

## BATTERY, WET, FILLED WITH ACID MATERIAL SAFETY DATA SHEET

ISSUE DATE – 1 AUG 2011  
SUPPLY DATE – 1 AUG 2011  
Page 1 of 7

### SECTION 1 IDENTIFICATION OF THE MATERIAL & SUPPLIER

**PRODUCT NAME** Battery Wet, Filled with Acid  
**APPLICATION** Automotive, Deep Cycle, Motorcycle, Traction and Marine Battery  
**SUPPLIER** Lion Batteries ( Wholesale) Pty Ltd  
**EMERGENCY TELEPHONE** (02) 9674-6322 Scott Jurd

### SECTION 2 HAZARDS IDENTIFICATION

This product is classified as hazardous under the criteria of WorkSafe Australia

**HAZARD CLASSIFICATION** Hazardous  
**RISK PHRASE(S)** R20/22 Harmful by inhalation if swallowed  
R33 Danger of cumulative effects (lead components)  
R35 Causes severe burns (battery fluid)  
R58 May cause long term effects to the environment  
R61/62 May cause harm to unborn child & risk of impaired fertility (lead components).  
**SAFETY PHRASE(S)** S1/2 Keep locked and out of reach of children  
S26 in case of contact with eyes (battery fluid), rinse immediately with plenty of water and seek medical advice  
S53 Avoid exposure – obtain special instructions before use

### WARNING

**HEALTH** Health effects from normal use of this product are not anticipated.  
Avoid contact with battery fluids and internal workings of the battery.  
Battery fluids (electrolytes) are corrosive and may cause irritation or burns.  
Flammable and explosive gas may be generated when charging the batteries- ventilation is recommended.

**ENVIRONMENT** Dispose of in accordance with Environmental Regulatory requirements.  
Batteries contain some recyclable components.

## HEALTH EFFECTS

### ACUTE

- SWALLOWED** Sulfuric acid – corrosive and causes severe burns. May cause irritation to mouth, throat and digestive system.  
Lead compounds – acute ingestion may cause abdominal pain, nausea, vomiting, diarrhoea and severe cramping.
- EYE** Sulfuric acid –severe irritation, burns, cornea damage and blindness.  
Lead compounds –may cause eye irritation.
- SKIN** Sulfuric acid –severe irritation, burns and ulceration.  
Lead compounds – not readily absorbed through the skin. Transfer of dust from hands to mouth possible.
- INHALED** Sulfuric acid – breathing of vapours or mists may cause respiratory irritation.  
Lead compounds – inhalation of lead dust or fumes may cause irritation of the upper respiratory tract.

### CHRONIC

- SULFURIC ACID** Possible erosion of tooth enamel, inflammation of nose, throat and bronchial tubes. Evidence available indicates exposure to strong inorganic acid mists may be carcinogenic to humans (WHO: IARC)
- LEAD COMPOUNDS** May cause constipation, weight loss, anemia, fatigue, kidney damage, pain in joints, neuropathy and reproductive changes. Exposure of unborn children to lead may cause developmental effects.

# BATTERY, WET, FILLED WITH ACID

## MATERIAL SAFETY DATA SHEET

ISSUE DATE – 1 AUG 2011  
SUPPLY DATE – 1 AUG 2011  
Page 3 of 7

### SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS Number	WEIGHT %	NOHSC TWA	NOHSC STEL	SKIN
Lead [Pb, PBO <sub>2</sub> , PbSO <sub>4</sub> ]	7439-92-1	60-70%	0.15 mg/m <sup>3</sup>	-	-
Sulfuric Acid	7664-93-9	25-33%	1.0 mg/m <sup>3</sup>	3.0 mg/m <sup>3</sup>	Xi
NON HAZARDOUS INGREDIENTS UP TO 100%					

### SECTION 4 FIRST AID MEASURES

INHALATION	Provide ventilation; remove exposed person to fresh air. Seek medical attention immediately. Administer EAR/CPR if person is not breathing.
SKIN CONTACT	Remove contaminated clothing and wash skin thoroughly with water. Seek medical assistance if irritation or burning symptoms persist.
EYE CONTACT	Irrigate eye with water for 15 minutes [if splashed with battery fluid]. Seek medical attention immediately.
INGESTION	Do NOT induce vomiting if electrolyte/battery fluid/sulfuric acid is swallowed. Drink water. Seek medical attention immediately.
OTHER	Access to potable water should be provided in areas where batteries are charged/maintained [safety shower & eyewash station recommended].

### SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA	Use a carbon dioxide or dry chemical extinguisher. Water should NOT be applied because of potential to liberate acid mists.
PROTECTION OF FIREFIGHTERS	Firefighters to wear acid-resistant full protective clothing, including rubber footwear and self-contained breathing apparatus.
HAZCHEM CODE	Not Applicable
HAZARDOUS DECOMPOSITION PRODUCTS	Sulfuric Acid - decomposing to sulfur trioxide, carbon monoxide, sulfur dioxide and hydrogen – Flammable and explosive vapours may be generated in confined areas. Lead Components – Exposure of lead components to high temperatures may produce toxic metal fume; contact with strong acids or alkalis may produce arsine gas (highly toxic) Exposure of plastic container to fire or high temperatures may produce carbon dioxide, carbon monoxide, noxious aldehydes (e.g. formaldehyde), ketones, methane and ethane

### SECTION 6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS	Use (store and charge) only in well ventilated areas. Avoid flames or ignition sources Ensure PPE worn when handling battery fluids. Wash hands after handling, charging or filling the battery.
ENVIRONMENTAL PRECAUTIONS	Contain spills; see PPE, Fire and Disposal information in MSDS. Batteries contain some recyclable components. Do not incinerate Dispose of in accordance with local Environmental Regulations.
METHODS FOR CLEANING UP	Contain spill. Use non combustible absorbents. Treat spill material as controlled/regulated/prescribed waste.

# BATTERY, WET, FILLED WITH ACID

## MATERIAL SAFETY DATA SHEET

ISSUE DATE – 1 AUG 2011  
SUPPLY DATE – 1 AUG 2011  
Page 4 of 7

### SECTION 7 HANDLING AND STORAGE

#### HANDLING

TECHNICAL MEASURES	Keep battery upright. Do not access the sealed areas of the battery. Use only approved charging methods.
PRECAUTIONS AND ADVICE	Battery electrolyte (fluid) contains sulfuric acid which is corrosive. Do not handle the battery electrolyte with exposed (bare) hands. Refer to Personal Protective Equipment section below for details.

#### STORAGE

TECHNICAL MEASURES	Lead-acid batteries can emit hydrogen gas if over-charged. Hydrogen may ignite or explode. Store and charge in well ventilated areas. Do not over-charge.
STORAGE CONDITIONS	Store in a well ventilated, cool dry area. Do not store with strong alkalis, acids, flammables or combustibles. Keep away from ignition sources.

### SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

NATIONAL EXPOSURE STANDARDS	Sulfuric acid: TWA 1 mg/m <sup>3</sup> ; STEL 3 mg/m <sup>3</sup> Metallic Lead: TWA 0.15 mg/m <sup>3</sup>												
BIOLOGICAL LIMIT VALUES	Not Available												
ENGINEERING CONTROLS	Not required if working in a well ventilated area. Provide mechanical LEV if work area has limited or restricted airflow.												
PERSONAL PROTECTIVE EQUIPMENT	<table><tr><td>GLOVES</td><td>When handling sulfuric acid wear impervious PVC, acid resistant gloves with elbow length gauntlet.</td></tr><tr><td>EYE PROTECTION</td><td>Safety goggles/face shield should be worn when handling sulfuric acid.</td></tr><tr><td>RESPIRATORY</td><td>Not required under normal use Trained personnel to wear SCBA if batteries are involved in fire.</td></tr><tr><td>VENTILATION</td><td>Use &amp; charge only in well ventilated areas. Provide mechanical ventilation if working in a restricted area.</td></tr><tr><td>OTHER EQUIPMENT</td><td>Safety shower and eye wash station should be provided near battery charging stations.</td></tr><tr><td>WORK HYGIENE</td><td>Wash hands after handling batteries and battery acid/fluid/electrolyte.</td></tr></table>	GLOVES	When handling sulfuric acid wear impervious PVC, acid resistant gloves with elbow length gauntlet.	EYE PROTECTION	Safety goggles/face shield should be worn when handling sulfuric acid.	RESPIRATORY	Not required under normal use Trained personnel to wear SCBA if batteries are involved in fire.	VENTILATION	Use & charge only in well ventilated areas. Provide mechanical ventilation if working in a restricted area.	OTHER EQUIPMENT	Safety shower and eye wash station should be provided near battery charging stations.	WORK HYGIENE	Wash hands after handling batteries and battery acid/fluid/electrolyte.
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# BATTERY, WET, FILLED WITH ACID

## MATERIAL SAFETY DATA SHEET

ISSUE DATE – 1 AUG 2011  
SUPPLY DATE – 1 AUG 2011  
Page 5 of 7

### SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Rectangular battery in sealed plastic packaging
Odour	Not Applicable
	Battery acid is corrosive – pH <4
Vapour Pressure	Not Applicable
Vapour Density	Not Applicable
Boiling point/range	Not Applicable
Freezing Point	Not Applicable
Solubility	Not Applicable
Specific Gravity or Density	Not Applicable
Information on Flammability	
Flash Point	Not Applicable
	Not Applicable
	Not Applicable
Additional Information	
Specific Heat Value	Not Applicable
Particle Size	Not Applicable
VOC Content	Not Applicable
Evaporation Rate	Not Applicable in sealed battery.
Viscosity	Not Applicable
Percent volatile	Not Applicable
Octanol/Water Partition Coefficient	Not Applicable
Saturated vapour concentration	Not Applicable
Additional applicable Characteristics	Not Applicable
Flame Propagation	Not Assessed
Other Properties that may contribute to the intensity of a fire	Hydrogen gas may cause intense fire or explosion if exposed to ignition source.
Potential for Dust Explosion	No
Reactions that release flammable gases or vapours	Over-charging; charging in confined areas – Hydrogen gas may be liberated
Fast or intensely burning characteristics	Not Assessed
Non-flammables that could contribute unusual hazards to a fire	Lead metals
Release of invisible flammable vapours and gases.	Yes – hydrogen gas
Decomposition temperature	>100 °C

