

MATERIAL SAFETY DATA SHEET

ORP Pretreatment Solution (EC-ORP-PRE)

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PRODUCT IDENTIFICATION

Product Name:	ORP Pretreatment Solution
Common Synonyms:	Nil
Chemical Family:	Inorganic Salts
Formula:	Complex
Formula Weight:	NA
CAS No:	NA
Product Use:	Laboratory and Industrial Reagent
Eutech SAF-T-Data System:	Health = 3 Moderate, Flammability = 0 Slight, Reactivity = 2, Contact = 1

SAFETY

For laboratory and industrial use only. Not for internal consumption. Avoid contact with eyes and skin

Component A: Sulfuric Acid	
CAS NO:	7664-93-9
WEIGHT:	5.6%
OSHA/PEL	TWA 1mg/m3
ACGIH/TLV	NA
Component B: Ferric Ammonium Sulfate	
CAS NO:	10138-04-2
WEIGHT	4.8%
OSHA/PEL	TWA 1mg/m3
ACGIH/TLV	NA
Component B: Ferrous Ammonium Sulfate	
CAS NO.:	10045-83-3
WEIGHT:	3.9%
OSHA/PEL	TWA 1mg/m3
ACGIH/TLV	NA

PHYSICAL DATA

Appearance & Odor:	Liquid, yellowish & Strong pungent Odor
Physical State:	Liquid
Boiling Point:	121.4°C
Vapour Pressure (mmHg):	20.756
Melting Point:	NA
Vapour Density (T=0 °C):	3.579
Specific Gravity:	1.05
% Volatiles by Volume:	5-6%
Solubility:	Slowly soluble in cold water
pH:	Less than 0.5pH
Odor Threshold (ppm):	NA
Coefficient Water/Oil Distribution:	1
Evaporation Rate:	NA

FIRE AND EXPLOSION DATA

Flash Point (Close Cup):	NA
Auto ignition Temperature:	NA
Flammable Limits:	Upper, NA Lower, NA
Fire Extinguishing Media:	Acid waste. Use extinguishing media appropriate for surrounding fire.
Special Fire-fighting procedures:	Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face-piece operated in positive pressure mode.
Unusual Fire and Explosion Hazards:	None identified
Toxic Gases produced:	None identified
Explosion data-sensitivity to mechanical impact:	None identified.
Explosion data-sensitivity to static discharge:	None identified.

HEALTH HAZARD DATA

Threshold limit value (TLV/TWWA):	TWA 1mg/m3
Toxicity of Components:	Not established
Carcinogenicity:	None identified.
Reproductive effects:	None identified.
Inhalation:	Inhalation produces damaging effects on the mucous membranes and upper respiratory tract. Symptoms may include irritation of the nose and throat, coughing, sore throat, chest pain, and labored breathing.
Skin contact:	Symptoms of redness, pain, and severe burn can occur. Circulatory collapse with clammy skin, weak and rapid pulse, shallow respirations, and scanty urine may follow skin contact or ingestion. Circulatory shock is often the immediate cause of death.
Eye contact:	Contact can cause blurred vision, redness, pain, irritation, and sever tissues burns. Can cause blindness.
Skin absorption:	None identified
Ingestion:	Swallowing can cause severe burns of the mouth, throat, and stomach, leading to death. Can cause sore throat, vomiting, diarrhea, and black stool. Circulatory collapse with clammy skin,

	weak and rapid pulse, shallow respirations, and scanty urine may follow Liver damage, coma, and death from iron poisoning has been recorded. Circulatory shock is often the immediate cause of death.
Chronic effects:	Long-term expose to mist or vapors may cause damage to teeth. Chronic exposure to mist containing sulfuric acid is a cancer hazard.
Target organs:	None identified
Primary routes of entry:	Inhalation

EMERGENCY AND FIRST-AID PROCEDURES

Ingestion :	DO NOT INDUCE VOMITING. Give several glasses of water to drink to dilute. Never give anything to the mouth to an unconscious person. Get medical attention
Inhalation:	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Skin contact:	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Excess acid on skin can be neutralized with 2% solution of bicarbonate of soda. Get medical attention immediately.
Eye contact:	Immediately flush eyes with gentle and plenty of water for at least 15minutes, lifting upper and lower eyelids occasionally. Get medical attention immediately
Acute:	None
Chronic:	No
Flammability:	No
Pressure:	No
Reactivity:	Nil.
Extremely hazardous substance:	No
Toxic chemicals:	None

REACTIVITY DATA

Stability:	Stable
Condition to avoid:	Light, heat, incompatibles
Incompatibles:	Potassium chlorate, potassium perchlorate, potassium permanganate, sodium lithium, bases, organic material, halogens, metal acetylides, oxides, and hydrides, metal (yields hydrogen gas), strong oxidizing and reducing agents and many other reactive substances.
Decomposition products:	Toxic fumes of oxides of sulfur, carbon, nitrogen, and ammonia when heated to decomposition. Reacts with carbonates to generate carbon dioxide gas, and with cyanides and sulfides to form poisonous hydrogen cyanide and hydrogen sulfide
Hazardous polymerization:	Will not occur

SPILL AND DISPOSAL PROCEDURES

Steps to be taken in the events of a spill or discharge:	Wash away with water.
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Disposal procedure:	Dispose in accordance with all applicable federal, state and local environmental regulations.
Ventilation:	Use adequate general or local exhaust ventilation
Respiratory protection:	If exposure limit is exceeded, a full facepiece respirator with an acid gas cartridge and particulate filter (NIOSH type N100 filter) may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres. When respirators are required, you must have a written program covering the basic requirements in the OSHA respirator standard. These include training, fit testing, medical approval, cleaning, maintenance, cartridge change schedules.
Eye/Skin protection:	<p>Eye: Use chemical safety goggles and/or full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.</p> <p>Skin: Use impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.</p>

STORAGE AND HANDLING PRECAUTIONS

SAF-T-Data*Storage colour code:	Orange.
Storage requirements:	Keep container tightly closed, stored in a cool, dry, ventilated area with acid resistant floors and good drainage. Protect against physical damage. Isolate from incompatible substances. Protect from light. Do not wash out container and use it for other purposes. When diluting, always add the acid to water; never add water to acid. Containers of this material may be hazardous when empty since they retain product residues (vapor, liquids, dust, or solids); observe all warning and precautions listed for the product.

TRANSPORTATION DATA AND ADDITIONAL INFORMATION

Domestic (D.O.T.)

Proper shipping name:	N/A (Not Regulated for Shipping)
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International (I.M.O.)

Proper shipping name:	N/A (Not Regulated for Shipping)
Marine pollutants:	Acid

Air (I.C.A.O.)

Proper shipping name:	N/A (Not Regulated for Shipping)
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