Material Safety Data Sheet
Revision 9: 5/02/12
Material Name: Oxy K-Devices, Oxyboks K-Devices, Oxy 6000- Oxy 3000-Devices

*** Section 1 - Chemical Product and Company Identification ***

Part Number: 6302000, 6733666 plus various others
Product Use: Oxygen generator, Alkali superoxides
Manufacturer Information
Dräger Safety AG & Co. KGaA
Revalstr. 1
23560 Lübeck
Germany

Distributor/Contact Information
Draeger Safety, Inc
101 Technology Drive
Pittsburgh, PA  15275-1057
Phone: (412) 787-8383
Fax: (412) 787-2207
Emergency # 1-800-424-9300 (CHEMTREC)

General Comments
NOTE: Emergency telephone numbers are to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure, or accident involving chemicals. All non-emergency questions should be directed to customer service.

*** Section 2 - Composition / Information on Ingredients ***

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Component</th>
<th>Percent*</th>
</tr>
</thead>
<tbody>
<tr>
<td>12030-88-5</td>
<td>Potassium superoxide</td>
<td>92-95</td>
</tr>
<tr>
<td>7775-09-9</td>
<td>Sodium chlorate</td>
<td>2-4</td>
</tr>
<tr>
<td>1313-60-6</td>
<td>Sodium peroxide</td>
<td>1-2</td>
</tr>
</tbody>
</table>

*Based on the chemicals in the sealed cartridges.

Component Information/Information on Non-Hazardous Components
This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

*** Section 3 - Hazards Identification ***

Emergency Overview
DANGER - The contents of this product are strong oxidizers, and may cause combustible materials to spontaneously ignite. There is also a danger of explosion from heat or friction. This product consists of two hermetically sealed cartridges; one cartridge contains potassium superoxide and the other cartridge consists mainly of sodium chlorate. Direct eye or skin contact, ingestion of potassium superoxide, or inhalation of dusts may cause severe irritation and burns. Direct eye and skin contact of sodium chlorate, or inhalation of dusts may cause irritation. Contents of product may be harmful or fatal if swallowed. Small amounts of sodium chlorate may produce methemoglobinemia.

Potential Health Effects: Eyes
Contents of cartridges may cause severe eye irritation and burns.

Potential Health Effects: Skin
Contents of cartridges may cause severe skin irritation and burns.

Potential Health Effects: Ingestion
Ingestion of cartridge contents is unlikely. However, ingestion of small amounts may cause methemoglobinemia characterized by cyanosis, headache, dizziness, fatigue, nausea, vomiting, drowsiness, stupor, coma and rarely death. Ingestion of contents may cause severe irritation to the gastrointestinal tract and risk of perforation in the esophagus and stomach. Product contents may be harmful or fatal if swallowed.

Potential Health Effects: Inhalation
Inhalation of dusts from the contents of cartridge may cause severe respiratory irritation, which may progress to pulmonary edema.

HMIS Ratings: Health: 3*  Fire: 0  Physical Hazard: 2  Pers. Prot.: goggles, gloves
Hazard Scale: 0 = Minimal  1 = Slight  2 = Moderate  3 = Serious  4 = Severe  * = Chronic hazard
*** Section 4 - First Aid Measures ***

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

**First Aid: Skin**
For skin contact, flush with large amounts of water while removing contaminated clothing.

**First Aid: Ingestion**
If material is ingested, immediately contact a physician or poison control center. Give 4 to 8 ounces of water. DO NOT induce vomiting unless directed to do so by medical personnel.

**First Aid: Inhalation**
If mist or vapor of this product is inhaled, remove person immediately to fresh air. Seek medical attention if symptoms develop or persist.

**First Aid: Notes to Physician**
Methylene blue is not effective against methemoglobinemia induced by sodium chlorate, except in very early stages.

*** Section 5 - Fire Fighting Measures ***

**Flash Point:** Not applicable
**Method Used:** Not applicable

**Upper Flammable Limit (UFL):** Not applicable
**Lower Flammable Limit (LFL):** Not applicable

**Auto Ignition:** Not applicable
**Flammability Classification:** Not applicable

**Rate of Burning:** Not applicable
**General Fire Hazards**
This product is a strong oxidizing agent and is a serious fire and explosion risk. Do not permit contact with combustible, organic or other oxidizable materials.

**Hazardous Combustion Products**
Decomposition of this product may yield potassium hydroxide and oxygen. Irritating and toxic gases or fumes may be released during a fire.

