

MATERIAL SAFETY DATA SHEET**1. Product and Company Identification**

LABEL IDENTIFIER: Oxygen-Generating Canister without Candle

PRODUCT IDENTIFIER: P/N 10071772, Canister, Navy Oxygen Breathing Apparatus
P/N 10071775, Canister, One Hour Oxygen Breathing Apparatus
P/N 10071773, Canister, One Hour for MSA Canada
P/N 10071774, Canister, One Hour International

PRODUCT DESCRIPTION: This device is an oxygen generating escape breathing apparatus containing potassium superoxide.

COMPANY IDENTIFICATION: MINE SAFETY APPLIANCES
P.O. Box 439
Pittsburgh, PA 15230
CUSTOMER SERVICE: 1-800-MSA-2222 (8:30 am – 5:00 pm, local US time)
EMERGENCY: 1-800-255-3924 (CHEM-TEL, INC.)

2. Composition/Information on Ingredients

	<u>%</u>	<u>Synonym(s)</u>
Canister Body Contents: Approx. 1100 grams Potassium superoxide (CAS 12030-88-5)	100	KO ₂

OSHA REGULATORY STATUS: Hazardous by definition of Hazard Communication Standard, 29 CFR 1910.1200.

3. Hazards Identification

EMERGENCY OVERVIEW: Canister is kidney shaped, approximately 8.72 inches high, 6.88 inches wide and 2.75 inches thick, weighing about 4.5 pounds with no odor. Material in canister is a strong oxidizer, contact with combustible material may cause fire. Material reacts vigorously with water generating heat, oxygen and corrosive solution. Material causes eye and possible skin burns.

PHYSICAL HAZARD:

KO₂: Strong water reactive oxidizer, reacts violently with water generating oxygen heat and caustic potassium hydroxide solution. Some organics (such as ethyl alcohol) will spontaneously combust on contact with KO₂.

POTENTIAL HEALTH HAZARDS:

KO₂: (Potassium superoxide): Canary yellow solid, either fine powder or granules, with no odor. Strong Oxidizer. Contact with other material may cause fire. Causes severe eye, skin, and respiratory tract burns.

4. First Aid Measures

EMERGENCY AND FIRST AID PROCEDURES: Exposure to chemical solids contained in canister is not anticipated under intended conditions of use and overexposure is highly unlikely. First aid procedures are listed here should overexposure somehow occur.

CHEMICAL CAUSES SEVERE ALKALI AND THERMAL BURNS! SEND TO A PHYSICIAN IN ALL CASES.

EYES: Immediately flush eyes with plenty of water for 15 minutes, holding eyes open.

SKIN: Immediately shake any material from skin, remove contaminated clothing, then flush skin with copious amounts of water for at least 15 minutes. Discard contaminated clothing and shoes.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen.

INGESTION: Do not induce vomiting. Give demulcent such as milk, olive oil, or margarine in small amounts up to 2 or 3 ounces. Never give anything by mouth to an unconscious person.

GET MEDICAL ATTENTION IMMEDIATELY IN ALL CASES.

5. Fire Fighting Measures

FLASH POINT: N/A

KO₂ decomposes releasing oxygen

LEL N/A

UEL N/A

EXTINGUISHING MEDIA: Water – Use extinguishing media appropriate for surrounding fire. Do not use powdered graphite.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Containers may rupture in fire. Liberated oxygen will intensify fire. Water will leach strong alkaline material from canister producing a caustic run-off solution. Avoid skin contact with run-off water.

PROTECTION OF FIRE FIGHTERS: Wear full protective clothing, including protective gloves and boots. For respiratory protection, wear a NIOSH approved self-contained breathing apparatus with full facepiece operated in a positive-pressure mode. Protect against corrosive smoke, dust, and waters.

6. Accidental Release Measures

PROCEDURES FOR SPILL OR LEAK CLEANUP: Avoid contact with chemicals. Wear recommended protective equipment. Scoop solids into properly labeled, unpainted, DRY metal container and cover. Take immediately to a waste handling area. Handle in compliance with all local, state, and federal laws and regulations.

7. Handling and Storage

HYGIENIC PRACTICES: Direct Exposure to KO₂ is not anticipated during normal canister usage.

STORAGE: Store in a cool, dry area protected from crushing or impact forces. Store separate from incompatible materials such as organics or combustibles.

8. Exposure Controls/Personal Protection

EXPOSURE LIMITS:TLV

Canister Body Contents:

Approx. 1100 grams KO₂ (CAS 12030-88-5)

Not Listed

PERSONAL PROTECTIVE EQUIPMENT WHEN EXPOSURE IS POSSIBLE: Wear chemical protective goggles; faceshield; chemically resistant and water impervious clothing; chemically resistant neoprene, vinyl, or rubber gloves; rubber boots; NIOSH approved self-contained breathing apparatus with a full facepiece operated in a positive-pressure mode.

WORK PRACTICES: follow detailed instructions supplied with apparatus

9. Physical and Chemical Properties

APPEARANCE AND ODOR: (Combination)	Canister: Contains yellow KO ₂ granules, odorless
DISSOCIATION TEMP: (KO ₂ Granules)	KO ₂ decomposes at 425°C
SPECIFIC GRAVITY (Candle):	Approximately 2.2
VAPOR PRESSURE:	N/A
BULK DENSITY (KO ₂ Granules):	Approximately 0.8
VAPOR DENSITY (AIR = 1):	N/A
PERCENT VOLATILE BY VOLUME:	N/A
FORMULA:	Apparatus contains Potassium superoxide (KO ₂),

10. Stability and Reactivity

CONDITIONS OR MATERIALS TO AVOID: Avoid easily oxidized materials, organics (including fuels, solvents, greases, lubricants), acids, combustibles. Contact of these materials with canister contents will cause a violent reaction and rupture of the canister.

