

YUASA-EXIDE,INC. -- LEAD-ACID BATTERY -- 6140-01-250-2113

=====  
Product Identification  
=====

Product ID:LEAD-ACID BATTERY

MSDS Date:08/01/1993

FSC:6140

NIIN:01-250-2113

Status Code:A

MSDS Number: CLCJC

=== Responsible Party ===

Company Name:YUASA-EXIDE,INC.

Address:645 PENN ST.

City:READING

State:PA

ZIP:19601

Country:US

Info Phone Num:215-371-0400

Emergency Phone Num:215-378-0500

Chemtrec Ind/P

hone:(800)424-9300

CAGE:0W0V7

=== Contractor Identification ===

Company Name:CELL ENERGY INC

Address:3190-B ORANGE GROVE AVE

Box:City:NORTH HIGHLANDS

State:CA

ZIP:95660-5706

Country:US

Phone:916-484-7974

Contract Num:SP0430-01-M-FB56

CAGE:1U269

Company Name:YUASA-EXIDE,INC.

Address:645 PENN ST.

Box:City:READING

State:PA

ZIP:19601

Country:US

Phone:215-371-0400

CAGE:0W0V7

=====  
Composition/Information on Ingredients  
=====

Ingred Name:LEAD

CAS:7439-92-1

RTECS #:OF7525000

= Wt:60

Other REC Limits:100 UG/M3 (NIOSH)  
OSHA PEL:50 UG/M3  
ACGIH TLV:150 UG/M3  
EPA Rpt Qty:1 LB  
DOT Rpt Qty:1 LB

Ingred Name:ANTIMONY  
CAS:7440-36-0  
RTECS #:CC4025000  
= Wt:.2.  
OSHA PEL:500 UG/M3  
ACGIH TLV:500 UG/M3  
EPA Rpt Qty:5000 LBS  
DOT Rpt Qty:5000 LBS

Ingred Name:ARSENIC  
CAS:7440-38-2  
RTECS #:CG0525000  
= Wt:.2  
OSHA PEL:10 UG/M3  
ACGIH TLV:200 UG/M3  
EPA Rpt Qty:1 LB  
DOT Rpt Qty:1 LB

Ingred Name:CALCIUM  
CAS:7440-70-2  
RTECS #:EV8040000  
= Wt:.2

Ingred Name:TIN  
CAS:7440-31-5  
RTECS #:XP7320000  
= Wt:  
.2  
OSHA PEL:2000 UG/M3  
ACGIH TLV:2000 UG/M3

Ingred Name:ELECTROLYTE (SULFURIC ACID)  
CAS:7664-93-9  
RTECS #:WS5600000  
Minimum % Wt:10.  
Maximum % Wt:30.  
Other REC Limits:1000 UG/M3 (NIOSH)  
OSHA PEL:1000 UG/M3  
ACGIH TLV:1000 UG/M3  
EPA Rpt Qty:1000 LBS  
DOT Rpt Qty:1000 LBS

Ingred Name:CASE MATERIAL: POLYPROPYLENE, POLYSTYRENE, STYRENE  
ACRYLONITRILE, ACRYLONITRILE BUTADIENE STYRENE, STYRENE BUTADIENE,  
POLYVINYLCHLORIDE, POLYCARBONATE, HARD RUBBER, POLYETHYLENE  
Minimum % Wt:5.  
Maximum % Wt:10

===== Hazards Identification =====

LD50 LC50 Mixture:NO DATA PROVIDED BY MANUFACTURER

Routes of Entry: Inhalation:YES Skin:YES Ingestion:YES

Reports of Carcinogenicity:NTP:YES IARC:YES OSHA:YES

Health Hazards Acute and Chronic:INHALATION:SULFURIC ACID:BREATHING OF SULFURIC ACID VAPORS OR MISTS MAY CAUSE SEVERE RESPIRATORY IRRITATION. LEAD COMPOUNDS: INHALATION OF LEAD DUST OF 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. SKIN:SULFURIC ACID:SEVERE IRRITATION, BURNS, AND ULCERATION. LEAD COMPOUNDS:NOT ABSORBED THROUGH THE SKIN. EYE:SULFURIC ACID: SEVERE IRRITATION, BURNS AND ULCERATION. LEAD COMPOUNDS:MAY CAUSE EYE IRRITATION.

