Material Safety Data Sheet

Issuing Date 06-06-2016 **Revision Date** **Revision Number** 0

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name **AA and AAA Alkaline batteries**

Recommended Use Batteries, operated in the electronic devices with LED, Motors, etc.

Supplier Address
Evergain Holdings Limited
Flat D35, 4/F., Wah Lok Industrial Ctr., 31-35 Shan Mei Street, Fotan, Hong Kong
HK Phone:852-35795222
Fax:825-35795225
Contact: Calvin
Contact Phone:852-35795222
Emergency Phone: 852-35795222

Company Emergency Phone Number 852-35795222

2. HAZARDS IDENTIFICATION

WARNING

Emergency Overview

May cause eye irritation
Harmful by inhalation
Corrosive
The product causes burns of eyes, skin and mucous membranes
Harmful by inhalation, in contact with skin and if swallowed

Appearance No information available **Physical State** Solid. **Odor** No information available

Potential Health Effects

Principle Routes of Exposure Eye contact. Skin contact.

Acute Toxicity

Eyes Causes burns. Corrosive to the eyes and may cause severe damage including blindness. Risk of serious damage to eyes.

Skin No known effect based on information supplied. Causes burns.

Inhalation No known effect based on information supplied. Harmful by inhalation.

Ingestion No hazard from product as supplied. Harmful if swallowed. Ingestion causes burns of the upper digestive and respiratory tract. Can burn mouth, throat, and stomach.

Chronic Effects Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Avoid repeated exposure. Possible risks of irreversible effects.

Aggravated Medical Conditions None known. Pre-existing eye disorders. Skin disorders. Respiratory disorders. Central Vascular System (CVS).

Environmental Hazard See Section 12 for additional Ecological Information. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

** This product is not classified or not hazardous according to GHS if not regulated for transport, and no further GHS elements are needed_

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %
Manganese dioxide	1313-13-9	46.9939
Iron	7439-89-6	25
Zinc	7440-66-6	18
Potassium hydroxide	1310-58-3	7
Graphite	7782-42-5	3
Lead	7439-92-1	0.004

Cadmium and compounds (as Cd)	7440-43-9	0.002
Mercury	7439-97-6	0.0001

4. FIRST AID MEASURES

General Advice Immediate medical attention is required.

Eye Contact Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area.

Skin Contact Immediate medical attention is required. Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes.

Inhalation Move to fresh air. Call a physician or Poison Control Center immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Ingestion Immediate medical attention is required. Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person. Remove from exposure, lie down. Clean mouth with water and afterwards drink plenty of water. Call a physician or Poison Control Center immediately.

Notes to Physician Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. Treat symptomatically.

Protection of First-aiders Use personal protective equipment. Avoid contact with skin, eyes and clothing.

5. FIRE-FIGHTING MEASURES

Flammable Properties Not flammable.

Flash Point Not determined.

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

This product contains a Class 1 Oxidizer as defined by the Uniform Fire Code

Hazardous Combustion Products Carbon oxides.

Explosion Data

Sensitivity to Mechanical Impact No.

Sensitivity to Static Discharge No.

Specific Hazards Arising from the Chemical

The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors. In the event of fire and/or explosion do not breathe fumes.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA **Health Hazard** 3 **Flammability** 0 **Stability** 0 **Physical and Chemical Hazards** -

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions Evacuate personnel to safe areas. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Keep people away from and upwind of spill/leak.

Environmental Precautions Do not allow material to contaminate ground water system. Should not be released into the environment. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Cleaning Up Use personal protective equipment. Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry. Take up mechanically and collect in suitable container for disposal. Avoid dust formation. Clean contaminated surface thoroughly. Dam up.

Other Information Refer to protective measures listed in Sections 7 and 8.

7. HANDLING AND STORAGE

Handling In case of rupture: Handle in accordance with good industrial hygiene and safety practice. Wear personal protective equipment. Avoid contact with skin, eyes and clothing.

