SAFETY DATA SHEET

1. Identification

Product identifier **Lead Acid Battery Wet, Filled With Acid**

Other means of identification

Synonyms may include gel/absorbed electrolyte type lead acid batteries

Recommended use of the chemical and restrictions on use

Recommended use Electric storage battery.

Restrictions on use Not available.

Details of manufacturer or importer

Manufacturer

Manufacturer/Supplier Banner GmbH
Address Banner Straße 1
Telephone number +43/732/3888-0
E-mail

2. Hazard(s) identification

Classification of the hazardous chemical

Physical hazards	Not classified.	
Health hazards	Acute toxicity, oral	Category 4
	Acute toxicity, inhalation	Category 4
	Skin corrosion/irritation	Category 1
	Serious eye damage/eye irritation	Category 1
	Reproductive toxicity	Category 1
	Specific target organ toxicity, single exposure	Category 1 (Respiratory system)
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
	Specific target organ toxicity, repeated exposure	Category 1 (respiratory system)
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 1
	Hazardous to the aquatic environment, long-term hazard	Category 1

Label elements, including precautionary statements

Hazard symbol(s)

Corrosion | Health hazard | Environment | Exclamation mark

Signal word Danger

Hazard statement(s) Harmful if swallowed. Harmful if inhaled. Causes severe skin burns and eye damage. May damage fertility or the unborn child. Causes damage to organs (Respiratory system). Causes damage to organs (respiratory system) through prolonged or repeated exposure. May cause respiratory irritation. Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not eat, drink or smoke when using this product. Do not breathe dust. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling. Avoid release to the environment.
Response	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Get medical advice/attention. Immediately call a POISON CENTER or doctor/physician. Collect spillage.
Storage	Store in a well-ventilated place. Keep container tightly closed.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards which do not result in classification

Under normal conditions of processing and use, exposure to the chemical constituents in this product is unlikely. The battery should not be opened or burned. Exposure to the ingredients contained within or their combustion products could be harmful.

Supplemental information

In use, may form flammable/explosive vapor-air mixture.

3. Composition/information on ingredients

Mixture

Identity of chemical ingredients	CAS number and other unique identifiers	Concentration of ingredients
Lead and lead compounds (inorganic)	7439-92-1	43 - 70
Electrolyte (Sulfuric acid)	7664-93-9	20 - 44
Antimony	7440-36-0	3 - 5

Composition comments

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.
Content composition concentrations will vary with battery type/size.

4. First-aid measures

Description of necessary first aid measures

Inhalation	Exposure to contents of an open or damaged battery: Move injured person into fresh air and keep person calm under observation. Get medical attention if any discomfort continues.
Skin contact	Exposure to contents of an open or damaged battery: Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention if irritation develops and persists.
Eye contact	Exposure to contents of an open or damaged battery: Flush thoroughly with water for at least 15 minutes. Hold eyelids open during flushing. If irritation persists, repeat flushing. Get medical attention if irritation develops and persists.
Ingestion	Exposure to contents of an open or damaged battery: Rinse mouth thoroughly with water. DO NOT induce vomiting because of danger of aspirating liquid into lungs. Get medical attention immediately.

Personal protection for first-aid responders

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

Symptoms caused by exposure

Under normal conditions of processing and use, exposure to the chemical constituents in this product is unlikely. The battery should not be opened or burned. Exposure to the ingredients contained within or their combustion products could be harmful.
Heavy lead exposure may result in central nervous system damage, encephalopathy and damage to the blood-forming (hematopoietic) tissues.

Medical attention and special treatment

Treat symptomatically.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media	Dry chemical, foam, carbon dioxide, water fog.
Unsuitable extinguishing media	Do NOT use water on live electrical circuits.

Specific hazards arising from the chemical	Batteries evolve flammable hydrogen gas during charging and may increase fire risk. Containers may explode when heated.
Special protective equipment and precautions for fire fighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.
Fire fighting equipment/instructions	Use standard firefighting procedures and consider the hazards of other involved materials.
Hazchem code	Not available.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	Avoid contact with skin.
For emergency responders	Keep unnecessary personnel away.
Environmental precautions	Prevent runoff from entering drains, sewers, or streams.
Methods and materials for containment and cleaning up	Neutralize the spilled material before disposal. Sweep up or vacuum up spillage and collect in suitable container for disposal. Dispose of waste and residues in accordance with local authority requirements.

7. Handling and storage

Precautions for safe handling	In the event of damage resulting in a leak of exposed materials, avoid contact with contents of an open or damaged cell or battery. Keep away from heat, sparks and open flame. Do not allow conductive material to touch the battery terminals. A dangerous short-circuit may occur and cause battery failure and fire.
Conditions for safe storage, including any incompatibilities	Store in original tightly closed container. Protect containers from damage. Place cardboard between layers of stacked batteries to avoid damage and short circuits.

