# INFORMATION FOR THE SAFE HANDLING OF LEAD - ACID ACCUMULATORS

## 1 Identification of the Product and Company

***1.1 Product*** Lead - Acid - Accumulator ***(Lead - Acid Battery)*** filled with Electrolyte (sulphuric acid) for Stand by and Motive Power – Applications (single cell or battery)

***1.2 Company***

***Contact***

***Address***

***Phone***

***FAX***

## 2 Composition, Information on the Ingredients

| CAS - Number | Name | Content [% by weight] | Chemical Symbol | Risk Phrase |
|---|---|---|---|---|
| 7439-92-1 | Lead, metallic | ~ 32 | Pb | R61-62-20/22-33 |
| 7439-92-1 | Lead compounds | ~ 32 | Pb / PbO | R61-62-20/22-33-50/53 |
| 7664-93-9 | Electrolyte | ~ 29 | $H_2SO_4$, $H_2O$ | R35 |
| n.a. | Plastic box , Separator (PP) | ~ 8 | *Flame retardends to be identified on customers demands* | |

## 3 Identification of potential hazards

**Handling of Batteries referring to the manual does not create any hazard to man and/or environment.** Lead-Acid Batteries are characterised by two major items:

- The electrolyte mainly consists of sulphuric acid, which may cause severe acid burns
- During the charging process they develop hydrogen gas and oxygen, which may under certain circumstances turn into an explosive mixture

For this reason, the batteries are labelled with the following hazard symbols:

Symbol 1 No smoking, no open flames, no sparks

Symbol 2 Wear safety goggles

Symbol 3 Keep away from children

Symbol 4 Sulphuric acid, corrosive

Symbol 5 Observe operating instructions

Symbol 6 Explosive gas mixture

## 4 First - Aid measures

### *4.1 General informations*

| | |
|---|---|
| **Electrolyte** (sulphuric acid) | acts corrosive |
| **Lead compounds** | have been classified as hazardous to reproduction and to the aquatic environment |

### *4.2 First - Aid measures*

**Electrolyte** (sulphuric acid):

| | |
|---|---|
| **after contact to skin** | rinse immediately with water; remove and wash wetted clothing |
| **after inhalation of acid - mist** | inhale fresh air and seek medical advice |
| **after contact with eyes** | rinse immediately with plenty of running water for several minutes and seek medical advice |
| **after swallowing** | drink a lot of water immediately, swallow activated carbon seek medical advice |

**Lead:**

| | |
|---|---|
| **after contact to skin** | clean with soap and water |

## 5 Fire - fighting measures

| | |
|---|---|
| ***Suitable extinguishing agents*** | $CO_2$ and all other solid extinguishing agents |
| ***Unsuitable extinguishing agents*** | Water in case of Battery voltages over 120 V |
| ***Special protective equipment*** | protective goggles, respiratory protective equipment acid protective equipment; acid resistant clothing if storing larger amounts of Batteries or larger stationary Batteries |

## 6 Measures to be taken in case of unintentional releases

**Spills of Electrolyte (sulphuric acid) have to be considered as unintentional releases.**

***Cleaning procedures:***

Use a bonding agent such as sand, lime or sodium carbonate to absorb and neutralise spills of the Electrolyte. Do not flush spills of Electrolyte into sewer system, into soil or into water. Dispose the used bonding agent compliant to the applicable (local) waste regulations.

## 7 Handling and Storage

Store Batteries under roof and protected against frost damage; prevent short circuits. Check storage conditions with the instructions for use.

For storing larger amounts of batteries it may be necessary to contact the local water authorities.

## 8 Exposure limits and personal protective equipment

***8.1 Lead and Lead compounds***

**Handling a Lead - Acid Battery referring to the manual does not cause any exposure with Lead and / or Lead compounds**

***8.2 Electrolyte*** (sulphuric acid)

Handling a Lead - Acid Battery can possibly cause exposure by sulphuric acid and / or mist of sulphuric acid during filling and charging

| | | |
|---|---|---|
| CAS - No.: | 7664 - 93 - 9 | |
| R - Phrases: | R - 35 | Causes severe burns |
| S - Phrases: | S - 1/2 | Keep locked up and out of reach of children |
| | S - 26 | In case of contact with eyes rinse immediately with plenty of water and seek medical advice. |
| | S - 30 | Never add water to this product (Does not apply for filling up the Battery with demineralised water) |
| | S - 45 | In case of an accident or if you unwell, seek medical advice immediately (show this instruction or the Batteries label if possible) |

