SAFETY DATA SHEET
Lead Acid Battery – Wet, Non-Spillable, Electric Storage
UN2800

1. PRODUCT IDENTIFICATION

Product Name:	**LEAD ACID BATTERY – WET, NON-SPILLABLE, ELECTRIC STORAGE**
Other names:	Industrial Battery, Sealed Lead Acid Battery, Valve Regulated Lead Acid (VRLA), AGM, Gel
Trade names:	Absolyte, Champion, Element, EPzV, EPzVBS, Equipment Gel, Energystore Gel, Marathon, Motorcycle Sealed, Orbital, Powergard, Railway Gel, Sonnenschein, Sonnenschein Solarblock, Sonnenschein Solar, Sprinter, Sunlyte, A, CT, GF, JFT, JTT, PFT & PJ2V ranges, PLFT – Powerfit Pure.
Use:	Valve Regulated Lead Acid batteries for the Motive and Network Power markets including electric forklifts, mobility, rail, starting, telecommunications, utilities, renewables, mining, remote area power and standby power applications.
Supplier:	GNB Industrial Power
ABN:	84 093 272 005
Street Address:	135 Nancy Ellis Leebold Drive Bankstown NSW 2200
Telephone Number:	(02) 9722 5700
Emergency Telephone Numbers:	Australia: 1800 033 111 (ALL HOURS) New Zealand: 0800 734 607 (ALL HOURS) Ixom Emergency Response Service

. HAZARD IDENTIFICATION

GHS Classification: **Signal Word**: **DANGER**

Health	Environment	Physical
Acute Toxicity (Oral) – Category 4 Skin Corrosion – Category 1A Eye Damage – Category 1 Reproductive Toxicity – Category 1A Carcinogenicity (lead)– Category 2 Carcinogenicity(acid mist)–Category1A Specific Target Organ Toxicity (repeated exposure) –Category 2	Aquatic Chronic – 1 Aquatic Acute – 1	Extremely Flammable Gas– Category 1 (Hydrogen and Oxygen may be produced in the event of improper recharge)
 Health Hazard Corrosive	 Environment	 Extremely flammable gas

This material is hazardous according to criteria of Safe Work Australia and the Australian Dangerous Goods Code (ADG Code) The ADG code allows transport of certain non-spillable batteries as non-dangerous goods, refer to Section 14. Transport Information for details.

No hazards occur during the normal operation of a Lead Acid Battery as it is described in the instructions for use provided with the Battery. Chemical hazards relate to the contents of the battery. Lead-acid Batteries have three significant characteristics

- They contain an electrolyte which contains diluted sulphuric acid. Sulphuric acid may cause severe chemical burns.
- Improper charging rates or procedures may develop hydrogen gas and oxygen, which under certain circumstances may vent and result in an explosive mixture.
- They 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.

GHS Codes	Description	GHS Codes	Description
H302	Harmful if swallowed.	P304/340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
H314	Causes severe skin burns and eye damage.		
H332	Harmful if inhaled.	P305/351/338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
H360	May damage fertility or the unborn child.		
H373	May cause damage to organs through prolonged or repeated exposure.	P310	Immediately call a POISON CENTER or doctor/physician.
H220	Extremely flammable gas (hydrogen)		
H410	Very toxic to aquatic life with long lasting effects.	P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking
P260	Do not breathe dust/fume/gas/mist/vapours/spray.	P260	Do not breathe dust/fume/gas/mist/vapours/spray
		P264	Wash thoroughly after handling.
H351	Suspected of causing cancer	P280	Wear protective gloves/protective clothing/eye protection/face protection.
H341	Suspected of causing genetic defects		
H360	May damage the unborn child.	P403	Store in well-ventilated area
P301/330/331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.	P405	Store locked up.
		P391	Collect spillage
P303/361/353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.	P273	Avoid release to the environment
		P501	Dispose of contents/container in accordance with local/regional/national/international regulation.