Storage Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Manganese dioxide 1313-13-9	TWA: 0.2 mg/m^3 Mn	(vacated) Ceiling: 5 mg/m^3 Ceiling: 5 mg/m^3 Mn	IDLH: 500 mg/m^3 Mn TWA: 1 mg/m^3 Mn STEL: 3 mg/m^3 Mn
Potassium hydroxide 1310-58-3	Ceiling: 2 mg/m^3	(vacated) Ceiling: 2 mg/m^3	Ceiling: 2 mg/m^3
Graphite 7782-42-5	TWA: 2 mg/m^3 respirable fraction all forms except graphite fibers	TWA: 15 mg/m^3 total dust synthetic TWA: 5 mg/m^3 total dust synthetic (vacated) TWA: 2.5 mg/m^3 respirable dust natural (vacated) TWA: 10 mg/m^3 total dust synthetic (vacated) TWA: 5 mg/m^3 respirable fraction synthetic TWA: 15 mppcf natural	IDLH: 1250 mg/m^3 TWA: 2.5 mg/m^3 respirable dust
Lead 7439-92-1	TWA: 0.05 mg/m^3	TWA: 50 µg/m^3 Action Level: 30 µg/m^3 Poison, See 29 CFR 1910.1025	IDLH: 100 mg/m^3 TWA: 0.050 mg/m^3
Cadmium and compounds (as Cd) 7440-43-9	TWA: 0.01 mg/m^3 TWA: 0.002 mg/m^3 respirable fraction	TWA: 0.1 mg/m^3 fume applies to any operations or sectors for which the Cadmium standard is stayed or otherwise not in effect TWA: 0.2 mg/m^3 dust applies to any operations or sectors for which the Cadmium standard is stayed or otherwise not in effect TWA: 5 µg/m^3 Action Level: 2.5 µg/m^3 (vacated) STEL: 0.3 ppm fume Ceiling: 0.3 mg/m^3 fume applies to any operations or sectors for which the Cadmium standard is stayed or otherwise not in effect Ceiling: 0.6 mg/m^3 dust applies to any operations or sectors for which the Cadmium standard is stayed or otherwise not in effect	IDLH: 9 mg/m^3 dust
Mercury 7439-97-6	TWA: 0.025 mg/m^3 S*	(vacated) TWA: 0.05 mg/m^3 vapor (vacated) STEL: 0.03 mg/m^3 (vacated) S* (vacated) Ceiling: 0.1 mg/m^3	IDLH: 10 mg/m^3 Ceiling: 0.1 mg/m^3 TWA: 0.05 mg/m^3 vapor

Immediately Dangerous to Life or Health. ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value. OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits.

Other Exposure Guidelines Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Engineering Measures Showers
Eyewash stations
Ventilation systems

Personal Protective Equipment

Eye/Face Protection Tightly fitting safety goggles. Face-shield.

Skin and Body Protection No special protective equipment required.

Respiratory Protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Hygiene Measures When using, do not eat, drink or smoke. Remove and wash contaminated clothing before re-use. Keep away from food, drink and animal feeding stuffs. Contaminated work clothing should not be allowed out of the workplace. Provide regular cleaning of equipment, work area and clothing. Avoid contact with skin, eyes and clothing. For environmental protection, remove and wash all contaminated protective equipment before re-use. Wear suitable gloves and eye/face protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	No information available.	**Odor**	No information available.
Odor Threshold	No information available.	**Physical State**	Solid
pH	No information available		
Flash Point	Not determined.	**Autoignition Temperature**	No information available
Decomposition Temperature	No information available	**Boiling Point/Range**	No information available
Melting Point/Range	No information available		
Flammability Limits in Air	No information available	**Explosion Limits**	No information available
Water Solubility	Insoluble in water.	**Solubility**	No information available
Evaporation Rate	No information available	**Vapor Pressure**	No data available
Vapor Density	No data available	**VOC Content (%)**	Not applicable
Partition Coefficient: n-			

octanol/water

10. STABILITY AND REACTIVITY

Stability Stable under recommended storage conditions.

Incompatible Products None known. Incompatible with strong acids and bases. Incompatible with oxidizing agents.

Conditions to Avoid None known. Exposure to air or moisture over prolonged periods.

Hazardous Decomposition Products Thermal decomposition can lead to release of irritating gases and vapors.

Hazardous Polymerization Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Product Information Product does not present an acute toxicity hazard based on known or supplied information.

