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SECTION 1 -CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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SECTION 2 -- COMPOSITION/ INFORMATION ON INGREDIENTS

					Air Exposure Limits (µg/m³)
Components	**Common name**	**Chemical Symbol**	**[1]CAS Number**	**Approx. % by Wt**	**[2]OSHA**
Inorganic lead compound:					
[3]Lead	Negative electrode & grid	Pb	7439-92-1	37 - 42	50
Lead dioxide	Positive electrode	PbO_2	1309-60-0	38 - 44	50
Lead sulphate	Positive & negative electrode	$PbSO_4$	7446-14-2		50
Antimony		Sb	7440-36-0	1.2	500
Tin		Sn	7440-31-5	0.14	2000
Arsenic		As	7440-38-2	0.1	10
Calcium		Ca	7440-70-2	0.07	1100
Aluminium		Al	7429-90-5	0.009	
Electrolyte (Sulphuric acid)			7664-93-9		1000
Type of Container: Polypropylene			93003-07-0		N/A

Common Name: (Used on label)		
(Trade Name & Synonyms)	Lead/Acid Storage Battery	Chemical Family: Toxic and Corrosive Material Mixture
Chemical Name:	Lead/Acid Storage Battery	Formula: Lead and Acid (electrolyte)

[1] CAS Number; Chemical Abstract Service number
[2] Occupational Safety& Health Act (OSHA)
[3] http://www.who.int/ipcs/publications/newsletters/en/04.pdf

Prepared By:	Reviewed By:	Approved By:
4/9/2026	01/09/2026	4/9/2026
Systems Expert	Quality & Systems Manager	Research, Development & Technology Manager

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SECTION 3 – HAZARD IDENTIFICATION

Signs and symptoms of exposure	Acute hazards	Do not open battery. Avoid contact with internal components. Internal components include lead and liquid electrolyte.
		Electrolyte – Electrolyte is corrosive and contact may cause skin irritation and chemical burns. Electrolyte causes severe irritation and burns of eyes, nose and throat. Ingestion can cause severe burns and vomiting.
		Lead – Direct skin or eye contact may cause local irritation. Inhalation or ingestion of lead dust or fumes may result in headache, nausea, vomiting, abdominal spasms, fatigue, sleep disturbances, weight loss, anaemia and leg, arm and joint pain.
	Sub-chronic and chronic health effects	Electrolyte – Repeated contact with sulfuric acid battery electrolyte fluid may cause drying of the skin which may result in irritation, dermatitis and skin burns. Repeated exposure to sulfuric acid mist may cause erosion of teeth, chronic eye irritation and/or chronic inflammation of the nose, throat and lungs.
		Lead – Prolonged exposure may cause central nervous system damage, gastrointestinal disturbances, anaemia, wrist-drop and kidney dysfunction. Pregnant women should be protected from excessive exposure to prevent lead from crossing the placental barrier and causing infant neurological disorders.
Medical conditions generally aggravated by exposure		If battery is broken or material spilled, then persons with the following medical conditions must take precaution; pulmonary oedema, bronchitis, emphysema, dental erosion and tracheobronchitis.
Routes of entry	Inhalation – Yes Ingestion – Yes	Eye contact – Yes Skin contact – Yes
	I.A.R.C	
Chemical(s) listed as carcinogen or potential carcinogen	Monographs - Yes	NIOSH – Yes OSHA – No

SECTION 4 – FIRST AID MEASURES

Emergency and first aid procedures	Contact with internal components if battery is opened, broken or spilled.
1. Inhalation	Remove to fresh air and provide medical oxygen/ CPR if needed. Obtain medical attention.
2. Eyes	Immediately flush with water for at least 15 minutes, hold eyelids open. Obtain medical attention.
3. Skin	Flush contacted area with large amounts of water for at least 15 minutes. Remove contaminated clothing and obtain medical attention if necessary.
4. Ingestion	Do not induce vomiting. If conscious drink large amounts of water/ milk. Obtain medical attention. Never give anything by mouth to an unconscious person.

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SECTION 5 – FIREFIGHTING MEASURES

Flash point	Not available	Flammable limits in air (% by volume) (When charging)	Hydrogen (H_2)	Lower – 4.1%	Upper – 74.2%	Extinguisher media	Class ABC, CO_2, Halon	Auto-ignition temperature	Polypropylene 675°F
Special firefighting procedures	Lead-acid batteries do not burn or burn with difficulty. Do not use water on fires where molten metal is present. Extinguish fire with agent suitable for surrounding combustible materials. Cool exterior of battery if exposed to fire to prevent rupture. The acid mist and vapours generated by heat or fires are corrosive. Use NIOSH approved self-contained breathing apparatus (SCBA) and full protective equipment operated in positive-pressure mode.								
Unusual fire and explosion hazards	Hydrogen gas and sulfuric acid vapours are generated upon overcharge and propylene case failure. Ventilate charging areas as per ACGIH Industrial Ventilation: A Manual of Recommended Practice and National Fire Code, 1980 Vol. 1, P. 12, B-9,10. Hydrogen gas may be flammable or explosive when mixed with air, oxygen, chlorine. Avoid open flames/ sparks/other sources of ignition near battery. To avoid risk of fire or explosion, keep sparks or other sources of ignition away from batteries and do not allow metallic materials to simultaneously contact negative and positive terminals of cells and batteries. Sulfuric acid reacts violently with water/ organics.								

