Hazard: 1 – Slight Hazard**

**Right, Reactivity: 0 – Minimal Hazard**

**Bottom, Special Notice: N/A**

**Product Use:**

Laboratory Reagent.

**Disclaimer:**

**PACE Technologies, Inc. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. PACE TECHNOLOGIES, INC. MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, PACE TECHNOLOGIES, INC. WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.**

DATE PREPARED: 6/19/2015

DATE REVISED: 6/7/2018 AG