LD50 Oral VALUE 7043.581 mg/kg (rat) estimated

LD50 Dermal VALUE

LC50 Inhalation (DUST) VALUE 40.5084 mg/L (mist) (dust) mg/m^3 estimated

LC50 Inhalation (VAPOR) VALUE

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Manganese dioxide	= 9000 mg/kg (Rat)	-	-
Iron	984 mg/kg (Rat)	-	-
Potassium hydroxide	= 214 mg/kg (Rat)	-	-
Graphite	> 10000 mg/kg (Rat)	-	-
Cadmium and compounds (as Cd)	= 2330 mg/kg (Rat)	-	= 8 mg/L (Rabbit) 4 h

Chronic Toxicity

Chronic Toxicity Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Avoid repeated exposure. Possible risks of irreversible effects.

Carcinogenicity This product contains one or more substances which are classified by IARC as carcinogenic to humans (Group I), probably carcinogenic to humans (Group 2A) or possibly carcinogenic to humans (Group 2B).

Chemical Name	ACGIH	IARC	NTP	OSHA
Lead	A3	Group 2A	Reasonably Anticipated	X
Cadmium and compounds (as Cd)	A2	Group 1	Known	X
Mercury		Group 3		

Target Organ Effects Central Vascular System (CVS). Eyes. Respiratory system. Skin.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Harmful to aquatic organisms. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Iron		LC50: 0.56 mg/L (96 h semi-static) Cyprinus carpio LC50: 13.6 mg/L (96 h static) Morone saxatilis		
Zinc	EC50: 0.09 - 0.125 mg/L (72 h static) Pseudokirchneriella subcapitata EC50: 0.11 - 0.271 mg/L (96 h static) Pseudokirchneriella subcapitata	LC50: 2.16-3.05 mg/L (96 h flow-through) Pimephales promelas LC50: 7.8 mg/L (96 h static) Cyprinus carpio LC50: 0.45 mg/L (96 h semi-static) Cyprinus carpio LC50: 30 mg/L (96 h) Cyprinus carpio LC50: 0.59 mg/L (96 h semi-static) Oncorhynchus mykiss LC50: 0.41 mg/L (96 h static) Oncorhynchus mykiss LC50: 3.5 mg/L (96 h static) Lepomis macrochirus LC50: 0.211-0.269 mg/L (96 h semi-static) Pimephales promelas LC50: 0.24 mg/L (96 h flow-through) Oncorhynchus mykiss LC50: 2.66 mg/L (96 h static) Pimephales promelas		EC50: 0.139 - 0.908 mg/L (48 h Static) Daphnia magna
Potassium hydroxide		LC50: 80 mg/L (96 h static) Gambusia affinis		
Lead		LC50: 0.44 mg/L (96 h semi-static) Cyprinus carpio LC50: 1.17 mg/L (96 h flow-through) Oncorhynchus mykiss LC50: 1.32 mg/L (96 h static) Oncorhynchus mykiss		EC50: 600 µg/L (48 h) water flea
Cadmium and compounds (as Cd)		LC50: 0.003 mg/L (96 h flow-through) Oncorhynchus mykiss LC50: 0.002 mg/L (96 h) Cyprinus carpio LC50: 0.016 mg/L (96 h) Oryzias latipes LC50: 0.24 mg/L (96 h static) Cyprinus carpio LC50: 0.0004-0.003 mg/L (96 h) Pimephales promelas LC50: 21.1 mg/L (96 h flow-through) Lepomis macrochirus LC50: 4.26 mg/L (96 h semi-static) Cyprinus carpio LC50: 0.006 mg/L (96 h static) Oncorhynchus mykiss		EC50: 0.0244 mg/L (48 h Static) Daphnia magna
Mercury		LC50: 0.18 mg/L (96 h static) Cyprinus carpio LC50: 0.9 mg/L (96 h flow-through) Oryzias latipes LC50: 0.16 mg/L (96 h semi-static) Cyprinus carpio LC50: 0.5 mg/L (96 h) Cyprinus carpio		EC50: 5.0 µg/L (96 h) water flea

Chemical Name	Log Pow
Manganese dioxide	0
Potassium hydroxide	0.83

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).

Contaminated Packaging Do not re-use empty containers.

