

Banner



BETTER SAFE THAN SORRY!

**LEAD BATTERY KNOW-HOW
AND ACCIDENT PREVENTION.**

**ALL Banner STARTER BATTERIES ARE DECLARED
AS ACID-FILLED WET BATTERIES (UN 2794).**



ZVEI information leaflet No. 1e

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Instructions for the safe handling of lead-acid accumulators (lead-acid batteries)

The REACH-regulation (1907/2006/EC) has replaced the directive on safety data sheets (91/155/EC). REACH describes the setting up and updating of safety data sheets for substances and preparations. For articles – like lead-acid batteries – safety data sheets are not required.

This leaflet addresses manufacturers of batteries and is meant to apply voluntarily.

The notes are meant to help to comply with legal requirements but do not replace them.

2. Hazardous substances

CAS-No.	Description	Content	R-phrases
7439-92-1	blue lead		–
7439-92-1	lead alloys with traces of As,Sb	34Weight%	–
	lead-containing Battery paste	31Weight %	R61-20/22-33-62-52/53
7664-93-9	sulphuric acid	34Weight%	R35

1. Substances / formulation and company name

Data on the product
Trade name

Lead-acid battery filled with diluted sulphuric acid

Data on the manufacturer:

Telephone:
Facsimile:

3. Potential hazards

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

Lead-acid batteries have 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.

- They have an internal voltage, which – depending on their level – can be dangerous to the human body when touched.
- Standard EN 50272-2 includes safety requirements for batteries and battery installations and describes the basic precautions to protect against dangers deriving from electric currents, leaking gases or electrolytes.

Batteries are marked with the following hazard symbols:

The meaning of the hazard symbols is:



No smoking, no open flames, no sparks.



Wear safety goggles.



Sulphuric acid.



Observe operating instructions.



Explosive gas mixture.

6. Measures to be taken in case of unintentional release

Cleaning / take-up procedures

Use a bonding agent, such as sand, to absorb split 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.

4. First-aid measures

General Information:

Sulphuric acid	acts corrosive and damages tissue
<i>after contact with skin</i>	rinse with water, remove and wash wetted clothing
<i>after inhalation of acid mist*)</i>	inhale 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
Lead-containing battery paste	classified as toxic for reproduction
<i>after contact with skin</i>	clean with water and soap

*) seek the advice of a doctor.

7. Handling and storage

Store frost-free under roof; prevent short circuits.

Protect plastic housings against exposition to direct sun radiation.

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.

5. Fire-fighting measures

Suitable extinguishing agents

When electrical devices are set in fire in general water is the suitable extinguishing agent. For incipient fires CO₂ is the most effective agent. Fire brigades are trained to keep a distance of 1 m when extinguishing an electrical fire (up to 1 kV) with spray jet and a distance of 5 m with full jet. For electrical fires in electrical installations with voltages > 1 kV other distances are applicable depending on the respective voltage. For fires in photovoltaic installations other rules apply.

Unsuitable extinguishing agents

Powder fire extinguishers are not suitable, amongst others because of only minor efficiency, possible risks or collateral damages.

Special protective equipment

For larger stationary battery installations or larger stored quantities: protective goggles, respiratory and acid protective equipment, acid-proof clothing.

8. Exposure limits and personal protective equipments

8.1 No exposure caused by lead and lead-containing battery paste.

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

CAS-Nr.	7664-93-9
R-phrases	R-35 Causes severe burns.
S-phrases	S - 1/2 Keep looked up and out of reach of children.
	S - 26 In case of contact with eyes rinse immediately with plenty water and seek medical advice.
	S - 30 Never add water to this product (applies for concentrated acid only)
	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 ³ *)
Hazard symbol	C, corrosive
Personal protective equipment: Rubber, PVC gloves, acid-proof goggles, acid-proof clothing, safety boots.	

³⁾ 0,5 mg/m³ at the lead battery production.

9. Physical and chemical properties

Lead

Appearance:
form: solid
colour: grey
odour: odourless

Safety-related data
Solidification point: 327 °C
Boiling point: 1740 °C
Solubility in water (25 °C):
low (0,15 mg/l)
density(20 °C): 11,35 g/cm³
vapour pressure (20 °C)

Sulphuric acid (30 – 38,5 %)

form: liquid
colour: colourless
odour: odourless

Solidification point:
– 35 bis – 60 °C
Boiling point: ca. 108 – 114 °C
Solubility in water (25 °C):
complete
density (20 °C): 1,2 – 1,3 g/cm³
vapour pressure (20 °C)

10. Stability and reactivity of 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 lyes and alkalis.

11. Data on toxicology of the constituents

Sulphuric acid

acts intensely corrosive on skin and mucous membranes. The inhalations 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

Preliminary remark:
Relevant only if release is caused by destruction of the battery

Sulphuric acid

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

As described in section 6 use a bonding agent, such as sand, to absorb spilled acid or neutralise using lime / sodium carbonate. Dispose of under the locally applicable provisions.

Dispose with due regard to official local regulations,

Do not allow progression into the sewage system, soil or bodies of water.

Lead and lead-containing battery paste

are hardly 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 compliance 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

14.1 Batteries, wet, filledwithacid

Land transportation according to ADR/RID

- Special Provision 598: **no transport as dangerous goods** (new + spent batteries are not subject to other requirements of ADR/RID if they meet the requirements according to Special Provision 598)
- If the requirements of Special Provision 598 are not fulfilled the transport of new and spent batteries has **to be declared as dangerous goods** as follows:
 - Hazardclass: 8
 - UN-no.: 2794
 - Naming and description: BATTERIES, WET, FILLED WITH ACID
 - Packinggroup: none
 - Hazard label: 8

- ADR Tunnel restriction code: E

Sea transportation according to IMDG Code

- Hazardclass: 8
- UN-no.: 2794
- Proper shipping name: BATTERIES, WET, FILLED WITH ACID
- Packaginggroup: none
- EmS: F-A, S-B
- Packaging Instruction: P 801
- Hazard label: 8

Air transportation according to IATA-DGR

- Class: 8
- UN-no.: 2794
- Proper shipping name: BATTERIES, WET, FILLED WITH ACID
- Hazardclass: 8
- Packaging Instruction: 870

14.3 Batteries, damaged:

Land transportation according to ADR/RID

- Hazardclass: 8
- UN-no.: 2794
- Proper shipping name: BATTERIES, WET, FILLED WITH ACID
- Packinggroup: none
- Packing Instruction P 801 a: **transport as dangerous goods** (packing in accu boxes) **or** Special Provision VV 14: **transport as dangerous goods** (in bulk)
- Hazardlabel: 8
- ADR Tunnel restriction code: E
- Note: these references can be applied by transportation of Lead-acid batteries of UN-no. 2800 aswell.

15. Marking

In accordance with the German law governing the sale, return

and environmentally sound disposal of batteries and secondary cells (Batteries Act – Batteriegesetz, BattG) from 25 June 2009 (national transposition of directive 2006/66/EC (battery directive) lead-acid batteries have to be marked with a crossed-out wheelie 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 manufactures concluded with the German Federal Minister of the Environment in September 1988.

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

16. Other information

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

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In spite of all due care, however, we cannot accept any liability
that the information is complete or correct or up to date.

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