

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identification : Valve Regulated Lead-Acid Battery (V R L A)
 Model Number : FLH12240L
 Name of Manufacturer : THE FURUKAWA BATTERY CO.,LTD.
 Address : No.2-4-1 HOSHIKAWA, HODOGAYA-KU, YOKOHAMA, KANAGAWA, JAPAN
 Telephone number : 81-45-336-5055
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2. HAZARD DATA

GHS Classification

Hazard class	Classification (Lead)	Classification (Lead Oxide)	Classification (Sulfuric Acid)
Explosives	Not applicable	Not applicable	Not applicable
Flammable gases	Not applicable	Not applicable	Not applicable
Flammable aerosols	Not applicable	Not applicable	Not applicable
Oxidizing gases	Not applicable	Not applicable	Not applicable
Gases under pressure	Not applicable	Not applicable	Not applicable
Flammable liquids	Not applicable	Not applicable	Not classified
Flammable solids	Not classified	Not classified	Not applicable
Self-reactive substances and mixtures	Not applicable	Not applicable	Not applicable
Pyrophoric liquids	Not applicable	Not applicable	Not classified
Pyrophoric solids	Not classified	Not classified	Not applicable
Self-heating substances and mixtures	Not classified	Not classified	Not classified
Substances and mixtures, which in contact with water, emit flammable gases	Not classified	Not classified	Not applicable
Oxidizing liquids	Not applicable	Not applicable	Not classified
Oxidizing solids	Not applicable	Not applicable	Not applicable
Organic peroxides	Not applicable	Not applicable	Not applicable
Corrosive to metals	Classification not possible	Classification not possible	Classification not possible
Health Hazards			
Acute toxicity (oral)	Classification not possible	Classification not possible	Category 5
Acute toxicity (dermal)	Classification not possible	Classification not possible	Classification not possible
Acute toxicity (inhalation: gas)	Not applicable	Not applicable	Not applicable
Acute toxicity (inhalation: vapour)	Classification not possible	Classification not possible	Not applicable
Acute toxicity (inhalation: dust, mist)	Classification not possible	Classification not possible	Category 2
Skin corrosion / irritation	Classification not possible	Category 3	Category 1A-1C
Serious eye damage / eye irritation	Classification not possible	Classification not possible	Category 1
Respiratory/skin sensitizer	Respiratory sensitization: Classification not possible; Skin sensitization: Classification not possible	Respiratory sensitization: Classification not possible; Skin sensitization: Classification not possible	Respiratory sensitization: Classification not possible; Skin sensitization: Not classified
Germ cell mutagenicity	Category 2	Category 2	Classification not possible

Carcinogenicity	Category 2	Category 2	possible Classification not possible
Toxic to reproduction	Category 1A	Category 1A	Not classified
Specific target organs/systemic toxicity following single exposure	Classification not possible	Classification not possible	Category 1 (respiratory)
Specific target organs/systemic toxicity following repeated exposure	Category 1 (hematopoietic system, kidneys, central nervous system, peripheral nervous system, cardiovascular system, immune system)	Category 2 (cardiovascular system, peripheral nervous system, kidneys)	Category 1 (testes, respiratory organs)
Aspiration hazard	Classification not possible	Classification not possible	Classification not possible
Environmental Hazards			
Hazardous to the aquatic environment (acute)	Classification not possible	Classification not possible	Category 3
Hazardous to the aquatic environment (chronic)	Classification not possible	Category 4	Not classified

Symbol :



Signal word : Danger

HEALTH HAZARD DATA INFORMATION

Routes of Entry:

Sulfuric acid: Harmful by all routes of entry.

Lead compounds: Hazardous exposure can occur only when product is heated, oxidized or otherwise processed or damaged to create dust, vapor or fume.

Inhalation:

Sulfuric acid: Breathing of sulfuric acid vapors or mists may cause severe respiratory irritation.

Lead compounds: Inhalation of lead dust or fumes may cause irritation of upper respiratory tract and lungs.

Ingestion:

Sulfuric acid: May cause severe irritation of mouth, throat, esophagus and stomach.

Lead compounds: Acute ingestion may cause abdominal pain, nausea, vomiting, diarrhea and severe cramping. This may lead rapidly to systemic toxicity and must be treated by a physician.

Skin Contact:

Sulfuric acid: Severe irritation, burns and ulceration.

Lead compounds: Not absorbed through the skin.

Eye Contact:

Sulfuric acid: Severe irritation, burns, cornea damage, and blindness.

Lead compounds: May cause eye irritation.

Effects of Overexposure - Acute:

Sulfuric acid: Severe skin irritation, damage to cornea, upper respiratory irritation.

Lead compounds: Symptoms of toxicity include headache, fatigue, abdominal pain, and loss of appetite, muscular aches and weakness, sleep disturbances and irritability.

