



## Instructions

### for the safe handling of lead-acid accumulators

#### 1 Substance / formulation - and company name

|                          |  |  |
|--------------------------|--|--|
| Data on the product:     | Lead-acid battery filled with diluted sulphuric acid (1,22...1,29 kg/l)    |  |
| Trade name               | RPower GiV/OGiV...   | Absorbent Glass Mat (AGM), Battery   |
| Data on the manufacturer | RP Technik<br>Hermann-Staudinger Str.10-16<br>D-633110 Rodgau<br>(Germany) | Amtsgericht Offenbach<br>HRA 40743<br>USt-IdNr.: DE 114053464<br>UBA Register-Nr.:21000732 |
| Ansprechpartner:         | Geschäftsführung:  | Reinald Pasedag  |
| Telephone:               | +49 (0) 6106 66028-0   | <a href="http://www.rptechnik.de">http://www.rptechnik.de</a>                              |
| Facsimile:               | +49 (0) 6106 66028-40  | <a href="mailto:info@.rptechnik.de">info@.rptechnik.de</a>                                 |

#### 2 Hazardous substances

| CAS-Nr.   | Description                       | Content | Unit      | R-phrases        |
|-----------|-----------------------------------|---------|-----------|------------------|
| 7439-92-1 | Blue led                          |         | Weigth. % | - - - -          |
| 7439-92-1 | lead alloys with traces of As, Sb | 34      | Weigth. % | - - - -          |
|           | Spuren As, Sb                     |         |           |                  |
|           | lead-containing battery paste     | 31      | Weigth. % | R 61-20/22-33-62 |
| 7664-93-9 | sulphuric acid                    | 34      | Weigth. % | R 35             |

#### 3 Potential hazards

No hazards in case of an intact battery and observation of the instructions for use.

**Lead-acid batteries have two significant characteristics:**

They contain diluted sulphuric acid, which may cause severe acid burns.

During the charging process they develop hydrogen gas and oxygen, which under certain circumstances may turn into an explosive mixture.



## Instructions for the safe handling of lead-acid accumulators

For this reason, the batteries have been marked with the following hazard symbols:



The significance of the hazard symbols is:

No smoking, no pen flames, no sparks.,



Wear safety goggles.



Keep away from children.



Sulphuric acid



Observe operating instructions



Explosive gas mixture

### 4 First-aid measures

#### General information:

|  |  |
|--|--|
| <u>Sulphuric acid</u>  | acts corrosive and damages tissue.                             |
| <u>Lead-containing battery paste</u>                                 | classified as toxic for reproduction                           |
| <u>Lead-containing battery paste</u><br><i>after contact to skin</i> | clean with water and soap                                      |
| <u>Sulphuric acid:</u><br><i>after contact to skin</i>               | rinse with water; remove and wash wetted clothing              |
| <i>after inhalation of acid mist *)</i>                              | inhal fresh air  |
| <i>after contact with the eyes *)</i>                                | rinse under running water for several minutes                  |
| <i>after swallowing *)</i>   | drink a lot of water immediately, and swallow activated carbon |

\*) Seek the advice of a doc-

### 5 Fire-fighting measures

#### Suitable extinguishing agents:

CO and solid extinguishing agent

#### Unsuitable extinguishing agents:

water in 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 of larger quantities stored

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

Cleaning / take-up procedures

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

### 7 Handling and storage

Store frost-free under roof; prevent short circuits. Seek agreement with local water authorities in case of larger quantities. If batteries have to be stored in storage rooms, it is imperative that the instructions for use are observed.



