

Statements**EEC regulations**

In conformance to the EG-guidelines 93/86 of the 4th of October 1993 several regulations with regard to waste disposal, recycling and the class of dangerous goods have been made.

Transport

Maintenance free, Valve Regulated Lead Acid (VRLA) batteries are a separate group and do NOT fall under the category of starter batteries, open industrial batteries or traction batteries. Therefore they can be transported without special marking and instructions. However, these batteries need to be collected separately for waste disposal.

Markings

As of the 31st of December 1994, every Valve Regulated Lead Acid (VRLA) battery has to have the symbols present in conformance to EG-guideline 93/86/EWG: a "crossed out waste container" and the abbreviation "Pb" indicating the contents of lead.

Air Transport

Maintenance free, Valve Regulated Lead Acid (VRLA) batteries are recognised by the I.A.T.A. (International Air Transport Association) as "non-spillable".

June, 2003

To: Users and transporters of pbq batteries

Subject: Transportation requirements in accordance with the Department of Transportation (D.O.T.)/ International Air Transport Association (I.A.T.A.) dangerous goods regulations as applied to pbq VRLA batteries .

We hereby certify that all pbq VRLA Batteries conform to the UN2800 classification as " Batteries, wet, Non-Spillable, electric storage"

We further certify that under (I.A.T.A.) Dangerous Goods Regulation, 41st edition, UN2800 provision A67 and the (D.O.T.), CFR 49 Section 173.159 paragraph d., pbq batteries having met the related conditions are EXEMPT from hazardous goods regulations, and therefore are unrestricted for Transportation by any means. Batteries must be protected so as to prevent short circuit, and must be securely packaged, and containers must be labeled " Non- Spillable" or " Non-Spillable Battery."

For your reference:

IATA Dangerous Goods Regulation, 41th edition, Section 4.4 Special Provisions:

Non-Spillable batteries are considered to be Non-dangerous if at temperature of 55 deg. C (130 deg. F), the electrolyte will not flow from a ruptured or cracked case and there is no free liquid to flow and if, when packaged for transport, the terminals are protected from short circuit.

MATERIAL SAFETY DATA

Hazardous Components

Component	% weight	Oshapel(tlv)	LD50 oral	LD50 inhalation	LD50 contact
Lead Pb,PbO ₂ , PbSO ₄	65-75%	0.050mg/m ³	<500mg/kg	<20mg/m ³	n/a
Sulphuric Acid	17-30%	1 mg/m ³	2.14mg/kg	18mg/m ³	135mg/kg

Physical Data

Component	Density	Melting point	Solubility in water	Odor	Appearance
Lead	11.34gm/cm ³	328°C	none	none	Silver-grey metal
Lead Sulphate	6.20gm/cm ³	1167°C	0.43 mg/l	none	White powder
Lead Dioxide	9.375gm/cm ³	290°C	none	none	Brown powder
Sulphuric Acid	1.290gm/cm ³	113°C	100%	none	Clear liquid

Flammability

Component	Flashpoint	Explosivelimits	Comments
Lead	none	none	Use "ABC" Type fire extinguisher for battery fires
Sulfuric acid	none	none	none
Hydrogen	<-18°C	4%-74.2%	pbq batteries can emit hydrogen only if overcharged (float voltage 2.40Vpc or greater)

Lead

The toxic effects of lead are accumulative and slow to appear. It affects the kidneys, reproductive and central nervous systems. The symptoms of lead over exposure are anaemia, vomiting, headache, stomach pain (lead colic), dizziness, loss of appetite and muscles and joint-pains. Exposure to lead from a battery most often occurs during lead reclaim operation through the breathing or ingestion of lead dusts and fumes. This sheet must be passed to any scrap dealer or smelter when the battery is resold.

Sulphuric acid

Sulphuric acid is a strong corrosive. Contact with the acid can cause severe burns to the skin and eyes. Ingestion of sulphuric acid will cause gastro intestinal tract burns. Acid can be released only from **pbq** batteries if the case is damaged or the battery is tampered with.

First aid - Sulphuric acid

- **Skin contact:** Flush with water, see physician if contact area is large or if blisters form.
- **Eye contact:** Call physician immediately, flush with water until physician arrives.
- **Ingestion:** Call physician do not induce vomiting.
- **Do not give anything to an unconscious person.**

Reactivity Data Sulphuric acid

- **Stability:** Stable at all temperatures
- **Polymerisation:** Will not polymerise
- **Incompatibility:** Reactive metals, strong bases, most organic compounds
- **Decomposition products:** Sulphur Dioxide, Sulphur Trioxide, Hydrogen Sulphide, Hydrogen

Conditions to avoid

Smoking, sparks, flames, etc. in battery charging area. Mixing acid with other chemicals.

Spill or leak procedures

If sulphuric acid is spilled from a battery, neutralize the acid with sodium bicarbonate (baking soda), sodium carbonate (soda ash) or calcium oxide (lime). Flush the area and dispose of as hazardous waste.

Waste disposal method

Spent lead acid batteries are disposed of using three acceptable methods, send the batteries to:

1. licensed secondary lead smelters for recycling
2. reputable battery handlers
3. reputable scrap dealers

If the user has to transport these batteries to the smelters, the user must follow your department of transportation (DOT) regulations.

Depending on the applicable Federal, State, and/or Local regulations. a copy of this material safety data sheet might have to be supplied to any scrap dealer or lead smelter.

Protection

Skin - rubber gloves, apron.

Respiratory

Protective equipment must be worn if the battery is cracked or otherwise damaged. A suitable respirator should be worn during reclaim operations.

Eyes safety

Goggles, face shield.

Electrical safety

Due to the low internal resistance of **pbq** batteries and high power density, high short circuit currents can be developed across the battery terminals. Do not place tools or cables on the battery. Use insulated tools only. Follow any installation instructions and diagrams when installing or maintaining battery systems.

In case of emergency or questions please contact:

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