

SAFETY DATA SHEET

Product Name	Lead Acid Battery	Issue Date	22.07.2006
Form Number		Revision Date	11
	GBF-YA-002	Revision Number	17.08.2020

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1 Substance / Mixture identity

Product Name: Lead Acid Battery

SDS Number: GBF-YA-002

1.2 The designated uses of the substance or mixture and non-recommended use

Intended use: Cars, generators, agricultural vehicles, defense vehicles

Non-recommended use: None of this is identified anywhere in the SDS

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture



Signal Word: Danger

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EC 1272/2008 (CLP) in accordance with the harmfulness classes and category codes:

Category	GHS Codes	Description
Acute Tox 4 Skin Corr. 1A Repr. 1B STOT RE. 2 Flamm Gas 1 Aquatic Acute 1 Aquatic Chronic 1	H302 H314 H332 H360 H373 H220 H410 P260 P301/P330/P331 P303/P361/P353 P304/P340 P305/P351/P338 P310	Harmful if swallowed. Causes severe skin burns and eye damage. Harmful if inhaled. May damage fertility or the unborn child. May cause damage to organs through prolonged or repeated exposure. Extremely flammable gas (Hydrogen) Very toxic to aquatic life with long lasting effects. Do not breathe dust/fume/gas/mist/vapors/spray. IF SWALLOWED: rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.
	P210 P260 P264 P280 P403 P405 P391 P273 P501	Keep away from heat/sparks/open flames/hot surfaces. No smoking. Do not breathe dust/fume/gas/mist/vapors/spray. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Store in well-ventilated area Store locked up Collect spillage. Avoid release to the environment. Dispose of contents/container in accordance with local/regional/national/international regulation.

WARNING: Batteries subjected to abusive charging at excessively high currents for prolonged periods of time without vent caps in place may create a surrounding atmosphere of an offensive, strong inorganic acid mist containing sulfuric acid.

3. COMPOSITION/INFORMATION OF INGREDIENTS

3.1 Substances

3.2 Mixtures

Substances or Mixtures	%	CAS No:
Lead /Lead Oxide	50-62	7439-92-1
Electrolyte [Sulfuric Acid (H ₂ SO ₄) and Water(H ₂ O)]	28-35	7664-93-9
Polypropylene (PP)	6-10	9003-07-0
Polyethylene (PE)	1-2	9002-88-4

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4. FIRST AID MEASURES

4.1 INHALATION: Sulfuric Acid: Remove to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Consult a physician.

Lead: Remove from exposure, gargle, wash nose and lips; consult physician.

4.2 INGESTION: Sulfuric Acid: Give large quantities of water; Do NOT induce vomiting or aspiration into the lungs may occur and can cause permanent injury or death; consult physician.

Lead: Consult physician immediately.

4.3 SKIN: Sulfuric Acid: Flush with large amounts of water for at least 15 minutes; remove contaminated clothing completely, including shoes. If symptoms persist, seek medical attention. Wash contaminated clothing before reuse. Discard contaminated shoes.

Lead: Wash immediately with soap and water.

4.4 EYES: Sulfuric Acid and Lead: Flush immediately with large amounts of water for at least 15 minutes while lifting lids; Seek immediate medical attention if eyes have been exposed directly to acid.

5. FIRE FIGHTING MEASURES

5.1 Fire Extinguishers

Flash Point: Not Applicable

Flammable Limits: : LEL=4.1% (Hydrogen gas in air) UEL: 74.2%

Extinguishing Media: CO₂; foam; dry chemical. Do not use carbon dioxide directly on cells. Avoid breathing vapors. Use appropriate media for surrounding fire

5.2 Fire Fighting Procedures:

Use positive pressure, self-contained breathing apparatus. Beware of acid splatter during water application and wear acid-resistant clothing, gloves, face and eye protection. If batteries are on charge, shut off power to the charging equipment, but note that strings of series connected batteries may still pose risk of electric shock even when charging equipment is shut down.