## Instructions for the safe handling of lead-acid accumulators

### 8 Exposure limits and personal protective equipment

8.1 No exposure caused by lead and lead-containing battery

8.2 Possible exposure caused by sulphuric acid and acid mist during filling and charging.

|                                |  |   |
|--------------------------------|--|---|
| CAS-Nr.                        | 7664-93-9  |   |
| R-Sätze                        | R - 35   | Causes severe burns.  |
| S-Sätze                        | 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 (applies for concentrated acid only, and not for refilling the battery with water). |
|                                | S-45   | In case of accident or if you feel unwell seek medical advice immediately (show the label where possible)           |
| Threshold value on workplace   | 0,1 mg/m <sup>3</sup> *  |   |
| Hazard symbol                  | C, corrosive   |   |
| Personal protective equipment: | Rubber, PVC gloves, acid-proof goggles, acid-proof clothing, safety boots. |   |

\*) 0,5 mg/m<sup>3</sup> at the lead battery production

### 9 Physical and chemical properties

| <b>Lead</b>                  | <b>Sulphuric acid (30 to 38,5 %)</b> |
|------------------------------|--------------------------------------|
| <b>Appearance</b>            |                                      |
| form:                        | solid                                |
| colour:                      | grey                                 |
| colour:                      | odourless                            |
| <b>Safety-related data</b>   |                                      |
| solidification point:        | solidification point:                |
| 327 °C                       | – 35 to – 60 °C                      |
| boiling point:               | boiling point:                       |
| 1.740 °C                     | approx. 108 to 114 °C                |
| solubility in water (25 °C): | solubility in water (25 °C):         |
| low (0,15 mg/l)              | complete                             |
| density (20 °C):             | density (20 °C):                     |
| 11.35 g/cm <sup>3</sup>      | (1.2 to 1.3) g/cm <sup>3</sup>       |
| vapour pressure (20 °C)      | vapour pressure (20 °C)              |

### 10 Stability and reactivity of the sulphuric acid (30 to 38.5 %)

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

### 11 Data on toxicology of the constituents

#### Schwefelsäure

- Sulphuric acid acts intensely corrosive on skin and mucous membranes. The inhalation of mists may cause damage to the respiratory tract.

#### Lead and lead-containing battery paste

may cause damage to the blood, nerves, and kidneys when taken in. Lead-containing battery paste is classified as toxic for reproduction.

### 12 Data on the ecology of the Constituents \*)

- **Sulphuric acid**  
Water-polluting liquid within the meaning of the German Water-Resources Act (WHG)  
Water pollution class: 1 (mildly water polluting)  
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.

\*) applies only to release caused by the destruction of the battery.

## Instructions for the safe handling of lead-acid accumulators

- Lead and lead-containing battery paste

are poorly soluble in water. Lead can be dissolved in an acidic or alkaline environment. Chemical and physical treatment is required for elimination from water.

Waste water containing lead must not be disposed of in untreated condition.

### 13 Recycling information

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

Spent lead-acid batteries are not subject to accountability of the German Waste Prove Ordinance. They are marked with the recycling / return symbol and with a crossed-out roller container (cf. chapter 15 „Marking“).

Spent lead-acid batteries are not allowed to be mixed with other batteries in order not to complicate the processing.

By no means may the electrolyte, the diluted sulphuric acid, be emptied in an inexpert manner. This process is to be carried out by the processing companies.

### 14 Transport instructions

- Surface transport**

New and spent lead-acid batteries are not subject to the German Regulations on Dangerous Goods carried on Land, if the following conditions are adhered to:

RID/ADR

Special provision 598

- Sea transport**

On account of the versatility in makes and the thus resulting different requirements, please enquiry with the supplier.

### 15 Marking

In accordance with the German-Battery Ordinance lead-acid batteries have to be marked by a crossed-out roller bin with the chemical symbol for lead Pb shown below.

In addition, the ISO-return/ recycling symbol is rendered.

The manufacturer, respectively the importer of the batteries shall be responsible for the attachment of the symbols. In addition, a consumer / user information



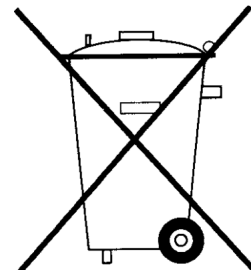
on the significance of the symbols has to be attached, which is required by the German Battery Ordinance quoted above as well as by the voluntary agreement of the battery manufacturers concluded with the German Federal Minister of the Environment in September 1988.

The manufacturers and sellers of the batteries subject to identification requirements (packaging, technical instructions, leaflets) shall be responsible for this information.

### 16 Miscellaneous data

The data rendered 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.



Pb