



ITEMS FOR ATTENTION

1. It would be invalid test report without specific stamp for test institute or the authority.
2. It would be invalid duplicated report without specific stamp for test institute or the authority.
3. It would be invalid test report without all the signatures of compilation, reviewer and approver.
4. It would be invalid test report, if there is any scrawl in the test report without official authorization.
5. Any disputes about the report must be submitted for test institute within 15 days from the day when the report is received, otherwise that would be invalid out of expiry.
6. Generally, the responsible is only for the samples in entrusted test.

Remark: Possible test case verdicts:

Test case does not apply to the test object.....:N(.A.)

Test item does meet the requirement.....:P(ass)

Test item does not meet the requirement.....:F(ail)

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Safety Data Sheet

Section 1 — Chemical product and company identification

| | | | |
|------------------|--|----------------------------|------------------|
| Product name | : GEL BATTERY (SOLAR BATTERY/ SEALED LEAD ACID BATTERY/ UPS BATTERY/ VRLA BATTERY/ INVERTER BATTERY/ STORAGE BATTERY). | | |
| Factory | : YINGDE AOKLY POWER CO., LTD | | |
| Address | : HUAQIAO IND ZONE DONGHUA TOWN, YINGDE CITY, GUANGDONG, CHINA | | |
| Telephone number | : 86-20-86861998 | Emergency telephone number | : 86-20-86861998 |
| | | Fax | : 86-20-86878822 |

Section 2 — Hazards identification

Inhalation:

- ◆ Sulfuric acid: Breathing of sulfuric acid vapors or mists may cause severe respiratory irritation.
- ◆ Lead compounds: Hazardous exposure can occur only when product is heated, oxidized or otherwise processed or damaged to create dust , vapor or fume.

Ingestion:

- ◆ Sulfuric acid: May cause severe irritation of mouth, throat , esophagus and stomach.
- ◆ Lead compounds: Acute ingestion may cause abdominal pain , vomiting, diarrhea and severe cramping. This may lead rapidly to systemic toxicity and treated by a physician.

Skin contact:

- ◆ Sulfuric acid: May cause sever irritation of mouth, throat, esophagus and stomach.
- ◆ Lead compounds: Not absorbed through the skin.

Eye contact:

- ◆ Sulfuric acid: sever irritation, burns, cornea damage, and blindness.
- ◆ Lead compounds: May cause eye irrigation.

Effects of overexposure-Acute:

- ◆ Sulfuric acid: Severe skin irritation, damage to cornea, upper respiratory irritation.
- ◆ Lead compounds: Symptoms of toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances and irritability.

Effects of overexposure-Chronic:

- ◆ Sulfuric acid: Possible erosion of tooth enamel, inflammation of nose, throat and bronchial tubes.
- ◆ Lead compounds: Anemia; neuropathy, particularly of the motor nerves, with wrist drop; kidney damage; reproductive changes in males and females.

Section 3 — Composition/information on ingredients

| No | Ingredients Name | Content(%) | CAS |
|----|---|--------------|------------|
| 1 | Lead(Pb,PbO ₂ ,PbSO ₄) | About 65-75% | 7439-92-1 |
| 2 | Sulfuric Acid | About 20 % | 7664-93-9 |
| 3 | Fiberglass separator | About 5% | 65997-17-3 |
| 4 | ABS or PP | About 5% | 25155-30-0 |
| 5 | Tin | <0.5% | 7440-31-5 |
| 6 | Calcium | <0.1% | 7440-70-2 |



Section 4 — First-aid measures

Eyes

◆ Sulfuric Acid and Lead : Check for and remove any contact lenses ,in case of contact ,immediately flush eyes with plenty of water for at least 15minutes, cold water may be used, get medical aid if irritation occurs.

Skin

◆ Sulfuric Acid :Wash with soap and water, cover the irritated skin with an emollient, get medical aid if irritation occurs.

◆ Lead :Wash immediately with soap and water

Ingestion

◆ Sulfuric Acid :Give at least 2 glassed of milk or water ,induce vomiting unless patient is unconscious ,call a physician

◆ Lead :Consult physician immediately

Inhalation

◆ Sulfuric Acid : Remove to fresh air immediately .If breathing is difficult give oxygen.

◆ Lead : Remove from exposure gargle, wash nose and lips: consult physician.

Section 5 — Fire-fighting measures

◆ Extinguishing Media: CO₂,foam,dry chemical

◆ Special fire fighting procedures: If batteries are on charge, shut off power. Use positive pressure, self-contained breathing apparatus. Water applied to electrolyte generates.

◆ Unusual fire and explosion hazards: Highly flammable hydrogen gas is generated during charging and operation of batteries. To avoid risk of the fire of explosion, keep sparks or other sources of ignition away from batteries. Do not allow metallic materials to simultaneously contact negatives and positive terminals of cells and batteries. Follow manufacturer's instructions for installation and service.

Section 6 — Accidental release measures

Personal precautions:

◆ Stop flow of material, contain/absorb small with dry sand, each ,and vermiculite. Do not use combustible materials. If possible, carefully neutralized spilled electrolyte with soda ash, sodium bicarbonate, lime, etc. Wear acid-resistant clothing, boots, gloves, and face shield. Do not allow discharge of unneutralized acid to sewer.

