



SAFETY DATA SHEET

**Section 1: PRODUCT AND COMPANY IDENTIFICATION**

Interstate All-Battery
4301 121st Street
Urbandale, IA 50323

EMERGENCY PHONE: 24 hours – (800) 255-3924
INFORMATION PHONE: (800) 541-8419, Ext. 6672 or 6663

PRODUCT NAME: Alkaline Manganese Dioxide-Zinc

SDS NUMBER: ALK1

REVISION NUMBER: 1

DATE OF PREPARATION/REVISION: June 1, 2015

Section 2: HAZARDS IDENTIFICATION

NOTE: Under OSHA regulations, batteries are considered “articles” and are not subject to the OSHA Hazard Communication Standard MSDS/SDS requirements which apply for “hazardous chemicals in the workplace.” Additionally, batteries are considered “articles” under the Global Harmonized System and are exempted from the GHS labeling and SDS classification criteria.

Internal components will not present a health hazard under normal use of the batteries. The chemicals and metals in this product are contained in a sealed can. Exposure to the contents will not occur unless the battery leaks, is exposed to high temperatures or is mechanically, physically, or electrically abused. Damaged battery will release concentrated potassium hydroxide, which is caustic. Anticipated potential leakage of potassium hydroxide is 2 to 20 mL, depending on battery size. A similar amount of zinc may also leak.

EMERGENCY OVERVIEW:

The battery should not be opened or burned. Exposure to the ingredients contained within or their combustion products could be harmful. If the battery is opened or broken then the following hazards apply:

**ROUTES OF ENTRY:**

EYE CONTACT: Contents of an open battery can cause severe irritation and chemical burns. Immediately flush eyes thoroughly with water for at least 15 minutes, lifting upper and lower lids, until no evidence of the chemical remains. Seek medical attention.

SKIN CONTACT: Contents of an open battery can cause skin irritation and/or chemical burns. If a chemical burn occurs or if irritation persists, seek medical attention.

INHALATION: Contents of an open battery can cause respiratory irritation.

INGESTION: Swallowing a battery can be harmful. Contents of an open battery can cause serious chemical burns of mouth, esophagus, and gastrointestinal tract.

ACUTE HEALTH EFFECTS:

Exposure and/or contact with battery electrolyte (acid) may lead to acute irritation of the skin, corneal damage of the eyes, and irritation of the mucous membranes of the eyes and upper respiratory system, including lung.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

A knowledge of the available toxicology information and of the physical and chemical properties of the material suggests that overexposure is unlikely to aggravate existing medical conditions.

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS
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Material	% by Wt.	CAS Number	Eight Hour Exposure Limits	
			OSHA PEL	ACGIH TLV
Graphite	2-6%	7782-42-5	15 µg/m ³ TWA (total dust) 5 µg/m ³ TWA (respirable fraction)	2 µg/m ³ TWA (respirable fraction)
Manganese Dioxide	30-45%	1313-13-9	5 µg/m ³ Ceiling (as Mn)	0.2 µg/m ³ TWA (as Mn)
Potassium Hydroxide	4-8%	1310-58-3	N/A	2 µg/m ³ Ceiling
Zinc	12-25%	7440-66-6	15 µg/m ³ TWA (total dust) 5 µg/m ³ TWA (respirable fraction)	10 µg/m ³ TWA (inhalable particulate) 3 µg/m ³ TWA (respirable particulate)
Non-Hazardous Components Steel	18-22%	7439-89-6	N/A	N/A

Section 4: FIRST AID MEASURES

EYE CONTACT: Immediately rinse with cool running water for at least 15 minutes. Seek medical attention immediately after rinsing.

SKIN CONTACT: Wash thoroughly with soap and water. If acid is splashed on clothing or shoes, remove immediately and discard.

INHALATION: Remove from exposure to fresh air and consult a physician if any of the acute effects listed above develop.

INGESTION: Do not induce vomiting. Refer to a physician immediately.

Section 5: FIRE FIGHTING MEASURES
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EXTINGUISHING MEDIA: Carbon dioxide (CO₂) or dry chemical fire extinguisher

SPECIAL FIRE FIGHTING PROCEDURES: Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing. Fight fire from a distance or protected area. Cool fire exposed batteries to prevent rupture. Use caution when handling fire-exposed containers (containers may rocket or explode in heat of fire).

