SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Valve Regulated Lead Acid Battery

MANUFACTURER’S NAME: CONCORDE BATTERY CORPORATION

ADDRESS: 2009 San Bernardino Rd., West Covina, CA 91790

PERSON RESPONSIBLE FOR PREPARATION: Steve Delmar, Director, Environmental, Health and Safety

COMMON NAME: (Used on label) Valve Regulated Lead-acid battery
(Trade Name & Synonyms) VRB, VRLA, SLAB, Recombinant Lead Acid: GPLSeries

SECTION 2 - HAZARD IDENTIFICATION

GHS Classification:

<table>
<thead>
<tr>
<th>Health</th>
<th>Environmental</th>
<th>Physical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Toxicity (Oral/Dermal/Inhalation)</td>
<td>Category 4</td>
<td>Aquatic</td>
</tr>
<tr>
<td>Skin Corrosion/Irritation</td>
<td>Category 1A</td>
<td>Chronic 1</td>
</tr>
<tr>
<td>Eye Damage</td>
<td>Category 1</td>
<td>Acute 1</td>
</tr>
<tr>
<td>Reproductive</td>
<td>Category 1A</td>
<td></td>
</tr>
<tr>
<td>Carcinogenicity (lead)</td>
<td>Category 1B</td>
<td></td>
</tr>
<tr>
<td>Carcinogenicity (arsenic)</td>
<td>Category 1A</td>
<td></td>
</tr>
<tr>
<td>Carcinogenicity (acid mist)</td>
<td>Category 1B</td>
<td></td>
</tr>
<tr>
<td>Specific Target Organ Toxicity (repeated exp.)</td>
<td>Category 2</td>
<td></td>
</tr>
</tbody>
</table>

GHS Label:

Hazard Statements
DANGER!
- Causes severe skin burns and eye damage. Causes serious eye damage.
- May damage fertility or the unborn child if ingested or inhaled.
- May cause cancer if ingested or inhaled.
- Causes damage to central nervous system, blood and kidneys through prolonged or repeated exposure.
- May form explosive air/gas mixture during charging.
- Extremely flammable gas (hydrogen).
- Explosive, fire, blast or projection hazard.

Precautionary Statements
- Wash thoroughly after handling.
- Do not eat drink or smoke when using this product.
- Wear protective gloves/protective clothing, eye protection/face protection.
- Avoid breathing dust/fume/gas/mist/vapors/spray.
- Use only outdoors or in a well-ventilated area.
- Causes skin irritation, serious eye damage.
- Contact with internal components may cause irritation or severe burns.
- Avoid contact with internal acid.
- Irritating to eyes, respiratory system, and skin.
**SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS**

<table>
<thead>
<tr>
<th>C.A.S.</th>
<th>PRINCIPAL HAZARDOUS COMPONENT(S) (chemical &amp; common name(s))</th>
<th>Hazard Category</th>
<th>% Weight</th>
<th>ACGIH TLV</th>
<th>OSHA PEL/TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>7439-92-1</td>
<td>Lead/Lead Oxide (Litharge)/Lead Sulfate</td>
<td>Acute-Chronic</td>
<td>60-70</td>
<td>0.05 mg/m³</td>
<td>0.05 mg/m³</td>
</tr>
<tr>
<td>7440-70-2</td>
<td>Calcium</td>
<td>Reactive</td>
<td>&lt;0.15</td>
<td>Not Established</td>
<td>Not Established</td>
</tr>
<tr>
<td>7440-31-5</td>
<td>Tin</td>
<td>Chronic</td>
<td>&lt;1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>7440-38-2</td>
<td>Arsenic (inorganic)</td>
<td>Acute-Chronic</td>
<td>&lt;1</td>
<td>0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>7664-93-9</td>
<td>Sulfuric Acid (Battery Electrolyte)</td>
<td>Reactive-Oxidizer Acute-Chronic</td>
<td>10-15</td>
<td>1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Note: PEL’s for Individual states may differ from OSHA’s PEL’s. Check with local authorities for the applicable state PEL’s.

**SECTION 4 - FIRST AID MEASURES**

- **Emergency and First Aid Procedures**
  - Contact with internal components if battery is opened/broken.
  - **Inhalation**
    - Sulfuric Acid: Remove to fresh air and provide medical oxygen/CPR if needed. Obtain medical attention.
    - Lead: Remove from exposure, gargle, wash nose and lips; obtain medical attention.
  - **Ingestion**
    - Sulfuric Acid: Do not induce vomiting, if conscious drink large amounts of water. Obtain medical attention. Never give anything by mouth to an unconscious person.
    - Lead: Consult physician immediately.
  - **Skin**
    - Sulfuric Acid: Flush contacted area with large amounts of water for at least 15 minutes. Remove contaminated clothing and obtain medical attention if necessary.
    - Lead: Wash immediately with soap and water.
  - **Eyes**
    - Sulfuric acid and/or lead: Immediately flush with large amounts of water, hold eyelids open. Obtain medical attention.

