



## MATERIAL SAFETY DATA SHEET

MSDS Number: SPS 01.01  
APRIL .10, 2015

### 1. PRODUCT IDENTIFICATION

PRODUCT NAME : Motorcycle Battery With Acid Pack  
PARTNUMBER : ALL  
CHEMICAL FAMILY : Mineral Acid, oxidising  
CHEMICAL NAME : Sulphuric Acid  
UN NO. : 2796

### 2. COMPOSITION

HAZARDOUS COMPONENT : H<sub>2</sub>SO<sub>4</sub>  
R.PHRASES : R :35

### 3. HAZADOUS INGREDIENTS

CHEMICAL NAME : Sulphuric Acid (Battery electrolyte)  
% BY WT. : 36.8~41.4% (at 25°C)  
CHEMICAL ABSTRACT(CAS) NO. : 7664-93-9  
EXPOSURE LIMITS :  
OSHA PEL : 1mg/ m<sup>3</sup>  
ACGIH TLV : 1mg/ m<sup>3</sup>,  
STEL 3mg/ m<sup>3</sup> (15 min. Max./8 hr. Shift)  
NIOSH REL : 1mg/m<sup>3</sup>  
UN NO. : 2796

### 4. PHYSICAL DATA

MATERIAL IS (at normal temperature) : Liquid  
BOILING POINT (at 760mm Hg) : 230°F/110°C  
MELTING POINT : -79.6°F/-62°C  
SPECIFIC GRAVITY (H<sub>2</sub>O=1) : 1.28~1.32  
VAPOR DENSITY (AIR=1) : 3.4  
VAPOR PRESSURE (mm Hg at 20°C) : 11.7  
SOLUBILITY IN H<sub>2</sub>O : 100%  
% VOLATILES BY WEIGHT : 0  
EVAPORATION RATE (Butyl Acetate=1) : Not Determined  
APPEARANCE AND ODOR : Clear to cloudy liquid with slight acidic odor.  
MAIN HAZARD : Poison, corrosive

### 5. HEALTH HAZARD INFORMATION

ROUTES AND METHODS OF ENTRY :  
1) INHALATION :



Battery electrolyte (acid) mist generated during battery formation may cause respiratory irritation.

**2) SKIN CONTACT :**

Battery electrolyte (acid) may cause irritative contact dermatitis.

**SKIN ABSORPTION :**

Skin absorption is not a significant route of entry.

**3) EYE CONTACT :**

Battery electrolyte (acid) will irritate the eyes upon contact.

**4) INGESTION :**

Ingestion is not expected to be a significant route of entry.

**MEDICAL CONDITIONS WHICH CAN BE AGGRAVATED BY EXPOSURE :**

Contact of battery electrolyte (acid) with the skin and eyes may aggravate chronic skin and eye diseases. Inhalation of mist may aggravate chronic diseases of the respiratory tract and stomach.

**POTENTIAL TO CAUSE CANCER :**

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.

**6. EMERGENCY AND FIRST AID PROCEDURES :**

**1) INHALATION :**

Remove from exposure and consult a physician if any of the acute effects listed above develop.

**2) SKIN :**

Wash thoroughly with soap and water. If acid is splashed on clothing, immediately remove them and discard. If acid is splashed in shoes, remove them immediately and discard. Acid cannot be removed from leather.

**3) EYE :**

Hold eyelids open and immediately rinse with cool, running water for at least 15 minutes. Seek medical attention after rinsing.

**4) INGESTION :**

Do not induce vomiting. See a physician immediately. Do not give anything by mouth to an unconscious person.

**7. FIRE FIGHTING MEASURES**

FLASH POINT (test method) :	None
AUTOIGNITION TEMPERATURE :	None
FLAMMABLE LIMITS IN AIR, % by Vol. :	Lower : None Upper : None

**EXTINGUISHING MEDIA :**

Use dry chemical, foam, or carbon dioxide (CO<sub>2</sub>)

**SPECIAL FIRE FIGHTING PROCEDURES :**

Avoid use of water where there is danger of acid spreading. Use pressure-demand, self-contained breathing apparatus where acid vapor or mist may be present.

**UNUSUAL FIRE AND EXPLOSION HAZARD :**



Charging and forming batteries may generate hydrogen gas which is flammable and explosive. They also generate oxygen which supports combustion. Therefore, keep sparks and other sources of ignition away. Hydrogen may also be generated by the action of acid on organic materials, nitrates, carbides and most metals.

## 8. STABILITY AND REACTIVITY

STABILITY : Stable

CONDITION TO AVOID :

Prevent smoking, fires, and any other source of ignition around lead acid batteries.

INCOMPATIBILITY (material to avoid) :

Combustible materials (especially finely divided), strong reducing agents, most metals, carbides, organic materials, chlorates, nitrate picrates, and gulminates.

HAZARDOUS DECOMPOSITION PRODUCTS :

Hydrogen, sulfur dioxide, sulfur trioxide.

HAZARDOUS POLYMERIZATION :

Will not occur

CONDITIONS TO AVOID : High temperature. Battery electrolyte (acid) will react with water to produce heat. Can react with oxidizing or reducing agents.

## 9. CONTROL MEASURES

ENGINEERING CONTROLS :

Use general dilution ventilation to maintain concentrations of sulfuric acid mist below the OSHA PEL of  $1 \text{ mg/m}^3$  when forming or charging batteries.