11. Toxicological Information

This product has not been tested for health hazards. The assumption is made in the OSHA Hazard Communication Standard that an untested mixture will present the same health hazards as do the components which comprise one percent or more.

Potassium superoxide readily reacts with water in the body to form potassium hydroxide. KO₂, KO₂ dust, and potassium hydroxide are caustic and will cause caustic burns to the eyes and may cause burns to the skin or mucous membranes of the respiratory tract.

Skin will turn red and may turn black. Exposure may cause an itching or burning sensation which may go away. A severe burn may be less painful than a minor one because tissue and nerves will be destroyed.

KO₂ is not listed in the National Toxicology Program (NTP) Annual Report on Carcinogens, not found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs, and not listed as an OSHA carcinogen.

MEDICAL CONDITIONS GENERALLY RECOGNIZED AS BEING AGGRAVATED BY EXPOSURE: Persons with preexisting skin conditions may be more susceptible to the effects of this product.

12. Ecological Information

Potassium superoxide (KO₂): No data available. KO₂ reacts with water to produce potassium hydroxide (KOH) that will increase the pH of the water and/or soil to create conditions that may kill fish and other living organisms.

13. Disposal Information

WASTE DISPOSAL: The procedure below is an option for potential use by permitted hazardous waste management facilities. Hazardous waste management facilities should comply with local, state and federal requirements.

When discarded by a United States generator, an oxygen-generating canister is a hazardous waste with the U.S. EPA Hazardous Waste Number of D001, any applicable state waste codes, and any additional codes that should be applied based on the unique situation of the generator and the conditions of the product's use. The D001 code applies because the potassium superoxide in the canister is a U.S. Department of Transportation oxidizer. Generators should use this information and any user-specific data to make their own hazardous waste determination.

The following procedure is included solely to address safe handling and deactivation of oxygen-generating canisters and is intended for use by permitted hazardous waste management facilities. Because waste management regulations depend on generator status and location, this generic procedure may not meet treatment standards required by applicable laws and regulations. Those employing these procedures must therefore independently assure compliance with all local, state, and federal requirements. Read the entire procedure first!

1. Properly protect eyes and skin of person performing disposal. Wear chemical protective goggles and caustic resistant gloves.
2. Select a well-vented area, preferably outdoors and free from flammable materials. DO NOT puncture canister underground.
3. Be sure canister cap is removed and copper foil is punctured.
4. Punch two or three holes in the bottom of the canister at least 1/2 inch in diameter.
5. Fill a clean 10 gallon steel container with 5 to 6 gallons of clean water.
6. Dissolve 3 lbs. (1.4 Kg) of greater than 90 percent pure sodium bicarbonate in the water.
7. Slowly place one canister into the solution. The canister must be at least three inches under the surface. The person performing disposal should avoid direct breathing of mist generated in this procedure since it may be caustic and cause damage to respiratory passages.
8. When bubbling stops, the pH of the residual water will be below 12. This can be checked with indicator papers. Additional sodium bicarbonate can be used to reduce the pH if necessary.

9. Remove the canister from the solution. Do not touch the canister with bare hands! If any solution contacts skin, wash the affected area immediately and completely with water.
10. Drain canister thoroughly and let dry completely.
11. The metal canister can be managed as scrap metal.
12. The total concentration of metals in the water after disposal of canister is normally below 25 parts per million. If it is necessary to minimize trace metal content of the water before disposal, the metal containing solids or sludge can be removed by filtration, using any media capable of removing fine particles; for example, medium grade filter paper.
13. The filtered wash water can be routed to a permitted wastewater treatment facility if allowed by the treatment plant authority (consult treatment plant authority for guidance). The sludge contains predominantly copper salts, with lesser proportion of lead salts. This sludge (typically less than 3 g. dry weight) should be disposed of according to local, state and federal regulations.
14. If more than one canister is to be disposed, the above procedure must be repeated for each canister.

14. Transport Information

This product is a U.S. Department of Transportation (DOT) Hazardous Material.

Proper Shipping Name:	Oxygen generator, chemical
Hazard Class or Division	5.1
Identification Number	UN3356
Packing Group	II

This device has been classified and approved for shipment by U.S. DOT in accordance with Classification Document DOT EX-9709047 and Approval CA-1997090009. Shipper should carefully review these documents which are available from the Office of Hazardous Materials Safety, Pipeline and Hazardous Materials Safety Administration. U.S. Department of Transportation, 400 7th Street, SW, Washington, DC 20590-0001. Tel: 1-800-467-4922. Web site: www.hazmat.dot.gov. Copies of these documents are also available at www.msanet.com/prism.

15. Regulatory Information

Potassium Superoxide:

TSCA: Potassium superoxide is listed on the TSCA Public Inventory.

SARA 313 Information: This mixture does not contain a toxic chemical or chemical subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR 372.

CERCLA/Superfund: No reportable quantity (RQ) established for this product.

EINECS: 234-746-5 for potassium superoxide.

16. Other Information

WARNING: This is a hazardous chemical product. By following the directions and warnings provided with this product, the hazards associated with the use of this product can be greatly reduced but never entirely eliminated. Mine Safety Appliances Company makes no warranties, expressed or implied, with respect to this product and EXPRESSLY DISCLAIMS THE WARRANTY OF MERCHANTABILITY AND ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. Users assume all risks in handling, using or storing this product.