SAFETY DATA SHEET

According to Safe Work Australia

Printing date 13.05.2013
Revision: 13.05.2013

1. IDENTIFICATION: PRODUCT IDENTIFIER AND CHEMICAL IDENTITY

Product Name: VALVE REGULATED MAINTENANCE FREE LEAD ACID GEL BATTERIES

Recommended Use of the Chemical and Restriction on Use: Wet battery, non-spillable, electrical storage

Details of Manufacturer or Importer:
Robert Bosch Australia Pty Ltd
1555 Centre Road
Clayton VIC 3169

Phone Number: 1300 307 040

Emergency telephone number: 1300 307 040

2. HAZARDS IDENTIFICATION

Hazardous Nature:

- GHS08 health hazard
- Repr. 1A H360 May damage fertility or the unborn child.
- STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.

- GHS05 corrosion
- Skin Corr. 1A H314 Causes severe skin burns and eye damage.

- GHS07

Acute Tox. 4 H302 Harmful if swallowed.
Acute Tox. 4 H332 Harmful if inhaled.

Label Elements

Signal Word Danger

Hazard Statements
H302+H332 Harmful if swallowed or if inhaled.
H314 Causes severe skin burns and eye damage.
H360 May damage fertility or the unborn child.
H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary Statements
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P264 Wash hands thoroughly after handling.
P270 Do no eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER or doctor/physician.

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3. COMPOSITION AND INFORMATION ON INGREDIENTS

Chemical Characterization: Mixtures
Description: Mixture of substances listed below with nonhazardous additions.

Hazardous Components:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>7439-92-1 lead</td>
<td>65-75%</td>
</tr>
<tr>
<td>7664-93-9 sulphuric acid</td>
<td>20-25%</td>
</tr>
</tbody>
</table>

Additional information:
The battery is sealed hermetically and designed to withstand temperatures and pressures encountered during normal use. Thus, the ingredients have no hazard potential except if the battery is violated or dismantled. If exposed to a fire, mechanical shocks, and electric stress by misuse, the battery cell case will be breached and the hazardous materials may be released and acrid gas may be emitted. Therefore the batteries should not short circuit, puncture, incinerate, immerse in water, force discharge or expose to temperatures above the temperature range of the cell or battery.

4. FIRST AID MEASURES

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek immediate medical attention.

Skin Contact:
In case of skin contact, immediately remove contaminated clothing and wash affected areas with water and soap. Seek medical attention if symptoms occur.

Eye Contact:
In case of eye contact, rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek immediate medical attention.

Ingestion:
If swallowed, do not induce vomiting. Do not give anything by mouth to an unconscious person. Seek immediate medical attention.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media: Carbon dioxide, foam or dry chemical.

Specific Hazards Arising from the Chemical
Sealed batteries can emit hydrogen only if over charged (float voltage> 2.4 VPC). The gas enters the air through the safety valve. To avoid the chance of a fire or explosion, keep sparks and other sources of ignition away from the battery.
Polypropylene (ABS) - Temperatures over 300 °C may release combustible gases.
Polypropylene (PP) - Temperatures over 380 °C may release combustible gases.

**Special Protective Equipment and Precautions for Fire Fighters**
Wear Safe Work Australia approved self-contained breathing apparatus and full protective clothing.

### 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions, Protective Equipment and Emergency Procedures:**
Wear Safe Work Australia approved positive pressure self-contained breathing apparatus and full protective clothing. Evacuate all non-essential personnel from affected area. Do not breathe vapours. Ensure adequate ventilation. Extinguish all sources of ignition. Avoid sparks and open flames. No smoking.

**Environmental Precautions:**
In the event of a major spill, prevent spillage from entering drains or water courses.

**Methods and Materials for Containment and Cleaning Up:**
Stop leak if safe to do so and absorb spill with sand, earth, vermiculite or some other absorbent material. If possible, carefully neutralize spilled electrolyte with soda ash, sodium bicarbonate, lime, etc. Collect the spilled material and place into a suitable container for disposal.

### 7. HANDLING AND STORAGE

**Precautions for Safe Handling:**
Use of safe work practices are recommended to avoid eye or skin contact and inhalation of vapours. Food, beverages and tobacco products should not be stored or consumed where this material is in use. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use. Provide eyewash fountains and safety showers in close proximity to points of potential exposure.

**Conditions for Safe Storage:**
Store in a cool, dry and well ventilated area. Keep container tightly closed. Protect from heat, sparks, open flames and hot surfaces. Keep away from all metallic articles that could contact the negative and positive terminals on a battery and create a short circuit condition. Do not rest tools or cables on the battery. Use insulated tools only. Store away from metals, strong bases and most organic compounds, potassium, carbides, sulfides, peroxides, phosphorus, sulfurs, ketone, ester and petrolatum.

### 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

**Exposure Standards (Safe Work Australia):**

<table>
<thead>
<tr>
<th>Standard</th>
<th>Threshold Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>7439-92-1 lead</td>
<td>NES 0.15 mg/m³</td>
</tr>
<tr>
<td>7664-93-9 sulphuric acid</td>
<td>NES Short-term value: 3 mg/m³, Long-term value: 1 mg/m³</td>
</tr>
</tbody>
</table>

**Engineering Contols:**
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapour below occupational exposure standards.

**Personal Protective Equipment (PPE):**

**Respiratory Protection:** None required under normal conditions.

**Skin Protection:**
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None required under normal conditions.
If battery case is damaged wear rubber or plastic acid-resistant gloves with elbow length gauntlet, acid-resistant protective clothing, apron and boots. See Australian Standards AS/NZS 2161, 2210.1 and 2210.2 for more information.

