

This leaflet was prepared by the Committee of Environmental Affairs of EUROBAT (May 2003), reviewed by EUROBAT TC members (September 2003) and CEM (October-November 2003). Last review by EUROBAT: Jan 2019. Revision by TAB d.d.: 19th May 2020.

EUROBAT CUSTOMER CARE PROGRAM

INFORMATION FOR THE SAFE HANDLING OF LEAD-ACID BATTERIES

1. Identification of product and company

Product:	Lead acid battery
Trade name:	Lead acid batteries filled with diluted sulphuric acid
	<ul style="list-style-type: none">• Starter batteries:<ul style="list-style-type: none">○ TAB: Polar, Polar S, Polar Blue, Polar Truck, Magic, Magic Truck, EFB Stop&Go, AGM Stop&Go, Ocean, Ocean Supply, Ocean Twin, OEM○ Topla: Start, Energy, Top JIS, Top, Top Sealed Truck, Top Truck, EFB Top Stop&Go, AGM Top Stop&Go, Energy Truck○ Vesna: Vesna Basic, Vesna Premium, Vesna Power Truck, Vesna Power, Premium EFB Stop&Go, Premium AGM Stop&Go, Vesna Premium Truck. Starter Vesna: Starter Classic, Starter Ultra, Starter Ultra Truck, Starter Vesna Plus, Starter AGM Stop&Go, Starter EFB Stop&Go, Starter Plus Truck○ Volthor: Ultra, Ultra Truck, Supreme, Supreme Truck, EFB Stop&Go, AGM Stop&Go• Industrial batteries:<ul style="list-style-type: none">○ TAB Traction: DIN (PzS), DIN-S (PzS), BS (PzB), BCI (USI), PzV, PzVB, PzRM○ TAB Stationary: OPzS blocks, OPzS_Ca blocks, OPzS cells, OPzS_Ca cells, OGi_blocks, OGi_Ca blocks, OGi cells, OGi_Ca cells, UPS, TOPzS, OPzV○ TAB Monoblock Batteries: TAB Motion Pasted, TAB Motion Tubular, TAB Motion AGM, TAB Motion GEL○ Vesna Solar Batteries
Manufacturer:	TAB d.d.
Address:	Polena 6, 2392 Mežica, Slovenia
Phone:	+386 (0) 28702300
E-mail:	sds@tab.si
Emergency telephone number:	In case of emergency call 112.




2. Potential 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. However, lead-acid batteries have three 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.

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

3. Composition and information on the main ingredients

CAS no.	Description	Content 1) [% of weight]	Hazards Category and Statement Code, GHS pictograms
7439-92-1	Lead Grid (Metallic lead ²⁾ , lead alloys with possible traces of additives)	~ 32	 Dgr Repr. 1A - H360Df Lact- H362
n.a.	Active Mass ³⁾ (Battery Oxide, inorganic lead compounds)	~ 32	 Dgs Repr. 1A - H360Df Acute Tox. 4 - H332 Acute Tox. 4 - H302 STOT RE 2 - H373 Aquatic Acute 1 – H400 Aquatic Chronic 1 - H410
7664-93-9	Electrolyte ⁴⁾ (diluted sulphuric acid with additives)	~ 29	 Dgs SkinCorr.1A - H 314
n.a.	Plastic Container / Plastic Parts ⁵⁾	~ 7	/

- 1) Contents may vary due to performance data of the battery/cell
- 2) Lead metal (CAS 7439-92-1) is classified as a substance of very high concern under REACH
- 3) Composition of active mass depends on the state of charge
- 4) Density of the electrolyte varies in accordance to the state of charge
- 5) Composition of the plastic may vary due to different customer requirements

4. First aid measures

This information is of relevance only if the battery is broken and this results in a direct contact with the 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

4.2 Electrolyte (Sulphuric acid)

After skin contact: rinse with water, remove and wash wetted clothing

After inhalation of acid mist: inhale fresh air, seek advice of a medical doctor

After contact with the eyes: rinse under running water for several minutes, seek advice of a medical doctor

After swallowing: drink a lot of water immediately, swallow activated carbon, do not induce vomiting, and seek advice of a medical doctor

4.3 Lead compounds

After skin contact: clean with water and soap

After inhalation: inhale fresh air, seek advice of a medical doctor

After contact with the eyes: rinse under running water for several minutes, seek advice of a medical doctor

After swallowing: wash mouth with water, seek advice of a medical doctor

5. Fire fighting measures

Suitable fire extinguishing agents:

CO₂, dry powder extinguishing agents or water.

Unsuitable fire extinguishing agents:

Water, if the battery voltage is above 120 V.

Special protective equipment:

Protective goggles, respiratory protective equipment, acid protective equipment, acid-proof clothing in case of larger stationary battery plants or where larger quantities are stored.

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.

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

7. Handling and storage

Store under a roof in cool ambience - charged lead-acid batteries do not freeze up to -50°C; prevent short circuits. 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 information for use is observed.

8. Exposure limits and personal protective equipment

8.1 Lead and lead compounds

No exposure to lead and lead compounds during normal conditions of use.

8.2 Electrolyte (Sulphuric Acid)

Exposure to sulphuric acid and acid mist might occur during filling and charging.

Threshold value in workplace: Occupational exposure limits for sulphuric acid mist are regulated on a national basis.

Signal word: Danger

Hazard: Corrosive

Hazard pictogram:



Personal protective equipment: Protective goggles, rubber or PVC gloves, acid-resistant clothing, safety boots.

CAS-No: 7664-93-9

Hazard statements:

H314 Causes severe burns and eye damage.

Precautionary Statements:

P102 Keep out of reach of children.

P103 Read label before use.

P260 Do not breathe dust/fume/ gas/mist/vapours/spray.

P264 Wash thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P363 Wash contaminated clothing before reuse.

P310 Immediately call a POISON CENTER or doctor/physician.

P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/ international regulation (to be specified).
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P309+P315	IF exposed or if you feel unwell, get immediate medical advice/attention.

9. Physical and chemical properties

	Lead and lead compounds	Electrolyte (diluted sulphuric acid, 30 to 38.5%)
Appearance		
<i>form:</i>	solid	liquid
<i>colour:</i>	grey	colourless
<i>odour:</i>	odourless	odourless
Safety-related data		
<i>solidification point:</i>	327°C	-35 to -60°C
<i>boiling point:</i>	1740°C	approx. 108 to 114°C
<i>solubility in water:</i>	very low (0,15 mg/l)	complete
<i>density (20°C):</i>	11,35 g/cm ³	1,2 to 1,3g/cm ³
<i>vapour pressure(20°C):</i>	N.A.	N.A.

Lead and lead compounds used in lead-acid batteries are poorly soluble in water, lead can be dissolved in an acidic or alkaline environment only.

10. Stability and reactivity (sulphuric acid, 30 – 38,5 %)

- Corrosive, non-flammable liquid.
- Thermal decomposition at 338° C.
- Destroys organic materials such as cardboard, wood, textiles.
- Reacts with metals, producing hydrogen.
- Vigorous reactions on contact with sodium hydroxide and alkalis.

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. Different exposure limits exist on a national level.

11.1 Electrolyte (diluted sulphuric acid):

Sulphuric acid is intensely corrosive to skin and mucous membranes; the inhalation of mists may cause damage to the respiratory tract.

Acute toxicity data:

- LD₅₀ (oral, rat) = 2140 mg/kg
- LC₅₀ (inhalation, rat) = 510 mg/m³/2h

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.

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)

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. The electrolyte solution reacts with water and organic substances, causing damage to flora and fauna. The electrolyte may also contain soluble components of lead that can be toxic to aquatic environments.

12.2 Lead and Lead compounds

Chemical and physical treatment is required for the elimination from water. Waste water containing lead must not be disposed of in an untreated condition.

Lead metal grids are not classified as eco-toxic.

13. Disposal considerations

Spent lead-acid batteries (EWC 160601*) are subject to regulation of the EU Battery Directive and its adoptions into national legislation on the composition and end-of-life management of batteries.

Spent lead-acid batteries are recycled in lead refineries (secondary lead smelters). The components of a spent lead-acid battery are recycled or re-processed.

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 re-processing process, spent lead-acid batteries must not be mixed with other batteries.

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

*200133 EWC may be used for municipal collected batteries.

14. Transport regulation

14.1 Flooded lead-acid batteries:

Land Transport	<p>Land Transport (ADR/RID)</p> <ul style="list-style-type: none"> - UN N°: UN2794 - Classification ADR/RID: Class 8 - Proper Shipping Name: BATTERIES, WET, FILLED WITH ACID electric storage - Packing Group: not assigned - Packaging instruction: P 801 - ADR/RID: New and spent batteries are exempt from all ADR/RID (special provision 598).
Sea Transport	<p>Sea Transport (IMDG Code)</p> <ul style="list-style-type: none"> - Classification: Class 8 - UN N°: UN2794 - Proper Shipping Name: BATTERIES, WET, FILLED WITH ACID electric storage - Packing Group: Not assigned - EmS: F-A, S-B - Packaging instruction: P 801
Air Transport	<p>Air Transport (IATA-DGR)</p> <ul style="list-style-type: none"> - Classification: Class 8 - UN N°: UN2794 - Proper Shipping Name: BATTERIES, WET, FILLED WITH ACID electric storage - Packing Group: Not assigned - Packaging instruction: P 870

14.2 Valve regulated lead acid batteries (VRLA):

Land Transport	<p>Land Transport (ADR/RID, U.S. DOT)</p> <ul style="list-style-type: none"> - UN N°: UN2800 - Classification ADR/RID: Class 8 - Proper Shipping Name: BATTERIES, WET, NON SPILLABLE electric storage - Packing Group: not assigned - Packaging instruction: P 801 - ADR/RID: New and spent batteries are exempt from all ADR/RID (special provision 598).
Sea Transport	<p>Sea Transport (IMDG Code)</p> <ul style="list-style-type: none"> - UN N°: UN2800 - Classification: Class 8 - Proper Shipping Name: BATTERIES, WET, NON SPILLABLE electric storage - Packing Group: Not assigned. - EmS: F-A, S-B - Packaging instruction: P 003 - If non-spillable batteries meet the Special Provision 238, they are exempted from all IMDG codes provided that the batteries' terminals are protected against short circuits.
Air Transport	<p>Air Transport (IATA-DGR)</p> <ul style="list-style-type: none"> - UN N°: UN2800 - Classification: Class 8 - Proper Shipping Name: BATTERIES, WET, NON SPILLABLE electric storage - Packing Group: Not assigned - Packaging instruction: P 872 - If non-spillable batteries meet the Special Provision A67, they are exempted from all IATA DGR codes provided that the batteries' terminals are protected against short circuits.

15. Regulatory information

In accordance with EU Battery Directive 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, lead-acid batteries may have to be labelled with the hazard symbols described below:

- Industrial batteries:



Electrical Accumulators

No smoking, no open flames



Wear safety goggles

Observe operating instructions



Dangerous voltage electrical risk

Starter batteries:



Cause no open flame, embers or sparks



Electrolyte is highly corrosive



Use overalls and safety - goggles



Please follow the instructions



Keep away from children



Explosion hazard. Avoid short circuits.

Labelling may vary due to application and dimension of the battery. The manufacturer, respectively the 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.

16. Other information

16.1 Safety Data Sheet

The European Directive 91/155/EEC which described the requirements for Material Safety Data Sheets had been repealed by the Regulation concerning the Registration, Evaluation, Authorization and Restriction of Chemicals on June 1st, 2007 (REACH-Regulation 1907/2006/EC, Art. 31). The requirement to publish a Safety Data Sheet applies to all suppliers of substances and preparations.

As already defined under the former Directive there is no requirement to develop and maintain a Safety Data Sheet for products such as Batteries.

16.2 Substances of Very High Concern (SVHC)

The publications of the European Chemicals Agency on substances of very high concern are monitored by TAB d.d. As defined by REACH, customers will receive the required information if an updated publication may add a substance relevant for our products to the list of SVHC's. On 19 December 2012, four Lead compounds used in the process of battery manufacturing – Lead Monoxide, Lead Tetroxide, Tetralead Trioxide Sulphate and Pentalead Tetraoxide Sulphate – were added to the list of Substances of Very High Concern. As of June 27 2018, Lead Metal was added to the SVHC list as well.

Irrespective of the battery design (flooded, MHF, Gel, AGM) all lead based batteries contain Lead Metal (CAS Nr.: 7439-92-1). The content varies but exceeds the notification threshold of 0,1% w/w.

Batteries ready for use do not contain Oxides or Sulphates that are classified SVHC.

Dry Batteries/dry cells (dry charged plates, delivered without electrolyte) contain more than 0,1 % of Lead Monoxide. Lead Monoxide (CAS Nr.: 1317-36-8) is listed as a substance of very high concern. Once the batteries / cells are filled with electrolyte all Lead Monoxide is transformed and the presence of Lead Monoxide has ended.

16.3 GHS labels

Among others the European GHS regulation describes classification and labelling of chemicals and preparations. GHS is not a regulation that describes labelling requirements for products such as Lead Acid Batteries.

The six pictograms on batteries target to provide safety information and are based on an international standard (EN 50342). These labels remain unaffected.

16.4 Hazard statements (H-statements)

Hazard statements used in this document:

H314: Causes severe skin burns and eye damage

H360: May damage fertility or the unborn child

H362: May cause harm to breast-fed children

H332: Harmful if inhaled

H302: Harmful if swallowed

H373: May cause damage to organs through prolonged or repeated exposure

H400: Very toxic to aquatic life

H410: Very toxic to aquatic life with long-lasting effects

16.4 General

The information given above is provided in good faith 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.

However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.