5.3 Hazardous Combustion Products:

Highly flammable hydrogen gas is generated during charging and operation of batteries. If ignited by burning cigarette, naked flame or spark, may cause battery explosion with dispersion of casing fragments and corrosive liquid electrolyte. Carefully follow manufacturer's instructions for installation and service. Keep away all sources of gas ignition and do not allow metallic articles to simultaneously contact the negative and positive terminals of a battery. Follow manufacturer's instructions for installation and service.

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6. ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

Stop flow of material, contain/absorb small spills with dry sand, earth or vermiculite. Do not use combustible materials. If possible, carefully neutralize spilled electrolyte with soda ash, sodium bicarbonate, lime, etc. Wear acid-resistant clothing, boots, gloves, and face shield. Do not allow discharge of un-neutralized acid to sewer. Acid must be managed in accordance with approved local, state, and federal requirements. Consult state environmental agency and/or federal EPA.

6.2 Environmental precautions

Prevent entry into waterways, sewers, basements or confined areas. Runoff from fire control and dilution water may be toxic and corrosive and may cause adverse environmental impacts.

7. HANDLING AND STORAGE

7.1 Handling

Handle batteries cautiously. Do not tip to avoid spills (if filled with electrolyte). Avoid contact with internal components. Wear protective clothing when filling or handling batteries. Follow manufacturer's instructions for installation and service. Do not allow conductive material to touch the battery terminals. Short circuit may occur and cause battery failure and fire. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco. Eyewash stations and safety showers should be provided with unlimited water supply. Handle in accordance with good industrial hygiene and safety practice.

7.2 Storage

Store in a cool/low-temperature, well-ventilated place away from heat and ignition sources. Batteries should be stored under roof for protection against adverse weather conditions. Place cardboard between layers of stacked batteries to avoid damage and short circuits. Store batteries on an impervious surface.

Storage class: Class 8B: Non-flammable corrosive materials.

7.3 Charging

There is a possible risk of electric shock from charging equipment and from strings of series connected batteries, whether or not being charged. Shut-off power to chargers whenever not in use and before detachment of any circuit connections. Batteries being charged will generate and release flammable hydrogen gas. Charging space should be ventilated. Keep battery vent caps in position. Prohibit smoking and avoid creation of flames and sparks nearby. Wear face and eye protection when near batteries being charged.

7.4 Other Precautions

Good personal hygiene and work practices are mandatory. Refrain from eating, drinking or smoking in work areas. Thoroughly wash hands, face, neck and arms before eating, drinking and smoking. Work clothes and equipment should remain in designated lead contaminated areas and never taken home or laundered with personal clothing. Wash soiled clothing work clothes and equipment before reuse.

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8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Occupational Exposure Limits (mg/m3)					
	OSHA	NIOSH	PEV	ONTARIO OEL	EU OEL
Lead	0.05	0.05	0.05	0.05	0.15
Electrolyte (Sulfuric Acid)	1	1	1	0.2	0.05
Calcium	Not Established	Not Established	Not Established	Not Established	Not Established
Arsenic	0.01	0.01	0.01	0.01	0.01
Tin	2	2	2	2	2

8.1 Engineering Controls (Ventilation)

Should be located in well ventilated areas. Mechanical ventilation equipment is being performed and the equipment acid-resistant. Caution should be exercised when moving, and the lids should be kept closed. The deterioration in the box, if you have a situation such as breakage, avoid contact with the body. During the charging process protective clothing, eye and face protectors.

8.1.1 Hygiene Practices: Wash hands thoroughly before eating, drinking or smoking after handling batteries.

8.1.2 Skin Protection: None required under normal conditions. If battery case is damaged, rubber or plastic acid-resistant gloves with elbow-length gauntlet.

8.1.3 Eye Protection: None required under normal conditions. If battery case is damaged, chemical goggles or face shield.

8.1.4 Other Protection: Under severe exposure or emergency conditions, wear acid-resistant clothing, gloves and boots. In areas where water and sulfuric acid solutions are handled in concentrations greater than 1%, emergency eyewash stations and showers should be provided, with unlimited water supply.

9. PHYSICAL AND CHEMICAL PROPERTIES

The following information is relevant to ingredients only and is only valid when contents are exposed.

