

C & D TECHNOLOGIES -- 31P-PHD, GELLED ELECTROLYTE BATTERY/DYNASTY --  
6140-01-433-1883

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

Product ID:31P-PHD, GELLED ELECTROLYTE BATTERY/DYNASTY

MSDS Date:07/01/1999

FSC:6140

NIIN:01-433-1883

Status Code:A

MSDS Number: CKMY Y

=== Responsible Party ===

Company Name:C & D TECHNOLOGIES

Address:900 E. KEEFE AVE

City:MILWAUKEE

State:WI

ZIP:53212

Country:US

Info Phone Num:

800-365-7777

Emergency Phone Num:(800)424-9300

Resp. Party Other MSDS Num.:L 83

Chemtrec Ind/Phone:(800)424-9300

CAGE:TO647

=== Contractor Identification ===

Company Name:C & D TECHNOLOGIES

Address:900 E. KEEFE AVE

Box:City:MILWAUKEE

State:WI

ZIP:53212

Country:US

Phone:800-365-7777

CAGE:TO647

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:SP0430-00-M-KD12

CAGE:1U269

===== Compositi

on/Information on Ingredients =====

Ingred Name:LEAD OR GRID  
CAS:7439-92-1  
RTECS #:OF7525000  
= Wt:50.  
ACGIH TLV:0.15 MG/M3  
EPA Rpt Qty:1 LB  
DOT Rpt Qty:1 LB

Ingred Name:LEAD DIOXIDE OR LEAD OXIDE  
CAS:1309-60-0  
RTECS #:OG0700000  
= Wt:21.

Ingred Name:LEAD SULFATE OR ANGLSITE  
CAS:7446-14-2  
RTECS #:OG4375000  
&lt; Wt:1.  
OSHA PEL:SEE 1910.1025  
ACGIH TLV:0.15 MG/M3  
EPA Rpt Qty:100 LBS  
DOT Rpt Qty:100 LBS

Ingred Name:SULFURIC ACID (40%) OR BATTERY ECTROLYTE (ACID)  
CAS:7664-93-9  
RTECS #:WS5  
600000  
= Wt:22.  
OSHA PEL:1 MG/M3  
ACGIH TLV:1 MG/M3  
ACGIH STEL:3 MG/M3  
EPA Rpt Qty:1000 LBS  
DOT Rpt Qty:1000 LBS

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

LD50 LC50 Mixture:NO DATA PROVIDED BY RESPONSIBLE PARTY.  
Routes of Entry: Inhalation:YES Skin:NO Ingestion:YES  
Reports of Carcinogenicity:NTP:NO IARC:NO OSHA:NO  
Health Hazards Acute and Chronic:UNDER NORMAL CONDITIONS OF BATTERY  
USE, INTERNAL COMPONENTS WILL NOT PRESENT A HEALTH HAZARD. THE  
FOLLOWING IS

PROVIDED FOR BATTERY ELECTROLYTE (ACID) AND LEAD FOR EXPOSURE THAT MAY OCCUR DURING BATTERY PRODUCTION OR CONTAINER BREAKAGE OR UNDER EXTREME HEAT CONDITIONS SUCH AS FIRE. INHALATION: ACID MIST GENERATED DURING BATTERY FORMATION MAY CAUSE RESPIRATORY IRRITATION. SKIN: BATTERY ELECTROLYTE (ACID) MAY CAUSE IRRITATIVE CONTACT DERMATITIS. EYE: BATTERY ELECTROLYTE (ACID) WILL IRRITATE THE EYES. INGESTION: HANDS CONTAMINATED WITH INTERNAL COMPONENTS OF A BATTERY CAN CAUSE INGESTION OF LEAD/LEAD COMPOUNDS.

Explanation of Carcinogenicity: IARC HAS CLASSIFIED " STRONG INORGANIC ACID MIST CONTAINING SULFURIC ACID" AS A CATEGORY 1 CARCINOGEN, A SUBSTANCE THAT IS CARCINOGENIC TO HUMANS. THIS CLASSIFICATION DOES NOT APPLY TO LIQUID FORMS OF SULFURIC ACID SUCH AS FOUND IN BATTERIES. INORGANIC ACID MIST IS NOT NORMALLY PRODUCED BY THIS BATTERY.

