SAFETY DATA SHEET

Valve Regulated Lead Acid Battery

FILE Ver: 2.0
MSDS DATE: MAR 15,2017

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

CHEMICAL/TRADE NAME (as used label)

+BatteryCenter-
Including ranges as
UP series Valve Regulated Lead Acid Battery

Valve Regulated Lead acid battery is filled with dilute sulphuric acid.

MANUFACTURER'S NAME/ADDRESS

MANUFACTURER: Universal Power Technology Co., Ltd.
ADDRESS: Meilong Road, Long Hua Town,Bao'An District, Shenzhen China 518131

TELEPHONE

EMERGENCY PHONE: +86 755 28094189
FAX PHONE: +86 755 83722565

CHEMICAL FAMILY/CLASSIFICATION:
UP series Valve Regulated Lead Acid Battery

SECTION 2: COMPOSITION / INFORMATION ON MAIN INGREDIENTS

EINECS#	CAS Nr.	Description	Content(Unit)*1)	Symbol and classification
231-100-4	7439-92-1	Lead Grid (pure lead and lead alloys with traces of As)	~34 Wt%	T(toxic) R50/53
215-267-0	7439-92-1	Active mass (lead containing battery paste)	~31 Wt%	T (toxic) R61-20/22-33-62 R50/53
231-639-5	7664-93-9	Electrolye (sulphuric acid with additives)	~34 Wt%	C (corrosive) R35

*1) contents may vary

SECTION 3: PHYSICAL AND CHEMICAL PROPERTIES

	Lead	Sulphuric acid (30% to 38.5 wt%)
Appearance		
Form:	Solid	Liquid
Color:	Grey	Colourless
Odour:	odourless	Odourless
Safety- related data		
Solidification point:	327°C	-35 to -60°C
Boiling point:	1740°C	approx. 108 to 114°C
Solubility in water:	very low (0.15 mg/L)	complete
Density (20°C):	11.35 g/cm^3	1.2 to 1.3 g/cm^3
Vapour pressure (20°C):	N.A.	N.A.

Lead and lead-containing battery paste are poorly soluble in water.
Lead can be dissolved in an acidic or alkaline environment.

SECTION 4: HAZARDS INDENTIFICATION

No hazards in case of an intact battery and observation of the instructions for use.
Valve regulated lead/acid batteries have three significant characteristics:

- **They contain dilute sulphuric acid, which may cause severe acid burns;**
- **During the charging process they develop hydrogen gas and oxygen , which under certain circumstances may result in an explosive mixture;**
- **They can contain a considerable amount of energy which may be a source of high electrical current and severe electrical shock in the event of a short circuit.**

SECTION 5: FIRST-AID MEASURES

This information is of relevance only if the battery is broken and direct contact with the compounds occurs.

General Information:

Sulphuric acid acts corrosively and damages skin.
Lead-containing battery paste is classified as toxic reproduction(if swallowed).

Lead-containing battery paste:

After contact with skin	clean with water and soap

Sulphuric acid:

After inhalation of acid mist*)	inhale fresh air
After contact with the eyes*)	rinse with water, remove and wash wetted clothing
After swallowing*)	drink a lot of water innediately, and swallow activated carbon, do not induce vomiting

*) Seek the advice of a doctor

SECTION 6: FIRE FIGHTING MEASURES

Suitable fire extinguishing agents:	CO2 or dry powder extinguishing agent
Unsuitable extinguishing agents:	water in the case of battery voltages of over 120 V
Special Protective equipment:	protective goggles, respiratory protective equipment, acid protective equipment, acid-proof clothing in case of larger stationary battery plants or where larger quantities are stored.

SECTION 7: ACCIDENTAL RELEASE MEASURES

Cleaning / take-up procedures :

Use a bonding agent, such as sand, to absorb spilt acid; use lime / sodium carbonate for neutralisation; dispose of with due regard to the official local regulations; do not permit penetration into the sewage system, the earth or water bodies.

SECTION 8: HANDLING AND USE

SPILL OR LEAK PROCEDURES:
Stop flow of material, contain/absorb small spills with dry sand, earth, or vermiculite. Do not use combustible materials. If possible, carefully neutralize 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.

WASTE DISPOSAL METHODS:
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.

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.

SECTION 9: EXPOSURE CONTROLS/PERSONAL PROTECTION

- No exposure to lead and lead-containing battery paste during normal conditions of use.
- Possible exposure to sulphuric acid and acid mist during filling and charging.