**SECTION 5 - FIREFIGHTING MEASURES**

- **Flash Point – Not Applicable**
- **Flammable Limits in Air % by Volume:** Not Applicable
- **Extinguishing Media – Class ABC, CO₂, Halon.**
  - Do not use carbon dioxide directly on cells. Avoid breathing vapors.
- **Auto-Ignition**
  - 675°F (polypropylene)
  - Temperature
- **Fire Fighting 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 vapors generated by heat or fire are corrosive. Use NIOSH approved self-contained breathing apparatus (SCBA) and full protective equipment operated in positive-pressure mode.
  - **Hazardous Combustion Products**
    - Highly flammable hydrogen gas is generated during charging and operation of batteries. Avoid open flames/sparks/other sources of ignition near battery. Sulfuric acid vapors are generated upon overcharge and polypropylene case failure. Carefully follow manufacturer’s instructions for installation and service. Do not allow metallic articles to simultaneously contact the negative and positive terminals of a battery. Use adequate ventilation.

**SECTION 6 - ACCIDENTAL RELEASE MEASURES**

- **Procedures for Cleanup:** 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 other neutralizing agent. Place battery in suitable container for disposal. Dispose of contents/container in accordance with Occupational Safety and Health Administration; ACGIH – American Conference of Governmental Industrial Hygienists; NIOSH – National Institute for Occupational Safety and Health.

- **Personal Precautions:** Acid resistant aprons, boots and protective clothing. ANSI approved safety glasses with side shields/face shield recommended.

- **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**
  - Store away from reactive materials, open flames and sources of ignition as defined in Section 10 – Stability and Reactivity Data.
  - Store batteries in cool, dry, well-ventilated areas. Batteries should be stored under roof for protection against adverse weather conditions. Avoid damage to containers. Do not allow the positive and negative terminals to contact each other, a short circuit will cause high current flow, creating high heat and the possibility of a fire.
  - **Precautions during charging**
    - Use proper voltages during charging (see battery label). Do not install or charge in a sealed container or sealed room.
    - Charge at constant potential (constant voltage) only. For optimum life, battery charge voltage should be adjusted with the battery operating temperature.
  - **Other Precautions**
    - GOOD PERSONAL HYGIENE AND WORK PRACTICES ARE MANDATORY. Refrain from eating, drinking or smoking in work areas. Thoroughly wash hands, face, neck and arms, before eating, drinking and smoking. Work clothes and equipment should remain in designated lead contaminated areas, and never taken home or laundered with personal clothing. Wash soiled clothing, work clothes and equipment before reuse.

**SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION**

- **Respiratory Protection**
  - None required under normal conditions. Acid/gas NIOSH approved respirator is required when the PEL is exceeded or employee experiences respiratory irritation.
- **Ventilation**
  - Store and handle in dry ventilated area. If mechanical ventilation is used, components must be acid-resistant.
- **Skin Protection**
  - Wear rubber or plastic acid resistant gloves. Under severe exposure or emergency conditions, wear acid-resistant clothing, gloves, and boots.
- **Eye Protection**
  - ANSI approved safety glasses with side shields/face shield recommended.
- **Other Protection**
  - Safety shower and eyewash. Chemically impervious apron and face shield recommended when adding water or electrolyte to batteries (not required for sealed, non-spillable batteries)

**SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES**

- **Boiling Point:** Not Applicable
- **Vapor Pressure:** Not Applicable
- **Specific Gravity:** 1.250-1.320
- **pH:** <2
- **Melting Point:** >320°F (polypropylene)
- **Vapor Pressure**
  - Hydrogen: 0.069 (Air =1)
  - Electrolyte: 3.4 @ STP (Air = 1)
- **Evaporation Rate:** Not applicable
- **Solubility In water:** 100% soluble (electrolyte)
- **Reactivity In Water:** Electrolyte – Water Reactive (1)
**SECTION 10 - STABILITY AND REACTIVITY**

<table>
<thead>
<tr>
<th>Stability</th>
<th>Stable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conditions to Avoid</td>
<td>Avoid overcharging and smoking, or sparks near battery surface. High temperatures-cases decompose at &gt;320°F.</td>
</tr>
<tr>
<td>Incompatibility (Materials to Avoid)</td>
<td>Sparks, open flames, keep battery away from strong oxidizers.</td>
</tr>
<tr>
<td>Hazardous Decomposition Products</td>
<td>Combustion can produce sulfur dioxide, carbon monoxide, sulfur trioxide, hydrogen sulfide, and sulfuric acid mist.</td>
</tr>
<tr>
<td>Hazardous Polymerization</td>
<td>Hazardous Polymerization has not been reported.</td>
</tr>
</tbody>
</table>

**SECTION 11 - TOXICOLOGICAL INFORMATION**

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

**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.

**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. 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.

**SULFURIC ACID:** Harmful exposure to sulfuric acid can occur by all routes of entry.

**ACUTE:** Severe irritation, burns, and ulceration. Can cause blindness.

**CARCINOGENICITY:**

**SULFURIC ACID:** The International Agency for Research on Cancer (IARC) has classified "strong inorganic acid mist containing sulfuric acid" as a Category I carcinogen, a substance that is carcinogenic to humans. Inorganic sulfuric acid mist is not generated under normal use.

