MATERIAL SAFETY DATA SHEET

Form # 853021

1. PRODUCT AND COMPANY IDENTIFICATION

MANUFACTURER
Yuasa Battery, Inc.
2901 Montrose Ave.
Laureldale, PA 19605

CHEMICAL/TRADE NAME: **Dry Charge Battery**

CHEMICAL FAMILY/ CLASSIFICATION Electric Storage Battery

EMERGENCY RESPONSE TELEPHONE NUMBERS (24-HOUR): CHEMTREC 1-800-424-9300
CHEMTREC INTERNATIONAL 1-703-527-3887

FOR NON-EMERGENCY INFORMATION: 610-929-5781 EHS Department

DATE REVISED: December 2008

2. COMPOSITION/INGREDIENT INFORMATION

Components-Chemical/Common Names	CAS Number	Approximate % by Weight or Volume	Approximate Air Exposure Limits (ug/m^3)		
			OSHA PEL/TWA	ACGIH TLV/TWA	NIOSH
Inorganic Lead Compound:					
Lead	7439-92-1	89-92	50	50	100
* Antimony	7440-36-0	0.2	500	500	–
*Tin	7440-31-5	0.006	2000	2000	–
*Calcium	7440-70-2	0.002	--	--	--
*Arsenic	7440-38-2	0.003	10	10	--
Case Material:		5-6	N/A	N/A	N/A
Polypropylene	9003-07-0				
Polystyrene	9003-53-6				
Styrene Acrylonitrite	9003-54-7				
Acrylonitrite Butadiene Styrene	9003-56-9				
Styrene Butadiene	9003-55-8				
Polyvinylchloride	9002-86-2				
Polycarbonate	---				
Hard Rubber	---				
Polyethylene	---				

3. HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS:

ROUTES OF ENTRY: Hazardous exposure can occur only when product is heated, oxidized or otherwise processed or damaged to create lead dust, vapor or fume.

INHALATION: Dust, vapor and fume may be absorbed by the respiratory system and can result in both acute and chronic overexposure as well as respiratory irritation.

INGESTION: Lead 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: Not readily absorbed through the skin.

EYES: Dust, vapor or fume may cause irritation.

ACUTE HEALTH HAZARDS: Symptoms of lead toxicity include headache, fatigue, abdominal pain, loss of appetite, muscular aches and weakness, sleep disturbances and irritability.

CHRONIC HEALTH HAZARDS: Lead absorption may cause nausea, weight loss, abdominal spasms, fatigue, and pain in arms, legs and joints. Other effects may include central nervous system damage, kidney dysfunction, anemia, neuropathy, particularly of the motor nerves, with wrist drop, and potential reproductive effects.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Lead and its compounds can aggravate some 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.

ADDITIONAL INFORMATION: No health effects are expected related to normal use of this product as sold.

4. FIRST AID MEASURES

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

INGESTION: Consult physician immediately.

SKIN: Wash immediately with soap and water.

EYES: Flush immediately with copious of water for at least 15 minutes; consult physician.

5. FIRE FIGHTING MEASURES

Inorganic lead compound is not a combustible material, nor will it explode under conditions of normal use.

FLASH POINT: NA
LOWER EXPLOSIVE LIMIT (LEL): NA
UPPER EXPLOSIVE LIMIT (UEL): NA
EXTINGUISHING MEDIA: Dry chemical, carbon dioxide, foam

SPECIAL FIRE FIGHTING PROCEDURES & PROTECTIVE EQUIPMENT:
Use full body protective clothing and self-contained breathing apparatus with positive pressure and full face.

UNUSUAL FIRE AND EXPLOSION HAZARDS:
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.

Additional information: Firefighting water runoff and dilution water may be toxic and corrosive and may cause adverse environmental impacts.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS:
Avoid contact of lead with skin. Wash hands thoroughly after handling product.

ENVIRONMENTAL PRECAUTIONS:
Prevent spilled material from entering sewers and waterways.

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 requirements.

OTHER PRECAUTIONS:
Refer to Material Safety Data Sheet for Lead Acid Battery when battery is filled with electrolyte/battery acid.

7. HANDLING AND STORAGE

HANDLING AND STORAGE:

- Store batteries in cool, dry, well-ventilated area on an impervious surface.
- Batteries should also be stored under roof for protection against adverse weather conditions.
- If battery case is broken, avoid contact with internal components.
- Place cardboard between layers of stacked batteries to avoid damage and short circuits.
- Do not allow conductive material to touch the battery terminals. A short circuit may occur and cause battery failure and fire.
- Keep away from fire, sparks and heat.

