**MATERIAL SAFETY DATA SHEET**
**29 CFR 1910.1200 OSHA Hazard**
**Communication Rule Format**
**Chem-Tel 24 Hour Emergency # 1-800-255-3924**

**MINE SAFETY APPLIANCES COMPANY**
**P.O. Box 426**
**Pittsburgh, PA 15230**
**PHONE (412) 967-3000**

This product contains Potassium Hydroxide, a substance subject to the Pennsylvania Worker Community Right-To-Know Act.

## CHEMICAL IDENTITY

LABEL IDENTITY - MSA P/N 454221Toxgard Electrolyte A, Dry

CHEMICAL NAME - Mixture of Potassium Hydroxide, sodium Sulfate and Sodium

ADDITIONAL IDENTITIES - Electrolyte A

FORMULA - KOH, $Na_2SO_4$, $Na_2SO_3$

## APPLICABLE CHEMICAL CONTENTS

Product bottle contains approx. 36 grams total

| | % | TWA |
|---|---|---|
| Potassium Hydroxide (CAS 1310-58-3) (ACGIH 1999) | <20 | 2 mg/$M^3$ Ceiling |
| Sodium Sulfate (CAS 7757-82-6) | <30 | Not listed |
| Sodium Sulfite (CAS 7757-83-7) | <60 | Not listed |

## PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|---|---|---|---|
| APPEARANCE AND ODOR - | White granules, odorless | | |
| BOILING POINT - | N/A | SPECIFIC GRAVITY ($H_2O$ = 1) - | >2 |
| VAPOR PRESSURE - | N/A | SOLUBILITY IN WATER - | Soluble |
| PERCENT VOLATILE BY VOLUME - | N/A | MELTING POINT- | 360°C |
| VAPOR DENSITY (AIR = 1) - | N/A | | |

N/A - Not Applicable

## PHYSICAL HAZARD INFORMATION

PHYSICAL HAZARD - Water reactive. KOH generates much heat on being dissolved in water and may generate a caustic mist.

CONDITIONS OR MATERIALS TO AVOID - KOH reacts violently with strong acids and many organic chemicals. KOH reacts with aluminum, tin, zinc, and alloys producing hydrogen gas.

FLASH POINT - N/A

EXTINGUISHING MEDIA - Product is not flammable. Apply media as needed for surrounding fire.

SPECIAL FIRE FIGHTING PROCEDURES - Wear pressure demand type self-contained breathing apparatus with full facepiece, impervious body covering, rubber boots and gloves.

UNUSUAL FIRE & EXPLOSION HAZARDS - KOH may melt and flow under fire conditions, if released. Run-off water will be caustic. Avoid contact. Sodium Sulphate and sodium Sulfite heated to decomposition generate toxic sulfur gases.

## HEALTH HAZARDS

HEALTH HAZARDS - Corrosive; toxic
Potassium Hydroxide contact causes rapid destruction of eyes, skin, mucous membranes. Approximate human lethal dose is 5 gms.

| KOH | $Na_2SO_4$ | $Na_2SO_3$ |
|---|---|---|
| ORL-RAT $LD_{50}$ 365 mg/kg | ORL-MUS $LD_{50}$ 5989 mg/kg | ORL-RBT $LD_{LO}$ 2825 mg/kg |
| SKN-HMN 50 m/24H SEV | INV-MUS $LD_{LO}$ 1220 mg/kg | IVN-RAT $LD_{50}$ 115 mg/kg |
| SKN-RBT 50 mg/24H SEV | | IPR-MUS $LD_{50}$ 950 mg/kg |
| SKN-GPG 50 mg/24H SEV | | IVN-MUS $LD_{50}$ 130 mg/kg |

SIGNS AND SYMPTOMS OF EXPOSURE - KOH is highly destructible of human tissue. Contact 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 are destroyed.

Nose- Mucous membrane irritation, sneezing, coughing.
Eye - Severe damage to eyes. Disintegration and sloughing of conjunctival and corneal covering corneal opacification, edema and ulceration.
Ingestion - Abdominal pain, muscular spasm, corrosion of mucous membranes.

PRIMARY ROUTES OF ENTRY - Dermal, inhalation, ingestion

TARGET ORGANS - Eye, Skin, mucous membranes

MEDICAL CONDITIONS GENERALLY RECOGNIZED AS BEING AGGRAVATED BY EXPOSURE - No Information

EXPOSURE LIMITS (OSHA PER, ACGIH TLV, OTHERS USED OR RECOMMENDED)- Available TWAs are listed on page 1.

CARCINOGENICITY DATA - Not listed in RTECS.

MUTAGENICITY DATE- (Sodium Sulfite) - See RTECS reference.

EMERGENCY & FIRST AID PROCEDURES - KOH CAUSES CAUSTIC BURNS. GET MEDICAL ATTENTION IMMEDIATELY IN ALL CASES.

Eye Contact - Immediately flush eyes with plenty of water for 15 minutes, holding eyes open and raising eyelids to flush underlid areas.

Skin Contact- Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing and thoroughly clean shoes before reuse.

Inhalation- Remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

Ingestion Do not induce vomiting. If victim is conscious give two glasses of water to dilute chemical.

GET MEDICAL ATTENTION IMMEDIATELY IN ALL CASES

## SAFE HANDLING AND USE

| | |
|---|---|
| HYGIENIC PRACTICES - | Not applicable |
| PROTECTIVE MEASURES DURING REPAIR AND MAINTENANCE OF CONTAMINATED EQUIPMENT - | If activity makes exposure possible, wear recommended personal protection equipment. |
| PROCEDURE FOR SPILL OR LEAK CLEANUP- | Avoid contact with chemical. Wear protective equipment if contact is possible. Sweep up dry spill being careful to avoid dusting conditions. Cover wet spill with sodium bicarbonate. Flush neutralized spill to drain with excess water. |
| STORAGE - | Store in a cool, dry place, separated from incompatible materials such as acids and active metals. |
| . WASTE DISPOSAL - | Dispose in accordance with current local, state and federal laws and regulations. |

## CONTROL MEASURES

| | |
|---|---|
| PERSONAL PROTECTIVE EQUIPMENT - | If contact with chemical is possible. Use chemical protective goggles, face shield, rubber gloves, rubber body covering, and a NIOSH approved respirator. |
| WORK PRACTICES - | Follow detailed instructions supplied with apparatus. |
| DATE OF PREPARATION - | Rev. 5, June 1999 |

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.