3. COMPOSITION / INFORMATION ON INGREDIENTS

CAS no.	Description	Content 1) (% of weight)
7439-92-1	Lead Grid (metallic lead, lead alloys with possible traces of additives) Active Material (Lead Oxide, inorganic lead compounds) 1)	60 - 68
7664-93-9	Electrolyte 2) (diluted sulphuric acid with additives)	17 - 29
9003-56-9 9003-07-0	Plastic Case / Plastic Parts 3) Acrylonitrile Butadiene Styrene or Polypropylene 3)	4 - 12

1) Inorganic lead and electrolyte (water and sulphuric acid solution) are the primary components of every lead acid battery manufactured by Exide Technologies or its subsidiaries. Composition of active material depends on the state of charge. Other ingredients may be present dependent upon battery type.
2) Density of the electrolyte varies in accordance to the state of charge. Silicon Dioxide additive used in Gel Batteries only.
3) Composition of the plastic may vary due to different customer requirements, typically polypropylene or ABS UL94:HB, Flame Retardant Grade, UL94:V0. No hazard in normal use. Material can burn in a fire with toxic smoke and decomposition products.

4. FIRST AID MEASURES

For advice, contact a Poisons Information Centre (e.g. phone Australia 131 126; New Zealand 0800 764 766) or a medical doctor.
This information is of relevance only if the battery is broken and this results in a direct contact with the ingredients.

4.1 General
Electrolyte (diluted sulphuric acid): sulphuric acid acts corrosively and damages skin
Lead compounds: lead compounds are classified as toxic for reproduction (if swallowed)

4.2 Electrolyte (Sulphuric acid)
After skin contact: rinse with water, remove and wash wetted clothing
After inhalation of acid mist: inhale fresh air; seek advice of a medical doctor
After contact with the eyes: rinse under running water for at least 15 minutes, seek advice of a medical doctor
After swallowing: drink lot of water immediately, swallow activated carbon, do not induce vomiting, seek advice of a medical doctor

4.3 Lead compounds
After skin contact: clean with water and soap
After inhalation: inhale fresh air; seek advice of a medical doctor
After contact with the eyes: rinse under running water for several minutes, seek advice of a medical doctor
After swallowing: wash mouth with water; seek advice of a medical doctor

4.4 Case Material (Plastics)
Material can burn in a fire with toxic smoke and decomposition products. Upon inhalation of decomposition products, remove to fresh air. If breathing is difficult, give oxygen, seek advice of a medical doctor.
Molten plastics on the skin -flush with large amounts of water for at least 15 minutes, seek advice of a medical doctor.

5. FIRE FIGHTING MEASURES

Suitable fire extinguishing agents:
CO_2 or Dry Powder extinguishing agents.

Unsuitable fire extinguishing agents:
Water, if the battery voltage is above 120 V

Special protective equipment:
Protective goggles, respiratory protective equipment, acid protective equipment, acid-proof clothing in case of larger stationary battery plants or where larger quantities are stored.

Hazchem Code: 2W

6. ACCIDENTAL RELEASE MEASURES

Emergency procedures:
Clear the area of all unprotected personnel. If contamination of sewers or waterways has occurred advise local emergency services.

Methods and materials for containment and clean up:
Stop flow of material; contain/absorb small spills with dry sand, earth, and 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 or waterways. Collect and seal in properly labelled containers for disposal. Wash area down with excess water. Neutralized acid must be managed in accordance with approved local, state environmental agency requirements.

7. HANDLING AND STORAGE

Handling and Storage:
Store batteries under roof in cool, dry, well-ventilated areas that are separated from activities which may create flames, sparks, or heat. Keep away from metallic objects that could bridge the terminals on a battery and create a dangerous short-circuit. Batteries are always live and store 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. There may be increasing risk of electric shock from strings of connected batteries exceeding three 12-volt units.

Charging:
There is a possible risk of electric shock from charging equipment and from strings of series connected batteries, whether or not they are being charged. Batteries being charged may generate and release flammable hydrogen gas under certain conditions. 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.

Waste Disposal Methods:
Spent batteries: Send to secondary lead smelter for recycling.