**Extinguishing Media**
Use dry powder, dry sand or dry cement. DO NOT use water or CO2. Use water to cool fire-exposed containers and to protect personnel.

**Fire Fighting Equipment/Instructions**
Firefighters should wear full protective clothing including self-contained breathing apparatus.

**NFPA Ratings: Health:** 3  **Fire:** 0  **Reactivity:** 2  **Other:** OX
**Hazard Scale:** 0 = Minimal  1 = Slight  2 = Moderate  3 = Serious  4 = Severe

*** Section 6 - Accidental Release Measures ***

**Containment Procedures**
If sweeping of a contaminated area is necessary, use a dust suppressant agent which does not react with product. Block any potential routes to water systems.

**Clean-Up Procedures**
Collect spill, avoiding any contact with organic materials, plastics, etc. Shovel material into appropriate container for disposal. Avoid the generation of dusts during clean-up. Thoroughly wash area with water after spill or leak clean-up.

**Evacuation Procedures**
Isolate area. Keep unnecessary personnel away.

**Special Procedures**
Wear appropriate protective equipment and clothing during clean-up.
** *** Section 7 - Handling and Storage *** **

**Handling Procedures**
Do not get this material in your eyes, on your skin, or on your clothing. Wash thoroughly after handling. Do not breathe dust from this material. Use this product with adequate ventilation.

**Storage Procedures**
Keep the container tightly closed and dry. Store away from heat and humidity. Store away from acids. Room temperature - normal conditions.

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** *** Section 8 - Exposure Controls / Personal Protection *** **

**Exposure Guidelines**
A: General Product Information
With normal handling of product there should be no exposure to contents. If contact does occur, keep exposure as low as possible.

B: Component Exposure Limits
ACGIH, OSHA, and NIOSH have not developed exposure limits for any of this product's components.

**Engineering Controls**
Provide adequate local exhaust ventilation to maintain worker exposure below exposure limits.

**PERSONAL PROTECTIVE EQUIPMENT**

**Personal Protective Equipment: Eyes/Face**
Wear chemical goggles.

**Personal Protective Equipment: Skin**
Use impervious gloves.

**Personal Protective Equipment: Respiratory**
If ventilation is not sufficient to effectively prevent buildup of aerosols or vapors, appropriate NIOSH/MSHA respiratory protection must be provided.

**Personal Protective Equipment: General**
Use good industrial hygiene practices in handling this material.

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** *** Section 9 - Physical & Chemical Properties *** **

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Cartridge containing yellow pellets.</td>
</tr>
<tr>
<td>Physical State</td>
<td>Solid</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Solubility (H2O)</td>
<td>Decomposes</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>Mixture</td>
</tr>
<tr>
<td>Odor</td>
<td>None</td>
</tr>
<tr>
<td>pH</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Melting Point</td>
<td>&lt;-490°C</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.7</td>
</tr>
</tbody>
</table>

** *** Section 10 - Chemical Stability & Reactivity Information *** **

**Chemical Stability**
Stable within container. However, exposed contents are a powerful oxidizer.

**Chemical Stability: Conditions to Avoid**
This product is an OXIDIZING AGENT - Avoid contact with organic material. Avoid contact with water. Bringing this product into contact with combustible material may cause a fire.

**Incompatibility**

**Hazardous Decomposition**
Decomposition of this product may yield potassium hydroxide and oxygen. Irritating and toxic fumes and gases may also be released.

**Hazardous Polymerization**
Will not occur.
*** Section 11 - Toxicological Information ***

Acute and Chronic Toxicity
A: General Product Information
Exposure to contents of the cartridge may cause both acute and chronic effects. Potassium superoxide may cause severe irritation and possible damage to the eyes, skin, and respiratory tract. Severe respiratory tract irritation may progress to a delayed onset pulmonary edema. Acute exposure to sodium chlorate may cause eye, skin and respiratory tract irritation. Sodium chlorate overexposure by ingestion or inhalation may cause: hemolytic anemia, cyanosis, pulmonary edema, liver damage, and kidney damage. Ingestion may be harmful or fatal due to the formation of methemoglobin. The lethal dose of sodium chlorate has been reported to range from one teaspoon to one ounce for an adult. Sodium peroxide may cause severe irritation and chemical burns of the skin and mucous membranes.