	Lead	Electrolyte	Plastics
Boiling Point @760 mm Hg	1070°C	95-115 °C	NA
Vapor Pressure	NA	100	NA
Appearance	Silver gray metal, white, powder brown	Tiskotropik Gel	Plastic plates, Jars, Cover
Density	11,34	1,23 – 1,35 g/cm ³	NA
LEL (Lower Explosive Limit)		4%(Hydrogen)UEL (Upper Explosive Limit) 74% (Hydrogen)	

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10. STABILITY & REACTIVITY DATA

10.1 Reactivity

Not reactive.

10.2 Chemical Stability

Stable at normal temperatures and pressures.

10.3 Possibility of Hazardous Reactions

None under normal processing.

10.4 Conditions to Avoid

Prolonged overcharge at high current; sources of ignition.

10.5 Incompatibilities

Electrolyte (Water and Sulfuric Acid Solution) : Contact with combustibles and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, sulfur dioxide gas, strong oxidizers, and water. Contact with metals may produce toxic sulfur dioxide fumes and may release flammable hydrogen gas.

Lead compounds: Avoid contact with strong acids, bases, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen and reducing agents.

10.6 Hazardous Decomposition Products:

Electrolyte: Sulfur dioxide, carbon monoxide, sulfuric acid mist, sulfur dioxide, hydrogen sulfide.

Lead compounds: Temperatures above the melting point are likely to produce toxic metal fume, vapor, or dust; contact with strong acid or base or presence of nascent hydrogen may generate highly toxic arsine gas.

11. TOXICOLOGICAL DATA

11.1 Acute Effects

Inhalation: Breathing of sulfuric acid vapors or mists may cause severe respiratory irritation.

Eye contact: Severe irritation, burns, and ulceration.

Skin contact: Severe irritation, burns, and ulceration.

Ingestion: May cause severe irritation of the mouth, throat, esophagus and stomach.

Oral LD50 (rat) : 2140 mg/kg (%25 Electrolyte)

Oral LC50 (guinea pig) : 510 mg/m3

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Oral LC50 (rat) : 375 mg/m3

Elemental Lead: Acute Toxicity Point Estimate= 4500 ppmV

Elemental Lead: Acute Toxicity Estimate (ATE) = 500 mg / kg body weight

11.2 Chronic Effects

Sulfuric Acid: Possible erosion of tooth enamel, inflammation of nose, throat & bronchial tubes. Lead Compounds: Anemia; neuropathy, particularly of the motor nerves, with wrist drop; kidney damage; reproductive changes in males and females. Repeated exposure to lead and lead compounds in the workplace may result in nervous system toxicity. Some toxicologists report abnormal conduction velocities in persons with blood lead levels of 50 µg/100 ml or higher. Heavy lead exposure may result in central nervous system damage, encephalopathy and damage to the blood-forming (hematopoietic) tissues.

11.3 Carcinogenicity

The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mist containing sulfuric acid" as a Category 1 carcinogen, a substance that is carcinogenic to humans. **This classification does not apply to liquid forms of sulfuric acid or sulfuric acid solutions contained within a battery.** Batteries subjected to abusive charging at excessively high currents for prolonged periods without vent caps in place may create a surrounding atmosphere of the offensive strong inorganic acid mist containing sulfuric acid. There is evidence that soluble lead compounds may have a carcinogenic effect, particularly on the kidneys of rats. However, the mechanisms by which this effect occurs are still unclear. Epidemiology studies of workers exposed to inorganic lead compounds have found a limited association with stomach cancer. This has led to the classification by IARC that inorganic lead compounds are probably carcinogenic to humans (Group 2A).

12. EXOLOGICAL INFORMATION

12.1 Environmental Fate

Lead is very persistent in soil and sediments. No data on environmental degradation. Mobility of metallic lead between ecological compartments is slow. Bioaccumulation of lead occurs in aquatic and terrestrial animals and plants but little bioaccumulation occurs through the food chain. Most studies include lead compounds and not elemental lead.