Explanation of Carcinogenicity:ARSENIC : LISTED BY NTP, IARC, OSHA &

NIOSH AS A CARCINOGEN ONLY AFTER EXPOSURE AT HIGH LEVELS.

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, LOSS OF APPETITE, MUSCULAR ACHES AND WEAKNESS, SLEEP DISTURBANCES AND IRRITABILITY. 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 BOTH MALES AND FEMALES.

Medical Cond 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.

===== First Aid Measures =====

First Aid:INHALATION:SULFURIC ACID: REMOVE TO FRESH AIR

ESH 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.

===== Fire Fighting Measures =====

Lower Limits: 4.1%

Upper Limits: 74.2%

Extinguishing Media: CO<sub>2</sub>; FOAM; DRY CHEMICAL

Fire Fighting Procedures: IF BATTERIES ARE ON CHARGE, SHUT OFF POWER.

USE POSITIVE PRESSURE, SELF-CONTAINED BREATHING APPARATUS. WATER APPLIED TO ELECTROLYTE GENERATES HEAT AND CAUSES IT TO SPATTER.

WEAR ACID-RESISTANT CLOTHING

G.

Unusual Fire/Explosion Hazard: 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.

===== Accidental Release Measures =====

Spill Release Procedures: STOP FLOW OF MATERIAL; CONTAIN/ABSORB SMALL SPILLS WITH

DRY SAND, EARTH, 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 OR UNNEUTRALIZED ACID TO SEWER.

===== Handling and Storage =====

Handling and Storage Precautions: STORE BATTERIES IN COOL, DRY, WELL VENTILATED AREAS WITH IMPERVIOUS SURFACES AND ADEQUATE

## CONTAINMENT

IN THE EVENT OF SPILLS. BATTERIES SHOULD ALSO BE STORED UNDER ROOF FOR PROTECTION AGAINST ADVERSE WEATHER CONDITIONS. SEPARATE FROM INCOMPATIBLE MATERIALS.

Other Precautions:POISON - CAUSES SEVERE BURNS. DANGER - CONTAINS SULFURIC ACID

### ===== Exposure Controls/Personal Protection =====

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.

Ventilation:STORE AND HANDLE IN WELL-VENTILATED AREAS. IF MECHANICAL VENTILATION IS USED, COMPONENTS MUST BE ACID-RESISTANT

Protective Gloves:RUBBER OR PLASTIC ACID-RESISTANT GLOVES WITH ELBOW-LENGTH GAUNTLET

Eye Protection:CHEMICAL GOGGLES OR FACE SHIELD

Other Protective Equipment:ACID-RESISTANT APRON. UNDER SEVERE EXPOSURE OR EMERGENCY CONDITIONS, WEAR ACID-RESISTANT CLOTHING AND BOOTS.

Work Hygienic 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.

Supplemental Safety and Health

DLA-HMIS STAFF NOTE: YUASA-EXIDE WAS SPLIT INTO 2 ENTITIES SOMETIME IN LATE 2000. THE TWO ENTITIES ARE: ENERSYS (MAINLY GEL-CELL OR NON-FILLED LEAD-ACID BATTERIES) AND EXIDE. WHAT BATTERY BELONGS TO WHICH COMPANY WILL HAVE TO DETERMINED BY PART NUMBER; MUST CALL COMPANY TO FIND OUT.

### ===== Physical/Chemical Properties =====

HCC:C1

Boiling Pt:=95.C, 203.F

Vapor Pres:10 (MM HG)

Vapor Density:> 1

Spec Gravity:1.215 TO 1.350 (H2O=1)

Evaporation Rate & Reference:< 1(BUTYL ACETATE =1)

Solubility in Water:100%

Appearance and Odor:NO APPARENT ODOR. ELECTROLYTE: CLEAR LIQUID, SHARP, PENETRATING, PUNGENT ODOR.

### ===== Stability and Reactivity Data =====

Stability Indicator/Materials to Avoid:YES

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 OXIDEZERS AND WATER.

Stability Condition to Avoid:PROLONGED OVERCHARGE; SOURCES OF IGNITION.

