

**SECTION 1. IDENTIFICATION OF THE PRODUCT AND THE COMPANY****1.1 Product identification**

- Trade name : Lead-acid batteries
Product definition : Lead-acid batteries are Articles as defined in Article 3.3 of REACH.
Registration number (REACH) : Not applicable (no substance with intention to be released).

1.2 Relevant identified uses and uses advised against

- Relevant identified uses : Use the lead-acid battery in line with the instructions provided.
Uses advised against : This product must not be used in applications other than those recommended in Section 1, without first seeking the advice of the supplier.

1.3 Details of the supplier of the safety data sheet

- Distributor : < To be filled in by the distributor >

Supplier : Landport BV
Address: P.O. box 325. 4940 AH Raamsdonksveer. The Netherlands
Phone: +31 (0) 162 58 14 00
E-mail: info@landportbv.com

SECTION 2. HAZARDS IDENTIFICATION**2.1 Hazards**

No hazards occur during the normal operation of a Lead Acid Battery as it is described in the instructions for use that are provided with the Battery.

If a separate acid pack is provided with the lead-acid battery, a separate Safety Data Sheet in line with REACH Art. 31 is provided. Please take notice of the hazards and safe use information provided for the acid pack.

2.2 Characteristics

Lead-acid Batteries have significant characteristics:

- They contain an electrolyte which contains diluted sulphuric acid. Sulphuric acid may cause severe chemical burns.
- During the charging process or during operation they might 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 a severe electrical shock in the event of a short circuit.
- Standard EN 50272-2 included safety requirements for batteries and battery installations and describes the basic precautions to protect against dangers deriving from electric currents, leaking gases or electrolytes.

2.3 Labelling

The batteries have to be labelled with the symbols listed under section 15.

SECTION 3. COMPOSITION AND INFORMATION ON MAIN INGREDIENTS**3.1 Product definition** : Article (REACH Art. 3.3)

Chemical name	CAS number	% (w/w) ¹⁾	Hazard statements (CLP 1272/2008) ²⁾
Lead Grid (metallic lead, lead alloys with possible traces of additives)	7439-92-1	30-39	Repr. 1A (H360), STOT RE 1 (H272), Acute Tox. 4 (H332), Aquatic Acute 1 (H400), Aquatic Chronic 1 (H410)
Active Mass (Battery Oxide, inorganic lead compounds)	7439-92-1	30-39	
Electrolyte ³⁾ (diluted sulphuric acid)	7664-93-9	10-44	Met. Corr. 1 (H290); Skin Corr. 1 (H314)
Plastic Container / Plastic Parts ⁴⁾	-	<10	

- 1) Contents may vary due to performance data of the Battery
- 2) Hazard statements from public data on ECHA website; full text of the hazard statements is listed in Section 16.
- 3) Density of the electrolyte varies in accordance to the state of charge
- 4) Composition of the plastic may vary due to different customer requirements

**SECTION 4. FIRST AID MEASURES**

This information is of relevance only if the Battery is broken and it results in a direct contact with ingredients.

4.1 General

- Electrolyte (diluted sulphuric acid) : Sulphuric acid acts corrosively and damages skin.
- Lead compounds : Lead compounds are classified as toxic for reproduction (if swallowed).

4.2 Electrolyte (diluted sulphuric acid)

- Inhalation (acid mists) : Keep calm and quiet, to fresh air. If necessary, provide oxygen or artificial respiration. Seek advice of a medical doctor.
- Contact with skin : Rinse with water. Remove and wash wetted clothing.
- Contact with eyes : Rinse thoroughly with plenty of water for at least 15 minutes. Remove contact lenses, if possible, and continue flushing. Consult a doctor: when eye irritation persists.
- Ingestion : Do not induce vomiting. Drink lot of water immediately and swallow activated carbon. Consult a doctor: if irritation persists.

4.3 Lead and lead compounds

- Inhalation : Inhale fresh air. Seek advice of a medical doctor.
- Contact with skin : Clean with water and soap.
- Contact with eyes : Rinse under running water for several minutes. Seek advice of a medical doctor.
- Ingestion : Wash mouth with water, Seek advice of a medical doctor.

SECTION 5. FIRE FIGHTING MEASURES**5.1 Extinguishing media**

- Suitable extinguishing media : CO₂ or dry powder extinguishing agents.
- Unsuitable extinguishing media : Water, if the battery voltage is above 120 V.

5.2 Special protective equipment

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

5.3 Advice for fire-fighters

- : 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 meter when extinguishing an electrical fire (up to 1 kilo volt) with spray jet and a distance of 5 meter with full jet. For electrical fires in electrical installations with voltages > 1 kilo Volt other distances are applicable depending on the respective voltage. For fires in photovoltaic installations other rules apply.

SECTION 6. MEASURES TO BE TAKEN IN CASE OF ACCIDENTAL RELEASE

This information is of relevance only if the battery is broken and the ingredients are released.