Precautions:
WEAR SAFETY GOOGLES
CORROSIVE - CONTAINS SULFURIC ACID
DANGER – EXTREMELY FLAMABLE GAS MIXTURE
ELECTRIC VOLTAGE – ALWAYS LIVE, DONOT SHORT CIRCUIT
NO SMOKING, OPEN FLAMES OR SPARKS
KEEP AWAY FROM CHILDREN
OBSERVE OPERATING INSTRUCTIONS

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Limits (Australia)

Ingredient	Material Name	TWA	STEL
Lead	Lead, inorganic dusts & fumes	0.15 mg/m^3	Not Available
Sulphuric Acid	Sulphuric Acid	1 mg/m^3	3 mg/m^3

Engineering Controls
Use only in a well ventilated area.

Work Practices
Batteries are heavy, appropriate material handling equipment and techniques should be used. Handle batteries cautiously to avoid spills. Ensure vent caps are on securely. Avoid contact with internal components. Wear protective clothing when maintaining batteries as detailed below in "Personal Protection". Follow manufactures instructions for installation, operation and service. Educate and train employees in the safe use and handling of this product.

Personal Protection
Respirator Type: Not required under normal use. If in contact with internal components and gas / particulates approaches the exposure standard respiratory protection is required.
Glove Type: When handling Sulphuric acid, wear impervious PVC acid resistant gloves with elbow length gauntlet. When handling lead, wear leather or similar type work gloves.
Eye Protection: Safety glasses with side shields. When handling Sulphuric acid, wear chemical goggles/face shield.
Clothing: When handling batteries, wear safety footwear.

9. PHYSICAL AND CHEMICAL PROPERTIES

Ingredient	Appearance	Safety-related data
Lead Grid and Active material. Inorganic Lead Compounds	Form Solid Colour Grey or brown Odour Odourless	Solidification point 327 °C Boiling point 1740 °C Solubility in water Very low (0.15m g/l) Solubility in acid or alkaline Yes, dependant on the strength of solution. Density (at 20°C) 11.35 g/cm^3 Vapour pressure (at 20°C) N.A.
Battery Electrolyte: Sulphuric Acid	Form Liquid Colour Colourless Odour Odourless	Solidification point -35 to -60 °C Boiling point Approx. 108 to 114 °C Solubility in water Complete Density (at 20°C) Variable up to 1.350 g/cm^3 Vapour pressure (at 20°C) 13 – 22mm Hg.
Case Material: Plastic container and parts	Form Solid Colour Grey or black Odour Slight Odour	Softening point > 100 °C (DIN 53460) Flash Point >330 °C Solubility in water Insoluble Solubility in other solvents Soluble in polar solvents, aromatic solvents, chlorinated hydrocarbons. Density (at 20°C) 1.07-1.4 g/cm^3 (DIN 53479) Vapour pressure (at 973°C) 1mm Hg

10. STABILITY AND REACTIVITY

Within the operational temperature range -20 to +50 °C the undamaged product is stable.

Conditions to Avoid: Prolonged overcharge at high current; sources of ignition; short circuits.

Lead Grid and Active material. Inorganic Lead Compounds	Materials to Avoid: Hazardous Decomposition Product(s):	Avoid contact with strong acids, bases, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen, and reducing agents. Temperatures above the melting point are likely to produce toxic metal fume, vapour, or dust; contact with strong acid or base or presence of nascent hydrogen may generate highly toxic arsine gas
Battery Electrolyte: Sulphuric Acid	Hazardous Reactions Hazardous Decomposition Product(s):	Contact with combustibles and organic materials may cause fire and explosion. Also reacts violently with strong reducing agents, metals, sulphur trioxide gas, strong oxidizers, and water. Contact with metals may produce toxic sulphur dioxide fumes and may release flammable hydrogen gas. Sulphur Oxides sulphuric acid mist, hydrogen sulphide
Case Material: Plastic container and parts	Conditions to Avoid: Materials to Avoid:	To avoid thermal decomposition, do not overheat. Starts to decompose at temperatures >275°C. Toxic and irritating gases/fumes may be given off during burning or thermal decomposition Powerful oxidising agents.

11. TOXICOLOGICAL INFORMATION

Routes of Entry:

Electrolyte: Harmful by all routes of entry.
Lead compounds: Hazardous exposure can occur only when product is heated above the melting point, oxidized or otherwise processed or damaged to create dust, vapour, or fume.