8. Exposure controls and personal protection

Control parameters Follow standard monitoring procedures.

Occupational exposure limits

Australia. National Workplace OELs (Workplace Exposure Standards for Airborne Contaminants, Appendix A)

Components	Type	Value	Form
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m3	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	STEL	3 mg/m3	
	TWA	1 mg/m3	
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.15 mg/m3	Dust and fume.

Australia. OELs. (Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment)

Components	Type	Value	Form
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m3	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	STEL	3 mg/m3	
	TWA	1 mg/m3	
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.15 mg/m3	Dust and fume.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m3	
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.2 mg/m3	Thoracic fraction.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.05 mg/m3	

UK. EH40 Workplace Exposure Limits (WELs)

Components	Type	Value
Antimony (CAS 7440-36-0)	TWA	0.5 mg/m3
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.05 mg/m3
Lead and lead compounds (inorganic) (CAS 7439-92-1)	TWA	0.15 mg/m3

Germany. DFG MAK List (advisory OELs). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG)

Components	Type	Value	Form
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	TWA	0.1 mg/m3	Inhalable fraction.

Biological limit values

Germany. TRGS 903, BAT List (Biological Limit Values)

Components	Value	Determinant	Specimen	Sampling Time	Notes
Lead and lead compounds (inorganic) (CAS 7439-92-1)	400 µg/l	Blei	Blood	*	
	300 µg/l	Blei	Blood	*	This BAT is for women less than 45 years old.

* - For sampling details, please see the source document.

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Lead and lead compounds (inorganic) (CAS 7439-92-1)	300 µg/l	Lead	Blood	*

* - For sampling details, please see the source document.

Appropriate engineering controls Provide adequate ventilation. Provide easy access to water supply and eye wash facilities.

Individual protection measures, for example personal protective equipment (PPE)

Eye/face protection None under normal conditions. Leak from a damaged or opened battery: Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection None under normal conditions. Leak from a damaged or opened battery: Wear appropriate chemical resistant gloves.

Other None under normal conditions. Leak from a damaged or opened battery: Wear suitable protective clothing. Use of an impervious apron is recommended.

Respiratory protection None under normal conditions.

Thermal hazards When material is heated, wear gloves to protect against thermal burns.

Hygiene measures Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state Solid.

Form Sulfuric acid, liquid. Lead, solid.

Color Not available.

Odor Odorless.

Odor threshold Not available.

pH	< 1
Melting point/freezing point	Not available.
Initial boiling point and boiling range	235 - 240 °F (112.78 - 115.56 °C) (Sulfuric acid)
Flash point	Below room temperature (as hydrogen gas).
Evaporation rate	< 1 (n-BuAc=1)
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	4 % (Hydrogen)
Flammability limit - upper (%)	74 % (Hydrogen)
Vapor pressure	10 mm Hg
Vapor density	> 1 (Air=1)
Relative density	1.27 - 1.33
Solubility(ies)	
Solubility (water)	100 % (Sulfuric acid)
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other physical and chemical parameters	
Specific gravity	1.27 - 1.33 (H2O = 1)

10. Stability and reactivity

Reactivity	The product is non-reactive under normal conditions of use, storage and transport.
Chemical stability	Stable at normal conditions.
Possibility of hazardous reactions	Will not occur.
Conditions to avoid	Overcharging. Ignition sources.
Incompatible materials	Strong bases. Combustible organic materials. Reducing agents. Finely divided metals. Strong oxidizers. Water.
Hazardous decomposition products	Sulfur dioxide. Sulfur trioxide. Carbon monoxide. Sulfuric acid. Hydrogen.

11. Toxicological information

Information on possible routes of exposure

Inhalation	Dust/mist may irritate respiratory system. Difficulty in breathing. Frequent inhalation of dust over a long period of time increases the risk of developing lung diseases.
Skin contact	Dust/mist may irritate skin.
Eye contact	Dust/mist may irritate the eyes.
Ingestion	May cause discomfort if swallowed. Copper poisoning can result in hemolytic anemia and kidney, liver and spleen damage.
Symptoms related to exposure	Dust may irritate the eyes and the respiratory system.

Components	Species	Test Results
Electrolyte (Sulfuric acid) (CAS 7664-93-9)		
Acute		
Oral		
LD50	Rat	2140 mg/kg

Skin corrosion/irritation	Exposure to contents of an open or damaged battery: Causes skin burns.
Serious eye damage/irritation	Exposure to contents of an open or damaged battery: Causes serious eye damage.

