

MATERIAL SAFETY DATA SHEET (MSDS)

Lead acid battery

Date of preparation: 09.07.2020

Version: 1.0/ENG

Revision date: -

Attention:

According Regulation (EC) No 1907/2006 (REACH) a safety data sheet must be provided for substances and preparations only. Batteries are not affected by the requirements of this Regulation.

1. Identification of the substance and of the manufacturer

1.1. Product identifier

Valve Regulated Lead Acid (VRLA) Batteries / Lead acid battery

1.2. Relevant identified uses of the substance or mixture and uses advised against

Battery

1.3. Details of the supplier of the safety data sheet

Supplier: CSG S.A.

Kalwaryjska Street 33

30-509, Cracow

Poland

Phone number: +48 12 444 62 47

e-mail address: info@greencell.pl

1.4. Emergency telephone number (POLAND):

General emergency number: 112

Police: 997

Fire brigade: 998

Emergency medical service: 999

2. Hazards identification

2.1. Classification of the substance or mixture

The classification of the substance or the mixture which results from the application of the classification criteria in Regulation (EC) No 1272/2008.

Healths hazards:

Acute Tox. 4; H302: Acute toxicity (oral), category 4. Harmful if swallowed.

Acute Tox. 4; H332: Acute toxicity (inhalation), category 4. Harmful if inhaled.

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Skin Corr. 1A; H314: Causes skin irritation, category 1A. Causes severe skin burns and eye damage.

Eye Dam. 1; H318: Causes serious eye damage, category 1. Causes serious eye damage.

Repr. 1A; H360: Reproductive toxicity, category 1A. May damage fertility or the unborn child.

STOT RE 2; H373: Specific target organ toxicity - repeated exposure, category 2. May cause damage to organs through prolonged or repeated exposure.

Environmental hazards:

Aquatic Chronic 3; H412: Hazardous to the aquatic environment - chronic, category 3. Harmful to aquatic life with long lasting effects.

2.2. Label elements

Label in accordance with Regulation (EC) No 1272/2008.

Hazardous substances

Contains lead.

Contains sulfuric acid 8,4%.

The concentration of the absorbed dilute sulfuric acid depends on the degree battery charge.

Hazard pictograms:



Signal word:

DANGER

Hazard statements:

H302+H332: Harmful if swallowed or if inhaled.

H314: Causes severe skin burns and eye damage.

H360: May damage fertility or the unborn child.

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

H412: Harmful to aquatic life with long lasting effects.

Precautionary statements:

P101: If medical advice is needed, have product container or label at hand.

P202: Do not handle until all safety precautions have been read and understood.

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

P263: Avoid contact during pregnancy/while nursing.

P264: Wash ... thoroughly after handling.

P273: Avoid release to the environment.

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.

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

P308+P313: IF exposed or concerned: Get medical advice/attention.

P363: Wash contaminated clothing before reuse.

P405: Store locked up.

P501: Dispose of contents/container in accordance with local/regional/national/ international regulation (to be specified).

Supplemental information on the label:

The product is not dangerous when the recommended precautions are used when handling the product.

2.3. Other hazards

The product is not dangerous if it is not damaged and if the instructions are followed handling.

3. Composition/information on ingredients

Lead battery.

Contains sulfuric acid 8,4%.

The concentration of the absorbed dilute sulfuric acid depends on the degree battery charge.

The plastic from which the battery casing is made may differ in composition depending on the type of product.

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Hazardous Components Chemical Identity	CAS Number	OSHA PEL	ACGIH TLV	Percent By Weight	EC Number	Average
Lead	7439-92-1	50 µg/m ₃	50 µg/m ₃	58.5-71.5%	231-100-4	65%
Sulfuric Acid	7664-93-9	100 µg/m ₃	1.00 mg/m ₃	7.3-9.5%	231-639-5	8.4%
Lead Oxide	1309-60-0	50 µg/m	500 µg/m	21.7-26.2%	215-174-5	24%

	Risk Phrases	Safety Phrases
Sulphuric Acid	R61,62,20/22,33	S1/2,S26,S30,S45
Lead Oxide	R35	None

Additional information

Due to the construction of the battery, hazardous components are not available to the user provided that the product is handled correctly.

4. First aid measures

The chemicals are contained in sealed cans. Upon normal conditions of use, risk of exposure occurs only if the battery is mechanically, thermally or electrically abused.

