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SANYO ENERGY USA CORP -- CADNICA -- 6140-01-433-3854
========== Product Identification ==========

Product ID:CADNICA
MSDS Date:01/01/1999
FSC:6140
NIIN:01-433-3854
Status Code:A
MSDS Number: CKKGN
=== Responsible Party ===
Company Name:SANYO ENERGY USA CORP
Address:2001 SANYO AVE
City:SAN DIEGO
State:CA
ZIP:92173
Country:US
Info Phone Num:619-681-6620
Emergency Phone Num:800-424-9300
Chemtrec Ind/Phone:(80
0)424-9300
CAGE:00JU0
=== Contractor Identification ===
Company Name:SANYO ENERGY(U.S.A.) CORP.
Address:2001 SANYO AVE
Box:City:SAN DIEGO
State:CA
ZIP:92173
Country:US
Phone:619-661-6620
CAGE:00JU0
Company Name:SKIL CORPORATION
Address:4300 WEST PATTERSON AVENUE
Box:City:CHICAGO
State:IL
ZIP:60646-5999
Country:US
Phone:312-286-7330
CAGE:55111

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

Ingred Name:CADMIUM
CAS:7440-43-9
RTECS #:EU9800000
Minumum % Wt:11.
Maxumum % Wt:2

6.
OSHA PEL:.005 MG/M3 TWA
ACGIH TLV:0.05 MG/M3 TWA
EPA Rpt Qty:10 LBS
DOT Rpt Qty:10 LBS

Ingred Name:CADMIUM HYDROXIDE
CAS:21041-95-2
RTECS #:EV1260000
Minumum % Wt:11.
Maxumum % Wt:26.
OSHA PEL:.005 MG/M3 TWA
ACGIH TLV:0.05 MG/M3 TWA

Ingred Name:NICKEL
CAS:7440-02-0
RTECS #:QR5950000
Minumum % Wt:8.
Maxumum % Wt:17.
OSHA PEL:1 MG/M3 TWA
ACGIH TLV:1 MG/M3 TWA

Ingred Name:NICKEL HYDROXIDE
CAS:12054-48-7
RTECS #:QR7040000
Minumum % Wt:5.
Maxumum % Wt:12.
OSHA PEL:1 MG/M3 TWA
ACGIH TLV:1 MG/M3
TWA
EPA Rpt Qty:10 LBS
DOT Rpt Qty:10 LBS

Ingred Name:POTASSIUM HYDROXIDE
CAS:1310-58-3
RTECS #:TT2100000
< Wt:3.
ACGIH STEL:C2 MG/M3
EPA Rpt Qty:1000 LBS
DOT Rpt Qty:1000 LBS

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

Routes of Entry: Inhalation:NO Skin:YES Ingestion:YES
Reports of Carcinogenicity:NTP:YES IARC:YES
Health Hazards Acute and Chronic:NON-HAZARODUS UNDER NORMAL USE. HAZMAT IS FULLY CONTAINED IN A HERMETICALLY-SEALED CASE. HOWEVER, IF BATTE

RY CELL IS BREACHED, HAZMAT MAY BE RELEASED. ACUTE:
INHALATION- DUST MAY EFFECT RESPIRATORY & CNS . INGESTION: THE ELECTROLYTE MAY CAUSE LOCALIZED BURNS. SKIN-EXPOSURE TO ELECTROLYRE MAY RESULT IN CHEMICAL BURNS. EYE- ELECTROLYTE MAY CAUSE SEVERE IRRITATION & CHEMICAL BURNS. CHRONIC: REPEATED OVEREXPOSURE TO CADMIUM MAY RESULT IN LUNG CANCER, LUNG, KIDNEY & LIVER DISFUNCTION; SKELETAL DISEASE & REPRODUCTIVE TOXICITY. CHRONIC OVEREXPOSURE TO NICKEL MAY RESULT IN CAN
CER, DERMATITIS.

Explanation of Carcinogenicity:CADMIUM & NICKEL HAVE BEEN IDENTIFIED BY NTP AS REASONABLY ANTICIPATED TO BE CARCINOGENS. EPA CLASSIFIES CADMIUM AS A "B1" PROBABLE HUMAN CARCINOGEN. IARC LISTS CADMIUM AS "A2" PROBABLE HUMAN CARCINO GEN.

Effects of Overexposure:INHALATION-INHALATION OF CADMIUM DUST OR FUMES MAY CAUSE THROAT DRYNESS, RESPIRATORY IRRITATION, HEADACHE, NAUSEA, VOMITING, CHEST PAIN, EXTREME RESTLESSNESSS & IRRITABILITY,PNEUMONITIS & BRONCHOPNE
UM ONIA. IN CASE OF EXTREME
EXPOSURE DEATH MAY OCCUR WITHIN SEVERAL DAYS. INGESTION-INGESTION OF CADMIUM COMPOUNDS MAY RESULT IN INCREASED SALIVATION, CHOKING, NAUSEA, PERSISTENT VOMITING, DIARRHEA, ABDO MINAL PAIN, ANEMIA, TENESMUS & KIDNEY DISFUNCTION. EXPOSURE TO ELECTROLYTE: IRRITATION, BURNS.

Medical Cond Aggravated by Exposure:A KNOWLEDGE OF THE AVAILABLE TOXICOLOGY INFORMATION & OF THE PHYSICAL & CHEMICAL PROPERTIES OF THE MATERIAL SUGGESTS THAT OVEREXPOSURE IS
UNLIKELY TO AGGRAVATE
EXISTING MEDICAL CONDITIONS.

