PT TRI MEGA BATERINDO
An Automotive and Motorcycle Battery Manufacturer
Plant :
Jl. Trosobo Km. 23, Taman
Sidoarjo, Indonesia – 61257
Ph. +62 31 7886052; +62 31 7886054
Fax. +62 31 7886053
Email : info@mcbatt.com Website : http://www.mcbatt.com

MATERIAL SAFETY DATA SHEET

I. PRODUCT IDENTIFICATION

Chemical Trade Name (as used on label)
Maintenance Free Battery
Lead Acid Battery, Wet, Filled With Acid

Chemical Family / Classification
Electric Storage Battery

Manufacturer's Name / Address
PT Tri Mega Baterindo
Plant :
Jalan Trosobo Km.23, Taman, Sidoarjo
Indonesia – 61257

Telephone
For information and emergencies,
Contact PT Tri Mega Baterindo
+62 31 7886052;

II. INFORMATION ON INGREDIENTS

Inorganic Lead Compound

Lead : ❖ Calcium
❖ Arsenic
❖ Tin

Case Material : ❖ Polypropylene (PP)

Others : ❖ Sulfuric Acid (H_2SO_4)
❖ Polyethylene (PE) Separators

III. HAZARDOUS INFORMATION

			Air Exposure Limits (μg / m^3)		
Inorganic Lead Compound	CAS Number	Approx. % by Weight or Vol.	OSHA	ACGIH	NIOSH
LEAD	7439-92-1	53 – 55	50	150	100
❖ Antimony	7440-36-0	0.200	500	500	-
❖ Calcium	7440-70-2	0.002	-	-	-
❖ Arsenic	7440-38-2	0.003	10	200	-
❖ Tin	7440-31-5	0.060	2000	2000	-
CASE MATERIAL					
❖ Polypropylene	9003-07-0	5 – 6	N/ A	N / A	N / A
OTHERS					
❖ Sulfuric Acid	7664-93-9	16 – 20	1000	1000	1000
❖ PE Separators	9002-88-4	1 – 3	N/A	N/A	N/A

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IV. EMERGENCY AND FIRST AID PROCEDURES

Inhalation
- ❖ Lead : Remove from exposure, gargle, wash nose and lips, consult physician

Ingestion
- ❖ Lead : Consult physician immediately

Eyes
- ❖ Lead : Flush immediately with large amounts of water for at least 15 minutes Consult physician

WARNING	:	**Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to State of California to cause cancer and reproductive harm.** **Battery also contain other chemicals known to the State of California to cause cancer**

V. FIRE FIGHTING MEASURE

Maintenance Free Battery with Electrolyte can cause explosion because they generated Hydrogen Gas
Flash Point : N/A Flammable Limits
LEL = 4.1% (Hydrogen Gas) UEL = 74.2%
Source of ignition away from filled lead acid 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 Extinguishing Media : CO2; Foam; Dry Chemical
Special Fire Fighting Procedures:
Wear full body protective clothing and self-contained breathing apparatus with positive pressure and full-face piece

VI. ACCIDENTAL RELEASE MEASURE

Steps to be taken in case material is released or spilled:

- Stop flow if possible
- Soak up small spills with clay, sand, or diatomaceous earth
- Dilute spill cautiously with five to six volumes of water and gradually neutralize with sodium bi-carbonate, soda ash, or lime

When exposure level is not known, wear NIOSH/MSHA approved respirator or SCBA

Waste disposal method:
Neutralized and dispose in accordance with local, state, and federal regulations

Avoid Direct Contact

Other Precautions:
Sodium bi-carbonate, soda ash, sand, or lime should be kept in same general area for emergency use

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VII. HANDLING AND STORAGE

1) Store batteries in cool, dry, well-ventilated areas with impervious surfaces and adequate containment in the event of spills
2) Batteries should also be stored under roof for protection against adverse weather conditions
3) Separate from incompatible materials
4) Store and handle only in areas with adequate water supply and spill control
5) Avoid damage to containers
6) Keep away from fire, sparks and heat

VIII. HEALTH HAZARD DATA

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

Ingestions: 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 physician.

Skin Contact:
Lead Compound: not absorbed through the skin.

Eye Contact:
Lead Compounds: may cause eye irritation.