**LEAD:** Lead is listed as a 2B carcinogen, likely carcinogenic to animals, other than humans, at extreme dose levels. Lead compounds, but not lead, are classified as possibly toxic to reproduction. May cause harm to the unborn child.

**SECTION 12 - ECOLOGICAL INFORMATION**

**Environmental Fate:**

Lead is persistent in soil and sediment. In most surface water and groundwater, lead forms compounds with anions such as hydroxides, carbonates, sulfates, and phosphates, and precipitates out of the water. Mobility of metallic lead between ecological compartments is slow. Most lead is strongly retained in soil, resulting in little mobility. Lead may be immobilized by ion exchange with hydrous oxides or clays or by chelation with humic or fulvic acids in the soil. Lead (dissolved phase) is bioaccumulated by plants and animals, both aquatic and terrestrial.

**Aquatic Toxicity:**

**Sulfuric Acid:** 24-hr LC50, freshwater fish (Brachydanio rerio): 82 mg/L, 96-hr LOEC, freshwater fish (Cyprinus carpio): 22 mg/L

**Lead:** 48-hr LC50 (modeled for aquatic invertebrates: <1mg/L, based on lead bullion

**Additional Information:**

**Volatile Organic Compounds (VOC):** 0% (by volume)

**SECTION 13 - DISPOSAL CONSIDERATIONS**

Lead-acid batteries are completely recyclable. Because these batteries contain lead, sulfuric acid, and other hazardous materials, they must never be discarded in the trash or in a landfill. Small quantities can be taken to local Household Hazardous Waste Management facilities, which are licensed to handle them. For assistance, please call Concorde Battery at 626-813-1234 or use either of the following links:

http://www.ehso.com/find_a_recycling_center.php

http://www.ehso.com/ehshome/batteries.php

**SECTION 14 - TRANSPORT INFORMATION**

All Concorde AGM, GPL, PVX, RG® series and D8565 series are valve regulated lead acid (VRLA) batteries. Concorde’s VRLA batteries have passed vibration, pressure differential and free flowing acid tests under 49 CFR173.159a, the vibration and pressure differential test under IATA Packing Instruction 972, meet IATA Special Provisions A48, A67, A164 & A183, and IMDG Special Provisions 238.1 & 238.2. The batteries are securely packaged, protected from short circuits and labeled "Non-Spillable.” Concorde’s VRLA batteries are exempt from DOT Hazardous Material Regulations, IATA Dangerous Goods Regulations, and IMDG Code.

**US DOT**

Excepted from the requirements because batteries have passed the vibration and pressure differential performance tests, and ruptured case test for Nonspillable designation.

**IMO**

Excepted from the requirements because batteries have passed the vibration and pressure differential performance tests, and ruptured case test for nonspillable designation. And when packaged for transport, the terminals are protected from short circuit. The words “Not Restricted” and the Special Provision numbers must be included in the description of the substance on the Air Waybill as required by 8.2.6, when an Air Waybill is issued.
SECTION 15 - REGULATORY INFORMATION

U.S. HAZARDOUS UNDER HAZARD COMMUNICATION STANDARD:
- LEAD - YES
- ARSENIC – YES
- SULFURIC ACID – YES

INGREDIENTS LISTED ON TSCA INVENTORY: YES

CERCLA SECTION 304 HAZARDOUS SUBSTANCES:
- LEAD – YES
  RQ: N/A*
- ARSENIC – YES
  RQ: 1 POUND
- SULFURIC ACID – YES
  RQ: 1000 POUNDS

* RQ: REPORTING NOT REQUIRED WHEN DIAMETER OF THE PIECES OF SOLID METAL RELEASED IS EQUAL TO OR EXCEEDS 100 μm (micrometers).

EPCRA SECTION 302 EXTREMELY HAZARDOUS SUBSTANCE:
- SULFURIC ACID – YES

EPCRA SECTION 313 TOXIC RELEASE INVENTORY:
- LEAD – CAS NO: 7439-92-1
- ARSENIC – CAS NO: 7440-38-2
- SULFURIC ACID – CAS NO: 7664-93-9

STATE REGULATIONS (US):
California Proposition 65: This product contains lead, lead compounds, and other chemicals, all known to state to cause cancer and reproductive harm: Lead (CAS# 7439-92-1).

INTERNATIONAL REGULATIONS:
Distribution into Quebec to follow Canadian Controlled product Regulations (CPR) 24(1) and 24(2).
Distribution into the EU to follow applicable Directives to the Use, Import/Export of the product as-sold.

SECTION 16 - OTHER INFORMATION

The information above is believed to be accurate and represents the best information currently available to us. However, Concorde Battery makes no warranty of merchantability or any other warranty, expressed or implied, with respect to such information, and we assume no 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.

Form SDS Rev. 05/22/2015

The data/information contained herein has been reviewed and approved for general release on the basis that this document contains no export-controlled information.