MATERIAL SAFETY DATA SHEET

SEALED MAINTENANCE FREE LEAD-ACID MOTORCYCLE BATTERY DRY CHARGED

SECTION 1: PRODUCT IDENTIFICATION

Product Name:	Sealed Maintenance Free Lead-Acid Motorcycle Batteries: Dry charged battery
Common Synonyms:	VRLA, SLA, Sealed Recombinant
DOT Description:	NONE
Chemical Family:	Electrical Battery Started
Company Name:	Leoch Battery Corp
Address:	19751 Descartes, Unit A, Foothill Ranch, CA 92610
Contact:	(CHINA) Phone: 086-755-8603-6060 Fax: 086-755-2606-7269
	(US) Phone: 001-949-588-5853 Fax: 001-949-588-5966
Emergency Number:	CHEMTREC (US, Canada & Mexico) Phone: 1-800-424-9300
	CHEMTREC (International) Phone: 1-703-527-3887
Date Issued:	February 1, 2012

SECTION 2: HAZARDOUS INGREDIENTS/ IDENTITY INFORMATION

COMPONENTS	Approx % by Wt.	CAS Number	Air Exposure Limits (μg/m$^{3)}$			LD_{50} ORAL （Rat ） (mg/kg)
			ACGIH TLV-TWA	OSHA PEL	NIOSH REL	
Inorganic Lead/Lead Compounds	85-90	7439-92-1	50	50	50	500
Calcium (Ca)	0.03-0.05	7440-70-2	--	--	--	--
Tin（Sn）	<0.3	7440-31-5	2000	2000	2000	--
Aluminum (Al)	<0.01	7429-90-5	10000	5000	5000	
Case Material: Acrylonitrile Butadiene Styrene (ABS) Polypropylene (PP)	~10	9003-56-9 9003-07-0	--	--	--	--

SECTION 3: PHYSICAL DATA

COMPONENTS	DENSITY g/cm^3	MELTING/BOILING (M/B) POINT	SOLUBILITY (H2O)	ODOR	APPEARANCE
Lead	11.34	327.46 °C, 621.43 °F (M)	None	None	Sliver-Gray Metal
Lead Sulfate	6.20	1170 °C, 2138 °F (B)	40 mg/l (15 °C, 59 °F)	None	White crystals or powder
Lead Dioxide	9.40	290 °C, 554 °F (M)	None	None	Dark brown Powder
Case Material: Acrylonitrile Butadiene Styrene (ABS) Polypropylene (PP)	ABS:1.05-1.06 PP:0.9-0.91	ABS: 130-160°C 266°F - 320°F (M) PP:165-170°C 329°F - 338°F (M)	None	None	Solid

SECTION 4: FLAMMABILITY DATA

COMPONENTS	FLASHPOINT	EXPLOSIVE LIMITS	COMMENTS
Lead	None	None	None
Acrylonitrile Butadiene Styrene (ABS) Polypropylene (PP)	None	PP:20g/cm^3	To ABS: Temperatures over 300°C (572°F) may release combustible gases. In case of fire: wear positive pressure self-contained breathing apparatus. To PP: Temperatures over 380°C (716°F) may release combustible gases. In case of fire: wear positive pressure self-contained breathing apparatus.

SECTION 5: REACTIVITY DATA

COMPONENT	Lead/lead compounds
Stability	Stable
Incompatibility	Potassium, carbides, sulfides, peroxides, phosphorus, sulfurs, ketone, ester, petrolatum
Decomposition products	Oxides of lead and sulfur.
Condition to avoid	High temperature, Sparks and other sources of ignition.

SECTION 6: HEALTH HAZARD DATA

Battery is considered as sealed non-spillable one. Under normal operating conditions, the materials sealed inside should not be hazardous to people's health. Only when these materials exposed during production or under case broken condition or being extremely heated (fired), they may be hazardous to people's health.

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:
Lead Compounds: Dust, vapor or fumes may cause irritation of upper respiratory tract or lungs.

Skin Contact:
Lead Compounds: Not readily absorbed through the skin.

Eye Contact :
Lead compounds: Dust, vapor or fume may cause irritation.

Ingestion:
Lead Compounds: May cause abdominal pain, nausea, vomiting, diarrhea, and severe cramping. Acute ingestion should be treated by a physician.

Acute Health Hazards:
Lead Compounds: May cause abdominal pain, nausea, headaches, vomiting, loss of appetite, severe cramping, muscular aches and weakness, and difficulty sleeping. The toxic effects of lead are cumulative and slow to appear. It affects the kidneys, reproductive and central nervous systems. The symptoms of lead overexposure are listed above. Exposure to lead from a battery most often occurs during lead reclamation operations through the breathing or ingestion of lead dust or fumes.

Chronic Health Hazards:
Lead Compounds: May cause anemia, damage to kidneys and nervous system, and damage to reproductive system in both males and females.

Medical Conditions Generally Aggravated by Exposure
Inorganic lead and its compounds can aggravate chronic forms of kidney, liver, and neurological diseases. Children and pregnant women must be protected from lead exposure. Persons with kidney disease may be at increased risk of kidney failure.

Emergency and First Aid Procedures
Inhalation
Sulfuric Acid: Remove to fresh air immediately. If breathing is difficult, give oxygen
Lead Compounds: Remove from exposure, gargle, wash nose and lips, consult physician
Ingestion
Sulfuric Acid: Do not induce vomiting, consult a physician immediately.
Lead Compounds: Consult a physician immediately
Eyes
Sulfuric Acid: Flush immediately with water for 15 minutes, consult a physician.
Lead Compounds: Flush immediately with water for 15 minutes, consult a physician
Skin
Sulfuric Acid: Flush with large amounts of water for at least 15 minutes, remove any contaminated clothing. If irritation develops seek medical attention.
Lead Compounds: Wash with soap and water.
Proposition 65

Warning: Battery posts, terminals and related accessories contain lead and lead compounds, chemical known to the State of California to cause cancer and reproductive harm. Batteries also contain other chemicals known to the State of California to cause cancer. Wash hands after handling.

SECTION 7: CARCINOGENICITY

Carcinogenicity
Lead Compounds: Human studies are inconclusive regarding lead exposure and an increased cancer risk. The EPA and the International Agency for Research on Cancer (IARC) have categorized lead and inorganic lead compounds as a B2 classification (probable/possible human carcinogen) based on sufficient animal evidence and inadequate human evidence.

SECTION 8: PRECAUTIONS FOR SAFE HANDLING AND USE

Spill or Leak Procedures
Lead dust should be vacuumed or wet swept into a D.O.T. approved container. Use controls that minimize fugitive emissions; do not use compressed air. Contact local and /or state environmental officials for proper disposal requirement.

Waste Disposal Method
Spent Batteries - send to secondary lead smelter for recycling. Follow applicable federal, state and local regulations
Neutralize as in preceding step. Collect neutralized material in sealed container and handle as hazardous waste as applicable.
A copy of this MSDS must be supplied to any scrap dealer or secondary lead smelter with the battery. Or, consult state environment agency and/ or federal EPA.

Handling and Storing
Store batteries in a cool, dry, well ventilated area that are separated from incompatible materials and any activities which may generate flames, sparks, or heat. Place cardboard between layers of stacked batteries to avoid damage and short circuits.
Battery should be stored under roof for protection against adverse weather conditions. Store and handle only in areas wit adequate water supply. Avoid damage to battery case.

SECTION 9: ECOLOGICAL INFORMATION

Lead and its compounds can pose a threat if released to the environment. See Waste Disposal Method in Section 8.

SECTION 10: CONTROL MEASURES

Engineering Controls:
Store and handle in well-ventilated area. General dilution ventilation is acceptable.

