

Information for the safe handling of Lead-Acid batteries

The *Lead-acid* battery is not a “substance”, a mixture or a *dangerous “preparation”* according to Regulation (EC) no. 1907/2006, it is an “article”; no substance is intended to be released during the utilization. There is no obligation, therefore, to provide a safety data sheet in accordance with the Regulation (EC) no. 1907/2006, article 31 and related Annex II (as amended by Regulation (EU) 2020/878).

This document, however, is made available to recipients and consumers in compliance with the provisions of Regulation (EC) no. 1907/2006, article 33.

1. Article identification and manufacturer

1.1 *Article*: Lead-acid battery

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

1.3 *Manufacturer*: MIDAC S.p.A.
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1.4 Emergency telephone *numbers*: ITALY: Pavia - Poison Center, +39 0382 24444
OTHER COUNTRIES: Poison control national center

2. Safety warnings and hazards

Using correctly intact battery, do not exist special hazards to humans and the environment.

Explosion Hazard:

An explosive mixture of oxyhydrogen gas occurs when charging batteries. Therefore, 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 skin and eyes. Specific gravity 1.22 ÷ 1.30 kg/l (30 – 40 %).

Electrical Hazard:





Lead-acid batteries 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.

Health Hazard:

There are no hazards to health if the battery is used and handled in the correct way. The battery however contains lead compounds which are harmful if swallowed or inhaled.

3. Composition/information on components

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

Component	% in weight	CAS no.	EC no.	GHS symbols	Classification in accordance with the Regulation (EC) no. 1272/2008
Lead metal and compounds	60 - 70	7439-92-1 1309-60-0	231-100-4 215-174-5	  	(*) Lact. H362 - May cause harm to breast-fed children (**) 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	---	---	---	---

(*) referred to lead metal that is classified as a substance of very high concern (SVHC) under REACH

(**) referred to lead dioxide

4. 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.

a) Inhalation:

Probability of exposure by inhalation is low, however in the event this should occur move the injured person away from the contaminated area to fresh air. If the injured person has respiratory problems, seek medical advice immediately.

b) 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.

c) 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.

d) Swallowing:

Rinse mouth with plenty of clear water and drink water immediately. Do not induce vomiting. Seek medical advice immediately.

Specific first aid facilities and equipment to be made available: bottles for eye washing or emergency eye washing fountains; showers.

5. 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.

a) Suitable fire extinguishers:

Dry powder, foam and CO₂.

b) Incorrect fire extinguishers:

Do not use water extinguishers as water causes an exothermic reaction (heat release) when it comes into contact with acid.

6. Measures in case of accidental release

a) Personal precautions:

In case of battery acid spillage always wear suitable PPE (personal protective equipment) to avoid the electrolyte coming into contact with skin and eyes such as rubber gloves, rubber boots protective anti-acid safety glasses and overalls.

b) Environmental protective measures:

Always keep electrolyte or lead dust away from sewers, water drains and water sources.

c) Methods for cleaning up:

Neutralise 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 (although the sulphuric acid is diluted in a water solution when it comes into contact with water it may have an exothermic (heat release) reaction).

7. 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 PPE (personal protective equipment) are 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 PPE (personal protective equipment):

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. Physical and chemical properties

Physical state of the product: solid with a prismatic shape

Electrolyte: Sulphuric acid in a water solution.

Specific gravity 1.22-1.30 kg/l.

Corrosive, odourless, non-flammable.

10. Stability and reactivity

This product is normally stable and non-reactive.

The amount of hydrogen and oxygen gas fumes released into the surroundings can be neglected. However, always avoid naked flames or sparks in vicinity of the battery.

11. Toxicological information

Not applicable.

12. 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. Waste management

Used lead-acid batteries are classified as “hazardous waste products” and by law it is obligatory to dispose of them through authorised waste management centres for recycling. It is strictly forbidden to dispose of used batteries in the environment. The EWC (European Wastes Catalogue) code for spent lead-acid batteries is **16 06 01**.

For further information and details about your local waste management centre please contact:

In Italy: **CONSORZIO ECOPEL** – Consorzio Nazionale Riciclo Piccoli Elettrodomestici

Via A. Scarsellini, 13 – 20161 MILANO

Tel. 02.66.26.70.01

14. Transport regulation

L Batteries are considered “NON-HAZARDOUS GOODS” if shipped dry charged (i.e. without acid filling).

a) 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
Packing instructions:	P801
Label required:	No. 8

New and used MIDAC batteries are exempt from all ADR codes as they comply with Special Provision 598 of ADR.

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
IMDG Emergency Medical Schedules – EmS:	F-A, S-B
Label required:	No. 8

By air (ICAO/IATA-DRG):

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:	No. 8

b) 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
Packing instructions:	P003 - P801
Label required:	No. 8

New and used MIDAC batteries are exempt from all ADR codes as they comply with Special Provision 598 of ADR.

Non spillable MIDAC batteries are exempt from all ADR codes as they comply with Special Provision 238 of ADR.

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
Packing instructions:	P003
IMDG Emergency Medical Schedules – EmS:	F-A, S-B
Label required:	No. 8

Non spillable MIDAC batteries are exempt from all IMDG codes as they comply with Special Provision 238 of IMDG code.

By air (ICAO/IATA-DRG):

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:	No. 8

Non spillable MIDAC batteries meet the Special Provision A67, therefore they are exempt from all ICAO/IATA-DRG codes provided their terminals are protected against short circuits.

15. Regulatory information

Classification and labelling

Risk phrases (they are purely indicative as **not applicable to this product**, but only to a part which is the electrolyte, the lead metal and the lead dioxide):

H314 – Causes severe skin burns and eye damage

H302 – Harmful if swallowed

H332 – Harmful if inhaled

H360Df – May damage fertility. May damage the unborn child

H362 - May cause harm to breast-fed children

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): remove/take off immediately all contaminated clothing. Rinse skin with water/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.

16. Other information

16.1 Substances of Very High Concern (SVHC)

As of June 27, 2018, **lead metal (CAS No. 7439-92-1)** was added to the four Lead compounds already included in the list of Substances of Very High Concern (SVHC) according to REACH Regulation: **lead monoxide, lead tetroxide, tetralead trioxide sulphate and pentalead tetraoxide sulphate.**

The batteries/cells ready for use (wet charged) do not contain oxides or sulphates that are classified SVHC; the content of **lead metal**, yet, varies but always exceeds the notification threshold of 0.1% in weight/weight.

The dry-charged batteries/cells (with dry charged plates, delivered without electrolyte) contain also **lead monoxide (PbO – CAS 1317-36-8)** in a quantity exceeding 0.1% in weight/weight. Once they are filled with electrolyte, all the Lead Monoxide is immediately transformed into Lead Sulphate (PbSO₄) that is not classified as a SVHC.

The unformed batteries/cells (“green”) contain the SVHC substances previously mentioned in a quantity exceeding 0.1% in weight/weight.

16.2 General

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 however responsible for determining product suitability, accuracy and completeness of the information provided herein for battery applications.