If chemicals leak attend these advices:

- Inhalation: Contents of an opened battery can cause respiratory irritation. Provide fresh air and call a doctor.
- Skin contact: Contents of an opened battery can cause skin irritation. Wash skin with soap and water.
- Eye contact: Contents of an opened battery can cause eye irritation. Immediately flush eyes thoroughly with water for 15 minutes and seek medical attention without delay.
- Ingestion: If contents of an opened cell has been swallowed do not give anything by mouth if the victim is unconscious or having convulsions. Rinse mouth thoroughly with water. Do not induce vomiting. At spontaneous vomiting bring victim in lean-forward position in order to minimize risk of suffocation Rinse mouth thoroughly with water again. Seek medical attention without delay .

If it should have come to an electric shock, your acting should be based on the following:

- do not touch the injured person until you have ensured the absence of voltage;
- take away exposed live cables from the injured person by using non-conductive items;
- primary objective in the treatment of unconscious patients is the maintenance of their breathing and cardiovascular system. If necessary you have to give cardiopulmonary resuscitation.
- cool burn injuries and cover them with an aseptic and non-fluffy wound dressing.

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5. Fire fighting measures

5.1. Extinguishing media

Suitable extinguishing media:

In case of fire use foam, carbon dioxide or dry agent (S43).

Unsuitable extinguishing media:

No data

5.2. Special hazards arising from the substance or mixture

Auto-ignition point (Hydrogen) 580° C at 760 mm Hg.

Wear positive-pressure breathing apparatus.

Flash point Hydrogen 259° C.

Flammable Limits in air, Lower 4.1%.

% by 3/4 vol. (Hydrogen).

Fire/explosion

Hydrogen and oxygen gases are produced in the cells during normal battery operation (hydrogen is flammable and oxygen supports combustion).

5.3. Advice for fire fighters

Wear tightly fitting safety goggles (EN 166), resistant protective clothing acids (EN 368/9) and use respiratory protection.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protection measures. Avoid contact with skin, eyes and clothes.

6.2. Environmental precautions

Do not discharge into drains, groundwater and surface waters.

6.3. Methods and material for containment and cleaning up

Spill the released mixture using absorbent materials (e.g. sand). Neutralize with sodium carbonate (soda). Collect the sorbent with the mixture and place it in a suitable waste container and then hand over to entities dealing with waste management. Proceed in accordance with the waste management regulations.

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6.4. Reference to other sections

See Section 7 of the Material Safety Data Sheet for handling and handling the mixture storage. Refer to Section 8 of the SDS on exposure controls and protection individual. See Section 13 of the Safety Data Sheet for waste disposal.

7. Handling and storage

7.1. Precautions for safe handling

Do not allow the battery contacts to short-circuit.
 Protect against mechanical damage.
 Do not open or disassemble the product.
 Follow the recommendations.
 Do not clean the battery with dry materials.
 Use wet materials.

7.2. Conditions for safe storage, including any incompatibilities

Store in a cool and sheltered place.
 Do not store charged lead-acid batteries below -50 ° C.
 It is recommended to store the batteries at room temperature.
 If a large number of batteries are stored, notify the relevant security authorities environment.
 Store the batteries according to the instruction manual.

7.3. Specific end use(s)

Battery

8. Exposure controls/personal protection

8.1. Control parameters

Lead OES / LTEL - ppm 0.15 mg/m³
 Lead Dioxide OES / LTEL - pmm 0.15 mg/m³

8.2. Exposure controls

Wear safety shoes with toe protector.
 Where internal components are liberated use rubber or neoprene boots.
 Wear goggles/safety glasses giving complete eye protection.
 excessive air contamination exists.
 Wear PVC mitts, gloves or gauntlets.

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9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Odour: Not applicable
Appearance: Sealed Valve Regulated lead Acid Battery
State under normal temp: Solid
Flash point (Hydrogen): 259° C

Internal components

pH - (Sulphuric acid): 1.3
Boiling point: Battery Electrolyte 110°C, Lead 1755°C
(at 760 mm/Hg)
Melting point: Lead 327.4 °C
Vapour pressure: 11.7
Vapour density: Battery Electrolyte 3.4 (air=1)
Specific gravity: Battery Electrolyte 1.3 g/cm³ (water=1)
Auto-ignition point: 580°C deg C at 760 mm/Hg

10. Stability and reactivity

VRLA Batteries are considered stable at normal conditions.
Keep away from heat and sources of ignition.
Incompatible with reducing agents. Incompatible with organic agents.
Decomposition products may include hydrogen.
Decomposition products may include sulphur oxides.

