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Material Safety Data Sheet

Printing date February 11, 2012 Reviewed on February 11, 2012

1 Identification of substance

Product details
Product name: LEAD ACID BATTERY

MSDS Code: CHE12-MAE020039M

2 Composition/Data on components

Chemical characterization:
Description : (CAS#)

9003-56-9	ABS plastic	15%
7439-92-1	Lead	75%
7664-93-9	Sulfuric acid	7%
65997-17-3	Glass fiber	3%

3 Hazards identification

Hazard description:
No dangerous under normal use of this product.
Routes of Entry: By inhalation (mist), skin and eyes, ingestion.
Acute: Tissue destruction on contact. May cause 2nd and 3rd degree burns or blindness. Ingestion will cause corrosive burns on contact. May be fatal if swallowed.
Chronic: Inhalation of mists may cause upper respiratory irritation.
Signs and Symptoms: Irritation and burning of exposed tissues.
Medical Conditions: Respiratory disorders may be aggravated by prolonged inhalation of mists.

4 First aid measures

Battery Electrolyte
Inhalation: Remove to fresh air. Give oxygen or artificial respiration if needed. Get immediate medical attention.

Material Safety Data Sheet

Trade Name: LEAD ACID BATTERY

Eye Contact: Flush with plenty of water for at least 15 minutes. Get immediate medical attention.
Skin Contact: Remove contaminated clothing and flush affected areas with plenty of water for at least 15 minutes.
Ingestion: Do not induce vomiting. Dilute by giving large quantities of water. If available give several glasses of milk. Do not give anything by mouth to an unconscious person.
Give CPR if breathing has stopped. Get immediate medical attention.

5 Fire fighting measures

Flash Point: N/A.
Flammable Limits: Lower 4.10% (Hydrogen gas), Upper 74.20%.
Extinguishing Media
Dry chemical, foam or CO_2.
Special Fire Fighting Procedures:
If batteries are on charge, turn off power. Use positive pressure, self-contained breathing apparatus in fighting fire. Water applied to electrolyte generates heat and causes it to splatter. Wear acid resistant clothing. Ventilate area well.
Unusual Fire and Explosion Hazards:
Hydrogen and oxygen gases are generated in cells during normal battery operation or when on charge. (Hydrogen is flammable and oxygen supports combustion). These gases enter the air through the vent caps during battery overcharging. To avoid risk of fire or explosion, keep sparks and other sources of ignition away from the battery. Do not allow metal objects to simultaneously contact both positive and negative terminal of batteries. Ventilate area well.

6 Accidental release measures

Steps to be Taken in case Material is Released or Spilled
If the battery is accidentally broken and electrolyte 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 battery to cool and vapors to dissipate. Provide maximum ventilation. Avoid skin and eye contact or inhalation of vapors. Remove spilled liquid with absorbent and incinerate.
Waste Disposal Method
It is recommended to discharge the battery to the end, handing in the abandoned battery to related department unify, dispose of the batteries in accordance with approved local, state, and federal requirements. Consult state environmental agency and/or federal EPA.

7 Handling and storage

Do not charge. The batteries should not be opened, destroyed or incinerate, since they may leak or rupture and release to the environment the ingredients that they contain in the hermetically sealed container.

Material Safety Data Sheet

Printing date February 11, 2012 Reviewed on February 11, 2012

Trade Name: LEAD ACID BATTERY

Store in a dry, cool and well-ventilated area.
Do not short circuit terminals, or charge the battery, forced over-discharge, throw to fire. Do not crush or puncture the battery, or immerse in liquids.
Precautions to be taken in handling and storing
Avoid mechanical or electrical abuse. Storage preferably in cool, dry and ventilated area, which is subject to little temperature change. Do not place the battery near heating equipment, nor expose to direct sunlight for long periods.
Other Precautions
Batteries may explode or cause burns, if disassembled, crushed or exposed to fire or high temperatures. Do not short or install with incorrect polarity.

