Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name
E-Kleen 153
Product Use
Alkaline cleaner

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 1
Serious Eye Damage/Eye Irritation - Category 1

GHS Label Elements

Signal Word
Danger

Hazard Statement(s)
Causes severe skin burns and eye damage

Precautionary Statement(s)
Prevention
Wear protective gloves/protective clothing/eye protection/face protection
Wash thoroughly after handling
Do not breathe dusts or mists

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

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>CAS</th>
<th>Component Name</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>7732-18-5</td>
<td>Water</td>
<td>70-90</td>
</tr>
<tr>
<td>1344-09-8</td>
<td>Sodium silicate</td>
<td>1-5</td>
</tr>
<tr>
<td>1310-58-3</td>
<td>Potassium hydroxide</td>
<td>5-10</td>
</tr>
<tr>
<td>7320-34-5</td>
<td>Tetrapotassium pyrophosphate</td>
<td>5-10</td>
</tr>
<tr>
<td>Trade Secret</td>
<td>Surfactant</td>
<td>3-7</td>
</tr>
</tbody>
</table>

Section 4 - FIRST AID MEASURES

Inhalation
If inhaled, immediately remove the affected person to fresh air. If the affected person is not breathing, apply artificial respiration. Call a physician if symptoms develop or persist.

Skin
For skin contact flush with large amounts of water while removing contaminated clothing. If irritation develops or persists, seek medical attention. If skin still feels slippery, caustic maybe still present in large enough quantities to cause rash burn. Continue to wash the affective area until it does not feel slippery.

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

**Ingestion**
Do not induce vomiting unless directed to do so by medical personnel. If conscious, drink large quantities of water or acidic beverages like tomato or orange juice or carbonated soft drinks. If vomiting does occur administer additional water. Never give anything by mouth to a victim who is unconscious or is having convulsions. Get medical attention or advice.

**Most Important Symptoms/Effects**
**Acute**
Causes severe irritation or burns to the eyes, skin, gastrointestinal tract, and respiratory system.

---

**Section 5 - FIRE FIGHTING MEASURES**

**Extinguishing Media**
**Suitable Extinguishing Media**
Dry chemical, foam, carbon dioxide, water fog.

**Unsuitable Extinguishing Media**
None known.

**Special Hazards Arising from the Chemical**
None identified.

**Hazardous Combustion Products**
None.

**Fire Fighting Measures**
Firefighters should wear full protective clothing including self contained breathing apparatus.

---

**Section 6 - ACCIDENTAL RELEASE MEASURES**

**Personal Precautions, Protective Equipment and Emergency Procedures**
Isolate area. Keep unnecessary personnel away. Persons not wearing appropriate protective equipment should be excluded from area of spill until clean-up has been completed.

**Methods and Materials for Containment and Cleaning Up**
Contain the discharged material. Stop source of leak if possible. Block any potential routes to water systems. Ventilate the contaminated area. Absorb spilled product with a commercial oil absorbent, such as sand or earth. Shovel absorbed material into appropriate container for disposal. Wear appropriate
protective equipment and clothing during clean-up. Avoid skin contact and inhalation of vapors during disposal of spills. Isolate area. Keep unnecessary personnel away. Follow all Local, State, Federal and Provincial regulations for disposal. Surfaces may become slippery after spillage. Neutralize with dilute acid. Flush spill area with water followed by liberal coverage of sodium bicarbonate.

**Environmental Precautions**
Do not allow the spilled product to enter public drainage system or open water courses.

---

**Section 7 - HANDLING AND STORAGE**

**Precautions for Safe Handling**
Avoid getting this material into contact with your skin and eyes. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling.

**Conditions for Safe Storage, Including any Incompatibilities**
Store locked up
Keep container tightly closed in a cool, well-ventilated place.

---

**Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION**

**Component Exposure Limits**

<table>
<thead>
<tr>
<th>Component</th>
<th>Exposure Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium hydroxide</td>
<td>1310-58-3</td>
</tr>
</tbody>
</table>

**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 to prevent skin contact. Use of an impervious apron is recommended.

**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.
Protective Materials
Eye wash fountain and emergency showers are recommended.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Appearance</th>
<th>Clear liquid</th>
<th>Physical State</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odor</td>
<td>Pungent Odor</td>
<td>Color</td>
<td>Amber</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not available</td>
<td>pH</td>
<td>13 - 14</td>
</tr>
<tr>
<td>Melting Point</td>
<td>Not available</td>
<td>Boiling Point</td>
<td>&gt;224 °F (107 °C)</td>
</tr>
<tr>
<td>Freezing point</td>
<td>45 - 50 °F (7.22-10 °C)</td>
<td>Evaporation Rate</td>
<td>Not available</td>
</tr>
<tr>
<td>Boiling Point Range</td>
<td>Not available</td>
<td>Flammability (solid, gas)</td>
<td>Not available</td>
</tr>
<tr>
<td>Autoignition</td>
<td>Not available</td>
<td>Flash Point</td>
<td>Not available</td>
</tr>
<tr>
<td>Lower Explosive Limit</td>
<td>Not available</td>
<td>Decomposition</td>
<td>Not available</td>
</tr>
<tr>
<td>Upper Explosive Limit</td>
<td>Not available</td>
<td>Vapor Pressure</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor Density (air=1)</td>
<td>Not available</td>
<td>Specific Gravity (water=1)</td>
<td>1.194 - 1.204</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>Completely</td>
<td>Partition coefficient: n-octanol/water</td>
<td>Not available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not available</td>
<td>Solubility (Other)</td>
<td>Not available</td>
</tr>
<tr>
<td>Density</td>
<td>Not available</td>
<td>VOC</td>
<td>0</td>
</tr>
</tbody>
</table>