Work Practices:
Handle batteries cautiously to avoid damaging the case. Avoid contact with internal components. Do not allow metallic articles to contact the battery terminals during handling. Wear protective clothing when filling or handling batteries. Wash hands after handling.

Respiratory Protection:
None required under normal conditions.

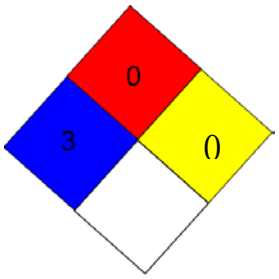
Personal Protection and Equipment: None needed under normal conditions. If battery case is damaged,

- Protective gloves: use rubber or plastic acid-resistant gloves with elbow-length gauntlet.
- Eye protection: use chemical goggles or face shield.
- Other protection: None required under normal use conditions when handling dry batteries.

SECTION 10: NFPA HAZARD RATING FOR LEAD

A. Not applicable under normal conditions.
B. Incase of damage resulting in breakage of the battery container, see section10, personal protection and equipment.

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



SECTION 11: TRANSPORTATION REGULATIONS (Non-Restricted Status)

GROUND-US DOT: No proper shipping name; not regulated as a hazardous material.

The transportation of dry batteries (those batteries that contain no electrolyte or residue) is NOT regulated by the U.S.DOT as a hazardous material.

AIRCRAFT-ICAO-IATA: No proper shipping name; not regulated as a hazardous material.

The international transportation of dry batteries is NOT regulated by the international Air Transport Association (IATA) as a hazardous material.

VESSEL-IMO-IMDG: No proper shipping name; not regulated as a hazardous material.

The international transportation of dry batteries is NOT regulated by the international Maritime Dangerous Goods Code (IMDG) as a hazardous material.

SECTION 12: REGULATORY INFORMATION

RCRA
Spent dry batteries are not regulated as hazardous waste by the EPA when recycled, however state and international regulations may vary.

CERCLA (superfund) and EPCRA
(a) EPCRA Section 312 Tier 2 reporting is required for batteries if lead is present in quantities of 10,00lbs.or more.
(b) Supplier Notification: This product contains toxic chemicals which may be reportable under EPCRA Section 313 Toxic Chemical Release Inventory (Form R) requirements. If you are a manufacturing facility under SIC codes 20 through 39 the following information is provided to enable you to complete the required reports:

Toxic Chemical	CAS Number	Approximate% by weight
Lead	7439-92-1	85-90

If you distribute this product to other manufacturers in SIC codes 20 through 39, this information must be provided with the first shipment in a calendar year. The Section 313 supplier notification requirement does not apply to batteries which are “consumer products”. Not present in all battery types. Contact **LEOCH BATTERY CORPORATION** for further information.

MATERIAL SAFETY DATA SHEET

SEALED MAINTENANCE FREE LEAD-ACID MOTORCYCLE BATTERY DRY CHARGED

TSCA
Ingredients in Leoch Battery's batteries are listed in the TSCA registry as follows:

Components	CAS Number	TSCA Status
Inorganic Lead Compound: Lead (Pb)	7439-92-1	Listed
Lead Oxide (PbO)	1317-36-8	Listed
Lead Sulfate (PbSO4)	7446-14-2	Listed
Calcium (Ca)	7440-70-2	Listed
Tin (Sn)	7440-31-5	Listed
Aluminum (Al)	7440-70-2	Listed

CANANIN REGULATIONS:
All chemical substances in this product are listed on the CEPA DSL/NDSL or are exempt from list requirements.

DISCLAIMER:

ALL PERSONS USING THIS PRODUCT, ALL PERSONS WORKING IN AN AREA WHERE THIS PRODUCT IS USED AND ALL PERSONS HANDLING THIS PRODUCT SHOULD BE FAMILIAR WITH THE CONTENTS OF THIS DATA SHEET. THIS INFORMATION SHOULD BE EFFECTIVELY COMMUNICATED TO EMPLOYEES AND OTHERS WHO MIGHT COME IN CONTACT WITH THE PRODUCT.