8 Exposure controls and personal protection

General:
Normal room ventilation is sufficient during normal use and handling. Recommend 2 to 3 room air changes per hour to prevent buildup of hydrogen gas.
Personal Protective Equipment (In the Event of Battery Case Breakage):
Always wear safety glasses with side shields or full face shield.
Use rubber or neoprene gloves.
Wear acid resistant boots, apron or clothing.
Work/Hygienic Practices:
Remove jewelry, rings, watches and any other metallic objects while working on batteries. All tools should be adequately insulated to avoid the possibility of shorting connections. DO NOT lay tools on top of battery. Be sure to discharge static electricity from tools and individual person by touching a grounded surface in the vicinity of the batteries, but away from cells.
Batteries are heavy. Serious injury can result from improper lifting or installation.
DO NOT lift, carry, install or remove cells by lifting or pulling the terminal posts for safety reasons and because terminal posts and post seals may be damaged.
DO NOT wear nylon clothes or overalls as they can create static electricity.
DO KEEP a fire extinguisher and emergency communications device in the work area.
IMPORTANT:
Wash hands thoroughly after working with batteries and before eating, drinking or smoking.

9 Physical and chemical properties

General Information
Form: Solid
Color: Black
Odor: Odorless
Change in condition
Melting point/Melting range: 170 ℃ (ABS)
Boiling point/Boiling range: 235-240 ℉ (113-116 ℃) (as sulfuric acid)
Sublimation temperature / start: Not Applicable
Flash point: Not applicable

Material Safety Data Sheet

Printing date February 11, 2012 Reviewed on February 11, 2012

Trade Name: LEAD ACID BATTERY

Ignition temperature: Not Applicable
Decomposition temperature: Not Applicable
Danger of explosion: Product does not present an explosion hazard
Vapor pressure: 10 mmHg
Vapor Density (AIR = 1): Electrolyte 3.4
Density: Not determined
Solubility in Water: 100% (as sulfuric acid)

10 Stability and reactivity

Stability
Stable
Conditions to Avoid
Elevated temperatures fire and ignition sources, mechanical abuse and electrical abuse.
Hazardous Decomposition Products
When exposed to fire or extreme heat, batteries may emit toxic fumes.

11 Toxicological information

Inhalation, skin contact and eye contact are possible when the battery is opened.
Exposure to internal contents, the corrosive fumes will be irritation to skin, eyes and mucous membranes. Overexposure can cause symptoms of non-fibrotic lung injury and membrane irritation.

12 Ecological information

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

13 Disposal considerations

Appropriate Method of Disposal of Substance or Preparation
Dispose of the battery in accordance with approved local, state, and federal requirements. Consult state environmental agency and/or federal EPA.

Material Safety Data Sheet

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14 Transport information

Identification and Proper Shipping Name:
Lead Acid Battery, Electric Storage, UN 2800.
DOT - Unregulated, meets the requirements of 49 CFR 173, 159 (a).
IATA/ICAO - Unregulated, meets the requirements of Special Provision A67.
IMO - Unregulated.
***For all modes of transportation, each battery and outer package must be labeled:**
"Non-Spillable" or "Non-Spillable Battery."
This label must be visible during transportation.
*Batteries must be securely packed to prevent short-circuiting.

15 Regulations

Law Information
《Dangerous Goods Regulation》
《Recommendations on the Transport of Dangerous Goods Model Regulations》
《International Maritime Dangerous Goods》
《Technical Instructions for the Safe Transport of Dangerous Goods》
《Classification and code of dangerous goods》
《Occupational Safety and Health Act》 (OSHA)
《Toxic Substances Control Act》 (TSCA)
《Consumer Product Safety Act》 (CPSA)
《The Oil Pollution Act》 (OPA)
《Superfund Amendments and Reauthorization Act Title III (302/311/312/313)》 (SARA)
《Resource Conservation and Recovery Act》 (RCRA)
《Safety Drinking Water Act》 (CWA)
《California Proposition 65》
《Code of Federal Regulations》 (CFR)
In accordance with all Federal, State and Local laws.

16 Other information

The above information is based on the data of which we are aware and is believed to be correct as of the data hereof. Since this information may be applied under conditions beyond our control and with which may be unfamiliar and since data made available subsequent to the data hereof may suggest modifications 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.