B: Component Analysis - LD50/LC50
Sodium chlorate (7775-09-9)
Inhalation LC50 Rat: >28 g/m3/1H; Oral LD50 Rat: 1200 mg/kg; Oral LD50 Mouse: 8350 mg/kg; Dermal LD50 Rabbit: >10 g/kg

Carcinogenicity
A: General Product Information
No information available.

B: Component Carcinogenicity
None of this product’s components are listed by ACGIH, IARC, OSHA, NIOSH, or NTP.

Mutagenicity
Potassium superoxide has been found to cause DNA damage in both hamster and human cells. Sodium chlorate caused mutations in fruit flies, but did not induce chromosome aberrations, micronuclei, or sperm abnormalities in mice.

Teratogenicity
Sodium chlorate is of concern for possible reproductive effects. Newborns may be more sensitive to sodium chlorate than adults, because fetal hemoglobin is oxidized to methemoglobin easier than adult hemoglobin. Fetal hemoglobin is also reduced back to normal hemoglobin slower than adult hemoglobin, giving the fetus an increased oxygen demand.

*** Section 12 - Ecological Information ***

Ecotoxicity
A: General Product Information
Components of this product are hazardous to aquatic life.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity
Sodium chlorate (7775-09-9)

<table>
<thead>
<tr>
<th>Test &amp; Species</th>
<th>Conditions</th>
<th>Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 Hr LC50 rainbow trout</td>
<td>4200 mg/L</td>
<td>4200 mg/L</td>
</tr>
<tr>
<td>24 Hr LC50 channel catfish</td>
<td>3157 mg/L</td>
<td>3157 mg/L</td>
</tr>
<tr>
<td>24 Hr LC50 harlequin fish</td>
<td>8600 mg/L</td>
<td>8600 mg/L</td>
</tr>
</tbody>
</table>

Environmental Fate
Adverse ecological effects cannot be excluded in the event of improper handling or disposal.

*** Section 13 - Disposal Considerations ***

US EPA Waste Number & Descriptions
A: General Product Information
If discarded, wastes may be classified as: D001 (ignitable).

B: Component Waste Numbers
No EPA Waste Numbers are applicable for this product’s components.

Disposal Instructions
Waste must be handled in accordance with all federal, state, provincial, and local regulations.
*** Section 14 - Transportation Information ***

International Transportation Regulations
No additional information available.

US DOT Information
- **Shipping Name:** Oxygen generator, chemical
- **UN/NA #:** UN3356
- **Hazard Class:** 5.1
- **Packing Group:** II
- **Required Label(s):** OXIDIZER
- This package is NOT AUTHORIZED for transportation aboard aircrafts.

*** Section 15 - Regulatory Information ***

**US Federal Regulations**
A: General Product Information
None identified.

B: Component Analysis
None of this product's components are listed under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), or CERCLA (40 CFR 302.4).

**State Regulations**
A: General Product Information
Other state regulations may apply. Check individual state requirements.

B: Component Analysis - State
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>
<th>RI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium superoxide</td>
<td>12030-88-5</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Sodium chlorate</td>
<td>7775-09-9</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Sodium peroxide</td>
<td>1313-60-6</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Canadian WHMIS Information**
A: General Product Information
WHMIS Class C - Oxidizing Material

B: Component Analysis - WHMIS IDL
No components are listed in the WHMIS IDL.

**Additional Regulatory Information**
A: General Product Information
No additional information available.

B: Component Analysis - Inventory

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS #</th>
<th>TSCA</th>
<th>CAN</th>
<th>EEC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium superoxide</td>
<td>12030-88-5</td>
<td>Yes</td>
<td>NDSL</td>
<td>EINECS</td>
</tr>
<tr>
<td>Sodium chlorate</td>
<td>7775-09-9</td>
<td>Yes</td>
<td>DSL</td>
<td>EINECS</td>
</tr>
<tr>
<td>Sodium peroxide</td>
<td>1313-60-6</td>
<td>Yes</td>
<td>DSL</td>
<td>EINECS</td>
</tr>
</tbody>
</table>

*** Section 16 - Other Information ***

Other Information
Reasonable care has been taken in the preparation of this information, but the manufacturer makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The manufacturer makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use.
Material Safety Data Sheet

Material Name: Oxy K-Devices, Oxyboks K-Devices, Oxy 6000- Oxy 3000-Devices

ID: 4594955

Key/Legend

Contact: Product Manager
Contact Phone: 412-787-8383

This is the end of MSDS # 4594955