Effects of Overexposure – Acute:
Lead Compounds: Symptoms of toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances and irritability

Effects of Overexposure – Chronic:
Lead Compounds: Anemia; neuropathy; particularly of the motor nerves, with wrist drop; kidney damage; reproductive changes in males and females

Carcinogenicity:
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 acid and its compounds can aggravate some forms of kidney, liver and neurologic diseases

IX. PHYSICAL AND CHEMICAL PROPERTIES

Lead

Boiling Point	:	> 2516 °F	Specific Gravity (H2O = 1)	:	9.6 to 11.3
Melting Point	:	486 to 680 °F	Vapor Density/Pressure	:	N / A
Solubility in Water	:	Negligible	Evaporation Rate	:	N / A

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Appearance and Odor

Appearance	:	Industrial / commercial lead-acid battery
Odor	:	Odorless
Odor Threshold	:	N/A
Physical State	:	Sulfuric Acid; Liquid; Solid

Chemical Name : Ca / Calcium Lead Alloy

Plastic :

Impact Copolymer Grade	ASTM D1238	10 g / 10 min.
Melt Flow Rate	ASTM D792	0.9 g / cm^3
Density	ASTM D648	104 ^oC
Solubility in Water	Negligible	

X. STABILITY AND REACTIVITY

Stability : Stable

Condition to avoid:
Contact with metal may release explosive hydrogen gas

Incompatibility (Materials to Avoid):
Strong alkali materials, carbides, chlorates, nitrates, and pirates, organic acid, acetates, anhydrates, metals

Hazardous Decompositions of By-Products:
Thermal decomposition or combustion may produce a sulfur trioxide and/or sulfur dioxide.

Hazardous Polymerization : will not occur

XI. TOXICOLOGICAL INFORMATION

Effects of Chronic Exposure

- Substance accumulation, in the human body, is likely and may cause some concern following repeated or long-term occupational exposure.
- Ample evidence exists that developmental disorders are directly caused by human exposure to the material.
- Ample evidence from experiments exists that there is a suspicion this material directly reduces fertility.
- Long-term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis; caused by particles less than 0.5 micron penetrating and remaining in the lung.
- Lead, in large amounts, can affect the blood, nervous system, heart, glands, immune system and digestive system. Anemia may occur.
- Lead can cross the placenta, and cause miscarriage, stillbirths and birth defects. Exposure before birth can cause mental retardation, behavioral disorders and infant death.
- Exposure to the material for prolonged periods may cause physical defects in the developing embryo (teratogenesis).

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- Lead can accumulate in the skeleton for a very long time. Endocrine system. Increased levels of lead result in increased brain damage, coma and death in extreme cases.
- Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis; caused by particles less than 0.5 micron penetrating and remaining in the lung.

XII. ECOLOGICAL CONSIDERATION

The product has no effect on the environment unless finely divided form. Lead is taken from soil by plants and can be concentrates in the food chain.
It is also relatively mobile in aquatic environment and can be concentrated by aquatic organism.
Acute toxicity data for fresh water animal is:

Fish	:	0.18 to 32 mg Pb / L
Crustaceans	:	0.5 mg Pb / L

XIII. DISPOSAL CONSIDERATION

- Dispose in accordance with all applicable federal, state, and local regulations.
- The contents of this battery, as a waste, may be regulated by the Resource Conservation and Recovery Act (RCRA):
  As a D008 (Lead) and D002 (Corrosive) hazardous waste.
- Send to a secondary lead smelter for recycling. Refer to local regulation.
- **THIS SHEET MUST BE PASSED TO ANY SCRAP DEALER OR SMELTER WHEN THE BATTERY IS RESOLD**

XIV. TRANSPORTATION INFORMATION

U.S.DOT : The transportation of wet and moist charged a (moist active) battery within the continental United States is regulated by the U.S. DOT through the Code of Federal Regulations, Title 49 (CFR 49). These regulations classify these types of batteries as a hazardous material. Refer to CFR 49, 173.159 for more details pertaining to the transportation of wet and moist batteries. The shipping information is as follows:

Proper Shipping Name	*:*	*Lead-Acid Batteries, Wet, Filled With Acid*
Hazardous Class	*:*	*8*
UN Identification	*:*	*UN2794*
Packing Group	*:*	*III*
Label / Placard Required	*:*	*Corrosive*

Some battery have been tested and meet the non-spillable criteria listed in CFR 49, 173.159 (d) (3) (i) and (ii). Non-spillable batteries are excepted from CFR 49, Subchapter C requirements, provided that the following criteria are met:

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1) The batteries must be protected against short circuits and securely packaged.
2) The batteries and their outer packaging must be plainly and durably marked "NON-SPILLABLE" or "NON-SPILLABLE BATTERY"

The exception from CFR 49, Subchapter C translates to no proper shipping name, no hazardous class, no UN number, no packing group and no hazardous labels when transporting a non-spillable battery.