11. Toxicological information

Danger of cumulative effects. (R33).
May cause severe irritation.
May cause gastro-intestinal disturbances.
Can cause damage to the mucous membranes.

12. Ecological information

Ecotoxicology - no information available.

13. Disposal considerations

13.1. Waste treatment methods

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Classification: This material and/or its container must be disposed of as hazardous waste.

Disposal considerations: Do not discharge into drains or the environment, dispose to an authorised waste collection point.

14. Transport information

Land Transport	Land Transport (ADR / RID) <ul style="list-style-type: none">• UN No: UN2800• Classification ADR / RID: Class 8• Proper Shipping Name: BATTERIES, WET, NON-SPILLABLE electric storage• Packing Group ADR: not assigned• Tunnel code: E• ADR / RID: New and spent (used) batteries are exempt from all ADR /RID SP 598)
Sea Transport	Sea transport (IMDG Code) <ul style="list-style-type: none">• UN No: UN2800• Classification: Class 8• Proper Shipping Name: BATTERIES, WET, NON-SPILLABLE electric storage• EmS: F-A, S-B Non-Spillable batteries meet the requirements of Special Provision 238; they are exempt from all IMDG codes and are not subject to special regulation for sea Transport
Air Transport	Air Transport (IATA-DGR) <ul style="list-style-type: none">• UN No: 2800• Classification: Class 8• Proper Shipping Name: BATTERIES, WET, NON-SPILLABLE electric storage• Special Provision A48: Packaging test are not considered necessary• Special Provision A67: Power-Sonic's VRLA batteries meet the requirements of Packing Instruction 872. The battery has been prepared for transport so as to prevent: a) A short-circuit of the battery's terminals by packaging in a strong and sturdy carton box; AND/OR b) The battery has been fitted with an insulating cover (made from ABS) which prevents contact with the terminals. c) Unintentional activation is thus prevented The words "NOT RESTRICTED" and the Special Provision (SP) number must be indicated on all shipping documents• Special Provision: A164: The battery has been prepared for transport so as to prevent: a) Short-circuit of the battery's terminals by packaging in a strong and sturdy carton box; AND/OR b) The battery has been fitted with a cover (made from ABS) which prevents contact with the terminals c) Unintentional activation is thus prevented
All methods of transport	DO NOT PLACE VRLA BATTERIES INSIDE SEALED OR GAS-TIGHT ENCLOSURES: VRLA Batteries emit hydrogen gas which is highly flammable and will form explosive mixtures in air from approximately 4% to 76%. This

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can be ignited by a spark at any voltage, naked flames or other sources of ignition

15. Regulatory information

15. 1. Safety, health and environmental regulations/legislation specific for the substance or mixture

The product is an article and does not require a safety data sheet in accordance with the Regulation (EC) No. 1907/2006 (REACH). This safety data sheet is a voluntary source information for users to take necessary health-related measures human health, safety at work and environmental protection. According to the regulations, batteries and accumulators placed on the market should be labelled the symbol of selective collection. Batteries and accumulators containing more than 0.004% by weight of lead should be marked chemical symbol Pb. Batteries can also be additionally marked with a recycling code.

Notes to regulations concerning the transport of hazardous goods:

- European Agreement concerning the International Carriage of Dangerous Goods by Road;
- Convention concerning International Carriage by Rail;
- European Agreement concerning the International Carriage of Dangerous Goods by Inland Navigation;
- International Maritime Dangerous Goods Code;
- International Civil Aviation Organization / Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO-TI);
- International Air Transport Association / Dangerous Goods Regulations (IATA-DGR).

16. Other information

Under normal conditions of battery use, internal components will not present a health hazard. The information contained in this Safety Data Sheet is provided for battery electrolyte (acid) and lead, for exposure that may occur during battery production or container breakage or under extreme heat conditions such as fire. This Safety Data Sheet and the information therein does not constitute the user's own assessment of work place risk as required by other Health & Safety legislation.