Section 10 - STABILITY AND REACTIVITY

Reactivity
Contact with some metals, particularly magnesium, aluminum, zinc (galvanized) can rapidly generate hydrogen which can be explosive.

Chemical Stability
Stable under normal conditions.
Possibility of Hazardous Reactions
Will not occur.

Conditions to Avoid
Avoid contact with extreme heat. Avoid contact with acids.

Incompatible Materials
This product may react with strong acids.

Hazardous decomposition products
Carbon monoxide and carbon dioxide.

Thermal decomposition products
Upon thermal decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons.

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:
Water (7732-18-5)
Oral LD50 Rat >90 mL/kg
Sodium silicate (1344-09-8)
Oral LD50 Rat 1960 mg/kg
Potassium hydroxide (1310-58-3)
Oral LD50 Rat 284 mg/kg
Tetrapotassium pyrophosphate (7320-34-5)
Oral LD50 Mouse 2000 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.

**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**

**Ecotoxicity**
Because of the high pH of this product, it would be expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems.

**Component Analysis - Aquatic Toxicity**

<table>
<thead>
<tr>
<th>Component</th>
<th>Aquatic Toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium silicate</td>
<td>1344-09-8</td>
</tr>
<tr>
<td>Fish:</td>
<td></td>
</tr>
<tr>
<td>LC50 96 h Lepomis macrochirus</td>
<td>301 - 478 mg/L;</td>
</tr>
<tr>
<td>Brachydanio rerio</td>
<td>3185 mg/L [semi-</td>
</tr>
<tr>
<td>Static]</td>
<td></td>
</tr>
<tr>
<td>Tetrapotassium pyrophosphate</td>
<td>7320-34-5</td>
</tr>
<tr>
<td>Fish:</td>
<td></td>
</tr>
<tr>
<td>LC50 96 h Oncorhynchus mykiss</td>
<td>&gt;100 mg/L</td>
</tr>
<tr>
<td>Invertebrate:</td>
<td></td>
</tr>
<tr>
<td>EC50 48 h water flea</td>
<td>&gt;100 mg/L</td>
</tr>
</tbody>
</table>

---

**Section 13 - DISPOSAL CONSIDERATIONS**

**Disposal Methods**
As shipped, this product would be considered a D002 (corrosive) waste. The U.S. EPA has not published waste numbers for this product's components. Waste must be handled in accordance with all federal, state, provincial, and local regulations. In case of large spills, follow all facility Emergency Response
Procedures. Do not allow this material to into sewers/water supplies. Do not reuse container. Dispose of container and any unused contents in accordance with Federal, State, Provincial and Local Waste Regulations.

Section 14 - TRANSPORT INFORMATION

US DOT Information:

Shipping Name: Potassium hydroxide, solution
Hazard Class: 8
UN/NA #: UN1814
Packing Group: II
Required Label(s): Corrosive

TDG Information:

Shipping Name: Potassium hydroxide, solution
Hazard Class: 8
UN#: UN1814
Packing Group: II
Required Label(s): Corrosive

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.

<table>
<thead>
<tr>
<th>Chemical</th>
<th>CAS</th>
<th>CA</th>
<th>MA</th>
<th>MN</th>
<th>NJ</th>
<th>PA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium hydroxide</td>
<td>1310-58-3</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>CERCLA:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1000 lb final RQ; 454 kg final RQ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

U.S. State Regulations
The following components appear on one or more of the following state hazardous substances lists:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS</th>
<th>CA</th>
<th>MA</th>
<th>MN</th>
<th>NJ</th>
<th>PA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium hydroxide</td>
<td>1310-58-3</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium hydroxide</td>
<td>1310-58-3</td>
<td>Yes</td>
<td>DSL</td>
<td>EIN</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Sodium silicate (1344-09-8)</td>
<td></td>
<td>Yes</td>
<td>DSL</td>
<td>EIN</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Potassium hydroxide (1310-58-3)</td>
<td></td>
<td>Yes</td>
<td>DSL</td>
<td>EIN</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Tetrapotassium pyrophosphate</td>
<td>(7320-34-5)</td>
<td>Yes</td>
<td>DSL</td>
<td>EIN</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Surfactant (Trade Secret)</td>
<td></td>
<td>Yes</td>
<td>DSL</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

**Section 16 - OTHER INFORMATION**

**HMIS Rating**
Health: 3 Fire: 0 Reactivity: 0
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

NFPA Ratings
Health: 3 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 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; KECl - 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.