Threshold value in workplace	the occupational exposure limit to sulphuric acid mist is regulated on a national basis
Hazard symbol :	C, corrosive
Personal protective equipment:	Rubber or PVC gloves, acid-proof goggles, acid-proof clothing, safety boots.

SECTION 10: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION:

- Sulfuric acid:

is intensely corrosive to skin and mucous membranes; the inhalation of mists may cause damage to the respiratory tract. Acute toxicity data: LD50 (oral, rat) 2140 mg/kg, LC50 (inhalation, rat) 510 mg/mV2h.

- Lead and lead compounds:
  may cause damage to the blood, nerves, and kidneys when ingested; lead-containing battery paste is classified as toxic for reproduction.

SECTION 10 NOTES:

Not applicable to the finished product 'lead-acid' battery, only applicable to its compounds in case of a broken battery. Different exposure limits exist on national level.

SECTION 11: ECOLOGICAL INFORMATION

This information is of relevance if the battery is broken and the contents are released to the environment.

Lead and lead compounds:
Chemical and physical treatment is required for elimination from water. Waste water containing lead must not be disposed of in an untreated condition.
Sulphuric acid:
In order to avoid damage to the sewage system, the acid has to be neutralised by means of lime or sodium carbonate before disposal. Ecological damage is possible by change of pH.
The electrolyte solution reacts with water and organic substances, causing damage to flora and fauna. The batteries also contain soluble components of lead that can be toxic to aquatic environments.

SECTION 12: DISPOSAL CONSIDERATIONS

The points of sale, the manufacturers and importers of batteries, respectively the metal dealers take back spent batteries, and render them to the secondary lead smelters for processing.

Spent lead-acid batteries (EUC 160601) are subject to regulation 91/157/EC (Battery Directive) and national regulations on the collection of batteries.

SECTION 13 : STABILITY AND REACTIVITY OF SULPHURIC ACID(30~38.5%)

- Corrosive, non-flammable liquid
- Thermal decomposition at 338 °C
- Destroys organic materials, such as cardboard, wood, textiles.
- Reacts with metals producing hydrogen.
- Vigorous reactions with alkalis.

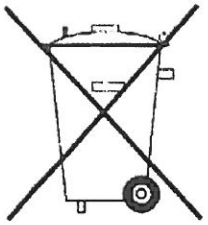
SECTION 14: TRANSPORTATION INFORMATION

Land transport	Land Transport (ADR/RID, U.S. DOT) UN N°: UN2800 Classification ADR/RID: Class 8 Proper Shipping Name: BATTERIES, WET, NON SPILLABLE electric storage Packing Group ADR: not assigned Label required: Corrosive ADR/RID: New batteries are exempt from all ADR/RID (special provision 598).

Sea transport	Sea Transport (IMDG Code) UN N°:UN2800 Classification: Class 8 Proper Shipping Name: BATTERIES, WET, NON SPILLABLE electric storage Packing Group: III EmS: F-A, S-B Label required: Corrosive If non-spillable batteries meet the Special Provision 238, they are exempt from all IMDG codes provided that the batteries' terminals are protected against short circuits.
Air Transport (IATA-DGR)	Air Transport (IATA-DGR) UN N°:UN2800 Classification: Class 8 Proper Shipping Name: BATTERIES, WET, NON SPILLABLE electric storage Packing Group: III Label required: Corrosive If non-spillable batteries meet the Special Provision A67, they are exempt from all IATA DGR provided that the batteries' terminals are protected against short

SECTION 15: REGULATORY INFORMATION

In accordance with EU and national law, lead-acid batteries have to be marked by a crossed out refuse bin with the chemical symbol for lead Pb shown below., together with the ISO return/recycling symbol.



In addition the 6 hazardous symbols described below have to be present:

No smoking, no open flames, no sparks

Wear safety goggles

Keep away from children

Sulphuric acid

Observe operating instructions

Explosice gas mixture

The manufacturer, respectively the importer of the batteries shall be responsible for the attachment of the symbols (a minimum size is specified). In addition, consumer/user information on the significance of the symbols may be attached.

SECTION 16: OTHER INFORMATION

The information given above is provided in good faith based on existing knowledge and does not constitute an assurance of safety under all conditions. It is the user's responsibility to observe all laws and regulations applicable for storage, use, maintenance or disposal of the product. If there are any queries, Universal Power Technology Co., Ltd and the agents should be consulted.

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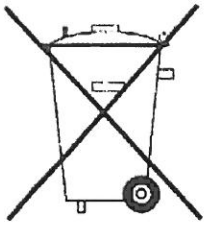

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