6.1 Personal precautions

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

6.2 Methods and material for cleaning up

- : In the case of spillage, 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 allow penetration into the sewage system, into earth or water bodies.

SECTION 7. HANDLING AND STORAGE**7.1 Precautions for safe handling**

- : Use the batteries in line with the use instructions provided.



- 7.2 Conditions for safe storage**
- : Store frost-free under roof in cool ambience. Charged lead-acid batteries do not freeze up to 50°C. Prevent short circuits. Protect plastic housings against exposition to direct sun radiation. Seek agreement with local water authorities in case of larger quantities of batteries to be stored. If batteries have to be stored, it is imperative that the instructions for use are observed.

SECTION 8. EXPOSURE LIMITS AND PERSONAL PROTECTIVE EQUIPMENT

8.1 Electrolyte (diluted sulphuric acid)

- Possible routes of exposure : Possible exposure caused by sulphuric acid and acid mists during filling and charging.
- Occupational exposure limit values : Source SER database:
8 h TWA: 1 mg / m³ (Belgium, Netherlands and Spain);
8 hours TWA: 0,1 mg / m³ (Germany, Austria, Norway and Sweden);
8 hours TWA: 0,05 mg / m³ (Denmark, Finland, France, UK, EU SCOEL)
15 min TWA: 3 mg / m³ (Belgium, France and Spain),
15 min TWA: 0,2 mg / m³ (Austria and Sweden)
15 min TWA: 0,1 mg / m³ (Finland)
- DNEL / PNEC limit values (REACH public dossier) : DNEL (workers; short term; local effects): 0,1 mg/m³;
DNEL (workers; long term; local effects): 0,05 mg/m³;
PNEC (aqua; fresh water): 0,0025 mg/L;
PNEC (aqua; marine water): 0,00025 mg/L;
PNEC (Sewerage treatment plant): 8,8 mg/L;
PNEC (sediment; fresh/marine water): 0,002 mg/kg sediment dry weight.

8.2 Lead and lead compounds

- Possible routes of exposure : No exposure to lead and lead containing battery paste during normal conditions of use.

8.3 Personal protective equipment

- a) Eye/face protection : Wear safety goggles (EN 166)
- b) Skin / hand protection : In case of potential exposure to the electrolyte (diluted sulphuric acid), wear acid-resistant rubber gloves (EN 374), PVC disposable gloves.
- c) Respiratory protection : In case of potential exposure to the electrolyte (diluted sulphuric acid) and insufficient ventilation, wear suitable respiratory equipment (filter type B).
- d) Other : Handle in accordance with good industrial hygiene and safety instructions. Wash hands thoroughly after use and before eating or drinking.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

	Diluted sulphuric acid	Lead and lead compounds
Appearance	: liquid (colourless)	solid (grey)
Odour	: odourless	odourless
Solidification point	: -35 to -60 °C	327 °C
Boiling point and boiling range	: 110 – 140 °C	1740 °C
Solubility in water (25 °C)	: complete	very low (0.15 mg/l)
Vapour pressure	: 19 hPa (15-51% H ₂ SO ₄)	not applicable
Density	: 1,10 – 1,4 g/cm ³ (15-51% H ₂ SO ₄)	11,35 g/cm ³

SECTION 10. STABILITY AND REACTIVITY

- 10.1 Electrolyte (diluted sulphuric acid):** Corrosive, non-flammable liquid.
Stable under normal conditions. Thermal decomposition at 338 °C.
Reacts with metals producing hydrogen.



Reacts violently with alkalis and oxidizing agents.
Destroys organic materials such as cardboard, wood, textiles.

10.2 Lead and lead compounds : Stable under normal conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

This information does not apply to the finished product "lead-acid battery". This information only applies to its compounds in case of a broken product.

11.1 Electrolyte (diluted sulphuric acid)

Acute toxicity : LD50 (oral / rat): 2140 mg/kg
LC50 (inhalation/4uur/rat): 375 mg/m³
Corrosion/irritation : High concentrations can cause severe breathing difficulties. When exposed, sulphuric acid vapour or mist may have corrosive effects on mucous membranes, skin and eyes.

11.2 Lead and lead compounds : Lead and its compounds used in a Lead Acid Battery may cause damage to the blood, nerves and kidneys when ingested. The lead contained in the active material is classified as toxic for reproduction.

SECTION 12. ECOLOGICAL INFORMATION

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

12.1 Electrolyte (diluted sulphuric acid) : Water polluting liquid that can be toxic to aquatic organisms. Do not allow progression into the sewerage system, soil or bodies of water.

As described in section 6, use a bonding agent, such as sand, to absorb spilled acid or neutralise using lime / sodium carbonate. Dispose with due regard to local regulations.