WORKING PRACTICES :

Handle lead acid batteries and containers of acid carefully to avoid spilling the acid.

### PERSONAL PROTECTIVE EQUIPMENT :

#### RESPIRATORY PROTECTION :

None required under normal handling conditions. If acid spillage occurs in a confined space, a respirator suitable for protection against acid mist may be required.

EYES AND FACE :

Chemical splash goggles in combination with a chemical faceshield offer the best protection. Also acceptable are « visor-gogs » or a chemical faceshield worn over safety glasses with solid side shields.

HANDS, ARMS, BODY :

Wear a long sleeved shirt and trousers made synthetic materials. Also use an impermeable, acid resistant apron and gauntlet type gloves.

OTHER SPECIAL CLOTHING AND EQUIPMENT :

Use safety shoes with rubber or neoprene boots or steel-toed rubber or neoprene boots worn over socks. Place pants legs over boots to keep acid of boots. All footwear must meet requirement of ANSI Z41.1-Rev.1972.



## **10. SAFE HANDLING PRECAUTIONS**

### **HYGIENE PRACTICES :**

Remove splashes of acid immediately from the skin with large amounts of cool, running water followed by washing with soap and water.

### **PROTECTIVE MEASURES TO BE TAKEN DURING NON-ROUTINE TASKS INCLUDING EQUIPMENT MAINTENANCE :**

Wear recommended eye protection. If clothing becomes saturated with acid, remove and wash affected area with water for 15 minutes. Discard saturated clothing.

### **SPILL OR LEAK PROCEDURES :**

#### **PROTECTIVE MEASURES TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED :**

Ventilate area. Remove combustible materials and all sources of ignition. Contain spill by diking with soda ash (sodium carbonate) or lime (calcium oxide). Cover spill with either chemical. Mix well. Make certain mixture is neutral (check with Ph paper). Collect residue and place in a drum or other suitable container. Dispose of as hazardous waste.

Wear acid resistant boots, faceshield, chemical splash goggles, and acid resistant gloves.

### **DO NOT RELEASE UNNEUTRALIZED ACID !**

#### **WASTE DISPOSAL METHOD :**

Neutralize as above for a spill, collect residue, and place in a drum or other suitable container. Dispose of as hazardous waste.

### **DO NOT FLUSH CONTAMINATED ACID TO SEWER.**

## **11. TOXICOLOGICAL INFORMATION**

### **ACUTE EFFECTS :**

Exposure to high concentrations of battery electrolyte (acid) mist cause severe irritation of eyes, respiratory tract and skin. It may also cause tooth erosion, mouth soreness, or breathing difficulties. Contact with battery electrolyte (acid) may irritate the skin and mucous membranes and may cause irreparable corneal damage and blindness as well as facial scarring which can include the eyelids.

### **CHRONIC EFFECTS :**

Repeated or prolonged exposure to battery electrolyte (acid) may cause skin irritation. Repeated or prolonged exposure to mist may erode the teeth, cause dermatitis, chronic irritation of eyes. Mouth and stomach, and chronic inflammation of the nose, throat and bronchial tubes.

## **12. ECOLOGICAL INFORMATION**

### **AQUATIC TOXICITY :**

Toxic to aquatic life, fish, daphnia, algae

### **BIODEGRADABILITY :**

When release into the soil this material may leach into ground water. When released into the air this material may be removed from the atmosphere to a moderate extent by wet deposition and dry



deposition.

BIOACCUMULATION :  
Not known

MOBILITY :  
Not known

### 13.DISPOSAL CONSIDERATION

#### DISPOSAL METHODS :

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and disposed of at any approved waste facility (Department of Environmental Affairs and Tourism) Processing , use or contamination of this product (e.g. Lead) may change the waste management options.

#### DISPOSAL OF PACKAGING :

Dispose of container and unused contents in accordance with legal requirements. Containers of this material may be hazardous when empty since they retain product residues. Observe all warnings and precautions listed for the product.

### 14.TRANSPORT INFORMATION

UN NO. : 2796  
SUBSTANCE IDENTITY NO. : Sulphuric acid, not more than 41.5%  
7664-93-9

#### LAND

PROPER SHIPPING NAME : Battery acid (Sulphuric acid, not more than 41.5%)  
HAZARD CLASS : 8  
PACKING GROUP : II  
EXEMPT QUANTITY : < 200kg

#### SEA

PROPER SHIPPING NAME : Battery acid (Sulphuric acid, not more than 41.5%)  
HAZARD CLASS : 8  
PACKING GROUP : II  
UN NO. : 2796  
EXEMPT QUANTITY : < 200kg

### 15.REGULATION INFORMATION

RISK PHRASES : R :35  
SAFETY PHRASES : S : (1/2)-26-30-45

#### ADDITIONAL LEGISLATION :

- 1) Hazardous Chemical Substance Regulations of Occupational Health and Safety Act no. 85 of 1983.
- 2) National Road Traffic Act Chapter VIII for Transportation of Dangerous Goods.

### 16. OTHER INFORMATION

NFPA RATINGS :



Health 3  
Flammability 0  
Reactivity 2  
Other—water reactive

**HAZARD :**  
Poison—Danger

**WARNING :**  
Corrosive liquid and mist cause severe burns to all body tissue. May be fatal if swallowed or contacted with skin. Harmful if inhaled. Affects teeth. Water reactive. Cancer hazard. Strong inorganic mists containing sulphuric acid can cause cancer.