1. IDENTIFICATION: PRODUCT IDENTIFIER AND CHEMICAL IDENTITY

Product Name: MAINTENANCE FREE BATTERY

Recommended Use of the Chemical and Restriction on Use: Automotive and marine battery

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:

- skull and crossbones
- Acute Tox. 3 H301 Toxic if swallowed.
- 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.
- corrosion
- Skin Corr. 1A H314 Causes severe skin burns and eye damage.

- Acute Tox. 4 H332 Harmful if inhaled.

Label Elements

Signal Word Danger

Hazard Statements
H301 Toxic if swallowed.
H332 Harmful 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 not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P201 Obtain special instructions before use.

(Contd. on page 2)
SAFETY DATA SHEET
According to Safe Work Australia

Product Name: MAINTENANCE FREE BATTERY

3. COMPOSITION AND INFORMATION ON INGREDIENTS

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

<table>
<thead>
<tr>
<th>Hazardous Components:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7439-92-1 Lead</td>
<td>60-70%</td>
</tr>
<tr>
<td>7664-93-9 Sulfuric acid</td>
<td>25-30%</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 missuse, the battery cell case will be breached and the hazardous materials may be released and acid gas may be emitted. Therefore the batteries should not short circuit, recharge, 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 battery fluids (electrolytes), 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 with battery fluids (electrolytes), immediately remove contaminated clothing and wash affected areas with water and soap. Seek immediate medical attention.

Eye Contact:
In case of eye contact with battery fluids (electrolytes), 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 battery fluids (electrolytes), do not induce vomiting. Do not give anything by mouth to an unconscious person. Seek immediate medical attention.
38.0.35

Information for Doctor

Symptoms Caused by Exposure:
Inhalation: Harmful if inhaled. Exposure to leaking electrolyte from ruptured battery can cause severe irritation of upper respiratory tract.
Skin Contact: Exposure to leaking electrolyte from ruptured battery can cause severe irritation, burns and ulceration of skin and mucous membranes.
Eye Contact: Exposure to leaking electrolyte from ruptured battery can cause severe irritation, burns, cornea damage or blindness.
Ingestion: Toxic if swallowed. Exposure to leaking electrolyte from ruptured battery can cause severe irritation, mouth, throat, oesophagus and stomach, abdominal pain, nausea, vomiting and diarrhoea.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media:
Carbon dioxide, foam or dry chemical. Water should not be applied because of potential to liberate acid mists.

Specific Hazards Arising from the Chemical:
Sulfuric acid decomposes to sulfur trioxide, carbon monoxide, sulfur dioxide and hydrogen. Flammable and explosive vapours may be generated in confined areas. Exposure of lead components to high temperatures may produce toxic metal fume. Contact with strong acids or alkalis may produce highly toxic arsine gas. Exposure of plastic container to fire or high temperatures may produce carbon dioxide, carbon monoxide, noxious aldehydes (e.g. formaldehyde), ketones, methane and ethane. Lead-acid batteries can emit hydrogen gas if over-charged. Hydrogen may ignite or explode.

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 respiratory protection 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 / mists. 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:
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Revision: 27.10.2014

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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:

<table>
<thead>
<tr>
<th>Substance</th>
<th>Exposure Standard</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>7664-93-9 Sulfuric acid</td>
<td>NES STEL</td>
<td>3 mg/m³</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>1 mg/m³</td>
</tr>
</tbody>
</table>

Engineering Controls:
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:
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 and 4501 for more information.

Eye and Face Protection:
Eye and face protectors for protection against splashing materials or liquids. See Australian/New Zealand Standard AS/NZS 1337 for more information.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:
Rectangular battery in sealed plastic packaging

Form:
According to product specification

Colour:
Not applicable

Odour:
Not applicable

Odour Threshold:
Not applicable

pH-Value:
<4

Melting point/Melting range:
No information available

Initial Boiling Point/Boiling Range:
No information available

Flash Point:
Not applicable

Flammability:
Not applicable

Auto-ignition Temperature:
Not applicable

Decomposition Temperature:
>100 °C

Explosion Limits:

Lower:
Not applicable

Upper:
Not applicable

Vapour Pressure:
Not applicable

Density:
Not applicable

Relative Density:
Not applicable

Vapour Density:
Not applicable

Evaporation Rate:
Not applicable

Solubility in Water:
Insoluble

Partition Coefficient (n-octanol/water):
Not determined. Not applicable

(Contd. on page 5)
38.0.35 Solids content: 70.0 %

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 other sources of ignition.

