Safety Data Sheet

for AGM and GEL Accumulators (Lead-acid Batteries)

The REACH regulation (1907/2006/EC) has replaced the directive on safety data sheets (91/155/EC). REACH describes the setting up and updating of safety data sheets for substances and preparations. For articles – like lead-acid batteries – safety data sheets are not required.
The notes are meant to help to comply with legal requirements but do not replace them.

1 – Substances / formulation and company name

Trade Name	**Lead acid battery, wet, non-spillable**
Product Details	**QUALITY-BATTERIES – LS, LSX, LFT, LH, LC, LCP, GEL, YT**
Usage / Applications	**LS / LSX / LFT / LH:** Emergency lighting, fire and smoke detectors, security systems, industry, telecommunication, uninterruptible power supply (UPS), utility switching, commercial and private use, etc. **LC / LCP:** Medical technic, wheelchairs, caravan, naval, cleaning machines, portable lifts, uninterruptible power supply (UPS), electric scooters, golf trolleys, etc. **GEL:** Cleaning vehicles, transportation systems, mobile lifts, electric vehicles, wheelchairs, electric scooters, electric tractors, etc. **YT:** motorcycle, jet skies, lawn mowers etc.
Manufacturer / Supplier	**AKKU SYS Akkumulator- und Batterietechnik Nord GmbH** Verbindungsweg 48, 25469 Halstenbek, Germany
Telephone	+49 4101 3 76 76 0
E-Mail	info@akkusys.de
Information + Emergency Contact	**+49 4101 3 76 76 0**

2 – Hazardous substances

CAS-No.	Description	Content	R-phrases
7439-92-1	Blue lead	–	–
7439-92-1	Lead alloys with traces of As, Sb	34 weight %	
	Lead-containing battery paste	31 weight %	R 61; R 20/22; R 33; R 62; R 52/53
7664-93-9	Sulphuric acid	34 weight %	R 35

3 – Potential hazards

No hazards in case of an intact battery and observation of the instructions for use.

Lead-acid batteries have significant characteristics:

- They contain diluted sulphuric acid, which may cause severe acid burns.
- During the charging process they develop hydrogen gas and oxygen, which under certain circumstances may turn into an explosive mixture.
- They have an internal voltage, which – depending on their level – can be dangerous to the human body when touched.

Standard EN 50272-2 includes safety requirements for batteries and battery installations and describes the basic precautions to protect against dangers caused by electric currents, leaking gasses or electrolytes.

Batteries are marked with the following hazard symbols:

No smoking, no naked flames, no sparks

Wear safety goggles

Battery acid

Note operating instructions

Explosive gas mixture

4 – First-aid measures

General information:

Component		Measures
Sulphuric Acid		Acts corrosive and damages tissue
	After contact with skin	Rinse with water, remove and wash wetted clothing
	After inhalation of acid mist[1)]	Inhale fresh air
	with the eyes[1)]	Rinse under running water for several minutes
	after swallowing[1)]	Drink a lot of water immediately, and swallow activated carbon
Lead-containing Battery Paste		Classified as toxic for reproduction
	After contact with skin	Clean with water and soap

[1)] Consult a medical doctor!

5 – Fire-fighting measures

Suitable Extinguishing Agents	When electrical devices are set in fire in general water is the suitable extinguishing agent. For incipient fires CO_2 is the most effective agent. Fire brigades are trained to keep a distance of 1 m when extinguishing an electrical fire (up to 1 kV) with spray jet and a distance of 5 m with full jet. For electrical fires in electrical installations with voltages > 1 kV other distances are applicable depending on the respective voltage. For fires in photovoltaic installations other rules apply.
Unsuitable Extinguishing Agents	Powder fire extinguishers are not suitable, amongst others because of only minor efficiency, possible risks or collateral damages.
Special Protective Equipment	For larger stationary battery installations or larger stored quantities: protective goggles, respiratory and acid protective equipment, acid-proof clothing.

6 – Measures to be taken in case of unintentional release

Cleaning / take-up procedures:

- Use a bonding agent, such as sand, to absorb split acid
- Use lime / sodium carbonate for neutralisation, dispose with due regard to the official local regulations
- Do not permit penetration into the sewage system, the earth or water bodies

7 – Handling and storage

Storage

- Frost-free under roof
- Prevent short circuits
- Protect plastic housings against exposition to direct sun radiation
- Seek agreement with local water authorities in case of larger quantities
- If batteries have to be stored in storage rooms, it is imperative that the instructions for use are observed

Working on Batteries

Wear protective goggles and electrostatic clothing and protective shoes

8 – Exposure limits and personal protective equipment

8.1 No exposure caused by lead and lead-containing battery paste
8.2 Possible exposure caused by sulphuric acid and acid mist during filling and charging

CAS-No.	7664-93-9
R-phrases	
R 35	Causes serious chemical burns
S-phrases	
S 1/2	Keep looked up and out of reach of children
S 26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
S 30	Never add water to this product (applies for concentrated acid only)
S 45	In case of accident or if you feel unwell seek medical advice immediately (show the label where possible)
Threshold value on workplace	0,1 mg/m³
Hazard symbol	C, corrosive
Personal protective equipment	Rubber, PVC gloves, acid-proof goggles, acid-proof clothing, safety boots.