US EPA Waste Number D006
D008
D009

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Lead - 7439-92-1	(hazardous constituent - no waste number)	Included in waste streams: F035, F037, F038, F039, K002, K003, K005, K046, K048, K049, K051, K052, K061, K062, K064, K065, K066, K069, K086, K100, K176	= 5.0 mg/L regulatory level	
Cadmium and compounds (as Cd) - 7440-43-9		Included in waste streams: F006, F039, K061, K069, K100	1.0 mg/L regulatory level	
Mercury - 7439-97-6	U151	Included in waste streams: F039, K071, K106, K175	0.2 mg/L regulatory level	U151

California Hazardous Waste Codes 141

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California EHW	California Carc	California Hazardous Waste	California Waste - Part 2
Zinc			Ignitable powder	STLC (for PBTs): 250 mg/L TTLC (for PBTs): 5000 mg/kg
Potassium hydroxide			Toxic Corrosive	
Lead			Toxic	TCLP (for CA Toxicity): 5.0 mg/L
Cadmium and compounds (as Cd)	Toxic powder Ignitable powder			STLC (for PBTs): 1.0 mg/L TTLC (for P&Bs) (EHW): 10000 mg/kg as Cd TTLC (for PBTs): 100 mg/kg TCLP (for CA Toxicity): 1.0 mg/L
Mercury	Toxic		Toxic	STLC (for PBTs): 0.2 mg/L TTLC (for P&Bs) (EHW): 2000 mg/kg as Hg TTLC (for PBTs): 20 mg/kg TCLP (for CA Toxicity): 0.2 mg/L

14. TRANSPORT INFORMATION

DOT Not regulated
Proper Shipping Name Non regulated
Hazard Class N/A

TDG Not regulated

MEX Not regulated

ICAO Not regulated

IATA Not regulated
Proper Shipping Name Non regulated
Hazard Class N/A

IMDG/IMO Not regulated
Hazard Class N/A
Marine Pollutant N/A

RID Not regulated

ADR Not regulated

ADN Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA	Exempt
DSL	Complies
EINECS/ELINCS	Complies
ENCS	Does not Comply
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Chemical Name	CAS-No	Weight %	SARA 313 - Threshold Values %
Manganese dioxide	1313-13-9	46.9939	1.0
Zinc	7440-66-6	18	1.0
Lead	7439-92-1	0.004	0.1
Cadmium and compounds (as Cd)	7440-43-9	0.002	0.1
Mercury	7439-97-6	0.0001	10

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Zinc		X	X	
Potassium hydroxide	1000 lb			X
Lead		X	X	
Cadmium and compounds (as Cd)		X	X	
Mercury		X	X	

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product does not contain any substances regulated as hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act Amendments of 1990.

Chemical Name	CAS-No	Weight %	HAPS data	VOC Chemicals	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Manganese dioxide	1313-13-9	46.9939				
Lead	7439-92-1	0.004				
Cadmium and compounds (as Cd)	7440-43-9	0.002				
Mercury	7439-97-6	0.0001				

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
Zinc	1000 lb	
Potassium hydroxide	1000 lb	
Lead	10 lb	
Cadmium and compounds (as Cd)	10 lb	
Mercury	1 lb	

U.S. State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals:

Chemical Name	CAS-No	California Prop. 65
Mercury	7439-97-6	Developmental
Cadmium and compounds (as Cd)	7440-43-9	Carcinogen Developmental Male Reproductive
Lead	7439-92-1	Carcinogen Developmental Female Reproductive

		Male Reproductive

U.S. State Right-to-Know Regulations

This product does not contain any substances regulated by state right-to-know regulations.

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Mercury	X	X	X	X	X
Cadmium and compounds (as Cd)	X	X	X	X	X
Lead	X	X	X	X	X
Manganese dioxide			X	X	
Graphite	X	X	X		X
Zinc	X	X	X		X
Potassium hydroxide	X	X	X		X

International Regulations

Mexico - Grade Slight risk, Grade 1

Chemical Name	Carcinogen Status	Exposure Limits
Mercury		Mexico: TWA 0.05 mg/m^3
Cadmium and compounds (as Cd)	A2	Mexico: TWA 0.01 mg/m^3 Mexico: TWA 0.002 mg/m^3
Lead	A3	Mexico: TWA= 0.15 mg/m^3
Manganese dioxide		Mexico: TWA= 0.2 mg/m^3
Graphite		Mexico: TWA= 2 mg/m^3

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class
Non-controlled

Chemical Name	NPRI
Mercury	X
Cadmium and compounds (as Cd)	X
Lead	X
Manganese dioxide	X
Zinc	X

Legend
NPRI - National Pollutant Release Inventory

16. OTHER INFORMATION

Issuing Date 06-06-2016

Revision Date

Revision Note No information available

General Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet