

Safety Data Sheet

Lead-Acid Batteries

Written on the basis of Annex II of Regulation EEC/EU n° 453/2010 Revision 09, June 2018

1.0 PRODUCT IDENTIFICATION

1.1 Filling Dry Cells: Lead-acid battery

1.2 Relevant uses: Industrial batteries for motive power and standby applications

1.3 Information about the supplier of the SDS: Concentric
1-888-619-8100
concentricusa.com

2.0 SAFETY WARNINGS AND HAZARDS

Using these products correctly, there are no special hazards to humans and the environment. According to Regulation (EC) no. 1907/2006, the battery is not a “substance” or a “preparation,” but rather it is an “article,” and no substance is intended to be released during its utilization. There is therefore no obligation to provide a safety data sheet in accordance with Regulation (EC) no. 1907/2006, Article 31.

Danger of Explosion:

An explosive mixture of oxyhydrogen gas occurs when charging batteries. Do not smoke, do not use naked flames or fires, and do not cause sparks in the immediate vicinity of the battery. Avoid short circuits in the battery terminals. Always use anti-static materials when cleaning. Do not store the battery in sealed containers; always store in a cool and well-ventilated area away from direct sunlight and heat sources.

Corrosive Hazard:

Lead-acid batteries contain sulphuric acid diluted in a water solution which is corrosive and harmful to the skin and eyes. Specific gravity 1.22 – 1.30 kg/l (30 – 40%).

Health Hazard:

There are no hazards to health if the battery is used and handled correctly and in accordance with the manufacturer's guidelines. The battery however contains lead compounds which are harmful if swallowed or inhaled.

3.0 COMPOSITION - INFORMATION ON COMPONENTS

Classification in accordance with Regulation (EC) no. 1272/2008:

Component	% in weight	CAS no.	EC no.	GHS symbols	Classification in accordance with Regulation (EC) no. 1272/2008
Lead metal and compounds	60 - 70	1309-60-0	215-174-5	  	(*) Acute Tox. 4 H302 – Harmful if swallowed H332 – Harmful if inhaled Repr. 1A H360Df – May damage fertility. May damage the unborn child. STOT Rep. Exp. 2 H373 – May cause damage to organs through prolonged or repeated exposure. Aquatic acute 1 H400 – Very toxic to aquatic life. Aquatic Chronic 1 H410 – Very toxic to aquatic life with long lasting effects.
Sulphuric acid solution 30 - 40% (Not applicable for dry charged cells)	20 - 30	7664-93-9	231-639-5		Skin Corr. 1A H314 – Causes severe skin burns.
Thermoplastic Polymers	6 - 9	---	---	---	---

(*) classification referred to lead dioxide.

4.0 FIRST AID MEASURES

First aid concerns above all exposure to the sulphuric acid solution (electrolyte), as all the other battery components are solid and are not considered hazardous if the battery is used and handled properly. Specific first aid facilities and equipment to be made available: bottles for eye washing or emergency eye washing fountains; showers.

- **Inhalation:** In the unlikely event of exposure by inhalation, move the injured person away from the contaminated area to fresh air. If the injured person has respiratory problems, seek medical advice immediately.
- **Skin contact:** If the acid comes into contact with skin, thoroughly wash the contaminated area with plenty of clear water. Remove all contaminated clothing. If skin irritation persists, seek medical advice immediately.
- **Eye contact:** If acid comes into contact with eyes, thoroughly wash eyes with plenty of clear water. Keep eyes open when rinsing. Seek medical advice immediately.
- **Swallowing:** Rinse mouth with plenty of clear water and drink water immediately. Do not induce vomiting. Seek medical advice immediately.

5.0 FIRE-FIGHTING SAFETY MEASURES

Lead-acid batteries are not highly combustible, the only hazard of combustion are the thermoplastic polymers which are a 6-9% of battery weight. Always wear suitable breathing apparatus when extinguishing a fire.

- **Suitable fire extinguishers:** Dry powder, foam, and CO₂.
- **Unsuitable fire extinguishers:** Do not use water extinguishers as water causes an exothermic reaction (heat release) when it comes into contact with the acid.

6.0 MEASURES IN CASE OF ACCIDENTAL RELEASE

- **Personal Protective Equipment (PPE):** In case of battery acid spillage always wear suitable Personal Protective Equipment (PPE) to avoid the electrolyte coming into contact with skin and eyes. Recommended PPE includes rubber gloves, rubber boots, protective anti-acid safety glasses, and overalls.
- **Environmental protective measures:** Always keep electrolyte or lead dust away from sewers, water drains and water sources.
- **Methods for cleaning up:** Neutralize with sodium or calcium carbonate. To contain spillage, use sand, earth or other similar absorbing material. Do not use rags or sawdust. Do not use water. Even though the sulphuric acid is diluted in a water solution, when it comes into contact with water it may result in an exothermic (heat release) reaction.

7.0 HANDLING AND STORAGE

Keep batteries away from heat sources, sparks or naked flames. Do not store batteries in sealed containers; store in a cool and well-ventilated area away from direct sunlight and heat sources.

8. EXPOSURE CONTROL & PERSONAL PROTECTION

Except for safety shoes, all other Personal Protective Equipment (PPE) is for protection against exposure to electrolyte, as other battery components are solid and are not considered hazardous (unless lead compounds are voluntary or accidentally swallowed).

Recommended Personal Protective Equipment (PPE):

- Anti-acid rubber gloves complying with EN374 standard (resistant to sulphuric acid);
- Safety glasses complying with EN166 standard (mask or visor);
- Anti-acid overalls;
- Rubber boots.

9.0 PHYSICAL & CHEMICAL PROPERTIES

Physical State:

- Solid with a prismatic shape

Electrolyte:

- Sulphuric acid in an aqueous solution
- Specific gravity 1.22 – 1.30 kg/l
- Corrosive, odourless, and non-flammable

10.0 STABILITY AND REACTIVITY

This product is stable and non-reactive under normal usage, transport, and storage conditions. The product releases hydrogen and oxygen gas fumes into the surroundings during charging. Proper ventilation is required. Always avoid naked flames and sparks in vicinity of the battery.

11.0 TOXICOLOGICAL INFORMATION

Not applicable.

12.0 ENVIRONMENTAL INFORMATION

The electrolyte solution reacts with water and organic substances causing damage to flora and fauna. Batteries also contain soluble lead compounds, which can be toxic for the aquatic environment.

13.0 WASTE MANAGEMENT

Used lead-acid batteries are classified as hazardous waste products and by law it is obligatory to dispose of them through authorized waste management centers for recycling. It is strictly illegal to dispose of used batteries in the environment. The EPA regulates hazardous waste products disposal & recycling, and requires documentation of chain-of-custody and cradle-to-grave supervision of such products.

14.0 TRANSPORT REGULATION

Batteries are considered non hazardous goods when shipped dry charged (i.e. without acid filling).

FLOODED LEAD-ACID BATTERIES:

By Land (ADR/RID – Road/Railway):

Proper Shipping Name	Batteries, wet, filled with acid, electric storage
UN No.	UN2794
Hazard Class	8
Packing Group ADR	Not assigned
Label required	8

If new and spent batteries meet the Special Provision 598, they are exempt from all ADR codes.

By Sea (IMDG Code):

Proper Shipping Name	Batteries, wet, filled with acid, electric storage
IMDG UN No.	UN2794
IMDG Hazard Class	8
Packing Group	Not assigned
Packing instructions P801	P801
IMDG Emergency Medical Schedules - EmS	F-A
S-B Label required	8



By Air (ICAO/IATA - DGR):

Proper Shipping Name	Batteries, wet, filled with acid, electric storage
ICAO/IATA UN No.	UN2794
ICAO/IATA Hazard Class	8
ICAO/IATA Packing Group	III
Label required	8



VRLA batteries, complying with special provision 238 of ADR and IMDG codes.

By Land (ADR/RID, U.S. DOT - Road/Railway):

Proper Shipping Name	Batteries, wet, non-spillable, electric storage
UN No.	UN2800
Hazard Class	8
Packing Group ADR	Not assigned
<i>Packing instructions</i>	P003 - P801a
Label required	8

If new and spent batteries meet the Special Provision 258, they are exempt from all ADR codes.
If non-spillable batteries meet the Special Provision 238, they are exempt from all ADR codes.