Effects of Overexposure: ACUTE: ACUTE EFFECTS OF OVEREXPOSURE TO LEAD COMPOUNDS ARE GI (GASTROINTESTINAL ) UPSET, LOSS OF APPETITE, DIARRHEA, CONSTIPATION WITH CRAMPING, DIFFICULTY IN SLEEPING, & FATIGUE. EXPOSURE &/OR CONTACT WITH BATTERY ELECTROLYTE (ACID) MAY LEAD TO ACUTE IRRITATION OF THE SKIN, CORNEAL DAMAGE OF THE EYES IF NOT WASHED IMMEDIATELY & IRRITATION OF THE MUCOUS MEMBRANES OF THE EYES & UPPER RESPIRATORY SYSTEM, INCLUDING THE LUNGS. CHRONIC EFFECTS: LEAD & ITS COMPOUNDS MAY CAUSE CHRONIC ANEMIA, DAMAGE TO THE KIDNEYS & NERVOUS SYSTEM.

Medical Cond Aggravated by Exposure: INORGANIC LEAD AND ITS COMPOUNDS CAN AGGRAVATE CHRONIC FORMS OF KIDNEY, LIVER, AND NEUROLOGIC DISEASES. CONTACT OF BATTERY ELECTROLYTE (ACID) WITH THE SKIN MAY AGGRAVATE SKIN DISEASES.

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

First Aid: INHALATION: REMOVE FROM EXPOSURE AND CONSULT A PHYSICIAN IF ANY OF THE ACUTE EFFECTS LISTED ABOVE DEVELOP. SKIN: WASH THOROUGHLY WITH SOAP AND WATER. IF ACID IS SPLASHED ON CLOTHING, REMOVE AND DISCARD. IF ACID IS SPLASHED IN SHOES, REMOVE THEM IMMEDIATELY AND DISCARD, ACID CANNOT BE MOVED FROM LEATHER. EYES: IMMEDIATELY RINSE WITH COOL RUNNING WATER FOR AT LEAST 15 MINUTES. SEEK MEDICAL ATTENTION AFTER RINSING. INGESTION: LEAD/LEAD COMPOUNDS: CONSULT A PHYSICIAN. BATTERY ELECTROLYTE (ACID): DO NOT INDUCE VOMITING. REFER TO A PHYSICIAN IMMEDIATELY.

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

Flash Point: =259.C, 498.2F  
HYDROGEN  
Autoigniti

on Temp:=580.C, 1076.F

Autoignition Temp Text:H2

Lower Limits:4.1

Upper Limits:74.2

Extinguishing Media:DRY CHEMICAL, FOAM, OR CARBON DIOXIDE (CO2).

Fire Fighting Procedures:USE POSITIVE PRESSURE, SELF-CONTAINED BREATHING APPARATUS.

Unusual Fire/Explosion Hazard:HYDROGEN AND OXYGEN GASES ARE PRODUCED IN THE CELLS DURING NORMAL BATTERY OPERATION (HYDROGEN) IS FLAMMABLE AND OXYGEN SUPPORTS COMBUSTION). THESE GASES ENTER THE AIR THROUGH THE VENT CAPS. TO AVOID THE CHANCE OF A FIRE

OR EXPLOSION, KEEP

SPARKS AND OTHER SOURCES OF IGNITION AWAY FROM THE BATTERY.

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

Spill Release Procedures:REMOVE COMBUSTIBLE MATERIALS & ALL SOURCES OF IGNITION. CONTAINS SPILL WITH SODA ASH (SODIUM CARBONATE) OR QUICKLIME (CALCIUM OXIDE).MIX WELL. MAKE CERTAIN MIXTURE IS NEUTRAL, THEN COLLECT RESIDUE & PLACE IN A DRUM OR OTHER SUITABLE CONTAINER. DISPOSE OF AS A HAZARDOUS WASTE. WEAR ACID-RESISTANT BOOT

S, CHEMICAL FACE SHIELD, CHEMICAL SPLASH GOGGLES, AND ACID-RESISTANT GLOVES.

Neutralizing Agent:SODA ASH OR QUICKLIME.

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

Handling and Storage Precautions:STORE LEAD ACID BATTERIES WITH ADEQUATE VENTILATION. ROOM VENTILATION IS REQUIRED FOR BATTERIES UTILIZED FOR STANDBY POWER GENERATION. NEVER RECHARGE BATTERIES IN AN UNVENTILATED, ENCLOSED SPACE. DO NOT REMOVE VENT CAPS. FOLLOW SHIPPING & HANDLING INSTRUCTI

ONS WHERE APPLICABLE TO THE BATTERY TYPE.

Other Precautions:NO DATA PROVIDED BY RESPONSIBLE PARTY.

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

Respiratory Protection:NONE REQUIRED UNDER NORMAL HANDLING CONDITIONS. DURING BATTERY FORMATION (HIGH-RATE CHARGE CONDITION), ACID MIST CAN BE GENERATED, WHICH MAY CAUSE RESPIRATORY IRRITATION. ALSO, IF ACID SPILLAGE OCCURS IN A CONFINED SPACE, EXPOSURE MAY OCCUR. IF IRRITATION OCCURS, WEAR A RESPIRATOR SUITA

BLE FOR PROTECTION  
AGAINST ACID MIST.