# BATTERY, WET, FILLED WITH ACID

## MATERIAL SAFETY DATA SHEET

ISSUE DATE – 1 AUG 2011  
SUPPLY DATE – 1 AUG 2011

Page 6 of 7

### SECTION 10 STABILITY AND REACTIVITY

<b>CHEMICAL STABILITY</b>	Stable.
<b>CONDITIONS TO AVOID</b>	Flame, ignition sources, confined areas, other incompatible dangerous goods.
<b>INCOMPATIBLE MATERIALS</b>	Strong alkalis and acids, oxidizers, spontaneously flammable metals.
<b>HAZARDOUS DECOMPOSITION PRODUCTS</b>	Sulfuric Acid - decomposing to sulfur trioxide, carbon monoxide, sulfur dioxide and hydrogen – Flammable and explosive vapours may be generated in confined areas. Lead Components – Exposure of lead components to high temperatures may produce toxic metal fume; contact with strong acids or alkalis may produce arsine gas (highly toxic) Exposure of plastic container to fire or high temperatures may produce carbon dioxide, carbon monoxide, noxious aldehydes (e.g. formaldehyde), ketones, methane and ethane
<b>HAZARDOUS REACTIONS</b>	Avoid oxidizers, alkalis and flammable substances.

### SECTION 11 TOXICOLOGICAL INFORMATION

**GENERAL:** The primary routes of exposure to lead are ingestion or inhalation of dust and fumes. Primary routes of exposure to sulfuric acid are as inhalation of mist, or skin contact with fluids or contaminated surfaces.

**ACUTE:**

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

Sulfuric acid is corrosive, over exposure to acid mists may cause irritation to the respiratory system, skin and digestive tract. Exposure to acid mists may aggravate medical conditions such as pulmonary oedema, bronchitis, emphysema, dental erosion, and tracheobronchitis.

**CHRONIC:**

**INHALATION/INGESTION:** 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, anemia, and wrist drop. Symptoms of central nervous system damage include fatigue, headaches, tremors, hypertension, hallucination, 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.

Chronic toxicological information is not applicable to exposure to sulfuric acid from lead acid battery use or charging.

### SECTION 12 ECOLOGICAL INFORMATION

Lead metal has low bioavailability but its compounds can be hazardous in the environment at low concentrations. They can be particularly toxic in the aquatic environment. Lead bio-accumulates in plants and animals in both the aquatic and terrestrial environments.



# BATTERY, WET, FILLED WITH ACID

## MATERIAL SAFETY DATA SHEET

ISSUE DATE – 1 AUG 2011  
SUPPLY DATE – 1 AUG 2011

Page 7 of 7

### SECTION 13 DISPOSAL CONSIDERATIONS

WASTE FROM RESIDUES	Residue may be corrosive.
CONTAMINATED PACKAGING	Dispose of according to environmental regulatory requirements – sulfuric acid and metallic lead compounds.

### SECTION 14 TRANSPORT INFORMATION

DANGEROUS GOODS CLASS	8 – Corrosive
PACKAGING GROUP	N/a
UN NUMBER	2794
HAZCHEM CODE	2W
POISONS SCHEDULE NUMBER	S6
SPECIAL PRECAUTIONS FOR USE	Batteries are heavy, appropriate manual handling techniques and material handling equipment is recommended. Handle batteries cautiously to avoid spilling fluids. Wear PPE when handling fluids. Store and charge in a well ventilated area.

### SECTION 15 REGULATORY INFORMATION

This product is classified as Hazardous according to the criteria of WorkSafe Australia (Australian Safety & Compensation Council). This product is classified as a Dangerous Good under the Australian Dangerous Goods Code. Regulations apply to the storage, handling and disposal of lead acid batteries and some of the componentry.

### SECTION 16 OTHER INFORMATION

#### KEY / LEGEND

TLV	Threshold limit value
TWA	Time-weighted average
STEL	Short-term exposure limit
mg/m <sup>3</sup>	Milligrams per meter cubed
ppm	Parts per million

### DISCLAIMER

While every effort has been made to ensure the accuracy of the information, the information is based on data believed by Lion Batteries (Wholesale) Pty Ltd to be accurate at the time of writing this Material Safety Data Sheet, but is subject to change without notice. Exact formulations are proprietary and therefore confidential. Precise product composition will not be disclosed except as in accordance with relevant laws and regulations. The information is given in good faith but Lion Batteries (Wholesale) Pty Ltd gives no warranty, expressed or implied of any kind whatsoever as to its accuracy, completeness or otherwise. Under no circumstances shall Lion Batteries (Wholesale) Pty Ltd be responsible for damages of any nature, directly or indirectly arising out of the materials referred to, or the publication, use or reliance upon the data provided.