12.2. Environmental Toxicity: Aquatic Toxicity:

Sulfuric Acid:

Sulfuric acid: 24 hr LC₅₀ , freshwater fish (Brachydanio rerio) : 82 mg/L

Sulfuric acid: 96 hr LOEC, freshwater fish (Cyprinus carpio) : 22 mg/L

Lead: 48 hr LC₅₀ (modeled for aquatic invertebrates) : <1 mg/L , based on lead bullion

Arsenic: 24 hr LC₅₀, freshwater fish (Carrassius auratus) >5000 g/L

Additional Information

- No known effects on stratospheric ozone depletion
- Volatile organic compounds: 0% (by Volume)
- Water Endangering Class (WGK): NA

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13. DISPOSAL INFORMATION

Spent batteries: Send to secondary lead smelter for recycling. Spent lead-acid batteries are not regulated as hazardous waste when the requirements of 40 CFR Section 266.80 are met. Spilled sulfuric acid is a characteristic hazardous waste; EPA hazardous waste number D002 (corrosivity) and D008 (lead).

Electrolyte: Place neutralized slurry into sealed acid resistant containers and dispose of as hazardous waste, as applicable. Large water diluted spills, after neutralization and testing, should be managed in accordance with approved local, state, and federal requirements. Consult state environmental agency and/or federal EPA.

Following local, State/Provincial, and Federal/National regulations applicable to end-of-life characteristics will be the responsibility of the end-user.

14. TRANSPORT INFORMATION

Proper Shipping Name: Batteries, wet, filled with acid

Hazard Class: 8

ID Number: UN2794

Packing Group: III

Labels: Corrosive

49 CFR 173.159(e) Specifies that when transported by highway or rail, electric storage batteries containing electrolyte or corrosive battery fluid are not subject to any other requirements of this subchapter, if all of the following are met:

- (1) No other hazardous materials may be transported in the same vehicle;
- (2) The batteries must be loaded or braced so as to prevent damage and short circuits in transit;
- (3) Any other material loaded in the same vehicle must be blocked, braced, or otherwise secured to prevent contact with or damage to the batteries; and
- (4) The transport vehicle may not carry material shipped by any person other than the shipper of the batteries.

If any of the above-referenced requirements are not met, the batteries must be shipped as fully-regulated Class 8 Corrosive hazardous materials.

IATA Dangerous Goods Regulations (DGR):

The shipping information is as follows:

Proper Shipping Name: Batteries, wet, filled with acid

Packing Group: N/A

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Hazardous Class: 8

Label/Placard Required: Corrosive

UN Identification: UN2794

Reference IATA Packing Instruction 870 (IATA DGR 56th Edition)

IMDG Code:

The shipping information is as follows:

Proper Shipping Name: Batteries, wet, filled with acid

Packing Group: N/A

Hazardous Class: 8

Label/Placard Required: Corrosive

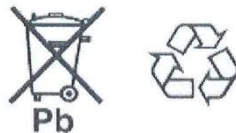
UN Identification: UN2794

Marine Pollutant: YES

Reference IMDG Code Packing Instruction P801







15.REGULATORY INFORMATION

Safety, Health and Environmental Protection Instructions/Legislation Specific for the Substance or Mixture



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 <p>No smoking, no open flames, no sparks.</p>	 <p>Corrosive</p>
 <p>Wear Safety goggles.</p>	 <p>Observe operating instructions</p>
 <p>Keep away from children.</p>	 <p>Explosive gas mixture</p>

For the implementation of legislative provisions in this safety data sheet, or other national measures that may be of interest, observe the following regulations.

- *Work with asbestos health and safety regulation*
- *Regulation on health and safety precautions working with chemicals*
- *Regulation On The Use Of Personal Protective Equipment In Workplaces*
- *Manual Handling Regulations*
- *Regulation On Control Of Hazardous Wastes*
- *Regulation on prevention of major industrial accidents and the reduction of the effects*
- *Harmful Regulation On Safety Data Sheets For Substances And Mixtures*
- *Classification Of Substances And Mixtures, Labelling And Packaging Regulation*
- *Occupational health and safety regulation*

16. OTHER INFORMATION

This document 91/155/EEC, 2001/58/EC, ISO 11014-1, pursuant to 13 December 2014 the Regulation on safety data sheets for substances and mixtures harmful 29204 date and" prepared within the framework of certified and accredited experts, as foreseen by the regulation prepared and approved by the staff.