Hazardous Decomposition Products:SULFURIC ACID: SULFUR TRIOXIDE, CARBON MONOXIDE, SUFIRC ACID MIST, SULFUR ACIDE MIST, SULFUR DIOXIDE, HYDROGEN.

===== Toxicological Information =====

Toxicological Information:SULFURIC ACI

D:THE INTERNATIONAL AGNECY 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 H UMANS. THIS CLASSIFICATION DOES NOT APPLY TO LIQUID FORMS OF SULFURIC ACID OR SULFURIC ACID SOLUTIONS CONTAINED WITHIN A BATTERY. ARSENIC : LISTED BY NTP, IARC, OSHA & NIOSH AS A CARCINOGEN ONLY AFTER EXPOSURE AT HIGH LEVELS. LEAD COMPOUNDS: LEAD IS LISTED AS A 2B CARCINOGEN, LIKEL

Y IN ANIMALS AT

EXTREME DOSES. PROOF OF CARCINOGENICITY IS LACKING IN HUMANS.

===== Ecological Information =====

Ecological:NO DATA PROVIDED BY MANUFACTURER

===== Disposal Considerations =====

Waste Disposal Methods:SPENT BATTERIES:SEND TO SECONDARY LEAD SMELTER FOR RECYCLING. PLACE NEUTRALIZED SLURRY INTO SEALED CONTAINERS AND DISPOSED OF AS HAZARDOUS WASTE, AS APPLICABLE. LARGE WATER-DILUTED SPILLS, AFTER NEU

TR ALIZATION AND TESTING, SHOULD BE HANDLED IN

ACCORDANCE WITH APPROVED LOCAL, STATE AND FEDERAL REQUIR EMENTS.

===== MSDS Transport Information =====

Transport Information:US DOT: WET (FILLED WITH ELECTROLYTE) BATTERIES

ARE REGULATED BY US DOT AS HAZARDOUS MATERIAL: PROPER SHIPPING

NAME: BATTERIES, WET, FILLED WITH ACID. HAZARD CLASS/DIVISION: 8.

ID NUMBER: UN2794. PACK ING GROUP: III. LABEL REQUIRED: CORROSIVE.

===== Regulatory

Information =====

SARA Title III Information:RQ FOR SPILLED 100% SULFURIC ACID UNDER CERCLA (SUPERFUND) AND EPCRA IS 1000 LBS. STATE AND LOCAL REPORTABLE QUANTITIES FOR SPILLED ACID MAY VARY. SULFURIC ACID IS A LISTED "EXTREMELY HAZARDOUS SUBSTANCE" UNDER EPCRA, WITH A THRESHOLD PLANNING QUANTITY (TPQ) OF 1000 LBS. EPCRA SECTION 302 NOTIFICATION IS REQUIRED IF 1000 OR MORE OF SULFURIC ACID IS PRESENT AT ONE SITE. THE QUANTITY OF SULFURIC ACID WILL VARY BY BATTERY TYPE. CONTACT YOUR YUASA-EXIDE REPRESENTATIVE FOR ADDITIONAL INFORMATION. EPCRA SECTION 312 TIER 2 REPORTING REQUIRED FOR BATTERIES IF SULFURIC ACID IN QUANTITIES GREATER THAN 500 LBS PRESENT.

Federal Regulatory Information:INGREDIENTS IN YUASA-EXIDE'S BATTERIES ARE LISTED IN THE BCA REGISTRY AS FOLLOWS: SULFURIC ACID, CAS# 7664-93-9; LEAD (Pb), CAS# 7439-92-1; LEAD OXIDE (PbO), CAS# 1317-36-8; LEAD SULFATE (PbSO4); ANTIMONY (Sb), CAS# 7440-36-0; ARSENIC (As), CAS# 7440-32-2; CALCIUM (Ca), CAS# 7440-70-2; TIN (Sn), 7440-31-5.

State Regulatory Information:NO DATA PROVIDED BY MANUFACTURER

===== Other Information =====

Disclaimer (provided with this information by the compiling agencies): This information is formulated for use by elements of the Department of Defense. The United States of America in no manner whatsoever, expressly or implied, warrants this information to be accurate and disclaims all liability for its use. Any person utilizing this document should seek competent professional advice to verify and assume responsibility for the suitability of this information to their particular situation.