



Safety Data Sheet

Material Name: E-Pik 219

SDS ID: EPI-0222c

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name

E-Pik 219

Product Use

Copper Etchant and Activator.

Manufacturer Information

Electrochemical Products Inc.
17000 West Lincoln Ave
New Berlin, WI 53151
Phone: 262-786-9330
Emergency Phone #: Chemtrec #800-424-9300 (CCN7498)
E-mail: us-sales@epi.com
www.epi.com
Fax: 262-786-9403

Section 2 - HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.

Skin Corrosion/Irritation - Category 1
Serious Eye Damage/Eye Irritation - Category 1
Respiratory Sensitization - Category 1A
Skin Sensitization - Category 1A

GHS Label Elements**Symbol(s)****Signal Word**

Danger

Hazard Statement(s)



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Causes severe skin burns and eye damage
May cause allergic or asthmatic symptoms or breathing difficulties if inhaled
May cause allergic skin reaction

Precautionary Statement(s)

Prevention

Wear protective gloves/protective clothing/eye protection/face protection
Wear respiratory protection
Wash thoroughly after handling
Contaminated work clothing must not be allowed out of the workplace
Do not breathe dusts or mists
Wear protective gloves

Response

IF INHALED: Remove person to fresh air and keep comfortable for breathing
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
Immediately call a POISON CENTER or doctor
Specific treatment (see label)

Storage

Store locked up

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations

Other Hazards

Causes severe eye, skin and respiratory tract irritation. Ingestion of this preparation is unlikely. However, ingestion may produce gastrointestinal irritation and disturbances. Inhalation may cause nose bleeds and irritation of the upper respiratory passages with coughing and discomfort.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent
10058-23-8	Monopotassium peroxymonosulfate	30-50
7646-93-7	Potassium hydrogen sulfate	20-35
7778-80-5	Sulfuric acid, dipotassium salt	20-30
7727-21-1	Potassium persulfate	1-6



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546-93-0	Magnesium carbonate	1-6
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Section 4 - FIRST AID MEASURES

Inhalation

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Skin

Immediately flush skin with lots of running water for 30 minutes. Remove contaminated clothing and shoes. Wash before reuse. Get immediate medical attention.

Eyes

Immediately flush eyes with water for at least 15 minutes, while holding eyelids open. Seek medical attention at once.

Ingestion

If swallowed, give milk or water to dilute. Seek medical attention immediately. Never give anything by mouth to an unconscious person. Do NOT induce vomiting.

Note to Physicians

None identified.

Section 5 - FIRE FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Water. Do not use carbon dioxide or other gas-filled fire extinguishers; they will have no effect on decomposing persulfates.

Special Hazards Arising from the Chemical

Will release oxygen when heated, intensifying a fire. Acidic mist may be present; self contained breathing apparatus should be used.

Hazardous Combustion Products

When heated over 570°, sulfur dioxide and sulfur trioxide are formed.

Fire Fighting Measures

Firefighters should wear full-face, self-contained breathing apparatus and impervious protective clothing. Firefighters should avoid inhaling any combustion products.

Section 6 - ACCIDENTAL RELEASE MEASURES



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Personal Precautions, Protective Equipment and Emergency Procedures

Take proper precautions to ensure your own health and safety before attempting spill control or clean-up. For more specific information, refer to the Emergency Overview on Page 1, Exposure Controls and Personal Protection in Section 8 and Disposal Considerations in Section 13 of this SDS. Isolate area. Keep unnecessary personnel away.

Methods and Materials for Containment and Cleaning Up

Sweep up solid. Flush liquid spills with low pressure water. Contain the discharged material, if this is without risk.

Environmental Precautions

Comply with Federal, State, and local regulations. Solutions greater than 3% by weight have a pH < 2.0, and may be a RCRA hazardous waste upon disposal due to the acidic pH characteristic of the solution. If approved, flush to sewer or waste treatment plant. Large quantities should be neutralized with soda ash.

Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling

Avoid getting this material into contact with your eyes. Wash thoroughly after handling. Avoid the formation of airborne dusts. Keep container tightly closed and store at room temperature.

Conditions for Safe Storage, Including any Incompatibilities

Store locked up

Keep the container tightly closed in original container and in a cool, well-ventilated place. Keep away from incompatible materials.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

Potassium persulfate	7727-21-1
ACGIH:	0.1 mg/m ³ TWA as Persulfate (related to Persulfates, inorganic, n.o.s.)
Magnesium carbonate	546-93-0
NIOSH:	10 mg/m ³ TWAtotal dust; 5 mg/m ³ TWArespirable dust
OSHA (US):	15 mg/m ³ TWAtotal dust; 5 mg/m ³ TWArespirable fraction (related to Magnesite (Mg(CO ₃)))
Mexico:	10 mg/m ³ TWA LMPE-PPT (related to Magnesite (Mg(CO ₃)))



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	20 mg/m ³ STEL [LMPE-CT] (related to Magnesite (Mg(CO ₃)))
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Biological limit value

There are no biological limit values for any of this product's components.

Engineering Controls

Use general ventilation and use local exhaust, where possible, in confined or enclosed spaces.

Individual Protection Measures, such as Personal Protective Equipment

Eye/face protection

Wear chemical goggles; face shield (if splashing is possible).

Skin Protection

Use of protective coveralls and long sleeves is recommended. Use of an impervious apron is recommended.

Respiratory Protection

Respirators: A NIOSH approved air-purifying respirator with an appropriate particulate cartridge or canister may be used under circumstances where airborne concentrations are expected to exceed exposure limits.

Glove Recommendations

Use of impervious gloves is recommended. Wear chemical impervious gloves.

Protective Materials

Eye wash fountain and emergency showers are recommended in the workplace. Use good industrial hygiene practices in handling this material.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	White to Off White powder	Physical State	Powder
Odor	Odorless	Color	Not available
Odor Threshold	Not available	pH	Not available
Melting Point	Not available	Boiling Point	Not available
Freezing point	Not available	Evaporation Rate	Not available
Boiling Point Range	Not available	Flammability (solid, gas)	Not available



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Autoignition	Not available	Flash Point	Not available
Lower Explosive Limit	Not available	Decomposition	Not available
Upper Explosive Limit	Not available	Vapor Pressure	Not available
Vapor Density (air=1)	Not available	Specific Gravity (water=1)	Not available
Water Solubility	Complete	Partition coefficient: n-octanol/water	Not available
Viscosity	Not available	Solubility (Other)	Not available
Density	Not available	VOC	0

Section 10 - STABILITY AND REACTIVITY

Reactivity

See section on incompatibility.

Chemical Stability

This is a stable material. Stable when handled and stored as indicated.

Possibility of Hazardous Reactions

Will not occur.

Conditions to Avoid

Avoid contact with extreme heat.

Incompatible Materials

The mixture of this product with compounds containing halides or active halogens (bromine, chlorine, iodine) can cause the release of the respective halogen gas, if moisture is present. Avoid these gases (bromine and chlorine) because they are very irritating to eyes and lungs even at low concentrations. Never mix concentrated product with dry or concentrated bromine-containing chemicals, such as bromates, bromides, or any concentrated bromine pool chemicals. Mixing concentrated product with dry or concentrated chlorine-containing chemicals, such as hypochlorites ("Hypo" for pools), sodium dichloroisocyanurate (dichlor), sodium trisocyanurate (trichlor) or with sodium chloride (salt), may cause the release of chlorine gas. Mixing with cyanides can cause release of hydrogen cyanide gas. Mixing with heavy metal salts such as those of cobalt, nickel, copper, or manganese can cause decomposition with release of oxygen and heat.

