Panasonic

Safety Data Sheet

Date Issued Feb. 23 1998
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1. Object of Product and Company Identification

Product	Valve Regulated Lead Acid Battery **Panasonic LC, UP and EC Series**	
Company Name	Panasonic Storage Battery (Shenyang) Co., Ltd.	Panasonic Devices Co.
Address	No. 17 Hunhe 20th Street, Shenyang Economic & Technical Development Zone, China	1701 Golf Road Suite 3-1100 Rolling Meadows, IL 60008
Division	Sales & Planning Department	(800) 793-3772
Telephone	024-62786318	For Chemical Emergency Spill,
Fax.	024-62786210	Leak, Fire, Exposure or Accident-
Contact	Vian Jiao	CHEMTREC 1-800-424-9300
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2. Hazard Identification

As long as using in a range of conditions specified in the manufacturer's specifications, Valve Regulated lead acid batteries are articles that does not change their shape and nature from the beginning to the end.
This identification is described assuming that when handling these products, if the contents are spilled out by dropping damage etc. from them, if the used batteries are recycled and if the general user touches the lead terminals.

GHS Classification	Item	VRLA	Classified Result Disassembled
Hazard to health :	Acute toxicity (Oral)	N/A	Category 5 (Sulfuric acid)
	Acute toxicity(Inhalation: Dust, Mist)	N/A	Category 2 (Sulfuric acid)
	Skin corrosion / irritation	N/A	Category 1A / 1C (Sulfuric acid)
	Serious Eye damage / Eye irritation	N/A	Category 1 (Sulfuric acid) Category 2A (Lead dioxide)
	Germ cell mutagenicity	Category 2 (Lead terminal)	Category 2 (Lead)
	Carcinogenicity	Category 2 (Lead terminal)	Category 1B (Lead sulfide) Category 2 (Lead & Lead dioxide)
	Toxic to Reproduction	Category 1A (Lead terminal)	Category 1A (Lead, Lead dioxide & Lead sulfide)
	Specific target organ toxicity (Single exposure)	N/A	Category 1 Respiratory tract (Lead dioxide & Lead sulfide)
	Specific target organ toxicity (Repeated exposure)	Category 1 Respiratory tract (Lead terminal)	Category 1 Respiratory tract (Lead,Lead dioxide & Lead sulfide)
Hazard to environment :	Aquatic hazard (Acute)	N/A	Category 1 (Lead sulfide) Category 3 (Sulfuric acid)
	Aquatic hazard(long-term)	N/A	Category 1 (Lead sulfide) Category 3 (Sulfuric acid)

GHS label elements :





Additional information at disassembled state

Signal words : Danger

Hazard and toxicity information :
- Suspected of causing genetic defects
- May cause cancer
- May damage fertility or the unborn child
- Causes damage to organs through prolonged or repeated exposure

Note of caution

Security measures :
- To get the instruction manual before use.
- Do not handle until read and understood all safety precautions.
- To wear protective gloves / protective clothing / protective glasses / face protection.
- Do not inhale mist and / or vapors.
- Do not eat, drink or smoke when using this product.

Concerning about the exposure or exposure, get medical advice or attention.
When I feel bad, obtain medical advice/attention.
Keep away from ignition sources such as heat, sparks, open flames and high temperature things.
Non smoking.
Do not spark or short with tools or the like.
Charge batteries in a place where is well-ventilated.
After handling, wash hands thoroughly, rinse your mouth well.

First aid measures : If the electrolyte (dilute sulfuric acid) should come in contact with your eyes, flush eyes immediately with plenty of clear water for at least 15 minutes then to get medical advice or attention of ophthalmologist
If the electrolyte (dilute sulfuric acid) is attached to the skin, to rinse immediately with plenty of water then wash thoroughly with soap.
If swallowed electrolyte (dilute sulfuric acid), wash your mouth with plenty of water immediately then to drink plenty of water and obtain medical advice or attention.
Do not induce vomiting when swallowed. In addition, not perform any action, such as neutralization process.
If the electrolyte (diluted sulfuric acid) is attached to the garment, it took off all contaminated clothing immediately. Before reuse the clothing to wash them without fail.
Recovering the spilled material.

Storage : Keep locked up.
To store where free from to receive high temperature, high humidity, Douro, direct sunlight and / or a place that is not potentially hazardous gases, droplets, dust generation and ingression or submerged.
Store in a place where there is no fire.

Disposal : Be recycled by the laws or regulations of each country.

3. Composition / Information on Ingredient

Hazards Ingredients

Specific Chemical Identity	% by Wt.	Chemical Symbol	CAS No.
Lead	55 - 85	Pb	7439-92-1
Lead Dioxide		PbO_2	1309-60-0
Lead Sulfate		$PbSO_4$	7446-14-2
Sulfuric Acid	10 - 30	$H_2SO_4 + H_2O$	7664-93-9

4. First Aids Measures

Inhalation :

Sulfuric Acid To wrap in a blanket the patient immediately , when the inhalation of sulfuric acid mist or vapor, then transfer from the inhaled location to a place where fresh air can be obtained.
To get medical advice / attention immediately.

Skin :

Sulfuric Acid If this liquid is attached to the skin, wash immediately with plenty of water then wash thoroughly with soap.
The parts where liquid is attached take off such clothing, shoes and socks, then keep away them.
The body parts of contact with the liquid is washed water continuously, then rapped in a sterile dressing (not be used for burn dressings).