Inhalation:

Electrolyte: Breathing of sulphuric acid vapours or mists may cause severe respiratory irritation.
Lead compounds: Inhalation of lead dust or fumes may cause irritation of upper respiratory tract and lungs.

Ingestion:

Electrolyte: May cause severe irritation of mouth, throat, oesophagus, and stomach.
Lead compounds: Acute ingestion may cause abdominal pain, nausea, vomiting, diarrhoea, and severe cramping. This may lead rapidly to systemic toxicity.

Skin Contact:

Electrolyte: Severe irritation, burns, and ulceration.
Lead compounds: Not absorbed through the skin.

Eye Contact:

Electrolyte: Severe irritation, burns, cornea damage, blindness.
Lead compounds: May cause eye irritation.

Effects of Overexposure - Acute:

Electrolyte: Severe skin irritation, damage to cornea may cause blindness, upper respiratory irritation.
Lead compounds: Symptoms of toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances, and irritability.

12. ECOLOGICAL INFORMATION

Very toxic to aquatic life with long lasting effects. May cause long term adverse effects in the environment.
Do not Discharge into Sewers or Waterways

13. DISPOSAL CONSIDERATIONS

Refer to your local waste disposal authority for disposal of lead compounds, sulphuric acid and spent soda ash, sodium bicarbonate, lime, etc. Spent batteries should be sent to a secondary lead smelter for recycling.

14. TRANSPORT INFORMATION

The Australian Dangerous Goods Code and IMDG Special Provision 238, Item a & b and Special Provision A67 of the International Air Transport Association (IATA) Dangerous Goods Regulations allow transport of certain non-spillable batteries as non-dangerous goods by road, rail, air and sea provided that all battery terminals are protected against short circuits. A manufactures declaration must also be provided. If not provided, batteries must be handled as dangerous goods.

The following types are **Not Regulated as a Hazardous Material** as per the attached Manufacturers Declaration:

Absolyte GP / IIP	Sonnenschein A400 blocks	Sonnenschein GF blocks
Absolyte GX / XL	Sonnenschein A500 blocks	Sonnenschein dryfit military blocks
Element	Sonnenschein A600 cells (A602)	Sonnenschein RAIL blocks
Marathon AGM blocks and cells	Sonnenschein A700 blocks	Powerfit blocks
Orbital blocks	Sonnenschein @home blocks	AGM Military blocks
Relay Gel	Sonnenschein Power Cycle blocks	Exide Gel blocks
Sprinter Blocks	Sonnenschein A600 Solar cells	Exide AGM Transportation blocks
SVRLA (Submarine Class)	Sonnenschein SOLAR blocks	
Sonnenschein A200 blocks	Sonnenschein SOLAR BLOCK blocks	

OTHERWISE

Road and Rail Transport

Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for Transport by Road and Rail; DANGEROUS GOODS.

UN No: 2800
Class-primary 8 Corrosive
Packing Group: not assigned
Proper Shipping Name: BATTERIES, WET, NON-SPILLABLE, ELECTRIC STORAGE
Hazchem Code: 2X

Marine Transport

Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; DANGEROUS GOODS.

UN No: 2800
Class-primary: 8 Corrosive
Packing Group: not assigned
Proper Shipping Name: BATTERIES, WET, NON-SPILLABLE, ELECTRIC STORAGE
IMDG EMS Fire: F-A
IMDG EMS Spill: S-B

Air Transport

Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air; DANGEROUS GOODS.

UN No: 2800
Class-primary: 8 Corrosive
Packing Group: not assigned
Proper Shipping Name: BATTERIES, WET, NON-SPILLABLE, ELECTRIC STORAGE

15. REGULATORY INFORMATION

Poisons Schedule: S6

16. OTHER INFORMATION

Date of preparation: November 2012 **Date of last Review:** March 2022

The information given above is provided in good faith based on existing knowledge and does not constitute an assurance of safety under all conditions. It is the user's responsibility to observe all laws and regulations applicable for storage, use, maintenance and disposal of the product. If there are any queries, the supplier should be consulted. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

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