Section 6: ACCIDENTAL RELEASE MEASURES

Caustic potassium hydroxide may be released from leaking or ruptured batteries. Clean-up personnel should wear appropriate protective clothing to avoid eye and skin contact and inhalation of vapors or fumes. Increase ventilation. Carefully collect batteries and place in an appropriate container for disposal.

Section 7: HANDLING AND STORAGE

MECHANICAL CONTAINMENT: Batteries normally evolve hydrogen which, when combined with oxygen from the air, can produce a combustible or explosive mixture unless vented. If such a mixture is present, short circuits, high temperature, or static sparks can cause an ignition.

Do not obstruct safety release vents on batteries. Encapsulation (potting) of batteries will not allow cell venting and can cause high pressure rupture.

HANDLING: Accidental short circuit for a few seconds will not seriously affect the battery. Prolonged short circuit will cause the battery to lose energy, and can cause the safety release vent to open. Sources of short circuits include jumbled batteries in bulk containers, metal jewelry, metal covered tables or metal belts used for assembly of batteries into devices.

WARNING: Do not install backwards, charge, put in fire, or mix with other battery types. May explode or leak causing injury. **Replace all batteries at the same time.**

STORAGE: Store in a cool, well ventilated area. Elevated temperatures can result in shortened battery life.

CHARGING: This battery is manufactured in a charged state. It is not designed for recharging. Recharging can cause battery leakage or, in some cases, high pressure rupture. Inadvertent charging can occur if a battery is installed backwards.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

VENTILATION: Not required under normal handling conditions.

RESPIRATORY PROTECTION: None required under normal handling conditions.

GLOVES: Not necessary under normal conditions. Use neoprene or natural rubber gloves if handling an open or leaking battery.

EYE PROTECTION: Not necessary under normal conditions. Wear safety glasses with side shields if handling an open or leaking battery.

OTHER PROTECTIVE EQUIPMENT: None required under normal handling conditions.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

▪ APPEARANCE (PHYSICAL STATE, & COLOR) :	Solid / Cylindrical
▪ ODOR:	Odorless
▪ ODOR THRESHOLD:	Not applicable
▪ PH:	Not applicable
▪ MELTING POINT/FREEZING POINT:	Not applicable
▪ INITIAL BOILING POINT AND BOILING RANGE:	Not applicable
▪ FLASH POINT:	Not applicable
▪ EVAPORATION RATE:	Not applicable
▪ FLAMMABILITY (SOLID, GAS):	Not determined

▪ UPPER/LOWER FLAMMABILITY OR EXPLOSIVE LIMITS:	Not determined
▪ VAPOR PRESSURE:	Not applicable
▪ VAPOR DENSITY:	Not applicable
▪ RELATIVE DENSITY:	Not applicable
▪ SOLUBILITY(IES):	Insoluble in water
▪ PARTITION COEFFICIENT: N-OCTANOL/WATER:	Not applicable
▪ AUTO-IGNITION TEMPERATURE:	Not applicable
▪ DECOMPOSITION TEMPERATURE:	Not applicable

Section 10: STABILITY AND REACTIVITY

STABILITY:

CONDITIONS TO AVOID:

☐ Unstable ☒ Stable

Do not heat, crush, disassemble, short circuit, or recharge.

INCOMPATIBILITY: Contents are incompatible with strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: Thermal decomposition may produce hazardous fumes of zinc and manganese; caustic vapors of potassium hydroxide and other toxic by-products.

HAZARDOUS POLYMERIZATION: Will not occur.

Section 11: TOXICOLOGICAL INFORMATION

Alkaline batteries are not hazardous waste. Under normal conditions of use, alkaline batteries are non-toxic.

