1 Identification of the substance/mixture and of the company/undertaking

Trade name: Biokleen 5779
Application of the substance / the preparation: Saponifier
Relevant identified uses of the substance or mixture and uses advised against Saponifier

Details of the supplier of the safety data sheet
This Safety Data Sheet has been updated in accordance with the Global Harmonized System (GHS).
Manufacturer/Supplier:
Kester
800 West Throndale Ave.
Itasca, IL 60143
Tel (630) 616-4000
Fax (630) 616-4044

Kester Components Pte Ltd
500 Chai Chee Lane
Singapore 469024
Tel: 65-64491133

Further information obtainable from: SDS Coordinator (630) 616-6844
Emergency telephone number:
CHEMTREC 24-Hour Emergency Response Telephone Number : (800) 424-9300
CHEMTREC 24-Hour Emergency Response (Outside US & Canada) Telephone Number : (703) 527-3887

2 Hazards identification

Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008

GHS06 skull and crossbones
Acute Tox. 3 H311 Toxic in contact with skin.

GHS05 corrosion
Skin Corr. 1B H314 Causes severe skin burns and eye damage.

GHS07
Acute Tox. 4 H302 Harmful if swallowed.
Acute Tox. 4 H332 Harmful if inhaled.
STOT SE 3 H335+H336 May cause respiratory irritation. May cause drowsiness or dizziness.

Label elements
Labelling according to Regulation (EC) No 1272/2008
The product is classified and labelled according to the CLP regulation.
Hazard pictograms

GHS05 GHS06

Signal word Danger
Hazard-determining components of labelling:
2-aminoethanol

(Continued on page 2)
SAFETY DATA SHEET (SDS)
according to 1907/2006/EC, Article 31

Printing Date: 31.01.2012
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2-butoxyethanol
Hazard statements
H302 Harmful if swallowed.
H311 Toxic in contact with skin.
H332 Harmful if inhaled.
H314 Causes severe skin burns and eye damage.
H335+H336 May cause respiratory irritation. May cause drowsiness or dizziness.

Precautionary statements
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER or doctor/physician.
P361 Remove/Take off immediately all contaminated clothing.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

3 Composition/information on ingredients

Chemical characterization: Mixtures -
Description: Mixture of substances listed below with nonhazardous additions.

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS Number</th>
<th>EINECS</th>
<th>Description</th>
<th>Hazard Statements</th>
<th>Composition</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-aminoethanol</td>
<td>141-43-5</td>
<td>205-483-3</td>
<td>50-100%</td>
<td>Acute Tox. 3, H311, Skin Corr. 1B, H314, Acute Tox. 4, H332</td>
<td></td>
</tr>
<tr>
<td>2-butoxyethanol</td>
<td>111-76-2</td>
<td>203-905-0</td>
<td>10-25%</td>
<td>Acute Tox. 3, H311, Acute Tox. 4, H302, Acute Tox. 4, H332, Skin Irrit. 2, H315, Eye Irrit. 2, H319</td>
<td></td>
</tr>
<tr>
<td>2,4,7,9-tetramethyldec-5-yne-4,7-diol</td>
<td>126-86-3</td>
<td>204-809-1</td>
<td>2.5-10%</td>
<td>Eye Irrit. 2, H319</td>
<td></td>
</tr>
</tbody>
</table>

4 First aid measures

Description of first aid measures
General information: Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

After inhalation:
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
In case of unconsciousness place patient stably in side position for transportation.
Supply fresh air; consult doctor in case of complaints.

After skin contact: Immediately wash with water and soap and rinse thoroughly.

After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing:
Drink plenty of water and provide fresh air. Call for a doctor immediately.
Seek immediate medical advice.

Information for doctor:
Most important symptoms and effects, both acute and delayed
No further relevant information available.

(Continued on page 3)
5 Firefighting measures

Extinguishing media
Suitable extinguishing agents: CO₂, sand, extinguishing powder. Do not use water.
Special hazards arising from the substance or mixture
Nitrogen oxides (NOₓ)
In case of fire, the following can be released:
Advice for firefighters
Protective equipment:
Mouth respiratory protective device.
Wear self-contained respiratory protective device.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Environmental precautions: Do not allow to enter sewers/ surface or ground water.
Methods and material for containment and cleaning up:
Use neutralizing agent.
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
Reference to other sections
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

Handling:
Precautions for safe handling
Store in cool, dry place in tightly closed receptacles.
Prevent formation of aerosols.
Information about fire - and explosion protection: No special measures required.

Conditions for safe storage, including any incompatibilities
Storage:
Requirements to be met by storerooms and receptacles: Store in a cool location.
Information about storage in one common storage facility: Not required.
Further information about storage conditions: Keep container tightly sealed.
Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

Additional information about design of technical facilities: No further data; see item 7.

Control parameters

Ingredients with limit values that require monitoring at the workplace:

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>WEL</th>
<th>Long-term value</th>
</tr>
</thead>
<tbody>
<tr>
<td>141-43-5 2-aminoethanol</td>
<td>Short-term value: 7.6 mg/m³, 3 ppm</td>
<td>Long-term value: 2.5 mg/m³, 1 ppm</td>
</tr>
</tbody>
</table>

(Continued on page 4)
**SAFETY DATA SHEET (SDS)**

according to 1907/2006/EC, Article 31

Printing Date: 31.01.2012

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Version number 2

Trade name: Biokleen 5779

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### 111-76-2 2-butoxyethanol

<table>
<thead>
<tr>
<th>WEL</th>
<th>Short-term value: 50 ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Long-term value: 25 ppm</td>
</tr>
</tbody>
</table>

### Exposure controls

**Personal protective equipment:**

General protective and hygienic measures:
- The usual precautionary measures are to be adhered to when handling chemicals.
- Keep away from foodstuffs, beverages and feed.
- Immediately remove all soiled and contaminated clothing
- Wash hands before breaks and at the end of work.
- Avoid contact with the eyes and skin.

