



Safety Data Sheet

Material Name: E-Kleen SR 2.0

SDS ID: EPI-0493c

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name

E-Kleen SR 2.0

Product Use

Cleaner Additive

Details of the supplier of the safety data sheet

Electrochemical Products Inc.

17000 West Lincoln Ave

New Berlin, WI 53151

Phone: 262-786-9330

Emergency Phone #: NCEC (#EPI-29003) +1 202 464 2554, +44 1865 407333

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 2

Serious Eye Damage/Eye Irritation - Category 2A

GHS Label Elements

Symbol(s)



Signal Word

Warning

Hazard Statement(s)

Causes skin irritation

Causes serious eye damage

Harmful to aquatic life with long lasting effects

May cause respiratory irritation

Ingestion may cause nausea, vomiting, and diarrhea

Precautionary Statement(s)



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Prevention

Wear protective gloves/protective clothing/eye protection/face protection
Wash thoroughly after handling
Avoid release to the environment

Response

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 ON SKIN: Wash with plenty of soap and water
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash before reuse

Storage

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

Disposal

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

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent
7732-18-5	Water	35-38
9004-83-5	Poly(oxy-1,2-ethanediyl), .alpha.-[2-(tert-dodecylthio)ethyl]-.omega.-hydroxy-	15-18
68238-84-6	Poly(oxy-1,2-ethanediyl), .alpha.-(2-ethylhexyl)-.omega.-hydroxy-, phosphate, potassium salt	1-4
123-91-1	1,4-Dioxane	0.0005-0.0009
75-21-8	Ethylene oxide	0.001-0.0018

Section 4 - FIRST AID MEASURES

Inhalation

Remove to fresh air. Give oxygen if breathing is difficult. Give artificial respiration if not breathing. Get immediate medical attention.



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Skin

Immediately flush skin with lots of running water for 5 minutes. Remove contaminated clothing and shoes. Wash before reuse. Get immediate medical attention.

Eyes

Immediately flush with lots of running water for 15 minutes, lifting the upper and lower eye lids occasionally. Washing eyes within several seconds is essential to achieve maximum effectiveness. Get immediate medical attention.

Ingestion

Do not induce vomiting. Give large quantities of water. If available, give several glasses of milk. Never give anything by mouth to an unconscious person. Get immediate medical attention.

Note to Physicians

None identified.

Section 5 - FIRE FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Dry chemical, foam, carbon dioxide, water fog.

Special Hazards Arising from the Chemical

Not available.

Hazardous Combustion Products

None identified.

Advice for firefighters

Exposing closed containers to heat may cause excessive pressure resulting in explosive rupture.

Fire Fighting Measures

Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.

Section 6 - ACCIDENTAL RELEASE MEASURES

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. Wear appropriate protective equipment during cleanup.

Methods and Materials for Containment and Cleaning Up

Confine spill by diking with sand, earth, or inert absorbent material. Absorb onto suitable material (sand, vermiculite, etc.), then shovel into suitable container for disposal.



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Environmental Precautions

Do not allow to drain to sewers. Comply with regulations for spill reporting.

Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling

Wash thoroughly after handling. Containers, even those that have been emptied, will retain product residue and vapors. Always obey hazard warnings on container as if they were full.

Conditions for Safe Storage, Including any Incompatibilities

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

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

1,4-Dioxane	123-91-1
ACGIH:	20 ppm TWA
	Skin - potential significant contribution to overall exposure by the cutaneous route
NIOSH:	1 ppm Ceiling 30 min; 3.6 mg/m ³ Ceiling 30 min
	500 ppm IDLH
Europe:	20 ppm TWA; 73 mg/m ³ TWA
OSHA (US):	100 ppm TWA; 360 mg/m ³ TWA
	prevent or reduce skin absorption
Mexico:	25 ppm TWA LMPE-PPT; 90 mg/m ³ TWA LMPE-PPT
	100 ppm STEL [LMPE-CT]; 360 mg/m ³ STEL [LMPE-CT]
	Skin - potential for cutaneous absorption
Ethylene oxide	75-21-8
ACGIH:	1 ppm TWA
NIOSH:	0.1 ppm TWA (less than stated value); 0.18 mg/m ³ TWA (less than stated value)