THIS MATERIAL SAFETY DATA SHEET IS BASED UPON INFORMATION AND SOURCES AVAILABLE AT THE TIME OF PREPARATION OR REVISION DATE. WE DO NOT ASSURE RESPONSIBILITY AND DISCLAIM LIABILITY FOR LOSS, DAMAGE OR EXPENSE IN ANY CONNECTED WITH THE HANDLING, STORAGE, USE OF, OR DISPOSAL OF THE PRODUCT. FOR ADDITIONAL INFORMATION CONCERNING *LEOCH BATTERY CORPORATION.* PRODUCTS OR QUESTIONS CONCERNING THE CONTENT OF THIS MSDS PLEASE CONTACT *LEOCH BATTERY CORPORATION*.

MATERIAL SAFETY DATA SHEET

MOTORCYCLE DRY CHARGED BATTERY ELECTROLYTE-SULFURIC ACID

SECTION 1: PRODUCT IDENTIFICATION

Product Name:	Motorcycle Charged Battery Electrolyte-Sulfuric Acid
Common Synonyms:	Sulfuric Acid
DOT Description:	Battery fluid acid
Chemical Family:	Acid, Corrosive
Company Name:	Leoch Battery Corp
Address:	19751 Descartes, Unit A, Foothill Ranch, CA 92610
Contact:	(CHINA) Phone: 086-755-8603-6060 Fax: 086-755-2606-7269
	(US) Phone: 001-949-588-5853 Fax: 001-949-588-5966
Emergency Number:	CHEMTREC (US, Canada & Mexico) Phone: 1-800-424-9300
	CHEMTREC (International) Phone: 1-703-527-3887
Date Issued:	February 1, 2012

SECTION 2: HAZARDOUS INGREDIENTS/ IDENTITY INFORMATION

COMPONENTS	%(Optional)	CAS Number	Air Exposure Limits (μg/m$^{3)}$			LD_{50} ORAL （Rat） (mg/kg)
			ACGIH TLV-TWA	OSHA PEL	NIOSH REL	
Sulfuric Acid (H_2SO_4)	30-40	7664-93-9	200	1000	1000	2140
Water(H_2O)	60-70	--	--	--	--	--

SECTION 3: PHYSICAL DATA

COMPONENTS	DENSITY g/cm^3	BOILING POINT	SOLUBILITY (H2O)	ODOR	APPEARANCE
Sulfuric Acid (H_2SO_4)	1.28-1.33	105℃-120℃，221°F-248°F	100%	Sharp, penetrating, pungent odor	Clear Colorless Liquid

SECTION 4: FLAMMABILITY DATA

COMPONENTS	FLASHPOINT	EXPLOSIVE LIMITS	COMMENTS
Sulfuric Acid (H_2SO_4)	None	None	Water applied to sulfuric acid generates heat and causes acid to splatter. Wear full-cover sulfuric acid resistant clothing. In case of fire: CO2; foam; dry chemical.

SECTION 5: REACTIVITY DATA

COMPONENT	**Sulfuric acid**
Stability	Stable
Incompatibility	Contact with metals may produce toxic sulfur dioxide fumes and/or hydrogen gas.
Decomposition products	Sulfur trioxide, carbon monoxide, sulfuric acid fumes, sulfur dioxide
Condition to avoid	Contact with organic materials, combustibles, strong reducing agents, metals, strong oxidizers, water.

SECTION 6: HEALTH HAZARD DATA

Battery is considered as sealed non-spillable one. Under normal operating conditions, the materials sealed inside should not be hazardous to people's health. Only when these materials exposed during production or under case broken condition or being extremely heated (fired), they may be hazardous to people's health.

Routes of Entry:
Sulfuric Acid: Harmful by all routes of entry.

Inhalation:
Sulfuric Acid: Breathing sulfuric acid vapors and mists may cause severe respiratory problems.

Skin Contact:

Sulfuric Acid: Severe irritation, burns and ulceration.