Ventilation:ROOM VENTILATION IS REQUIRED FOR BATTERIES UTILIZED FOR  
STANDBY POWER GENERATION. NEVER RECHARGE BATTERIES IN AN  
UNVENTILATED, ENCLOSED SPACE.

Protective Gloves:VINYL-COATED, PVC, GAUNTLET-TYPE GLOVES WITH ROUGH  
FINISH.

Eye Protection:CHEMICAL SPLASH GOGLES ARE PREFERRED. ALSO ACCEPTABLE  
ARE VISOR-GOGS OR A CHEMI

Other Protective Equipment:SAFETY SHOES WORN WITH RUBBER OR NEOPRENE  
BOOTS OR STEEL-TOED RUBBER OR NEOPRENE BOO

TS WORN OVER SOCKS. PLACE

PANTS LEGS OVER BOOTS TO KEEP ACID OUT OF BOOTS. ALL FOOTWEAR MUST  
MEET REQUIRMENTS OF ANSI

Work Hygienic Practices:FOLLOWING CONTACT WITH INTERNAL BATTERY  
COMPONENTS, WASH HANDS THOROUGHLY BEFORE EATING, DRINKING OR  
SMOKING.

Supplemental Safety and Health

NO DATA PROVIDED BY RESPONSIBLE PARTY.

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

HCC:C1

Boiling Pt:>110.C, 230.F

B.P. Text:ELECTROLYTE

Melt/Freeze Pt:=327.4C, 621.3F

M.P/F.

P Text:LEAD

Vapor Pres:NOT DETERMINED

Vapor Density:N/D

Spec Gravity:1.280-1.320 (ACID)

Evaporation Rate & Reference:NOT DETERMINED

Solubility in Water:100% (ACID)

Appearance and Odor:BATTERY ELECTROLYTE (ACID) IS A GRAYISH-WHITE  
GELLED SOILD WITH A SIGHT ACIDIC

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

Stability Indicator/Materials to Avoid:YES

LEAD/LEAD COMPOUNDS: POTASSIUM, CARBIDES, SULFIDES, PEROXIDES,  
PHOSPHORUS, SULFUR. BATTERY ELECTROLYTE (ACID): C

OMBUSTIBLES

MATERIALS. STRONG REDUCING AGENTS, MOST METALS. CARBIDES, ORGANIC MATERIALS, CHLORATED, NITRATES, P

Stability Condition to Avoid:SPARKS AND OTHER SOURCES OF IGNITION. HIGH TEMPERATURES. BATTERY ELECTROLYTE (ACID) WILL REACT WITH WATER TO PRODUCE HEAT. CAN REACT WITH OXIDIZING OR REDUCING AGENTS.

Hazardous Decomposition Products:LEAD/LEAD COMPOUNDS: OXIDES OF LEAD AND SULFUR. BATTERY ELECTROLYTE (ACID): HYDROGEN, SULFUR DIOXIDE, SULFUR TRIOXIDE.

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

Toxicological Information:NO DATA PROVIDED BY RESPONSIBLE PARTY.

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

Ecological:NO DATA PROVIDED BY RESPONSIBLE PARTY.

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

Waste Disposal Methods:BATTERY ELECTROLYTE (ACID): NEUTRALIZE AS ABOVE FOR A SPILL, COLLECT RESIDUE, AND PLACE IN A DRIM OR SUITABLE CONTAINER. DISPOSE OF AS A HAZARDOUS WASTE. DO NOT FLUSH LEAD-CONTAMINATED ACID INTO SEWER . BATTERIES: SEND TO LEAD SMELTER FOR RECALAMTION FOLLOWING APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS.

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

Transport Information:DOT: BATTERY, WET, FILLED WITH ACID, UN2794, CLASS 8. IATA: BATTERY, WET, FILLED WITH ACID, UN2794, CLASS 8. IMO: BATTERY, WET, FILLED WITH ACID, UN2794, CLASS 8.

===== Regulatory Information =====

SARA Title III Information:THE CONTENTS OF THIS PRODUCT ARE TOXIC CHEMICALS THAT ARE SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 302 AND 313 OF THE EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT OF 1986 (40 CFR 355 AND 372).

Federal Regulatory Information:NO DATA PROVIDED BY RESPONSIBLE PARTY.

State Regulatory Information:NO DATA PROVIDED BY RESPONSIBLE PARTY.

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

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y the compiling agencies):

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