IATA : The international transportation of wet and moist charged a (moist active) battery is regulated by the International Air Transport Association (IATA). These regulations also classify these types of batteries as a hazardous material. The batteries must be packed according to IATA Packing Instruction 800. The shipping information is as follows:

Proper Shipping Name	*:*	*Lead-Acid Batteries, Wet, Filled With Acid*
Hazardous Class	*:*	*8*
UN Identification	*:*	*UN2794*
Packing Group	*:*	*III*
Label / Placard Required	*:*	*Corrosive*

Some batteries have been tested and meet the non-spillable criteria listed in IATA packing instruction 806. Non-spillable batteries must be packed according to IATA packing instruction 806.
The shipping information for non-spillable is as follows:

Proper Shipping Name	*:*	*Lead-Acid Batteries, Wet, Filled With Acid*
Hazardous Class	*:*	*8*
UN Identification	*:*	*UN2800*
Packing Group	*:*	*III*
Label / Placard Required	*:*	*Corrosive*

In addition, some non-spillable batteries have been tested and meet the non-regulated criteria listed in IATA special provision A67. These batteries are excepted from all IATA regulations provided that the batteries' terminals are protected against short circuits

IMDG : The international transportation of wet and moist charged (moist active) batteries is regulated by the International Maritime Dangerous Goods code
(IMDG). These regulations also classify these types of batteries as a hazardous material. The batteries must be packed according to IMDG code pages 8120 and 8121.
The shipping information is as follows:

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Proper Shipping Name	*:*	*Lead-Acid Batteries, Wet, Filled With Acid*
Hazardous Class	*:*	*8*
UN Identification	*:*	*UN2794*
Packing Group	*:*	*III*
Label / Placard Required	*:*	*Corrosive*

Some battery have been tested and meet the non-spillable criteria listed on page 8121. Non-spillable batteries must be packed according to IMDG page 8121.
The shipping information for non-spillable is as follows:

Proper Shipping Name	*:*	*Lead-Acid Batteries, Wet, Filled With Acid*
Hazardous Class	*:*	*8*
UN Identification	*:*	*UN2800*
Packing Group	*:*	*III*
Label / Placard Required	*:*	*Corrosive*

In addition, some non-spillable batteries have been tested and meet the non-regulated criteria listed in IMDG code page 8121. These batteries are excepted from all IMDG code provided that the batteries' terminals are protected against short circuits.

XV. REGULATORY INFORMATION

Shipping Name : Lead-Acid Battery, Wet, Filled With Acid
Identification Number : N/ A, non-assigned
Hazard Class : Applicable to 49CFR 172.101 Hazardous Material and subject to Parts 170-189 of this Sub-chapter
RCRA : Regulated as hazardous waste by the EPA when recycled
Hazard Rating Lead
Health (Blue) 3
Flammability (Red) 0
Reactivity (Yellow) 0

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XVI. OTHER REGULATORY INFORMATION

RCRA:
Spent lead-acid batteries are not regulated as hazardous waste by the EPA when recycled, however state and international regulations may vary

CERCLA (Superfund) and EPCRA:
Refer to the latest revision of the OSHA general Industry Standards, 29 CFR 1910. Information about the hazardous ingredients contained in lead compounds are shown in Subpart Z – Toxic and Hazardous Substances: antimony is discussed in 1910.1000, air contaminants; inorganic arsenic is covered in the Inorganic Arsenic Standard, 1910.1018; and inorganic lead is covered in the Inorganic Lead Standard, 1910.1025

a) EPCRA Section 312 Tier 2 reporting is required for batteries if sulfuric acid is present in quantities of 500 lbs. or more and/or if lead is present in quantities of 10,000 lbs. or more.
b) Supplier Notification: This product contains toxic chemicals, which may be reportable under
c) 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

Toxic Chemical	CAS Number	Approx. % by Weigth
Lead	7349-92-1	53 – 55%
• Antimony	7440-36-0	0.200%
• Calcium	7440-70-2	0.002%
• Arsenic	7440-38-2	0.003%
Sulfuric Acid	7664-92-1	16 – 20%

If you distribute this product to other manufacturers in SIC codes 20 through 39, this information must be provided with the first shipment of each calendar year. The section 313 supplier notification requirement does not apply to batteries, which are "consumer products".

TSCA
Ingredients in batteries are listed in the TSCA Registry as follows:

Components	CAS Number	TSCA Status
Inorganic Lead :		
Lead (Pb)	7439-92-1	Listed
Antimony (Sb)	7440-36-0	Listed
Arsenic (As)	7440-38-2	Listed
Calcium (Ca)	7440-70-2	Listed
Tin (Sn)	7440-31-5	Listed
Electrolyte		
Sulfuric Acid (H_2SO_4)	7664-92-1	Listed

TRI MEGA BATERINDO PT, supports preventative actions concerning ozone depletion in the atmosphere due to emissions of CFC's and other ozone depleting chemicals (ODC's).