INCOMPATIBILITY (MATERIALS TO AVOID):
Avoid contact with strong bases, acids, combustible organic materials, halides, halogenates, potassium nitrate, permanganate, peroxides, nascent hydrogen, reducing agents and water.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

ENGINEERING CONTROLS:
Store and charge in well-ventilated area. General dilution ventilation is acceptable.

WORK PRACTICES:
Handle batteries cautiously, do not tip to avoid spills (if filled with electrolyte). Avoid contact with internal components. Wear protective clothing when filling or handling batteries. Wash hands after handling.

RESPIRATORY PROTECTION:
None required under normal conditions. See special firefighting procedures (Section 5).

SKIN PROTECTION:
Wear acid-resistant gloves as a standard procedure to prevent skin contact.

EYE PROTECTION:
Wear protective glasses with side shields or chemical goggles or face shield.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT:
None required under normal use conditions when handling dry batteries.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Manufactured article
ODOR:	Odorless
LEAD:	
BOILING POINT:	Greater than 2516°F
MELTING POINT:	486 to 680°F
SOLUBILITY IN WATER:	Insoluble
EVAPORATION RATE: (Butyl acetate=1)	NA
SPECIFIC GRAVITY (H_2O=1):	9.6- 11.3
VAPOR PRESSURE/DENSITY:	NA
% VOLATILES BY WEIGHT:	NA
APPEARANCE AND ODOR:	Bluish gray metal, no apparent odor

10. STABALITY AND REACTIVITY

STABILITY:	This product is stable under normal conditions at ambient temperature.
HAZARDOUS DECOMPOSITION PRODUCTS:	High temperatures of lead compounds will likely produce toxic metal fume, vapor or dust; contact with strong acid/base or presence of nascent hydrogen may generate highly toxic arsine gas.
HAZARDOUS POLYMERIZATION:	Will not occur.
CONDITIONS TO AVOID:	Prolonged overcharge; sources of ignition.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:
LEAD: No data available for elemental lead.

CARCINOGENICITY:
LEAD COMPOUNDS: Lead is listed by IARC as a 2B carcinogen, likely in animals at extreme doses; possible carcinogen in humans.

CARCINOGENICITY:
ARSENIC: Listed by National Toxicology Program (NTP), International Agency for Research on Cancer (IARC), OSHA and NIOSH as a carcinogen only after prolonged exposure at high levels.

12. ECOLOGICAL INFORMATION

DEGRADABILITY:
Lead is persistent in soils and sediments. No data available on biodegradation.

AQUATIC TOXICITY (for LEAD):
No data available.

13. DISPOSAL CONSIDERATIONS

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

14. TRANSPORT INFORMATION

GROUND – US DOT:
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:
The international transportation of dry batteries is NOT regulated by the International Air Transport Association (IATA) as a hazardous material.

VESSEL – IMO-IMDG:
The international transportation of dry batteries is NOT regulated by the International Maritime Dangerous Goods Code (IMDG) as a hazardous material.

15. REGULATORY INFORMATION

CERCLA (Superfund) and EPCRA:

(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 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 Wt.
Lead	7439-92-1	90
* Antimony	7440-36-0	0.2
* Arsenic	7440-38-2	0.003

*Not present in all battery types. Contact your Yuasa Battery representative for additional information.

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 Yuasa 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)	1917-36-8	Listed
Lead Sulfate ($PbSO_4$)	7446-14-2	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

15. REGULATORY INFORMATION continued

CAA: Yuasa Battery, Inc. supports preventative actions concerning ozone depletion in the atmosphere due to emissions of CFC's and other ozone depleting chemicals (ODC's), defined by the USEPA as Class I substances. Pursuant to Section 611 of the Clean Air Act Amendments (CAAA) of 1990, finalized on January 19, 1993, Yuasa, established a policy to eliminate the use of Class I ODC's prior to the May 15, 1993 deadline.

CALIFORNIA PROPOSITION 65:

WARNING:

- This product contains lead, a 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.

16. ADDITIONAL INFORMATION

Refer to the latest revision of the OSHA General Industry Standards, 29 CFR 1910 for the following:

- Information about the hazardous ingredients contained in lead compounds is 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.
- Inorganic lead is covered in the Inorganic Lead Standard, 1910.1025.

DISCLAIMER:

This Material Safety Data Sheet is based upon information and sources available at the time of preparation or revision date. We do not assume responsibility and disclaim liability for loss, damage or expense in any way connected with the handling, storage, use of, or disposal of the product. For additional information concerning Yuasa Battery, Inc. products or questions concerning the content of this MSDS please contact your Yuasa representative.