Effects of Overexposure - Chronic:

Sulfuric acid: Possible erosion of tooth enamel, inflammation of nose, throat and bronchial tubes.

Lead compounds: Anemia; neuropathy, particularly of the motor nerves, with wrist drop; kidney damage; reproductive changes in males and females.

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. This classification does not apply to liquid forms of sulfuric acid or sulfuric acid solutions contained within a battery. Inorganic acid mist (sulfuric acid mist) is not generated under normal use of this product. Misuse of the product, such as overcharging, may result in the generation of sulfuric acid mist.

Lead compounds: Lead is listed as a 2B carcinogen, likely in animals at extreme doses. Proof of carcinogenicity in humans is lacking at present.

Medical Conditions Generally Aggravated by Exposure:

Overexposure to sulfuric acid mist may cause lung damage and aggravate pulmonary conditions. Contact of sulfuric acid with skin may aggravate skin diseases such as eczema and contact dermatitis. Lead and its compounds can aggravate some forms of kidney, liver and neurologic diseases.

Emergency and First Aid Procedures:

This data is the emergency and first aid which must carry out the minimum. Take to a doctor after that.

Inhalation:

Sulfuric acid: Remove to fresh air immediately. If breathing is difficult, give oxygen.

Lead: Remove from exposure, gargle, wash nose and lips; consult physician.

Ingestion:

Sulfuric acid: Give large quantities of water; do not induce vomiting; consult physician.

Lead: Consult physician immediately.

Skin:

Sulfuric acid: Flush with large amounts of water for at least 15 minutes; remove contaminated clothing completely, including shoes.

Lead: Wash immediately with soap and water.

Eyes:

Sulfuric acid and lead: Flush immediately with large amounts of water for at least 15 minutes; consult physician.

Proposition 65:

Warning: Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the state of California to cause cancer and reproductive harm. Wash hands thoroughly after working with batteries and before eating, drinking or smoking.

3. COMPOSITION/INFORMATION ON IDENTIFICATION

Material		Chemical Formula	Approximate % by Wt. or Vol.	OHS PEL (mg/m ³)	ACGIH TLV (mg/m ³)	CAS #
Components	Common Name					
Lead	Plate	Pb	35-45	0.05	0.05	7439-92-1
Lead Oxide	Plate	PbO ₂	20-30	0.05	0.05	1309-60-0
Sulfuric Acid	Electrolyte	H ₂ SO ₄	15-25	1.0	0.2	7664-93-9
Acrylonitrile-Butadiene-Styrene Copolymers (ABS Resin)	Container	—	5-15	N/A	N/A	9003-56-9
Rubber, Glass fiber, Other	—	—	<5	N/A	N/A	—

Inorganic lead and Lead compounds are the primary components of every battery manufactured by The Furukawa Battery, Co., Ltd. Other ingredients may be present dependent upon battery type.

4. HAZARDOUS INGREDIENTS / IDENTITY INFORMATION

Note: FLH12150 Battery is a non-spillable design. Under normal use and handling the user has no contact with the internal components of battery or chemical hazards. Under normal use and handling those battery do not emit regulated or hazardous substances.

Warning: Battery terminals, posts and related accessories contain lead and lead compounds, chemicals known to cause cancer and reproductive harm. Wash hands thoroughly after working with batteries and before eating, drinking or smoking.

5. FIRE AND EXPLOSION HAZARD DATA

Flash Point Not Applicable
Flammable Limits: LEL 4.1% (Hydrogen Gas) UEL = 74.2%
Extinguishing media CO₂, foam, dry chemical or Halon.

Special Fire Fighting Procedures

If batteries are on charge, turn off power. Use positive pressure, self-contained breathing apparatus. Water applied to electrolyte generates heat and causes it to spatter. Wear acid-resistant clothing.

Unusual Fire and Explosion hazards

Highly flammable hydrogen gas is generated during charging and operation of batteries. To avoid risk of fire or explosion, keep sparks or other sources of ignition away from batteries. Do not allow metallic materials to simultaneously contact negative and positive terminals of cells and batteries. Follow manufacturer's instructions for installation and service.

6. SPILLAGE DISPOSAL

Collect leaking and spilled liquid in sealable containers as far as possible. Use face shield, Chemical protection suit, filter respirator for toxic particles and protective gloves.

7. PRECAUTIONS FOR SAFE HANDLING AND USE

Step to be Taken in Case of Broken Battery Case or Electrolyte Leakage.

Stop flow of material, contain/absorb small spills with dry sand, earth, and vermiculite. Do not use combustible materials. If possible, carefully neutralize spilled electrolyte with soda ash, sodium bicarbonate, lime, etc. Wear acid-resistant clothing, boots, gloves, and face shield. Do not allow discharge of unneutralized acid to sewer.