Eye and Face Protection:
None required under normal conditions.
If battery case is damaged wear safety glasses with top and side shields or goggles. See Australian Standards AS/NZS 1336 and 1337 for more information.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Appearance:</th>
<th>Solid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form:</td>
<td>According to product specification</td>
</tr>
<tr>
<td>Colour:</td>
<td>Odourless</td>
</tr>
<tr>
<td>Melting point/Melting range:</td>
<td>Lead - 327 °C</td>
</tr>
<tr>
<td></td>
<td>Polypropylene (ABS) - 175 °C</td>
</tr>
<tr>
<td></td>
<td>Polypropylene (PP) - 170 °C</td>
</tr>
<tr>
<td>Initial Boiling Point/Boiling Range:</td>
<td>Sulfuric acid - 95 °C-115 °C</td>
</tr>
<tr>
<td>Flammability:</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Solubility in Water:</td>
<td>Sulfuric acid - 100% soluble</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Possibility of Hazardous Reactions: Hazardous polymerisation will not occur.

Chemical Stability: Stable at ambient temperature and under normal conditions of use.

Conditions to Avoid:
Heat, sparks, open flames and hot surfaces. Keep away from all metallic articles that could contact the negative and positive terminals on a battery and create a short circuit condition.

Incompatible Materials:
Lead and lead compounds - Potassium, carbides, sulfides, peroxides, phosphorus, sulfurs, ketone, ester and petrolatum.
Sulfuric acid - metals, strong bases and most organic compounds.

Hazardous Decomposition Products:
Oxides of lead, sulfuric dioxide, trioxide, hydrogen sulfide and hydrogen.

11. TOXICOLOGICAL INFORMATION

Toxicity:
Acute Health Effects
Inhalation:
Harmful if inhaled. Exposure to leaking electrolyte from ruptured battery can cause severe irritation of upper respiratory tract.

Skin:
Exposure to leaking electrolyte from ruptured battery can cause severe irritation, burns and ulceration of skin and mucous membranes.

Eye:
Exposure to leaking electrolyte from ruptured battery can cause severe irritation, burns, cornea damage or blindness.

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### 36. Ingestion:

Harmful if swallowed. Exposure to leaking electrolyte from ruptured battery can cause severe irritation mouth, throat, oesophagus and stomach, abdominal pain, nausea, vomiting and diarrhoea.

### Skin Corrosion / Irritation:

Causes severe skin burns.

### Serious Eye Damage / Irritation:

Causes eye damage.

### Respiratory or Skin Sensitisation:

No sensitising effects known.

### Carcinogenicity:

Lead is classified by IARC as Group 2B - Possibly carcinogenic to humans.

Acid mists, strong inorganic are classified by IARC as Group 1 - Carcinogenic to humans.

### Reproductive Toxicity:

Suspected of damaging fertility or the unborn child.

### Specific Target Organ Toxicity (STOT) - Repeated Exposure:

May cause damage to organs through prolonged or repeated exposure.

### Chronic Health Effects:

Sulfuric acid can cause scarring of the cornea, inflammation of the nose and throat and erosion of tooth enamel.

Lead compounds can cause anemia, damage to kidneys and nervous system, and damage to reproductive system in both males and females.

**Existing Conditions Aggravated by Exposure:**

Inorganic lead and its compounds can aggravate chronic forms of kidney, liver, and neurological diseases.

Contact of battery electrolyte (acid) with the skin may aggravate skin diseases such as eczema and contact dermatitis.

Overexposure to sulfuric acid mist may case lung damage and aggravate pulmonary conditions.

### 12. ECOLOGICAL INFORMATION

**Ecotoxicity:** Lead and its compounds can pose a threat if released to the environment.

**Aquatic toxicity:** No further relevant information available.

**Persistence and Degradability:** No further relevant information available.

**Bioaccumulative Potential:** No further relevant information available.

**Mobility in Soil:** No further relevant information available.

### 13. DISPOSAL CONSIDERATIONS

**Disposal Methods and Containers:**

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Dispose according to applicable local and state government regulations.

**Special Precautions for Landfill or Incineration:**

Please consult your state Land Waste Management Authority for more information.

### 14. TRANSPORT INFORMATION

| UN Number | Not applicable |
| Proper Shipping Name | Not applicable |
| Dangerous Goods Class | Not applicable |
| Packing Group: | Not applicable |
Marine pollutant: No

Special Provisions:
SP238 (b): Non-spillable batteries are not subject to this Code if, at a temperature of 55 °C, the electrolyte will not flow from a ruptured or cracked case and there is no free liquid to flow and if, when packaged for transport, the terminals are protected from short circuit.

15. REGULATORY INFORMATION

<table>
<thead>
<tr>
<th>Australian Inventory of Chemical Substances:</th>
</tr>
</thead>
<tbody>
<tr>
<td>7439-92-1 lead</td>
</tr>
<tr>
<td>7664-93-9 sulphuric acid</td>
</tr>
<tr>
<td>9003-07-0 1-Propene, homopolymer</td>
</tr>
<tr>
<td>60676-86-0 Silica, fused</td>
</tr>
<tr>
<td>7440-31-5 tin</td>
</tr>
<tr>
<td>7440-76-2 calcium</td>
</tr>
</tbody>
</table>

16. OTHER INFORMATION

Creation Date: 13.05.2013
Prepared by: MSDS.COM.AU Pty Ltd

Abbreviations and acronyms:
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
IARC: International Agency for Research on Cancer
STEL: Short Term Exposure Limit
TWA: Time Weighted Average

Disclaimer
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