Lead The parts where liquid is attached take off such clothing, shoes and socks, then keep away them.
The body parts in contact with this substance is rinsed with water continuously.

Eye :

Sulfuric Acid Immediately rinse with plenty of clear water for at least 15 minutes with thumb and forefinger and spread the eyelids, at the same time, the eyes move in all directions.
If eye irritation persists, obtain medical advice and treatment.

Lead Immediately rinse with plenty of clear water for at least 10-15 minutes with thumb and forefinger and spread the eyelids, at the same time, the eyes move in all directions.

Ingestion :

Sulfuric Acid If swallowed this liquid, wash your mouth with plenty of water immediately then to drink plenty of water and obtain medical advice or attention.
Do not induce vomiting when swallowed. In addition, not perform any action, such as neutralizatio process.

5. Fire and Explosion Hazard Data

Extinguishing media :	Small fire : Foam halogen and/or noninflammable gas fire extinguisher
	Big fire : Large quantities of sprinkled and/or atomized water. (In this case to prevent environmental damage, flush water has to treat appropriately.)
Particular hazards :	Irritate, corrosive and/or toxicity gases may break out from the burning battery.
Proper fire fighting	If possible, turn off their power first when batteries are on charge or remove ignition sourc and remove batteries from the fire place.
	Extinguish out the fire from where well air flow and windward.
	Extinction water has to treat appropriately for preventing environmental damage.
	Cool down enough the burnt batteries with plenty amount of water.
	Try to put out fire in early stage. In this case to use protectors written below.
Protection for fire-fighter :	Use positive pressure, self-contained breathing apparatus and wear acid-resistant face shield, gloves and boots in fighting fire.

6. Accidental Release Measures

Spillage of Electrolyte (Sulfuric Acid)

Human body	Do not touch the spilled electrolyte, and walk around the spillage place.
	Keep out outsiders from the spillage place.
Environment	Spilled electrolyte has to treat appropriately for preventing environmental damage, such as direct out flowing of the spilled electrolyte into the river, drain, etc..
Neutralization	Neutralize spilled electrolyte with sodium bicarbonate, lime, etc. and flush with large quantities of water. In this case to use protectors properly.

7. Handling and Storage

Handling	Keep away from fire and sparks.
	Handle with care and keep away from shock, upset, etc..
	Do not short-circuit both battery terminals.
	Charge Lead Acid starter battery in well ventilated areas.
Storage	Store Lead Acid starter battery in cool and dry areas.
	Batteries should also be stored under protection against rain, dew and sunlight.
	Keep away from fire, dust source, harmful gas and immersion.

8. Exposure Controls / Personal Protection

Not applicable for Valve Regulated Lead Acid battery.

9. Physical & Chemical Properties

Not applicable for Valve Regulated Lead Acid battery.

Reference (Component)

	Electrolyte (Sulfuric Acid)	Lead
Appearance	Clear	Silvery solid
Specific Gravity	1.280 - 1.380 (38 - 48 %)	11.3
Boiling Point	112 deg.C (38 %)	1740 deg.C
Melting Point	- 40 deg.C or below	327 deg.C
Solidifying Point	- 56.4 deg.C (34.6 %)	-
Vapor Pressure	3.17 kPa (30 %)	0.1 Pa or less (25 deg.C)

10. Stability and Reactivity

Stability :	Dilute sulfuric acid : When rapidly in contact with water, large amount of heat generation may be scattered acid
Reactivity :	Dilute sulfuric acid : The concentration, the temperature and type of metal, sulfuric acid the produces H_2O, H_2S, SO_2, S and a sulfide or sulfate of metal.
	To generate hydrogen by reacting with the metal ionization tendency larger than hydrogen.
	Lead : May react with acids and strong acids.
decomposition products :	H_2S, So_x Cause very harmful gas by heating and chemical reactions.

11. Toxicological Information

Correspond to section 2

12. Ecological Information

Correspond to section 2

13. Disposal Considerations

Send idle battery to lead smelter for material recycling under applicable state and/or local law and regulations.

14. Transport Information

Special care

It is desirable to devote effort to keep battery temperature below 40 deg. C through the transportation.
Keep away from fire, hot air, high humidity, rain and dew and direct sunlight.
If possible, avoid consolidated transportation with other material.
Handle with care to avoid acid spillage due to drop and/or upset.
Be aware of battery weight and take care of battery handling.

UN Recommendation on transportation

	IMO	ICAO/IATA
UN Number	2800	
Dangerous Goods	8	
Special Provision	238	A48, A67, A164, A183

US DOT	Regulation	Labeling
	49 CFR 173.159 (d)	NONSPILLABLE

HS Code 8507.20 (Other lead Acid batteries)

Country of origin Japan / Republic of China

15. Regulatory Information

California Proposition 65

The state of California has determined that certain battery terminals contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm.
IMPORTANT : WASH HANDS THOROUGHLY AFTER WORKING WITH BATTERIES AND BEFORE EATING, DRINKING OR SMOKING.

TSCA Not applicable for Valve Regulated Lead Acid battery

16. Other Information

Notice to readers

This information has been complied from sources considered to be dependable and is, to the best of our knowledge and belief, accurate and reliable as of the date complied.
However, no representation, warranty (either expressed or implied) or guarantee is made to the accuracy, reliability or completeness of the information contained herein.
This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process.
It is the use's responsibility to satisfy himself as to the suitability and completeness of this information for his own particular use.

Electrochemical equation