The toxicological information of the applicable internal cell materials is as follows:

POTASSIUM HYDROXIDE

- Acute toxicity:
 - Oral GHS: Category 3. Harmful if swallowed
 - Skin GHS: It is not possible to classify
 - Inhalation (steam) GHS: It is not possible to classify
 - Inhalation (dust) GHS: It is not possible to classify
- Skin corrosivity: GHS: Category 1B.
Serious chemical wound of the skin and damage of eyes is caused.
- Serious damage and irritant property for eyes: GHS: Category 1
- Respiratory or skin sensitization:
 - Respiratory sensitization: GHS: It is not possible to classify
 - Skin sensitization: GHS: out of Category
- Germline mutagenicity: GHS: out of Category
- Carcinogenicity: GHS: It is not possible to classify
- Reproduction Toxicity: GHS: It is not possible to classify
- Certain target organ/ Systemic toxicity (single exposure):
 - GHS: Category 1
 - The disorder of the respiratory system is caused
- Certain target organ/ Systemic toxicity (repeated exposure)
 - GHS: It is not possible to classify

Section 12: ECOLOGICAL INFORMATION

No eco-toxicity data is available. This product is not expected to present an environmental hazard. Alkaline batteries do not contain any added mercury, cadmium or lead.

Section 13: DISPOSAL

Dispose of in compliance with federal, state/provincial and local regulations.

Non-Household Setting (US Federal): Alkaline batteries in their original form (finished consumer product), when disposed of as waste, are considered **non-hazardous** waste according to Federal RCRA regulation (40 CFR 261).

Household Use: Alkaline batteries can be safely disposed of with normal household waste. Do not accumulate large quantities used batteries for disposal as accumulation could cause batteries to short-circuit.

Do not incinerate.

It is recommended that the batteries be recycled. To find an Interstate All Battery Store that will send Alkaline batteries for recycling, please go to the dealer locator function found at www.interstatebatteries.com.

**Section 14: TRANSPORTATION INFORMATION**

UN NUMBER: UN3028

UN PROPER SHIPPING NAME: Batteries, Dry, Containing Potassium Hydroxide, Solid

TRANSPORT HAZARD CLASS: Class 8

PACKING GROUP: III

Alkaline cylindrical cell batteries are considered to be “dry cell” batteries and are unregulated for purposes of transportation by the U.S. Department of Transportation (DOT), International Civil Aviation Administration (ICAO), International Air Transport Association (IATA), and the International Maritime Organization (IMO). The only requirements for shipping these batteries by DOT is Special Provision 130 which states: “Batteries, dry are not subject to the requirements of this subchapter only when they are offered for transportation in a manner that prevents the dangerous evolutions of heat (for example, by the effective insulation of exposed terminals). The only requirement for shipping these batteries by ICAO and IATA is Special Provision A123 which states: “An electrical battery or battery powered device having the potential of dangerous evolutions of heat that is not prepared so as to prevent a short-circuit (e.g. in the case of batteries, by the effective insulation of exposed terminals; or in the case of equipment, by disconnection of the battery and protection of exposed terminals) is forbidden from transportation.”

Securely pack in strong outer packaging. Be sure to protect against short-circuiting by positioning batteries side-by-side. Alkaline cylindrical cell batteries are accepted for shipping by FedEx and UPS.

Provision 130 in 49 CFR 172.102 says:

“Batteries, dry, sealed, n.o.s.,” commonly referred to as dry batteries, are hermetically sealed and generally utilize metals (other than lead) and/or carbon as electrodes. These batteries are typically used for portable power applications. The rechargeable (and some non-rechargeable) types have gelled alkaline electrolytes (rather than acidic) making it difficult for them to generate hydrogen or oxygen when overcharged and therefore, differentiating them from non-spillable batteries. Dry batteries specifically covered by another entry in the § 172.101 Table must be transported in accordance with the requirements applicable to that entry. For example, nickel-metal hydride batteries transported by vessel in certain quantities are covered by another entry (*see* Batteries, nickel-metal hydride, UN3496). Dry batteries not specifically covered by another entry in the § 172.101 Table are covered by this entry (*i.e.*, Batteries, dry, sealed, n.o.s.) and are not subject to requirements of this subchapter except for the following:

(a) *Incident reporting.* For transportation by aircraft, a telephone report in accordance with § 171.15(a) is required if a fire, violent rupture, explosion or dangerous evolution of heat (*i.e.*, an amount of heat sufficient to be dangerous to packaging or personal safety to include charring of packaging, melting of packaging, scorching of packaging, or other evidence) occurs as a direct result of a dry battery. For all modes of transportation, a written report submitted, retained, and updated in accordance with § 171.16 is required if a fire, violent rupture, explosion or dangerous evolution of heat occurs as a direct result of a dry battery or battery-powered device.