Respiratory protection:
- When ventilation is not sufficient to remove fumes from the breathing zone, a safety approved respirator or self-contained breathing apparatus should be worn.

Protection of hands:

![Protective gloves]

- **Material of gloves**
  - Nitrile rubber, NBR
  - Natural rubber, NR

- **Penetration time of glove material**
  - The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection:
- Safety Glasses with Side Shields Required
- Goggles recommended during refilling

Body protection: Apron

---

### 9 Physical and chemical properties

**Information on basic physical and chemical properties**

**General Information**

**Appearance:**
- Form: Liquid
- Colour: Light yellow
- Odour: Ammonia-like

**pH-value at 20°C:** 12.8

**Change in condition**
- Melting point/Melting range: Undetermined
- Boiling point/Boiling range: 171°C

**Flash point:** > 55°C

**Ignition temperature:** 240°C

**Self-igniting:** Product is not selfigniting.

**Danger of explosion:** Product does not present an explosion hazard.

**Explosion limits:**
- Lower: 1.1 Vol %
- Upper: 10.6 Vol %

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**SAFETY DATA SHEET (SDS)**

according to 1907/2006/EC, Article 31

Printing Date: 31.01.2012
Revision: 31.01.2012
Version number 2

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**Trade name:** Biokleen 5779

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**Vapour pressure at 20°C:** 1.2 hPa

**Density at 20°C:** 0.98 g/cm³

**Solubility in / Miscibility with water:** Fully miscible.

**Solvent content:**
- Organic solvents: 95.5 %
- Solids content: 1.0 %

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**10 Stability and reactivity**

**Reactivity**

**Chemical stability**

Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

Possibility of hazardous reactions: No dangerous reactions known.

Conditions to avoid: No further relevant information available.

Incompatible materials: Strong acids, strong oxidizers.

Hazardous decomposition products: Nitrogen oxides

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**11 Toxicological information**

**Information on toxicological effects**

**Acute toxicity:**

<table>
<thead>
<tr>
<th>LD/LC50 values relevant for classification:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>141-43-5 2-aminoethanol</strong></td>
</tr>
<tr>
<td>Oral</td>
</tr>
<tr>
<td>Dermal</td>
</tr>
<tr>
<td><strong>111-76-2 2-butoxyethanol</strong></td>
</tr>
<tr>
<td>Oral</td>
</tr>
<tr>
<td>Dermal</td>
</tr>
</tbody>
</table>

Primary irritant effect:
- on the skin: Caustic effect on skin and mucous membranes.
- Irritant to skin and mucous membranes.
  - on the eye: Irritating effect.
  - Sensitization: Sensitization possible through inhalation.

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**12 Ecological information**

**Toxicity**

**Aquatic toxicity:** No further relevant information available.

**Additional ecological information:**

**General notes:**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Must not reach sewage water or drainage ditch undiluted or unneutralized.

**Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.
### 13 Disposal considerations

**Waste treatment methods**

**Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system. Disposal must be made according to official regulations.

**Uncleaned packaging:**
**Recommendation:** Disposal must be made according to official regulations.

**Recommended cleansing agents:** Water, if necessary together with cleansing agents.

### 14 Transport information

<table>
<thead>
<tr>
<th>UN-Number</th>
<th>UN2491</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADR, IMDG, IATA</td>
<td>UN2491 ETHANOLAMINE SOLUTION</td>
</tr>
<tr>
<td>UN proper shipping name</td>
<td>ADR 2491 ETHANOLAMINE SOLUTION</td>
</tr>
<tr>
<td>IMDG, IATA</td>
<td>ETHANOLAMINE SOLUTION</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>ADR, IMDG, IATA</td>
</tr>
<tr>
<td>Class</td>
<td>8 Corrosive substances.</td>
</tr>
<tr>
<td>Label</td>
<td>8</td>
</tr>
</tbody>
</table>

**IMDG, IATA**

| Class | 8 Corrosive substances. |
| Label | 8 |
| Packing group | ADR, IMDG, IATA |
| Environmental hazards: | III |
| Marine pollutant: | No |
| Special precautions for user | Not applicable. |
| Danger code (Kemler): | 80 |
| EMS Number: | F-A,S-B |
| Segregation groups | Alkalis |
| Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not applicable. |

**Transport/Additional information:**

| ADR | Tunnel restriction code | E |
| UN "Model Regulation": | UN2491, ETHANOLAMINE SOLUTION, 8, III |
15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the CLP regulation.

Hazard pictograms

GHS05  GHS06

Signal word Danger

Hazard-determining components of labelling:
2-aminoethanol
2-butoxyethanol

Hazard statements
H302 Harmful if swallowed.
H311 Toxic in contact with skin.
H332 Harmful if inhaled.
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P310 Immediately call a POISON CENTER or doctor/physician.
P361 Remove/Take off immediately all contaminated clothing.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

The information contained herein is based on data considered accurate and is offered solely for information, consideration and investigation. Kester extends no warranties, makes no representations and assumes no responsibility as to the accuracy, completeness or suitability of this data for any purchaser’s use. The data on this Material Safety Data Sheet relates only to this product and does not relate to use with any other material or in any process. All chemical products should be used only by, or under the direction of, technically qualified personnel who are aware of the hazards involved and the necessity for reasonable care in handling. Hazard communication regulations require that employees must be trained on how to use a Material Safety Data Sheet as a source for hazard information.

Contact: Branch Manager (Malaysia only) Tel : 04-6414633

Abbreviations and acronyms:
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
ICAO: International Civil Aviation Organization
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent

* Data compared to the previous version altered.