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	5 ppm Ceiling 10 min/day; 9 mg/m ³ Ceiling 10 min/day
	800 ppm IDLH
OSHA (US):	1 ppm TWA
	5 ppm Excursion Limit (See 29 CFR 1910.1047) 15 min; 0.5 ppm Action Level (See 29 CFR 1910.1047); 1 ppm TWA (See 29 CFR 1910.1047)
	5 ppm STEL (See 29 CFR 1910.1047)
Mexico:	1 ppm TWA LMPE-PPT; 2 mg/m ³ TWA LMPE-PPT

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 safety glasses with side shields or chemical goggles.

Skin Protection

Use of protective coveralls and long sleeves is recommended to prevent skin contact.

Respiratory Protection

If ventilation is not sufficient to effectively prevent buildup of vapor/mist/fume/dust, appropriate NIOSH/MSHA respiratory protection must be provided.

Glove Recommendations

Use chemical resistant impervious gloves. Recommended gloves include rubber, neoprene, nitrile or viton.

Protective Materials

Eye wash fountain and emergency showers are recommended.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Yellow liquid	Physical State	Liquid
Odor	Pungent	Color	Light yellow
Odor Threshold	Not available	pH	8.5 - 9.5
Melting Point	Not available	Boiling Point	Not available
Freezing point	Not available	Evaporation Rate	Not available



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Boiling Point Range	Not available	Flammability (solid, gas)	Not available
Autoignition	Not available	Flash Point	>200 °F
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)	1.008 - 1.01
Water Solubility	Complete	Partition coefficient: n-octanol/water	Not available
Viscosity	Not available	Solubility (Other)	Not available
Density	Not available		

Section 10 - STABILITY AND REACTIVITY

Reactivity

Will not occur.

Chemical Stability

This is a stable material.

Possibility of Hazardous Reactions

Will not occur.

Conditions to Avoid

Avoid contact with extreme heat. Avoid storing in direct sunlight.

Incompatible Materials

Strong acids. Strong bases. Strong oxidizers.

Hazardous decomposition products

Oxides of Carbon, Nitrogen and Phosphorous may be emitted if product burns.

Thermal decomposition products

Oxides of Carbon, Nitrogen and Phosphorous may be emitted if product burns.

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:



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Water (7732-18-5)
Oral LD50 Rat >90 mL/kg
1,4-Dioxane (123-91-1)
Oral LD50 Rat 5170 mg/kg
Dermal LD50 Rabbit 7600 µL/kg
Inhalation LC50 Rat 46 mg/L 2 h
Ethylene oxide (75-21-8)
Oral LD50 Rat 72 mg/kg
Inhalation LC50 Rat 800 ppm 4 h

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

1,4-Dioxane	123-91-1
ACGIH:	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans
IARC:	Monograph 71 [1999]; Supplement 7 [1987]; Monograph 11 [1976] (Group 2B (possibly carcinogenic to humans))
NTP:	Reasonably Anticipated To Be A Human Carcinogen
DFG:	Category 4 (no significant contribution to human cancer)
OSHA:	Present
Ethylene oxide	75-21-8
ACGIH:	A2 - Suspected Human Carcinogen
IARC:	Monograph 100F [2012]; Monograph 97 [2008]; Monograph 60 [1994] (overall evaluation upgraded from Group 2A to Group 1 based on mechanistic and other relevant data) (Group 1 (carcinogenic to humans))
NTP:	Known Human Carcinogen



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DFG:	Category 2 (considered to be carcinogenic for man)
OSHA:	Present
OSHA:	see 29 CFR 1910.1047

Germ Cell Mutagenicity

No data available.

Tumorigenic Data

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

No data available.