SECTION 6 – ACCIDENTAL REALEASE MEASURES

Procedures for clean-up: Stop release, if possible. Avoid contact with any spilled material. Contain spill, isolate hazard area, and deny entry. Limit site access to emergency responders. Neutralize with sodium bicarbonate, soda ash, lime or another neutralizing agent. Place battery in suitable container for disposal. Dispose of contaminated material in accordance with applicable local, state and federal regulations. Sodium bicarbonate, soda ash, sand, lime or another neutralizing agent should be kept on-site for spill remediation.
Personal precautions: Acid resistant aprons, boots and protective clothing. ANSI approved safety glasses with side shields/ field shield recommended. Ventilate enclosed areas.
Environmental precautions: Lead and its compounds and sulfuric acid can pose a severe threat to the environment. Contamination of water, soil and air should be prevented.

SECTION 7 – HANDLING AND STORAGE

Precautions to be taken in handling and storage	Keep away from flames during and immediately after charging. Combustion or overcharging may create or liberate toxic and hazardous gases and liquids including hydrogen, sulfuric acid mist, sulphur dioxide, stibine, arsine and sulfuric acid. Store batteries in cool, dry, well-ventilated area. Do not short circuit battery terminals or remove vent caps during storage or recharging. Protect battery from physical damage.
Other precautions	Good personal hygiene and work practices are mandatory. Refrain from eating, drinking or smoking in working area. Thoroughly wash hands, face, neck and arms before eating, drinking or smoking. Launder soiled clothed before reuse. Emptied batteries contain hazardous sulfuric acid residues.

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SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

Respiratory protection (Specify type)	Acid/ gas NIOSH approved respirator is required when the PEL is exceeded or employee experiences respiratory irritation. When exposure levels are unknown or when firefighting, wear a self-contained breathing apparatus with a full facepiece operated in a positive pressure mode.				
Ventilation	Must be provided when charging in an enclosed area. Change air every 15 mins.	Local exhaust	When PEL is exceeded.	Mechanical (General)	Normal mechanical ventilation recommended for stationary applications.
Protective gloves	Wear rubber or plastic acid resistant gloves with elbow length gauntlet when filling batteries.	Eye protection		ANSI approved safety glasses with side shields/ face shield recommended. Safety goggles.	
Other protective clothing or equipment	Ventilation as described in the Industrial Ventilation Manual by the American Conference of Governmental Industrial Hygienists, shall be provided in areas where exposures are above the PEL or TLV specified by OSHA or other local, state and federal regulations. Acid resistant rubber or plastic apron, boots and protective clothing. Safety shower and eyewash.				

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Boiling point	Electrolyte Approx. 235°F	Vapor pressure	Electrolyte 1mm Hg @145.8°F	Specific gravity	Electrolyte (H2O=1) 1.245 pH<2	Melting point	Polypropylene <320°F	
Percent Volatile by Volume (%)	Not applicable		Vapor density	Hydrogen (Air=1):0.069 Electrolyte (Air=1): 3.4		At STP	Evaporation rate	Not applicable

Solubility in water	Reactivity in water
Electrolyte 100% soluble	Electrolyte – water reactive (1)
Appearance and odour	Battery: Polypropylene or hard rubber case, solid.
	Lead: Gray, metallic, solid
	Electrolyte: Liquid, colourless, oily fluid, nuisance odour when hot or charging battery.

SECTION 10 – STABILITY AND REACTIVITY

Conditions to avoid	Heat, moisture and incompatibles. Prevent fires and any other ignition materials around lead acid battery. The electrolyte reacts with water to produce heat.
Materials to avoid	Sparks, open flames, keep battery case away from strong oxidizers.
Incompatible materials	Avoid water, potassium product metals and organic materials, oxidizing and reducing agents.
Decomposing products	Toxic fumes of oxides when heated to decomposition will react with water to form corrosive fumes, reacts with carbonates to produce carbon dioxide and reacts with hydrogen to produce hydrogen cyanide and hydrogen sulphate which is poisonous

SECTION 11 – TOXICOLOGICAL INFORMATION

General: The primary routes of exposure to lead are ingestion or inhalation of dust and fumes.

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ACUTE: INGESTION/ INHALATION

Exposure to lead and its compounds may cause headache, nausea, vomiting, abdominal spasms, fatigue, sleep disturbances, weight loss, anaemia and pain in the legs, arms and joints. Kidney damage, as well as anaemia, can occur from acute exposure.