12.2 Lead and lead compounds : Are hardly soluble in water. Chemical and physical treatment is required for elimination from water. Lead can be dissolved in an acidic or alkaline environment. Waste water containing lead must not be disposed of in untreated condition

SECTION 13. DISPOSAL CONSIDERATIONS / RECYCLING INFORMATION

13.1 Recycling information : Spent lead-acid batteries (EWC 160601) are subject to regulation of the EU Battery Regulation and its adoptions into national legislation on the composition and end-of-life management of batteries. Never dispose spent lead-acid batteries with domestic waste. Spent lead-acid batteries are recycled in lead refineries (secondary lead smelters). The components of a spent lead-acid battery are recycled or reprocessed.

At 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. To simplify the collection and recycling or reprocessing process, spent lead-acid batteries must not be mixed with other batteries.

13.2 Other information : By no means may the electrolyte (diluted sulphuric acid) be emptied in an inexperienced manner. This process is to be carried out by the processing companies only.

SECTION 14. TRANSPORT INFORMATION

14.1 Lead batteries, wet, filled with acid

Transport by road/railways (ADR/RID) : UN number: 2794
Proper shipping name: BATTERIES, WET, FILLED WITH ACID
Hazard class: 8



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- Remark: New and spent batteries are not subject to the ADR/RID requirements if they meet the requirements of special provision 598.
- Transport by sea (IMDG) : UN number: UN 2794
Proper shipping name: BATTERIES, WET, FILLED WITH ACID
Hazard class: 8
- Transport by air (IATA-DGR) : UN number: UN 2794
Proper shipping name: BATTERIES, WET, FILLED WITH ACID
Hazard class: 8

14.2 Lead batteries, wet, non-spillable

- Transport by road/railways (ADR/RID) : UN number: 2800
Proper shipping name: BATTERIES, WET, NON-SPILLABLE
Hazard class: 8
Remark: Non-spillable batteries are not subject to the ADR/RID requirements if they meet the requirements of special provision 238 and 598.
- Transport by sea (IMDG) : UN number: UN 2800
Proper shipping name: BATTERIES, WET, NON-SPILLABLE
Hazard class: 8
Remark: Non-spillable batteries are not subject to the IMDG requirements if they meet the requirements of special provision 238 and 598.
- Transport by air (IATA-DGR) : UN number: UN 2800
Proper shipping name: BATTERIES, WET, NON-SPILLABLE
Hazard class: 8
Remark: Non-spillable batteries are not subject to the IATA DGR requirements if they meet the requirements of special provision A67. Provided that poles are secured against short-circuit.

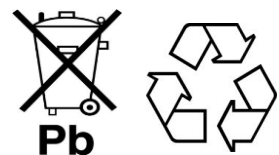
14.3 Lead-acid batteries, damaged

- Transport by road/railways (ADR/RID) : UN number: 2794 or 2800
Proper shipping name: BATTERIES, WET, FILLED WITH ACID or BATTERIES, WET, NON-SPILLABLE
Hazard class: 8
Remark: Packing instruction P801a: transport as dangerous goods (packing in battery boxes) or special provision VV14: transport as dangerous goods (in bulk)

SECTION 15. REGULATORY INFORMATION

15.1 Labelling requirements

In accordance with EU Battery Regulation and the respective National legislation, lead-acid batteries have to be marked by a crossed out dust bin with the chemical symbol for lead shown below, together with the ISO return/recycling symbol.



In addition, conform standard IEC 60095-1, lead-acid batteries have to be labelled with the hazard symbols described below.



No smoking, no open flames, no sparks



Wear safety goggles



Keep away from children



Corrosive



Observe operating instructions



Explosive gas mixture



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Labelling might vary due to application and dimension of the battery. The manufacturer / importer of the batteries shall be responsible for placing 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

16.1 Revision comments

A line in the margin combined with text rendered in red indicates a relevant amendment from the previous version.

16.2 Abbreviations and acronyms used

Hazard statements (Section 3) : H272= May intensify fire; oxidiser.
H290= May be corrosive to metals.
H314= Causes severe skin burns and eye damage.
H332= Harmful if inhaled.
H360= May damage fertility or the unborn child.
H400= Very toxic to aquatic life.
H410= Very toxic to aquatic life with long lasting effects.

16.3 References and sources for data : EUROBAT Safe handling instructions (may 2006), ZVEI information leaflet 1e (September 2012), supplier SDSs; public registration dossier ECHA website

16.4 Disclaimer

Products such as Batteries do not require the publication of an EU Safety Data Sheet (REACH Art 31). The information given above is provided in good faith, is 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, the supplier should be consulted.

WAIVING OF LIABILITY: However, the information is provided without any warranty - express or implied - regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense be rejected that in any way whatsoever, can result from handling, storage, use or disposal of the product. This safe handling instructions was prepared and is to be used for this product for the identified use only. If the product is used as a component in another product, it is possible that the information in this document is not applicable.

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