(b) *Preparation for transport.* Batteries and battery-powered device(s) containing batteries must be prepared and packaged for transport in a manner to prevent:

(1) A dangerous evolution of heat;

(2) Short circuits, including but not limited to the following methods:

- (i) Packaging each battery or each battery-powered device when practicable, in fully enclosed inner packaging made of non-conductive material;
- (ii) Separating or packaging batteries in a manner to prevent contact with other batteries, devices or conductive materials (*e.g.*, metal) in the packaging; or
- (iii) Ensuring exposed terminals or connectors are protected with non-conductive caps, non-conductive tape, or by other appropriate means; and

(3) Damage to terminals. If not impact resistant, the outer packaging should not be used as the sole means of protecting the battery terminals from damage or short circuiting. Batteries must be securely cushioned and packed to prevent shifting which could loosen terminal caps or reorient the terminals to produce short circuits. Batteries contained in devices must be securely installed. Terminal protection methods include but are not limited to the following:

- (i) Securely attaching covers of sufficient strength to protect the terminals;
- (ii) Packaging the battery in a rigid plastic packaging; or
- (iii) Constructing the battery with terminals that are recessed or otherwise protected so that the terminals will not be subjected to damage if the package is dropped.

(c) *Additional air transport requirements.* For a battery whose voltage (electrical potential) exceeds 9 volts—

(1) When contained in a device, the device must be packaged in a manner that prevents unintentional activation or must have an independent means of preventing unintentional activation (*e.g.*, packaging restricts access to activation switch, switch caps or locks, recessed switches, trigger locks, temperature sensitive circuit breakers, *etc.*); and (2) An indication of compliance with this special provision must be provided by marking each package with the words “not restricted” or by including the words “not restricted” on a transport document such as an air waybill accompanying the shipment.

(d) *Used or spent battery exception.* Used or spent dry batteries of both non-rechargeable and rechargeable designs, with a marked rating up to 9-volt that are combined in the same package and transported by highway or rail for recycling, reconditioning, or disposal are not subject to this special provision or any other requirement of the HMR. Note that batteries utilizing different chemistries (*i.e.*, those battery chemistries specifically covered by another entry in the § 172.101 Table) as well as dry batteries with a marked rating greater than 9-volt may not be combined with used or spent batteries in the same package. Note also that this exception does not apply to batteries that have been reconditioned for reuse.

Special Provision A123 in the IATA Dangerous Goods Regulations says:

This entry applies to Batteries, electric storage, not otherwise listed in Subsection 4.2 – List of Dangerous Goods. Examples of such batteries are: alkali-manganese, zinc-carbon, nickel-metal hydride and nickel-cadmium batteries. Any electrical battery or battery powered device, equipment or vehicle having the potential of dangerous evolution of heat must be prepared for transport so as to prevent:

- (a) A short-circuit (e.g. in the case of batteries, by the effective insulation of exposed terminals; or, in the case of equipment, by disconnection of the battery and protection of exposed terminals) is forbidden from transport; and
- (b) Accidental activation

The words “Not Restricted” and the Special Provision number must be included in the description of the substance on the Air Waybill as required by 8.2.6, when an Air Waybill is issued.

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: Alkaline batteries are not classified as dangerous goods and are exempt for the TDG Regulations

Section 15: REGULATORY INFORMATION

Alkaline batteries are not classified as dangerous goods by the US Department of Transportation or the major international regulatory bodies and are therefore not regulated.

CALIFORNIA PROPOSITION 65 WARNING: This product has been evaluated and does not require warning labeling under California Proposition 65.

SARA TITLE III: As an article, this battery and its contents are not subject to the requirements of the Emergency Planning and Community Right-To-Know Act.

CANADIAN ENVIRONMENTAL PROTECTION ACT: These products are manufactured articles and are exempt from regulation.

Section 16: OTHER INFORMATION

Disclaimer: This information has been compiled from sources considered to be dependable and is, to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty (either express or implied) or guarantee is made to the accuracy, reliability or completeness of the information contained herein. This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. It is the user’s responsibility to satisfy himself as to the suitability and completeness of this information for his own particular use. We do not accept liability for any loss or damage that may occur, whether direct, indirect, incidental or consequential, from use of this information.