

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

Trade name : AAA (Manganese Dioxide Alkaline)  
Product form : Mixture

**1.2. Relevant identified uses of the substance or mixture and uses advised against**

Use of the substance/mixture : This product qualifies as an article under OSHA's definition. Articles are exempt from GHS classification. This Product Data Sheet is supplied in good faith with the understanding that the risk of exposure occurs only if the battery is mechanically or electrically abused in a manner outside of the intended use.

**1.3. Details of the supplier of the safety data sheet**

Battenfeld Technologies, Inc.  
2501 Lemone Industrial Blvd.  
Columbia, MO 65201  
Tel: 573-445-9200

**1.4. Emergency telephone number**

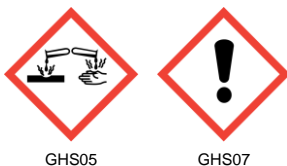
Emergency number : 800-424-9300

**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture****GHS-US classification**

Acute Tox. 4 (Oral) H302  
Acute Tox. 4 (Inhalation:dust,mist) H332  
Skin Corr. 1A H314

**2.2. Label elements****GHS-US labelling**

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

**Danger**

Hazard statements (GHS-US) :

H302+H332 - Harmful if swallowed or if inhaled  
H314 - Causes severe skin burns and eye damage

Precautionary statements (GHS-US) :

P260 - Do not breathe dust, mist, vapours  
P261 - Avoid breathing dust, mist, vapours  
P264 - Wash hands, forearms and face thoroughly after handling  
P270 - Do not eat, drink or smoke when using this product  
P271 - Use only outdoors or in a well-ventilated area  
P280 - Wear eye protection, protective clothing, protective gloves  
P301+P312 - If swallowed: Call a doctor, a poison center if you feel unwell  
P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting  
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower  
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing  
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 doctor, a poison center  
P312 - Call a doctor, a poison center if you feel unwell  
P321 - Specific treatment (see first aid instructions on this label)  
P330 - Rinse mouth  
P363 - Wash contaminated clothing before reuse  
P405 - Store locked up  
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

**2.3. Other hazards**

No additional information available

**2.4. Unknown acute toxicity (GHS-US)**

No data available

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### SECTION 3: Composition/information on ingredients

#### 3.1. Substance

Not applicable

#### 3.2. Mixture

Name	Product identifier	%
Manganese dioxide	(CAS No) 1313-13-9	15 - 40
Potassium hydroxide	(CAS No) 1310-58-3	7 - 13
Sodium hydroxide	(CAS No) 1310-73-2	7 - 13

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

- First-aid measures general : If exposed or concerned, get medical attention/advice. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before re-use. Never give anything to an unconscious person.
- First-aid measures after inhalation : IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if breathing is affected. If breathing is difficult, supply oxygen.
- First-aid measures after skin contact : IF ON SKIN (or clothing): Remove affected clothing and wash all exposed skin with water for at least 15 minutes. Get medical attention immediately.
- First-aid measures after eye contact : IF IN EYES: Immediately flush with plenty of water for at least 15 minutes. Remove contact lenses if present and easy to do so. Get medical attention immediately. Continue rinsing.
- First-aid measures after ingestion : IF SWALLOWED: rinse mouth thoroughly. Do not induce vomiting without advice from poison control center or medical professional. Get medical attention if you feel unwell.

#### 4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : Harmful if swallowed or if inhaled. Causes severe skin burns and eye damage.
- Symptoms/injuries after inhalation : Harmful if inhaled.
- Symptoms/injuries after skin contact : Causes severe skin burns and eye damage.
- Symptoms/injuries after eye contact : Causes serious eye damage.
- Symptoms/injuries after ingestion : Harmful if swallowed.

#### 4.3. Indication of any immediate medical attention and special treatment needed

No additional information available.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

- Suitable extinguishing media : Dry chemical. Carbon dioxide. Water spray.
- Unsuitable extinguishing media : None known.

#### 5.2. Special hazards arising from the substance or mixture

- Fire hazard : No data to indicate that product is flammable.
- Explosion hazard : No data available.
- Reactivity : No dangerous reactions known under normal conditions of use.

