



MSDS(MATERIAL SAFETY DATA SHEET)

1. HAZARDOUS INGREDIENT

NOTE: Under normal Conditions of use, absorbed electrolyte Battery will not release, or otherwise result in exposure to hazardous chemicals, Therefore, according to 29 CFR 1910, 1200 section©, this material has been classified as an "article"

The following ingredients are listed ofr international purposes but not classified as "hazardous" per the definition in CFR 1910, 1200

Materials	% by wet or Vol 1	Exposure Limits		
		OSMA	AGOIM	OTHER
Lead	N.A	50 $\mu\text{g}/\text{m}^3$	150 $\mu\text{g}/\text{m}^3$	NIOSH 100 $\mu\text{g}/\text{m}^3$
Lead Dioxide	N.A	50 $\mu\text{g}/\text{m}^3$	150 $\mu\text{g}/\text{m}^3$	NIOSH 100 $\mu\text{g}/\text{m}^3$
Lead Sulfate	N.A	50 $\mu\text{g}/\text{m}^3$	150 $\mu\text{g}/\text{m}^3$	NIOSH 100 $\mu\text{g}/\text{m}^3$
Sulfuric acid	N.A	1 $\mu\text{g}/\text{m}^3$	1 $\mu\text{g}/\text{m}^3$	NIOSH 1 $\mu\text{g}/\text{m}^3$

2. PHYSICAL DATE

<input type="checkbox"/> Soiled <input type="checkbox"/> Liquids <input type="checkbox"/> Gas <input type="checkbox"/> an object	An object consisting of a transparent to opaque case and sealed cover filled with side or top terminals and vent caps, it is odorless
Boiling point (At 750mmHg) Not applicable	
Specific gravity (H ₂ O=1) Not applicable	
Specific density (Air=1) Not applicable	

3. Health hazard information

NOTE : Under normal conditions of use, internal components will not present a health hazard. The following is provided for sulfuric acid and lead in the event of battery container breakage

ROUTES AND METHODS OF ENTRY
Skin contact Sulfuric Acid is not a significant route of entry
Eye absorption Skin absorption is not a significant route of entry
Eye contact Sulfuric acid liquid can irritate the eyes
Ingestion Hands contaminated by contact with internal component of a battery can cause ignition of lead/lead compounds of hands are not washed prior to eating, drinking, or smoking
SIGNS AND SYMPTOMS OF OVEREXPOSURE
Acute effects Acute effects of overexposure to lead are GI upset which may be loss of

appetite, diarrhea and/or constipation with cramping, difficulty in sleeping, and fatigue, Exposure and/or contact with sulfuric acid may lead to acute irritation of the skin, corneal damage of the eyes, and irritation of the mucous membrane of the eyes and upper respiratory system including lungs

Chronic affects
 Lead and its compounds may cause chronic animals damage to the kidneys and nervous system. Lead may also cause reproductive system damage and can affect developing fetus in pregnant woman. Sulfuric acid may lead to scarring of the cancer and chronic bronchitis as well as erosion of tooth enamel in mouth breathers in repeated exposures

POTENTIAL TO CAUSE CANCER

This material or its components have have not been tested for ability to cause cancer
 The results of such testing have been listed by NTP IARC OSHA.
 Testing showed that there is insufficient evidence to show that lead can or cannot cause cancer

EMERGENCY AND FIRST AID PROCEDURES

Inhalation
 Remove from exposure and Consult physician if any of the acute affects listed above develop.

Skin
 Wash thoroughly with soap and water, if electrolyte comes into contact with clothing, remove and do not wear again until cleaned.

Eyes
 Immediately rinse with cool running water for at least 16 minutes. Seek medical attention after rinsing.

Ingestion
 Lead/Lead compounds : consult a physician
 Electrolyte : Do not induce vomiting, Refer to a physician immediately.

MEDICAL CONDITIONS WHICH CAN BE AGGRAVATED BY EXPOSURE

Inorganic lead and its compounds can aggravate chronic forms of kidney, liver, and neurologic disease. Contact of sulfuric acid with the skin may aggravate skin disease.

Skin
 Wash thoroughly with soap and water, if electrolyte comes into contact with clothing, remove and do not wear again until cleaned

Eyes
 Immediately rinse with cool running water for at least 16 minutes. Seek medical attention after rinsing

Ingestion
 Lead/Lead compounds : consult a physician
 Electrolyte : Do not induce vomiting. Refer to a physician immediately

4. FIRE AND EXPLOSION DATE

Flash point not applicable	Autoignition temperature Not applicable	Flammable limits in Air, % vol Lower N.A Upper N.A
Exinguishing Media		
DRY chemical form or CO2		
Special fire fighting procedures		
Use poslitive pressure, Self-Contained breathing apparatus.		
Unusual fire and explosion hazards		
Hydrogen and oxygen gases are produced in the cells during normal battery operation (hydrogen is oxygen supports combustion), Theses enter the air through the vent caps, To avoid chance of a fire or explosion. Koop searks and toher sources of ignition away from the battery.		

5. REACTIVITY

Stabililty <input type="checkbox"/> Unstable <input type="checkbox"/> stable	Condition to avoid Sparks and other sources of ignition
(Materials to avoid)	
Lead/Lead compounds : potassium, Carbide, Sulfides, peroxides, phosphorus sulfur, Sulfuric acid : hydrogen, Sulfur dioxide, sulfur trioxide	
Hazardous polymerization <input type="checkbox"/> May occur <input type="checkbox"/> will not occur	Condition to avoid None

6. CONTROL MEASURES

Engineering control Good room ventilation is required for batteries utillzed for standby papper sensation. Naver re-charge batteries in an unventilated
PERSONAL PROTECTIVE EQUIPMENT
Respiratory protection None required
Work progress Make certain vent caps are on tightly. Follow shipping and handling instruction which are applicable to the battery type.
Eyes Safety glasses
Hand, arms, body vinyl coated. PVC.
Equipments Safety shees are recommended when handing batteries, All footwear must meet requirements of ANSI Z41.1-rev.

7. SAFE HANDLING PRECAUTIONS

Process Following contact with internal battery components, wash hands thoroughly before eating, drinking, or smoking
SPILL OR LEAK PROCEDURES
Remove combustible materials and all sources of Ignition. Cover spill with soda ash(sodium carbonate)
Mixture is neutral then collect residue and place in a drum or other suitable container. Dispose of as hazardous waste Wear acid-resistant boots, faceshield, chemical splash gentials, and acid resistant gloves. Don't release unnaturalized acid!
Electrolyte : naturalize as above for a spill, residue, and place in a drum or suitable container. Dispose of as hazardous waste. Do not flush lead contaminated acid to sewer. Batteries : Send to lead smelter for reciamation following applicable federal, state, and total regulation.
8. UNNO: UN2800 CLASS 8
OTHER HANDLING AND STORAGE PRECAUTIONS
None required