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/Phon
e:(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.
O

ther 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
Minumum % Wt:10.
Maxumum % 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
Minumum % Wt:5.
Maxumum % 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 IRRITAITON OF MOUTH, THROAT, ESOPHAGUS AND STOMACH.LEAD COMPOUNDS:ACUTE INGESTION MAY CAUSE ABDOMINAL PAIN, NAUSEA, VOMITING, DIARRHEA AND SEV ERE CRAMPING. SKIN:SULFURIC ACID:SEVERE IRRITATION, BURNS, AND ULCERATION. LEAD COMPOUNDS:NOT ABSORBED THROUGH THE SKIN. EYE:SULFIRC ACID: SEVERE IRRITATION, BURNS AND ULCERATION. LEAD COMPOUNDS:MAY C AUSE 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 AC HES 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, P ARTICULARLY 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 ECXEMA AND CONTACT DARMATITIA.

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

First Aid:INHALATION:SULFURIC ACID: REMOVE TO FRESH AIR IMMEDIATELY. IF
BREATHING IS DIFFICULT, GIVE OXYGEN. LEAD: REMOVE FROM EXPOSURE, GARGLE ,WASH NOSE AND LIPS; CONSULT PHYSICIAN. INGESTION:SULFURIC ACID: G IVE 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 CONT AMINATED CLOTHING COMPLETELY. INCLUDING SHOES. LEAD:WASH IMMEDIATELY WITH SOAP AND WATER. EYES: SUFURIC ACI

D AND LEAD: FLUSH IMMEDIATELY WITH LARGE AMOUNTS OF WATER FOR AT LEAST 15 MINUTES; CONSULT PH YSICIAN.

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

Lower Limits:4.1%
Upper Limits:74.2%
Extinguishing Media:CO2; 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 CLOTHIN 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 ME TALLIC 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 BICA RBONATE, 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 CONT
AINMENT
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 RESP

IRATORY 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. MAK
E 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 W HICH COMPANY WILL HAVE TO DETERMINED BY PART NUMBER; MUST CALL COMPANY TO FIND OUT.

========== P
hysical/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 ORG
ANIC 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 ACID:T

HE 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, LIKELY I
N 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 NEUTR
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 Inf
ormation ==========

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 SUBSTA NCE" 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 ACI D 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 QUATITIES GREATER THAN 50 0 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); ANT IMONY (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 ==========

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