#### 5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Do not dispose of fire-fighting water in the environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.
- Other information : Cell may vent when subjected to excessive heat-exposing battery contents. Hazardous Combustion Products: Carbon monoxide, carbon dioxide, lithium oxide fumes.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Spill should be handled by trained clean-up crews properly equipped with respiratory equipment and full chemical protective gear (see Section 8). Evacuate area. Ventilate area. Keep upwind.

##### 6.1.1. For non-emergency personnel

- Protective equipment : Wear Protective equipment as described in Section 8.
- Emergency procedures : Evacuate unnecessary personnel.

##### 6.1.2. For emergency responders

- Protective equipment : Wear suitable protective clothing, gloves and eye or face protection. Approved supplied-air respirator, in case of emergency.

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### 6.2. Environmental precautions

Avoid release to the environment. Prevent entry to sewers and public waters.

### 6.3. Methods and material for containment and cleaning up

For containment : If the battery is accidentally broken and leaks out, wipe it up with a cloth and dispose of it in a plastic bag and put into a steel can. The preferred response is to leave the area and allow the batteries to cool and vapors to dissipate. Provide maximum ventilation.

Methods for cleaning up : Avoid skin and eye contact or inhalation of vapors. Remove spilled material with absorbent. Dispose of material in compliance with local, state, and federal regulations.

### 6.4. Reference to other sections

No additional information available

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Do not handle until all safety precautions have been read and understood. Use appropriate personal protection equipment (PPE). The batteries should not be opened, destroyed or incinerated, since they may leak or rupture and release to the environment the ingredients that they contain in the hermetically sealed contained. Do not short circuit terminals, or over charge the battery, forced over-discharge, or throw into fire. Do not crush or puncture the battery, or immerse in liquids. It is recommended to discharge the battery to the end, handing in the abandoned batteries to related department unified, dispose of the batteries in accordance with approved local, state and federal requirements. Consult state environment protection agency and/or federal EPA.

### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Do not short or install with incorrect polarity.

Storage conditions : Keep out of reach of children. Keep container tightly closed. Keep in properly labeled containers. Store in a dry, cool and well-ventilated place. Avoid mechanical or electrical abuse. Store in an area subject to little temperature change. Storage at high temperatures should be avoided.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

Manganese dioxide (1313-13-9)	
Remark (ACGIH)	OELs not established
Remark (OSHA)	OELs not established
Potassium hydroxide (1310-58-3)	
ACGIH Ceiling (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
OSHA PEL (Ceiling) (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup> vacated
Sodium hydroxide (1310-73-2)	
ACGIH Ceiling (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
OSHA PEL (TWA) (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
OSHA PEL (Ceiling) (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>

### 8.2. Exposure controls

Appropriate engineering controls : Provide adequate general and local exhaust ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof equipment with flammable materials. Ensure adequate ventilation, especially in confined areas.

Personal protective equipment : Gloves. Protective clothing. Wear chemical goggles and face shield in combination.



Hand protection : Use gloves chemically resistant to this material when prolonged or repeated contact could occur. Gloves should be classified under Standard EN 374 or ASTM F1296. Suggested glove materials are: Neoprene, Nitrile/butadiene rubber, Polyethylene, Ethyl vinyl alcohol laminate, PVC or vinyl. Suitable gloves for this specific application can be recommended by the glove supplier.

Eye protection : Wear eye protection, including chemical splash goggles and a face shield when possibility exists for eye contact due to airborne particles.

Skin and body protection : Wear long sleeves, and chemically impervious PPE/coveralls to minimize bodily exposure.

Respiratory protection : Use NIOSH-approved dust/particulate respirator. Where vapor, mist, or dust exceed PELs or other applicable OELs, use NIOSH-approved respiratory protective equipment.

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### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Physical state	: Solid
Color	: No data available.
Odor	: No data available
Odor Threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Solubility	: No data available
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

#### 9.2. Other information

No additional information available

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

No dangerous reactions known under normal conditions of use.

#### 10.2. Chemical stability

Stable.

#### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

#### 10.4. Conditions to avoid

Heating, mechanical abuse and electrical abuse.

#### 10.5. Incompatible materials

No additional information available

#### 10.6. Hazardous decomposition products

When exposed to fire or extreme heat, batteries may emit toxic fumes.

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity : Oral: Harmful if swallowed. Inhalation:dust/mist: Harmful if inhaled.

Potassium hydroxide (1310-58-3)	
LD50 oral rat	284 mg/kg
ATE CLP (oral)	500.000 mg/kg bodyweight

Sodium hydroxide (1310-73-2)	
LD50 dermal rabbit	1350 mg/kg

Skin corrosion/irritation	: Causes severe skin burns and eye damage.
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitisation	: Not classified

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Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
Symptoms/injuries after inhalation	: Harmful if inhaled.
Symptoms/injuries after skin contact	: Causes severe skin burns and eye damage.
Symptoms/injuries after eye contact	: Causes serious eye damage.
Symptoms/injuries after ingestion	: Harmful if swallowed.

### SECTION 12: Ecological information

#### 12.1. Toxicity

No additional information available

#### 12.2. Persistence and degradability

No additional information available

#### 12.3. Bioaccumulative potential

No additional information available

#### 12.4. Mobility in soil

No additional information available

#### 12.5. Other adverse effects

No additional information available

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Waste treatment methods	: Do not discharge to public wastewater systems without permit of pollution control authorities.
Waste disposal recommendations	: Dispose of in accordance with local/national regulations. Do not allow the product to be released into the environment. Do not re-use empty containers.

### SECTION 14: Transport information

In accordance with DOT

Not hazardous for transport

#### Additional information

Other information : No supplementary information available.

#### Transport by sea

No additional information available

#### Air transport

No additional information available

### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

<b>AAA (Manganese Dioxide Alkaline)</b>	
All chemical substances in this product are listed in the EPA (Environment Protection Agency) TSCA (Toxic Substances Control Act) Inventory	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard

<b>Zinc</b>	<b>CAS #:</b>	<b>7440-66-6</b>
Section 302 (EHS) TPQ		lb
Section 304 EHS RQ		lb
CERCLA RQ		1000 lb
Section 313		Listed on US SARA Section 313

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<b>Sodium Hydroxide</b>	<b>CAS #:</b>	<b>1310-73-2</b>
Section 302 (EHS) TPQ		lb
Section 304 EHS RQ		lb
CERCLA RQ		1000 lb
Section 313		Not Listed

<b>Potassium Hydroxide</b>	<b>CAS #:</b>	<b>1310-58-3</b>
Section 302 (EHS) TPQ		lb
Section 304 EHS RQ		lb
CERCLA RQ		1000 lb
Section 313		Not Listed

### 15.2. International regulations

#### CANADA

No additional information available.

### 15.3. US State regulations

#### California Proposition 65

This product does not contain any substances known to the state of California to cause cancer and/or reproductive harm

#### Zinc (7440-66-6)

U.S. - Massachusetts - Right To Know List  
U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

#### Potassium hydroxide (1310-58-3)

U.S. - Massachusetts - Right To Know List  
U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

#### Graphite (7782-42-5)

U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - Pennsylvania - RTK (Right to Know) List  
U.S. - Massachusetts - Right To Know List

#### Sodium hydroxide (1310-73-2)

U.S. - Massachusetts - Right To Know List  
U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - Pennsylvania - RTK (Right to Know) List  
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

## SECTION 16: Other information

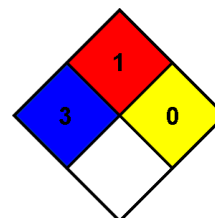
Revision date : 09/03/2015

Other information : Author: ZPT.

NFPA health hazard : 3 - Short exposure could cause serious temporary or residual injury even though prompt medical attention was given.

NFPA fire hazard : 1 - Must be preheated before ignition can occur.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



### HMIS III Rating

Health : 3

Flammability : 1

Physical : 0

Personal Protection :

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product