Precautions to be Taken in Handling, Storing and Transportation:

Store in cool and dry area away from combustible materials. Do not store in sealed, unventilated areas. Avoid overheating and overcharging

Other Precaution:

Do not charge in unventilated areas. Do not use organic solvents or other than recommended chemical cleaners on battery.

8. CONTROL MEASURES/PERSONAL PROTECTION

Other Protection:

Acid-resistant apron. Under severe exposure or emergency conditions, wear acid-resistant clothing and boots.

Emergency Flushing:

In areas where sulfuric acid is handled in concentrations greater than 1%, emergency eyewash stations and showers should be provided, with unlimited water supply.

Engineering Controls:

Store and handle in well-ventilated area. If mechanical ventilation is used, components must be acid-resistant.

Work Practices:

Handle batteries cautiously to avoid spills. Make certain vent caps are on securely. Avoid contact with internal components. Wear protective clothing when filling or handling batteries.

Respiratory Protection:

None required under normal conditions. When concentrations of sulfuric acid and lead powder mist are known to exceed PEL, use NIOSH or MSHA-approved respiratory protection.

Protective gloves:

Rubber or plastic acid-resistant gloves with elbow-length gauntlet.

Eye Protection:

Chemical goggles or face shield.

9. PHYSICAL DATA

Boiling Point	Electrolyte 110-112°C
Melting Point	Not Applicable
Vapor Pressure	Electrolyte 11.7(mmHg)
Vapor Density (AIR = 1)	Electrolyte 3.4
Solubility in Water	Lead, Lead Oxide are not soluble in water. Electrolyte is 100% soluble in water.
Specific Gravity (H ₂ O = 1)	Electrolyte 1.215 to 1.350
% Volatile by Weight:	Not Applicable
Appearance and Odor	Manufactured article; no apparent odor. Electrolyte is a clear liquid with a sharp, penetrating, pungent odor of acid.

10. REACTIVITY DATA

Stability	Stable under normal condition.
Conditions to Avoid	Prolonged overcharge, Sparks and other sources of ignition, Fire or explosion hazard due to possible hydrogen gas generation.

Incompatibility: (materials to avoid):

Sulfuric acid: Contact with combustibles and organic materials may cause fire and explosion. Also reacts violently

with strong reducing agents, metals, sulfur trioxide gas, strong oxidizers and water. Contact with metals may produce toxic sulfur dioxide fumes and may release flammable hydrogen gas.

Lead compounds: Avoid contact with strong acids, bases, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen and reducing agents.

Hazardous Decomposition Products:

Sulfuric acid: Sulfur trioxide, carbon monoxide, sulfuric acid mist, sulfur dioxide, and hydrogen.

Lead compounds: High temperatures likely to produce toxic metal fume, vapor or dust; contact with strong acid or base or presence of nascent hydrogen may generate highly toxic arsine gas.

11. TOXICOLOGICAL INFORMATION

OCCUPATIONAL EXPOSURE LIMITS

ACGIH (TLV) (1993-1994)

Sulfuric acid: TWA 1mg/m³, STEL 3mg/m³

Lead: TWA 0.05mg/m³

12. ENVIROMENTAL DATA

Environmental toxicity:

It is thought that each component parts of battery is a danger to the environment. Special caution should be given to air pollution. For humans, within the important food chain, especially in shellfish, bioconcentration can occur.

13. DISPOSAL CONSIDERATION

Spent batteries: Send to secondary lead smelter for recycling.

Federal and State laws prohibit the improper disposal of all lead acid batteries. The battery end users(owners) are responsible for their batteries from the date of purchase through their ultimate disposal.

Consult state environmental agency and/or federal EPA.

14. TRANSPORTATION INFORMATION

DOT : Unregulated, meets the requirements of 49 CFR 173,159(d)

IATA/ICAO : Unregulated, meets the requirements of Special Provision A67

IMO/IMGD : Unregulated,meets the requirements of SP238

INPORTANT

For all modes of transportation, each battery and outer package must be labeled: "Non-Spillable" or "Non-Spillable Battery". This Label must be visible during transportation. Batteries must be securely packed to prevent short circuiting. This label is not stuck on battery and outer package to the Japan sale.

Proper Shipping Name : Batteries, wet, non-spillable

Hazardous Class : 8

UN Identification : UN2800

Packing Group : —

Label / Placard Required : Corrosive

15. REGULATION INFORMATION

NFPA Hazard Rating for sulfuric acid:

Flammability (Red) :0
Health (Blue) :3
Reactivity (Yellow) :2

TSCA (Toxic Substances Control Act)

Each component parts of battery is listed in the TSCA Registry as follows.

Components	Chemical Formula	TSCA Status
Lead	Pb	Listed
Lead Oxide	PbO ₂	Listed
Sulfuric Acid	H ₂ SO ₄	Listed

16. OTHER INFORMATION

NOTICE TO READERS : DISCLAIMER

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