MPL for acid mist (TLV) : 1,0 mg/m³

Hazard symbol: C, corrosive

Personal protective equipment: Acid resistant goggles and gloves, acid proved clothing and safety shoes

## 9 Physical and Chemical properties

| | ***Lead and Lead compounds*** | ***Electrolyte*** *(sulphuric acid, 30 - 38,5 %)* |
|---|---|---|
| **Appearance** | | |
| form | solid | liquid |
| colour | grey | colourless |
| odour | odourless | odourless |
| **Safety related data** | | |
| Solidification point [°C] | 327 | - 35 to - 60 |
| boiling point [°C] | 1.740 | approx. 108 to 114 |
| Solubility in water [25°C] | low (0,15 mg/l) | complete |
| density [20°C] | 11,45 g/cm³ | 1,2 to 1,3 g/cm³ |
| Vapour pressure [20°C] | ./. | 14,6 mbar |

## 10 Stability and reactivity of the Electrolyte (sulphuric acid, 30 to 38,5 %)

- Corrosive and inflammable liquid
- Thermal decomposition at 388 °C
- Destroys organic materials such as cardboard, wood, textiles
- Reacts with metals by producing hydrogen
- Vigorous reaction with lyes and alkalis

## 11 Toxicological informations on the components

***11.1 Electrolyte*** (sulphuric acid)

The electrolyte acts intensely corrosive on skin and mucous membranes. The inhalation of mists can cause damage to respiratory tract.

***11.2 Lead and Lead compounds***

Lead and Lead compounds may cause damages to the blood, nerves and kidney after ingestion and / or inhalation of Lead dust. Lead compounds are considered to be hazardous to reproduction

## 12 Ecological informations

**These ecological informations are only relevant for destroyed Lead - Acid Batteries and refers to the components only.**

***12.1 Electrolyte*** (sulphuric acid)

Referring to the German Federal Act on Water resources sulphuric acid is classified in Water Pollution Class 1 (middly water pollutant). Additional informations see item 6.

***12.2 Lead and Lead compounds***

Lead and Lead compounds are poorly soluble in water (see 9).

Lead and Lead compounds can be dissolved in an acidic or alkaline environment. Chemical and physical treatment is required for the Elimination of Lead from Water.

Lead compounds are very toxic to aquatic organisms and may cause long term-adverse effects in the aquatic environment (R50/53)

## 13 Recycling informations

- Spend Lead - Acid Batteries are to be recycled at Battery recycling facilities such as secondary Lead smelters. All components of the Battery are recycled and / or recovered.
- Spend Lead - Acid Batteries are considered as especially supervisable waste ***(EWC 160601)***. They are labelled with the recycling / return symbol and a crossed out rubbish bin.
- Spend Lead - Acid Batteries must not be mixed with other Batteries in order not to complicate the recycling / recovery process.
- Emptying the Electrolyte only can be done by those persons who process the recycling / recovery.
- Spend Batteries are to be returned at the point of sale of the Battery manufactures and / or importers, or they can be recollected by metal dealers to be rendered to the secondary Lead smelters for recycling / recovery.

## 14 Transport instructions

### *14.1 Surface transport*

New and spend Lead - Acid Batteries are not subject of the Regulations on Dangerous Goods, if the transportation in done in compliance with:

**Rn 2801 a (2) ADR**

**Rn 801 a RID**

### *14.2 Sea transport*

New and spend Lead - Acid Batteries are subject of the Regulations on Dangerous Goods. Transport has to be done compliance with:

**2794 IMDG - Code**

## 15 Regulatory Information / Labelling

In accordance with EC Directives 157/91/EEC and 83/93/EEC Lead - Acid Batteries have to be labelled with a crossed out rubbish bin and the chemical symbol for Lead ***(Pb)*** as shown below. In addition the ISO return / recycling symbol is rendered.

Symbol 7 Recycling

Symbol 8 crossed out rubbish bin

Symbol 9 Pb

The manufacturer / importer of the Battery is responsible for the labelling. In addition a consumer / user information on the significance of the symbols has to be attached, as it is required by the EC Directives mentioned above.

## 16 Miscellaneous

The informations and data mentioned above are based on today's knowledge, and do not constitute an assurance of properties. Existing laws and regulations have to be observed by the recipient of the product in own responsibility.