Section 12 - ECOLOGICAL INFORMATION

Component Analysis - Aquatic Toxicity

1,4-Dioxane	123-91-1
Fish:	LC50 96 h Lepomis macrochirus >10000 mg/L [static]; LC50 96 h Lepomis macrochirus >10000 mg/L [semi-static]; LC50 96 h Pimephales promelas 9850 mg/L [flow-through]; LC50 96 h Pimephales promelas 10306 - 14742 mg/L [static]; LC50 96 h Pimephales promelas 9850 mg/L
Invertebrate:	EC50 48 h water flea 163 mg/L [static]
Ethylene oxide	75-21-8
Fish:	LC50 96 h Pimephales promelas 73 - 96 mg/L
Invertebrate:	LC50 48 h Daphnia magna 137 - 300 mg/L IUCLID



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Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods

Waste must be handled in accordance with all federal, state, provincial, and local regulations. Transport waste material to an authorized waste location, or incinerate under controlled conditions.

Section 14 - TRANSPORT INFORMATION

US DOT Information:

No Classification assigned.

TDG Information:

No Classification assigned.

Section 15 - REGULATORY INFORMATION

U.S. Federal Regulations

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

1,4-Dioxane	123-91-1
SARA 313:	0.1 % de minimis concentration
CERCLA:	100 lb final RQ; 45.4 kg final RQ
Ethylene oxide	75-21-8
SARA 302:	1000 lb TPQ
SARA 313:	0.1 % de minimis concentration
CERCLA:	10 lb final RQ; 4.54 kg final RQ
OSHA (safety):	5000 lb TQ
SARA 304:	10 lb EPCRA RQ

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



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1,4-Dioxane	123-91-1	Yes	Yes	Yes	Yes	Yes
Ethylene oxide	75-21-8	Yes	Yes	Yes	Yes	Yes

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):

WARNING! This product contains a chemical known to the state of California to cause cancer

WARNING! This product contains a chemical known to the state of California to cause reproductive/developmental effects

1,4-Dioxane	123-91-1
Carc:	carcinogen , 1/1/1988
Ethylene oxide	75-21-8
Carc:	carcinogen , 7/1/1987
Repro/Dev. Tox	developmental toxicity , 8/7/2009
	male reproductive toxicity , 8/7/09
	female reproductive toxicity , initial date 2/27/87

Canada Regulations

This material is not a controlled product under Canadian WHMIS regulations.

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

1,4-Dioxane	123-91-1
	0.1 %
Ethylene oxide	75-21-8
	0.1 %

Component Analysis - Inventory

Water (7732-18-5)

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

Poly(oxy-1,2-ethanediyl), .alpha.-[2-(tert-dodecylthio)ethyl]-.omega.-hydroxy- (9004-83-5)



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

Poly(oxy-1,2-ethanediyl), .alpha.-(2-ethylhexyl)-.omega.-hydroxy-, phosphate, potassium salt (68238-84-6)

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

1,4-Dioxane (123-91-1)

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

Ethylene oxide (75-21-8)

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

Section 16 - OTHER INFORMATION

HMIS Rating

Health: 2 Fire: 0 Reactivity: 0

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

NFPA Ratings

Health: 2 Fire: 0 Reactivity: 0

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



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Community; EINECS - European Inventory of Existing Commercial Chemical Substances; ENCS - Japan Existing and New Chemical Substance Inventory; 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; ISHL - Japan Industrial Safety and Health Law; JP - Japan; Kow - Octanol/water partition coefficient; KECI - Korea Existing Chemicals Inventory; KECL - Korea Existing Chemicals List; KR - Korea; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; MX - Mexico; 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; TCCA - Korea Toxic Chemicals Control Act; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TW - Taiwan; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States.

Other Information

Disclaimer:

Reasonable care has been taken in the preparation of this information; however, the manufacturer makes no warranty whatsoever including the warranty of merchantability, expressed or implied, with respect to this information. The manufacturer makes no representations and assumes no liability for any direct, incidental, consequential, or other such damages resulting from its use or misuse..