Eye Contact:
Sulfuric Acid: Severe irritation, burns, cornea damage, or blindness.

Ingestion:
Sulfuric Acid: May cause severe irritation of the mouth, throat, esophagus, and stomach.

Acute Health Hazards:
Sulfuric Acid: Severe skin irritation, burns, damage to cornea may cause blindness, upper respiratory irritation.

Chronic Health Hazards:
Sulfuric acid: Possible scarring of the cornea, inflammation of the nose, throat and bronchial tubes, possible erosion of tooth enamel.

Medical Conditions Generally Aggravated by Exposure
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.

Emergency and First Aid Procedures
Inhalation
Sulfuric Acid: Remove to fresh air immediately. If breathing is difficult, give oxygen
Ingestion
Sulfuric Acid: Do not induce vomiting, consult a physician immediately.
Eyes
Sulfuric Acid: Flush immediately with water for 15 minutes, consult a physician.
Skin
Sulfuric Acid: Flush with large amounts of water for at least 15 minutes, remove any contaminated clothing. If irritation develops seek medical attention.
Proposition 65
Warning: Battery posts, terminals and related accessories contain lead and lead compounds, chemical known to the State of California to cause cancer and reproductive harm. Batteries also contain other chemicals known to the State of California to cause cancer. Wash hands after handling.

SECTION 7: CARCINOGENICITY

Carcinogenicity
Sulfuric Acid: The National Toxicological Program (NTP) and The International Agency for Research on Cancer (IARC) have classified strong inorganic acid mist containing sulfuric acid as a Category 1 carcinogen, a substance that is carcinogenic to humans. The ACGIH has classified strong inorganic acid mist containing sulfuric acid as an A2 carcinogen (suspected human carcinogen). These classifications do 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.

SECTION 8: PRECAUTIONS FOR SAFE HANDLING AND USE

Spill or Leak Procedures
In case the release occurs, 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. If use, cautiously dilute with water. Wear acid-resistant clothing, boots, gloves, and face shield. Do not allow discharge of unneutralized acid to sewer.

Waste Disposal Method
Place neutralized slurry in sealed containers and dispose of as hazardous waste, as applicable. Large water-diluted spills, after neutralization and testing, should be managed in accordance with local, state and federal requirements. Consult state environmental agency and/or federal EPA.

Handling and Storing
Handle cautiously; avoid contact with skin and eyes. Storage and handling areas should be equipped with proper containment to capture and neutralize spills. In addition, these areas should be equipped with eyewash stations and safety showers.

Precautionary Labeling: POISON-CAUSES SEVERS BURNS
DANGER-CONTAINS SULFURIC ACID

SECTION 9: ECOLOGICAL INFORMATION

Sulfur acid can pose a threat if released to the environment. See Waste Disposal Method in Section 8.

SECTION 10: CONTROL MEASURES

Engineering Controls:
Store and handle in well-ventilated area. General dilution ventilation is acceptable.

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

Personal Protection and Equipment:

- Protective gloves: use rubber or plastic acid-resistant gloves with elbow-length gauntlet.
- Eye protection: use chemical goggles or face shield.
- Other protection: Acid-resistant apron. Under severe exposure or emergency conditions, wear acid-resistant clothing and boots.

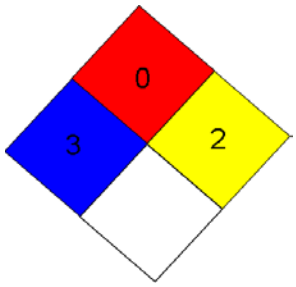
Emergency Flushing: In areas where sulfuric acid is handled in concentrations greater than 1%, emergency eyewash stations and showers should be provided, with unlimited water supply.