Incompatible Materials:
Metals, strong bases and most organic compounds, potassium, carbides, sulfides, peroxides, phosphorus, sulfurs, ketone, ester and petrolatum.

Hazardous Decomposition Products:
Sulfuric acid decomposesto sulfur trioxide, carbon monoxide, sulfur dioxide and hydrogen. Flammable and explosive vapours may be generated in confined areas. Exposure of lead components to high temperatures may produce toxic metal fume. Contact with strong acids or alkalis may produce highly toxic arsine gas. Exposure of plastic container to fire or high temperatures may produce carbon dioxide, carbon monoxide, noxious aldehydes (e.g. formaldehyde), ketones, methane and ethane.

11. TOXICOLOGICAL INFORMATION

Toxicity:

<table>
<thead>
<tr>
<th>LD₅₀/LC₅₀ Values Relevant for Classification:</th>
</tr>
</thead>
<tbody>
<tr>
<td>7664-93-9 Sulfuric acid</td>
</tr>
<tr>
<td>Oral</td>
</tr>
<tr>
<td>LD₅₀ 2140 mg/kg (rat)</td>
</tr>
<tr>
<td>Inhalation</td>
</tr>
<tr>
<td>LC₅₀ 320 mg/m³ (mouse)</td>
</tr>
<tr>
<td>510 mg/m³ (rat)</td>
</tr>
</tbody>
</table>

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.

Ingestion:
Toxic 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 serious eye damage.

Respiratory or Skin Sensitisation: No sensitising effects known.

Germ Cell Mutagenicity: Based on classification principles, the classification criteria are not met.

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: May damage fertility or the unborn child.

Specific Target Organ Toxicity (STOT) - Single Exposure:
Based on classification principles, the classification criteria are not met.

Specific Target Organ Toxicity (STOT) - Repeated Exposure:
May cause damage to organs through prolonged or repeated exposure.

Aspiration Hazard: Based on classification principles, the classification criteria are not met.

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 cause lung damage and aggravate pulmonary conditions.

12. ECOLOGICAL INFORMATION

Ecotoxicity:
Lead metal has low bioavailability but its compounds can be hazardous in the environment at low concentrations.

Aquatic toxicity: Lead compounds can be particularly toxic in the aquatic environment.

Persistence and Degradability: No information available

Bioaccumulative Potential: Lead bioaccumulates in plants and animals in both the aquatic and terrestrial environments.

Mobility in Soil: No information available

13. DISPOSAL CONSIDERATIONS

Disposal Methods and Containers: 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: 2800
Proper Shipping Name: BATTERIES, WET, NON-SPILLABLE, electric storage
Dangerous Goods Class: 8
Packing Group: Not applicable
Marine pollutant: No
EMS Number: F-A,S-B
Hazchem Code: 4W
Special Provisions: 238
Limited Quantities: 1L
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Packagings & IBCs - Packing Instruction: P003
Packagings & IBCs - Special Packing Provisions: PP16
Portable Tanks & Bulk Containers - Instructions: Not applicable
Portable Tanks & Bulk Containers - Special Provisions: Not applicable

15. REGULATORY INFORMATION

Australian Inventory of Chemical Substances:
- 7439-92-1 Lead
- 7664-93-9 Sulfuric acid

Standard for the Uniform Scheduling of Drugs and Poisons (SUSMP) - Poison Schedule:

16. OTHER INFORMATION

Creation Date: 27.10.2014
Prepared by: MSDS.COM.AU Pty Ltd
www.msds.com.au

Abbreviations and acronyms:
- ADG: Australian Dangerous Goods
- IMDG: International Maritime Code for Dangerous Goods
- IATA: International Air Transport Association
- GHS: Globally Harmonized System of Classification and Labelling of Chemicals
- EINECS: European Inventory of Existing Commercial Chemical Substances
- ELINCS: European List of Notified Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- LC₅₀: Lethal concentration, 50 percent
- LD₅₀: Lethal dose, 50 percent
- IARC: International Agency for Research on Cancer
- STEL: Short Term Exposure Limit
- TWA: Time Weighted Average
- NES: National Exposure Standard (Safe Work Australia - Workplace Exposure Standards For Airborne Contaminants)

Disclaimer
This MSDS is prepared in accord with the Safe Work Australia document “Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals - December 2011”.

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