Respiratory or skin sensitization

Respiratory sensitization No data available.

Skin sensitization No data available.

Germ cell mutagenicity No data available.

Carcinogenicity The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mists containing sulfuric acid" as a known human carcinogen, (IARC category 1). This classification applies only to mists containing sulfuric acid and not to sulfuric acid or sulfuric acid solutions.

ACGIH Carcinogens

Lead and lead compounds (inorganic) (CAS 7439-92-1)	A3 Confirmed animal carcinogen with unknown relevance to humans.

IARC Monographs. Overall Evaluation of Carcinogenicity

Lead and lead compounds (inorganic) (CAS 7439-92-1)	2B Possibly carcinogenic to humans.

Reproductive toxicity None under normal conditions. Exposure to contents of an open or damaged battery: May damage fertility or the unborn child.

Specific target organ toxicity - single exposure None under normal conditions. Exposure to contents of an open or damaged battery: Causes damage to organs (Respiratory system).

Specific target organ toxicity - repeated exposure None under normal conditions. Exposure to contents of an open or damaged battery: May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard Due to the physical form of the product it is not an aspiration hazard.

Chronic effects Exposure to contents of an open or damaged battery: Heavy lead exposure may result in central nervous system damage, encephalopathy and damage to the blood-forming (hematopoietic) tissues. Chronic inhalation of sulfuric acid mist may increase the risk of lung cancer.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Exposure to contents of an open or damaged battery: Very toxic to aquatic life with long lasting effects.

Components	Species	Test Results
Lead and lead compounds (inorganic) (CAS 7439-92-1)		
LC50	Rainbow trout, donaldson trout (Oncorhynhus mykiss)	1.17 mg/l, 96 Hours

Persistence and degradability The degradation half-life of the product is not known. Lead and its compounds are highly persistent in water.

Bioaccumulative potential Bioaccumulation of lead occurs in aquatic and terrestrial animals and plants, but very little bioaccumulation occurs through the food chain.

Mobility in soil Lead in massive forms is not mobile in the environment.

Mobility in general The product is insoluble in water and will spread on water surfaces.

Other adverse effects None known.

13. Disposal considerations

Disposal methods Recycle the batteries, as the primary disposal method. Avoid discharge into water courses or onto the ground. Dispose of this material and its container to hazardous or special waste collection point.

Residual waste Avoid discharge into water courses or onto the ground.

Contaminated packaging Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

ADG

UN number 2794

UN proper shipping name BATTERIES, WET, FILLED WITH ACID, electric storage

Transport hazard class(es)

Class 8

Subsidiary risk -

Packing group -

Environmental hazards	Yes
Hazchem code	2R
Special precautions for user	Not available.

RID

UN number	2794
UN proper shipping name	BATTERIES, WET, FILLED WITH ACID, electric storage
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Label(s)	8
Packing group	-
Environmental hazards	Yes
Special precautions for user	Not available.

IATA

UN number	2794
UN proper shipping name	Batteries, wet, filled with acid electric storage
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	-
Environmental hazards	Yes
ERG Code	8L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	2794
UN proper shipping name	BATTERIES, WET, FILLED WITH ACID electric storage
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	-
Environmental hazards	
Marine pollutant	Yes
EmS	F-A, S-B
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

15. Regulatory information

Safety, health and environmental regulations

National regulations This Safety Data Sheet was prepared in accordance with the Australia National Code of Practice for the Preparation of Material Safety Data Sheets (NOHSC: 2011.) Additional information is given in the Material Safety Data Sheet. No poison schedule number allocated.

Australia Medicines & Poisons Appendix A

Poisons schedule number not allocated.

Australia Medicines & Poisons Appendix B

Lead and lead compounds (inorganic) (CAS 7439-92-1)	Low toxicity. General: Any use

Australia Medicines & Poisons Appendix C

Lead and lead compounds (inorganic) (CAS 7439-92-1)	In paints, tinters, inks or ink additives

Australia Medicines & Poisons Appendix D

Poisons schedule number not allocated.

Australia Medicines & Poisons Appendix E

Antimony (CAS 7440-36-0)	For advice, contact a Poisons information Centre (Phone eg Australia 131 - 126; New Zealand 03 - 4747 - 000) or a doctor (at once).

Electrolyte (Sulfuric acid) (CAS 7664-93-9)	For advice, contact a Poisons information Centre (Phone eg Australia 131 - 126; New Zealand 03 - 4747 - 000) or a doctor (at once)., If swallowed, do NOT induce vomiting., If in eyes, hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes., If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	in hair cosmetics For advice, contact a Poisons information Centre (Phone eg Australia 131 - 126; New Zealand 03 - 4747 - 000) or a doctor (at once). in other [unspecified] preparations For advice, contact a Poisons information Centre (Phone eg Australia 131 - 126; New Zealand 03 - 4747 - 000) or a doctor (at once)., If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.