SECTION 11: NFPA HAZARD RATING FOR LEAD

A. Not applicable under normal conditions.

B. Incase of damage resulting in breakage of the battery container, see section10, personal protection and equipment.

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



SECTION 12: TRANSPORTATION REGULATIONS (Non-Restricted Status)

TRANSPORTATION INFORMATION

GROUND – US DOT:

The transportation of electrolyte within the continental United States is regulated by the U.S.DOT through the CFR49.These regulations classify electrolyte as a hazardous material. Electrolyte must be packed according to 173.202 or 173.242 depending upon the nature of the shipment. The shipping information for electrolyte is as follows:

Proper Shipping Name： Battery Fluid, Acid
Hazard Class/Division：8
ID Number： UN2796
Packing Group：II
Label Required：Corrosive

When battery fluid is shipped in a carton with a dry battery, CFR49, 172. 102 special provision N6 states that this combination packaging must conform to either section173.159 (g) or (h).

AIRCRAFT-ICAO-IATA:

The transportation of electrolyte is regulated by the International Air Transport Association (IATA).These regulations classify electrolyte as a hazardous material. Electrolyte must be packed according to IATA Packing Instruction Y809. The shipping information for electrolyte is as follows:

Proper Shipping Name： Battery Fluid, Acid
Hazard Class/Division：8
ID Number： UN2796
Packing Group：II
Label Required：Corrosive

VESSEL-IMO-IMDG:

The transportation of electrolyte is regulated by the International Maritime Dangerous Goods Code (IMDG).These regulations classify electrolyte as a hazardous material. Electrolyte must be packed according to IMDG code page 8230. The shipping information for electrolyte is as follows:

Proper Shipping Name： Battery Fluid, Acid
Hazard Class/Division：8
ID Number： UN2796
Packing Group：II
Label Required：Corrosive

SECTION 13: REGULATORY INFORMATION

RCRA
Spilled sulfuric acid is a characteristic hazardous waste; EPA hazardous waste number 002 (corrosives).

CERCLA (superfund) and EPCRA
(a) Reportable Quantity (RQ) for spilled 100% sulfuric acid under CERCLA (superfund) and EPCRA (Emergency Planning Community Right to Know Act is 1,000lbs. State and local reportable quantities for spilled sulfuric acid may vary.
(b) Sulfuric acid is a listed “Extremely Hazardous Substance” under EPCRA with a Threshold Planning Quantity (TPQ) of 1,000lbs.
(c) EPCRA Section 302 Notification is required if 1,000lbs.or more of sulfuric acid is present at one site. The quantity of sulfuric acid will vary by battery type. Contact **LEOCH BATTERY CORPORATION** for additional information.
(d) EPCRA Section 312 Tier 2 reporting is required for batteries if sulfuric acid is present in quantities of 500lbs. or more.
(e) Supplier Notification: This product contains toxic chemicals which may be reportable under EPCRA Section 313 Toxic Chemical Release Inventory (Form R) requirements. If you are a manufacturing facility under SIC codes 20 through 39 the following information is provided to enable you to complete the required reports:

Toxic Chemical	CAS Number	Approximate% by weight
Sulfuric Acid	7664-93-9	30-40

If you distribute this product to other manufacturers in SIC codes 20 through 39, this information must be provided with the first shipment in a calendar year. The Section 313 supplier notification requirement does not apply to batteries which are “consumer products”. Not present in all battery types. Contact **LEOCH BATTERY CORPORATION** for further information.

TSCA
Ingredients in battery electrolyte are listed in the BCA Registry as follow:

Components	CAS Number	TSCA Status
Sulfuric Acid	7664-93-9	Listed

CANANIN REGULATIONS:
All chemical substances in this product are listed on the CEPA DSL/NDSL or are exempt from list requirements.

CALIFORNIA PROPOSITION 65:
WARNING:

- Electrolyte contains Sulfuric acid, a chemical known to the state of California to cause cancer, or birth defects or other reproductive harm.
- Batteries also contain other chemicals known to the state of California to cause cancer.
- Wash hands after handling.

MATERIAL SAFETY DATA SHEET

MOTORCYCLE DRY CHARGED BATTERY
ELECTROLYTE-SULFURIC ACID

DISCLAIMER:

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