Hazardous decomposition products



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Decomposes when heated or dampened, releasing oxygen and heat of decomposition.

Section 11 - TOXICOLOGICAL INFORMATION

Acute and Chronic Toxicity

Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and the following selected endpoints are published:

Potassium hydrogen sulfate (7646-93-7)

Oral LD50Rat 2340 mg/kg

Sulfuric acid, dipotassium salt (7778-80-5)

Oral LD50Rat 6600 mg/kg

Potassium persulfate (7727-21-1)

Oral LD50Rat 802 mg/kg

Dermal LD50Rabbit >10000 mg/kg

Immediate Effects

No information on significant adverse effects.

Delayed Effects

No information on significant adverse effects.

Irritation/Corrosivity Data

No data available.

Respiratory Sensitization

No data available.

Dermal Sensitization

No data available.

Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, NTP, DFG or OSHA

Germ Cell Mutagenicity

No data available.

Reproductive Toxicity

No data available.

Specific Target Organ Toxicity - Single Exposure

No data available.

Specific Target Organ Toxicity - Repeated Exposure

No data available.

Aspiration hazard

No data available.

Medical Conditions Aggravated by Exposure



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No data available.

Section 12 - ECOLOGICAL INFORMATION

Component Analysis - Aquatic Toxicity

Sulfuric acid, dipotassium salt	7778-80-5
Fish:	LC50 96 h Lepomis macrochirus 653 mg/L; LC50 96 h Lepomis macrochirus 3550 mg/L [static]; LC50 96 h Pimephales promelas 510 - 880 mg/L [static]
Algae:	EC50 72 h Desmodesmus subspicatus 2900 mg/L IUCLID
Invertebrate:	EC50 48 h Daphnia magna 890 mg/L IUCLID

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods

Dispose of waste material in accordance with all applicable Federal, State or provincial and local environmental regulations. See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations. Decomposes and releases toxic gases if heated. High heat can cause decomposition.

Section 14 - TRANSPORT INFORMATION

US DOT Information:

Shipping Name: Corrosive Solid, n.o.s., (Contains: Acidic, Inorganic, n.o.s. (Monopersulfate Compound))

Hazard Class: 8

UN/NA #: 3260

Packing Group: II

Required Label(s): Corrosive

TDG Information:

Shipping Name: Corrosive Solid, n.o.s., (Contains: Acidic, Inorganic, n.o.s. (Monopersulfate Compound))

Hazard Class: 8

UN#: 3260

Packing Group: II

Required Label(s): Corrosive



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Section 15 - REGULATORY INFORMATION

U.S. Federal Regulations

None of this products components are listed under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.

U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA
Potassium hydrogen sulfate	7646-93-7	No	No	No	Yes	No
Potassium persulfate	7727-21-1	No	Yes	No	Yes	Yes
Magnesium carbonate	546-93-0	No	Yes	Yes	Yes	Yes

Not listed under California Proposition 65

Canadian WHMIS Ingredient Disclosure List (IDL)

Components of this material have been checked against the Canadian WHMIS Ingredients Disclosure List. The List is composed of chemicals which must be identified on MSDSs if they are included in products which meet WHMIS criteria specified in the Controlled Products Regulations and are present above the threshold limits listed on the IDL

Potassium hydrogen sulfate	7646-93-7
	1 %
Potassium persulfate	7727-21-1
	0.1 % (related to Persulfates)

Component Analysis - Inventory

Monopotassium peroxydisulfate (10058-23-8)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	No

Potassium hydrogen sulfate (7646-93-7)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes



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Sulfuric acid, dipotassium salt (7778-80-5)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Potassium persulfate (7727-21-1)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Magnesium carbonate (546-93-0)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Section 16 - OTHER INFORMATION

HMIS Rating

Health: 3 Fire: 0 Reactivity: 1

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

NFPA Ratings

Health: 3 Fire: 0 Reactivity: 1

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of Lists™



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- ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH- Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States.