Australia Medicines & Poisons Appendix F

Electrolyte (Sulfuric acid) (CAS 7664-93-9)	applies to all preparations in any concentration Corrosive. Avoid contact with eyes., Avoid contact with skin.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	applies to all preparations in any concentration Avoid contact with eyes., Avoid contact with skin., Avoid breathing dust (or) vapour (or) spray mist. applies to all preparations in any concentration Unless adequately fired, utensils glazed with this preparation must not be used as containers for food or beverages; to do so may cause lead poisoning. in hair cosmetics Do not use on broken skin. Wash hands thoroughly after use.

Australia Medicines & Poisons Appendix G

Antimony (CAS 7440-36-0)

Australia Medicines & Poisons Appendix H

Poisons schedule number not allocated.

Australia Medicines & Poisons Appendix I

Antimony (CAS 7440-36-0)	First Schedule.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	Third Schedule.

Australia Medicines & Poisons Appendix J

Poisons schedule number not allocated.

Australia Medicines & Poisons Appendix K

Poisons schedule number not allocated.

Australia Medicines & Poisons Schedule 2

Poisons schedule number not allocated.

Australia Medicines & Poisons Schedule 3

Poisons schedule number not allocated.

Australia Medicines & Poisons Schedule 4

Antimony (CAS 7440-36-0)	for therapeutic use
Lead and lead compounds (inorganic) (CAS 7439-92-1)	in preparations for human therapeutic use

Australia Medicines & Poisons Schedule 5

Poisons schedule number not allocated.

Australia Medicines & Poisons Schedule 6

Antimony (CAS 7440-36-0)	applies to all preparations in any concentration Exception may apply, see the regulation for relevance.
Electrolyte (Sulfuric acid) (CAS 7664-93-9)	Exception may apply, see the regulation for relevance.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	applies to all preparations in any concentration Exception may apply, see the regulation for relevance.

Australia Medicines & Poisons Schedule 7

Poisons schedule number not allocated.

Australia Medicines & Poisons Schedule 8

Poisons schedule number not allocated.

Australia Medicines & Poisons Schedule 9

Poisons schedule number not allocated.

Australia National Pollutant Inventory (NPI): Threshold quantity

Antimony (CAS 7440-36-0)	10 TONNES/YR Threshold Category: 1

Electrolyte (Sulfuric acid) (CAS 7664-93-9)	10 TONNES/YR Threshold Category: 1
Lead and lead compounds (inorganic) (CAS 7439-92-1)	10 TONNES/YR Threshold Category: 1

High Volume Industrial Chemicals (HVIC)

Electrolyte (Sulfuric acid) (CAS 7664-93-9)	> 1000000 TONNES See the regulation for additional information.
Lead and lead compounds (inorganic) (CAS 7439-92-1)	100000 - 999999 TONNES See the regulation for additional information.

Importation of Ozone Deleting Substances (Customs(Prohibited imports) Regulations 1956, Schedule 10)

Not listed.

National Pollutant Inventory (NPI) substance reporting list

Lead and lead compounds (inorganic) (CAS 7439-92-1)	2000 TONNES/YR Threshold Category: 2B

Prohibited Carcinogenic Substances

Not regulated.

Prohibited Substances (National Model Regulation for the control of Workplace Hazardous Substances, Schedule 2 NOHSC:1005 (1994) as amended)

Not listed.

Resricted Importation of Organochlorine Chemicals (Customs(Prohibited Imports) Regulations 1956, Schedule 9)

Not listed.

Restricted Carcinogenic Substances

Not regulated.

International regulations

Stockholm Convention

Not applicable.

Rotterdam Convention

Not applicable.

Kyoto protocol

Not applicable.

Montreal Protocol

Not applicable.

Basel Convention

Not applicable.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information

Issue date	02-December-2014
Revision date	-
Key abbreviations or acronyms used	DNEL: Derived No-Effect Level. PNEC: Predicted No-Effect Concentration. PBT: Persistent, bioaccumulative and toxic. vPvB: Very Persistent and very Bioaccumulative.

References	IARC Monographs. Overall Evaluation of Carcinogenicity Registry of Toxic Effects of Chemical Substances (RTECS)
Disclaimer	The information in this SDS was obtained from sources which we believe are reliable, but no warranty or representation as to its accuracy or completeness is hereby given. Users should consider the information herein only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal, the safety and health of employees and customers and the protection of the environment.