CHRONIC: INGESTION/ INHALATION

Prolonged exposure to lead and its compounds may produce many of the symptoms of short-term exposure and may also cause central nervous system damage, gastrointestinal disturbances, anaemia and wrist drop. Symptoms of central nervous system damage include fatigue, headaches, tremors, hypertension, hallucinations, convulsions and delirium. kidney dysfunction and possible injury has also been associated with chronic lead poisoning. Chronic over-exposure to lead has been implicated as a causative agent for the impairment of male and female reproductive capacity, but there is, at present, no substantiation of the implication.
Pregnant women should be protected from excessive exposure. Lead can cross the placental barrier and unborn children may suffer neurological damage or developmental problems due to excessive lead exposure in pregnant women.

SECTION 12 – ECOLOGICAL INFORMATION

In most surface water and groundwater, lead forms compounds with anions such as hydroxides, carbonates, sulphates and phosphates and precipitates out of the water column. Lead may occur as absorbed ions or surface coatings on sediment mineral particles or may be carried in colloidal particles in surface water. Most lead is strongly stained in soil, resulting in little mobility. Lead may be immobilized by ion exchange with hydrous oxides or clays or by chelation with humic and fulvic acids in the soil. Lead (when in the dissolved phase) is bioaccumulated by plants and animals, both aquatic and terrestrial.

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste disposal method	Read the disposal methods on the product. Taking the product to an approved recycling plant is advised. Any other material that cannot be recovered should be disposed of as hazardous waste. Observe all warning and precautions listed on the product.

SECTION 14 – TRANSPORT INFORMATION

Proper shipping name: Batteries, wet, filled with acid
Hazard class: 8
ID number: UN 2794
Packing group: III
Label: Corrosive

IMO proper shipping name: Batteries, wet, filled with acid
IMO regulations page number: 8120
IMO U.N. Class: 8
IMO U.N. number: UN 2794
IMO packing group: III
IMO Label: Corrosive
IMO vessel stowage: A

IATA proper shipping name: Batteries, wet, filled with acid
IATA U.N. class: 8

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IATA U.N. number: UN 2794
IATA packing group: III
IATA label: Corrosive

SECTION 15 – REGULATORY INFORMATION

Hazardous under Hazard Communication Standard	Lead	Yes
	Sulfuric acid	Yes
	Antimony	Yes
	Arsenic	Yes
Ingredients listed on TCA Inventory	Yes	
CERCLA Section 304 Hazardous Substances	Lead – yes	RQ: NA*
	Sulfuric acid – yes	RQ: 1000 pounds
	Antimony – yes	RQ: 500 pounds
	Arsenic – yes	RQ: 1 pounds

*Reporting not required when diameter of the pieces of solid metal released is equal to or exceeds 100 micrometres.

EPCRA Section 302 Extremely Hazardous substance: Sulfuric acid – Yes

EPCRA Section 313 Toxic Release Inventory: Lead – CAS NO: 7439-92-1
Sulfuric acid – CAS NO: 7664-93-9
Antimony – CAS NO: 7440-36-0
Arsenic CAS NO: 7440-38-2

SECTION 16 – OTHER INFORMATION

The information above is believed to be accurate and represents the best information currently available to us. However, Associated Battery Manufacturers (EA) Ltd makes no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. Although reasonable precautions have been taken in the preparation of the data contained herein, it is offered solely for your information, consideration and investigation. This safety data sheet provides guidelines for the safe handling and use of this product, it does not and cannot advise on all possible situations, therefore, your specific use of this product should be evaluated to determine if additional precautions are required.

SECTION 17 – AMENDMENT SHEET

Issue/ Rev	Date	Page	Section	Description of changes	Requested by
1/05	21.11.20	All	All	Removal of word "Material" in the title so as to remain with Safety Data sheet. Addition of document reference ABM-QCX-SDS-(WLAB)-001. Change of contact personnel from Quality & Customer Experience Manager to Technical Manager. Review of administrative section; approved by section changed from Quality & Customer Experience Manager to Technical Manager.	System Coordinator

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1/06	25.01.31	All	All	Document reference ABM-QCX-SDS-(WLAB)-001 changed to ABM-TEC-SDS-(WLAB)-001. Process Coordinator changed to Head of Quality & Process.	System Coordinator
2/00	25.11.24	All	All	Change of document reference from ABM-TEC-SDS-(WLAB)-001to ABM-QA-SDS-(WLAB)-001. Change of contact personnel from Technical Manager to Quality & Systems Manager. Change of titles; Head of Quality & Process to Quality & Systems Manager; System Coordinator to System Management Specialist. Review of administrative section; approved by changed from Technical Manager to Research, Development & Technology Manager.	System Management Specialist
2/01	26.09.04	All	All	Change of titles; System Management Specialist to Systems Expert.	Quality & Systems Manager