By Sea (IMDG Code):

Proper Shipping Name	Batteries, wet, non-spillable, electric storage
IMDG UN No.	UN2800
IMDG Hazard Class	8
Packing Group Not assigned	Not assigned
Packing instructions	P003
IMDG Emergency Medical Schedules - EmS	F-A,
S-B Label required	8



If non-spillable batteries meet the Special Provision 238, they are exempt from all IMDG codes provided that the battery terminals are protected against short circuits.

By Air (ICAO/IATA - DGR):

Proper Shipping Name	Batteries, wet, non-spillable, electric storage
ICAO/IATA UN No.	UN2800
ICAO/IATA Hazard Class	8
ICAO/IATA Packing Group	III
Label required	8



If non-spillable batteries meet the Special Provision A67, they are exempted from all ICAO/IATA-DRG codes provided that the batteries' terminals are protected against short circuits.

15.0 REGULATORY INFORMATION

Classification and Labeling

Risk phrases (these are purely indicative as not applicable to this product, but only to those parts containing the electrolyte):

H314 - Causes severe skin burns and eye damage

H302 - Harmful if swallowed

H332 - Harmful if inhaled

H360Df - May damage fertility. May damage an unborn child

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

Safety Advice - General

P102 - Keep out of reach of children

Safety Advice - Prevention

P210 - Keep away from heat, sparks, open flames, hot surfaces. No smoking.

Safety Advice - Reaction

P305 + P351 + P338 - IF IN EYES: rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P303 + P361 + P353 - IF ON SKIN (or hair): immediately remove all contaminated clothing. Rinse affected skin with plenty of water, or shower.

Where applicable, to make reference to normative following:

- D. Lgs. 152/2006 and following modifications;
- D. Lgs. 81/2008 and following modifications;
- Regulation (EC) no. 1907/2006 of European Parliament and Council of December 18, 2006;
- Regulation (EC) no. 1272/2008 of European Parliament and Council of December 16, 2008.

US Federal Regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the US EPA TSCA Inventory List.

CERCLA Hazardous Substance List (40 CFR 302.4)

- Antimony (CAS 7440-36-0)
- Electrolyte (Sulfuric acid) (CAS 7664-93-9)
- Lead and lead compounds (inorganic) (CAS 7439-92-1)

SARA 304 Emergency Release Notification

- Electrolyte (Sulfuric acid) (CAS 7664-93-9) 1000 LBS

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

- Lead and lead compounds (inorganic) (CAS 7439-92-1) Reproductive Toxicity
 - Central nervous system
 - Kidney
 - Blood
 - Acute toxicity

US State Regulations

US. Massachusetts RTK - Substance List

- Antimony (CAS 7440-36-0)
- Electrolyte (Sulfuric acid) (CAS 7664-93-9)
- Lead and lead compounds (inorganic) (CAS 7439-92-1)

US. New Jersey Worker and Community Right-to-Know Act

- Antimony (CAS 7440-36-0)
- Electrolyte (Sulfuric acid) (CAS 7664-93-9)
- Lead and lead compounds (inorganic) (CAS 7439-92-1)

US. Pennsylvania Worker and Community Right-to-Know Law

- Antimony (CAS 7440-36-0)
- Electrolyte (Sulfuric acid) (CAS 7664-93-9)
- Lead and lead compounds (inorganic) (CAS 7439-92-1)

US. Rhode Island RTK

- Antimony (CAS 7440-36-0)
- Electrolyte (Sulfuric acid) (CAS 7664-93-9)
- Lead and lead compounds (inorganic) (CAS 7439-92-1)

California Proposition 65 - Required Warning

- WARNING: Cancer and Reproductive Harm. www.P65warnings.ca.gov, or:
- PROPOSITION 65 WARNING: Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Batteries also contain other chemicals known to the State of California to cause cancer. WASH HANDS AFTER HANDLING.



California Proposition 65 - Chemical Abstracts Service (CAS)

- Arsenic (CAS 7440-38-2)
- Electrolyte (sulfuric acid) (CAS 7664-93-9)
- Lead and lead compounds (inorganic) (CAS 7439-92-1)

16.0 OTHER INFORMATION

The information contained herein is correct to the best of our knowledge at the time of issue. Such information refers to the specific product described herein and is not to be considered as guarantee of product quality and performance. The user is responsible for determining product suitability, accuracy, and the completeness of information provided herein for battery applications.

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over 25 years



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