Section 7 — Handling and storage

Handling and Storage

Store batteries in cool, dry, well-ventilated areas with impervious surfaces and adequate containment in the event of spills. Batteries should also be stored under roof for protection against adverse weather conditions .Separate from incompatible materials. Store and handle only in areas with adequate water supply and spill control. Avoid damage to containers. Keep away from fire, sparks and heat. Precautionary

Labeling: POISON-CAUSES SEVERE BURNS DANGER-CONTAINS SULFRIC ACID

**Section 8 — Exposure controls and personal protection****Engineering controls :**

◆ Store and handle in well-ventilated areas .If mechanical ventilation is used, components must be acid-resistant.

Personal protective equipment:

◆ Respiratory protection: None required under normal conditions. When concentrations of sulfuric acid mist are known to exceed the PEL, use NIOSH or MSHA-approved.

◆ Hand protection: Rubber or plastic acid-resistant gloves with elbow-length gauntlet.

◆ Eye protection: chemical safety glasses if necessary

◆ Other Protection: Acid-resistant apron. Under severe exposure emergency conditions, wear acid-resistant clothing and boots.

General hygiene measures :

◆ No smoking, drinking ,eating at working site ,wash thoroughly after handling

Section 9 — Physical and chemical properties

| | | | |
|--|---------------------------------------|---------------------------------------|------------------|
| Appearance and Odor | Rectangle Solid ,Black & Odorlessness | | |
| Boiling Point: | Not applicable | Specific Gravity(H ₂ O=1): | Not applicable |
| Melting Point : | Not applicable | Vapor Pressure(mm Hg): | Not applicable |
| Solubility in water: | 100%(Sulfuric Acid) | Vapor density(Air =1): | 3.4(Electrolyte) |
| Evaporation rate (butyl acetate=1): | Not applicable | %Volatile by weight: | Not applicable |
| Upper explosive limit(%): | Not applicable | Decomposition temp(°F): | Not applicable |

Section 10 — Stability and reactivity

◆ Product is considered stable under normal pressure and temperature

◆ Conditions to Avoid : Prolonged overcharge, sources of ignition.

◆ Incompatibility : Sulfuric acid: Contact with combustibles and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals . sulfur trioxide gas, strong oxidizers and water. Contact with metals may produce toxic sulfur dioxide fumes and may release flammable hydrogen gas.

Lead Compounds: Avoid contact with strong acids, bases, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen and reducing agents.

◆ Hazardous decomposition products : Sulfuric acid : sulfur trioxide, carbon monoxide, sulfuric acid mist, sulfur dioxide, and hydrogen. Lead compounds : High temperatures likely to produce toxic metal fume, vapor, or dust; contact with strong acid or base or presence of nascent hydrogen may generate highly toxic arsine gas



Section 11 — Toxicological information

- ◆ Lead: The toxic effects of lead are accumulative and slow to appear . It affects the kidneys, reproductive, and central nervous system. The symptoms of lead overexposure are anemia, vomiting, headache, stomach pain, dizziness, loss of appetite, and muscle and joint pain. Exposure to lead from a battery most often occurs during lead reclaim operations through the breathing or ingestion of lead dusts and fumes.
- ◆ Sulfuric acid : Sulfuric acid is a strong corrosive. Contact with acid can cause severe burns on the skin and in the eyes. Ingestion of sulfuric acid will cause GI tract burns. Acid can be release if the battery case is damaged or if the vents are tampered with .

Section 12 — Ecological information

- ◆ When promptly used or disposed the battery does not present environmental hazard. When disposed, keep away from water, rain and snow

Section 13 — Disposal considerations

Disposal instructions:

- ◆ Spent batteries: Send to secondary lead smelter for recycling.
- ◆ Place neutralized slurry into sealed containers and handle as applicable with state and federal regulations. Large water-diluted spills, after neutralization and testing , should be managed in accordance with approved local, state and federal requirements. Consult state environmental agency and /or federal EPA.

Section 14 — Transport information

We hereby certify that Sealed Lead-acid Battery conform to the UN2800 classification as "Batteries, wet, Non-Spillable , and electric storage" as a result of passing the Vibration test , Pressure Differential test and At a temperature of 55° C the electrolyte will not flow from a ruptured or cracked case and there is no free liquid to flow test described in D.O.T., 49 CFR 173.159(d), and IMO/IMDG, and ICAO/IATA packing instruction 872 and note A48, A67, A164 and A183. The batteries are not restricted to IMO/IMDG code according to special provision 238, which classifies them as non-regulated goods.

The Sealed Lead-acid Battery meet the related conditions are EXEMPT from hazardous goods regulations for the purpose of transportation by D.O.T, and IATA/I, and therefore are unrestricted for transportation by any means. For all modes of transportation, each Rechargeable sealed Lead-acid Battery outer package are packed in such a way to prevent short circuits, securely packaged, marked "NON-SPILLABLE" or "NON-SPILLABLE BATTERY",



Section 15 — Regulatory information

Law information

- ◆ According to Directive 2013/56/EU
- ◆ According to Directive 1907/2006/EC
- ◆ According to Directive 2012/19/EU
- ◆ 《Dangerous Goods Regulation》
- ◆ 《Consumer Product Safety Act》 (CPSA)
- ◆ 《Federal Environmental Pollution Control Act》 (FEPCA)
- ◆ 《Recommendations on the Transport of Dangerous Goods Model Regulations》
- ◆ 《International Maritime Dangerous Goods》
- ◆ 《Classification and code of dangerous goods》
- ◆ 《Toxic Substances Control Acts》 (TSCA)

Section 16 — Other information

◆ The above information is based on the data of which we are aware and is believed to be correct as the data hereof, since this information may be applied under conditions beyond our control and with which may be unfamiliar and since data may be available subsequent to the data hereof may suggest modification of the information, we do not assume any responsibility for the results of its use, this information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose

End of Report