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16.3 Safety Data Sheet Form Number

GBF-YA-000002

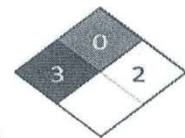
16.3 FR(PR-ÇYS/4.4.6-01)01Düzenleme No

16.4 Revisions/Reviews

CAR PARTS DISTRIBUZIONE S.R.L. prepared by Safety Data Sheet according to Regulation No. 29204 December 2014 and 13 are arranged.

16.5 Descriptions Of Relevant Statements

H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H332	Harmful by inhalation.
H360	May harm the unborn child or can cause reproductive harm.
H373	May cause damage to organs through prolonged or repeated exposure.
H220	Excessive flammable gas
H410	In the aquatic environment, long-lasting, very toxic effect.
P260	Dust/fume/gas/mist/vapors/spray do not breathe.
P301/P330/P331	If swallowed: rinse mouth. Don't try to quit.
P303/P361/P353	Skin (or hair): in case of contact immediately remove all contaminated clothing/remove. Your skin rinse with plenty of water.
P304/P340	INHALATION: remove victim to fresh air and keep in a position comfortable for breathing.
P305/P351/P338	In case of contact with eyes: Rinse cautiously with water for several minutes. Plugged in and easy to do remove contact lenses, if. Continue rinsing.
P310	Immediately TELEPHONE No. 114 of the National poison control center or doctor/physician call.



Further information: NFPA Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3=Serious 4 = Severe NFPA ratings

16.6 Other

In order to ensure the protection of human health and the environment against exposure to workers and the overall safety of the product safety data sheets and label clearly read the name of the formation of Culture and on the use of the information, it is recommended that appropriate training be taken.

- Sources of key data used in this safety data sheet regulation;
- CAR PARTS DISTRIBUZIONE S.R.L. prepared by the safety data sheet
- "Harmful Regulation on safety data sheets for substances and mixtures" and attachments
- "Measures and the Regulation on security measures and related carcinogens," and attachments, and Other relevant regulations
- UN ADR, IMDG, IATA lists, E and relevant EU Directives,
- Other help resources.

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16.7 Additional Information

- The information provided in this safety data sheet was prepared on the date the best experience which are available, has been prepared based on our knowledge and beliefs. The information provided on safe handling, use, processing, storage, transportation, disposal and disposal are designed to provide guidance for.
- This information is specified in the documents only unless used in conjunction with the designated item of this article applies to the case of other substances or in any process if used may not be valid.
- Observe the information in the safety data sheet for use.
- Appropriate safety information This product safety data sheet accordance with the Regulations defines, but does not guarantee the properties of the product and the assurance.
- Does not establish a legally valid contractual relationship does not constitute any guarantee and product specifications.

16.8 Abbreviations

ADR=European Agreement on International Carriage of Dangerous Goods by Road

TLV= Threshold Limit Value

TWA= Time Weighted Average

CAS = Chemical Abstracts Service

CFR = Code of Federal Regulations

CPR = Controlled Products Regulations

DOT = Department of Transportation

EINECS = European Inventory of Existing Commercial Chemical Substances

EPA = Environmental Protection Agency

IARC = International Agency for Research on Cancer

IATA = International Air Transport Association

IMDG =International Maritime Dangerous Goods Code

mg/Kg = milligrams per Kilogram

mg/L = milligrams per Liter

mg/m3 = milligrams per Cubic Meter

MSHA = Mine Safety and Health Administration

NA = Not Applicable or Not Available

NIOSH = National Institute for Occupational Safety and Health

NTP = National Toxicology Program

OSHA = Occupational Safety and Health Administration

RID=European Agreement on International Transport of Dangerous Goods by Rail

STEL = Short Term Exposure Limit

TDG = Transport Dangerous Goods