9 – Physical and chemical properties

Component	Appearance		Safety-related data	
Lead	Form	solid	Solidification point	327 °C
	Colour	grey	Boiling point	1740 °C
	Odour	odourless	Solubility in water (25 °C)	low (0.15 mg/l)
			Density (at 20 °C)	11,35 g/cm³
Sulphuric Acid	Form	liquid	Solidification point	-35 to -60 °C
(30 – 38,5 %)	Colour	Colourless	Boiling point	ca. 108 to 114 °C
	Odour	odourless	Solubility in water (25 °C)	complete
			Density (at 20 °C)	1,2 to 1,3 g/cm³

10 – Stability and reactivity

Component	
Sulphuric Acid (30 – 38,5%)	Corrosive, inflammable liquid • Thermal decomposition at 338 °C • Destroys organic materials such as cardboard, wood, textiles • Reacts with metals producing hydrogen • Vigorous reaction with lyes and alkalis

11 – Data on toxicology of the constituents

Component	
Sulphuric Acid (30 – 38,5%)	• Acts intensely corrosive on skin and mucous membranes • The inhalation of mists may cause damage to the respiratory tract
Lead-containing Battery Paste	• May cause damage to the blood, nerves, and kidneys when taken in • Lead-containing battery paste is classified as toxic for reproduction

12 – Data on the ecology of the constituents

Preliminary remark:
Relevant only if release is caused by destruction of the battery

Component	
Sulphuric Acid (30 – 38,5%)	• Water-polluting liquid within the meaning of the German Water Resources Act (WHG). Water pollution class: 1 (slightly water polluting) • As described in section 6 use a bonding agent, such as sand, to absorb spilled acid or neutralise using lime /sodium carbonate • Dispose with due regard to official local regulations • Do not allow progression into the sewage system, soil or water bodies
Lead-containing Battery Paste	• Are hardly soluble in water • Lead can be dissolved in an acidic or alkaline environment • Chemical and physical treatment is required for elimination from water • Waste water containing lead must not be disposed in untreated conditions

13 – Recycling information

The points of sale, the manufacturers and importers of batteries, respectively the metal dealers take back dead batteries, and render them to the secondary lead smelters for processing.

Spent lead-acid batteries are not subject to accountability of the German Waste Prove Ordinance. They are marked with the recycling / return symbol and the WEEE symbol. (Refer to chapter 15. “Marking”)

Spent lead-acid batteries are not allowed to be mixed with other batteries in order not to complicate the processing.

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

14 – Transport instructions

14.1 Batteries, wet, non-spillable

Land Transport (ADR / RID)

- Class 8
- UN No: 2800
- Proper shipping name: BATTERIES, WET, NON-SPILLABLE
- Packing group: none
- Packing instruction: P 003, P801a
- Hazard label: 8
- Special provision 238 para. a) and b): **no transport as dangerous goods**

Non-spillable batteries are not subject to other requirements of ADR/RID when complying to the requirements according to special provision 238. An appropriate manufacturer's declaration is necessary.

Sea Transport (IMDG Code)

- Class 8
- UN No: 2800
- Proper shipping name: BATTERIES, WET, NON-SPILLABLE
- Packing group: none
- Packing instruction: P 003 and PP 16
- Hazard label: 8
- EmS: F-A, S-B
- Special provision 238 No. 1) and 2): **no transport as dangerous goods**

Non-spillable batteries are not subject to other requirements of IMDG Code when complying to the requirements according to special provision 238. An appropriate manufacturer's declaration is necessary.

Air Transport (IATA-DGR)

- Class 8
- UN No: 2800
- Proper shipping name: BATTERIES, WET, NON-SPILLABLE
- Packing group: none
- Packing instruction: 872
- Hazard label: 8
- Special provision A 67: no transport as dangerous goods

Non-spillable batteries are not subject to other requirements of IATA-DGR when complying to the requirements according to special provision A 67. An appropriate manufacturer's declaration is necessary.

14.2 Damaged batteries:

Land Transport (ADR / RID)

- Class 8
- UN No: 2794
- Proper shipping name: BATTERIES, WET, FILLED WITH ACID
- Packing group: none
- Packing instruction P 801a: transport as dangerous goods (packing in accu boxes) or Special provision VC1, VC2, AP8: transport as dangerous goods (in bulk)
- Hazard label: 8
- ADR tunnel restriction code: E
- Note: these references can be applied by transportation of lead-acid batteries of UN No: 2800 as well

15 – Marking

In accordance with the German law governing the sale, return and environmentally sound disposal of batteries (Batteries Act – Batteriegesetz, BattG) from 25 June 2009 (National transposition of the directive 2006/66/EC (battery directive) lead-acid batteries have to be marked with the WEEE symbol with the chemical symbol „Pb".

In addition, the ISO-return / recycling symbol is rendered.

The manufacturer, respectively the importer of the batteries shall be responsible for the attachment of the symbols. In addition, a consumer / user information on the significance of the symbols has to be attached, which is required by the Germany Battery Ordinance quoted above as well as by the voluntary agreement of the battery manufacturers concluded with the German Federal Minister of Environment in September 1988.

The manufacturers and sellers of the batteries subject to identification requirements (packaging, technical instructions, leaflets) shall be responsible for this information.

16 – Other information

The data rendered above are based on a today's knowledge, and do not constitute an assurance or properties. Existing laws and regulations have to be observed by the recipient of the product in own responsibility.

AKKU SYS Akkumulator- und Batterietechnik Nord GmbH
Verbindungsweg 48 · 25469 Halstenbek / Hamburg · GERMANY
Tel. +49 4101 | 3 76 76-0 / Fax +49 4101 | 3 76 76-66 / info@akkusys.de / www.akkusys.de