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

First Aid:SWALLOWING-DO NOT INDUCE VOMITING. SEEK MEDICAL ATTENTION IMMEDIATELY. SKIN-IF THE INTERNAL CELL MATERIAL OF AN OPENED BATTERY CELL COMES INTO CONTACT WITH THE SKIN, IMMEDIATELY FLUSH WITH WATER FOR A T LEAST 15 MIN. INHALATION: IF POTENTIALFOR EXPOSURE TO CADMIUM OR NICKEL FUMES OR DUSTS OCCURS, REMOVE IMMEDIATELY TO FRESH AIR & SEEK MEDICA
L ATTENTION. EYES-IF THE
CONTENTS FROM AN OPENED BATTERY C OME INTO CONTACT WITH THE EYES, IMMEDIATELY FLUSH EYES WITH WATER CONTINUOUSLY FOR AT LEAST 15 MIN. SEEK MEDICAL ATTENTION.

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

Extinguishing Media:ANY CLASS OF EXTINGUISHING MEDIUM MAY BE USED ON THE BATTERIES OR THEIR PACKING MATERIAL.

Fire Fighting Procedures:EXPOSURE TO TEMPERATURES OF ABOVE 212 F CAN CAUSE EVAPORATION OF THE LIQUID CONTENT OF THE

POTASSIUM HYDROXIDE
ELECTROLYTE RESULTING IN THE RUPTURE OF THE CELL. POTENTIAL FOR EXPOSURE TO CADMIUM FUMES DURING FIRE; USE SELF-CONTAINED BREATHING APPARATUS.

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

Spill Release Procedures:SPILLS AND LEAKS ARE UNLIKELY BECAUSE CELLS ARE CONTAINED IN AN HERMATICALLY SEALED CASE. IF THE BATTERY CASE IS BREACHED, DON PROTECTIVE CLOTHING THAT IS IMPERVIOUS TO CAUSTIC MATERIALS AND ABSORB OR PACK SPILL RESI
DUE IN INERT MATERIAL.
DISPOSE OF AS A HAZARDOUS WASTE IN ACCORDANCE WITH APPLICABLE STATE & FEDERAL REGULATIONS.

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

Handling and Storage Precautions:STORE IN A COOL PLACE, BUT PREVENT CONDENSATION ON CELL OR BATTERY TERMINALS. ELEVATED TEMPERATURES MAY RESULT IN REDUCED BATTERY LIFE. OPTIMUM STORAGE TEMPERATURES ARE BETWEEN -31F AND 95F.
Other Precautions:DO NOT INCINERATE OR SUBJECT BATTERY CELLS TO TEMP
ERATURES IN EXCESS OF 212F.SUCH TREATEMNT CAN VAPORIZE THE LIQUID ELECTROLYTE CAUSING CELL RUPTURE. INCINERATION MAY RESULT IN CADMIUM EMISSIONS.

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

Respiratory Protection:NOT REQUIRED UNDER NORMAL USE.
Ventilation:NOT REQUIRED UNDER NORMAL USE.
Protective Gloves:NOT REQUIRED UNDER NORMAL USE.
Eye Protection:NOT REQUIRED UNDER NORMAL USE.
Other Protective Equipment:NOT REQUIRED UNDER NORMAL USE.
Supplemental Safety and He
alth
CHARGING: THE BATTERY IS DESIGNED FOR RECHARGING. A LOSS OF VOLTAGE & CAPACITY OF BATTERIES DUE TO SELF-DISCHARGE DURING STORAGE IS UNAVOIDABLE. CHARGE BATTERY BEFORE USE. OBSERVE THE SPECIFIED CHARGE RATE SINCE HIGHER RATES CAN CAUSE A RISE IN INTERNAL GAS PRESSURE.

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

HCC:Z5
Boiling Pt:=763.9C, 1407.F
Melt/Freeze Pt:=321.1C, 610.F
Vapor Pres:(MM HG)
Vapor Density:(AIR=1)
Spec Gravity:8.65@77F
Solubility i

n Water:INSOLUBLE
Appearance and Odor:SILVER-WHITE, OR SLIGHTLY YELLOW, ODODRLESS.

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

Stability Indicator/Materials to Avoid:YES
THE BATTERY CELLS ARE ENCASED IN A NON-REACTIVE CONTAINER; HOWEVER, IF THE CONTAINER IS BREACHED, AVOID CONTACT OF INTERNAL BATTERY COMPONENTS WITH ACIDS, ALDEHYDES, AND CARBARNATE COMPOUNDS.
Stability Condition to Avoid:THE BATTERIES ARE STABLE UNDER NORMAL OPERATING CONDITIONS. AVOID HEAT,
OPEN FLAMES, SPARKS AND MOISTURE.
Conditions to Avoid Polymerization:WILL NOT OCCUR.

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

Waste Disposal Methods:RETURN TO SANYO ENERGY CORP. FOR RECYCLE. CONTACT YOUR SANYO REPRESENTATIVE FOR MORE INFORMATION ON THE EARTHSAVER 2001 RECYCLING PROGRAM. BATTERIES MUST BE HANDLED IN ACCORDANCE WITH ALL APPLICABLE S TATE AND FEDERAL LAWS AND REGULATIONS.

========== MSDS Transport Information ==========
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Transport Information:THESE BATTERIES ARE MANUFACTURED ARTICLES AS DESCRIBED IN 29 CFR 1910.1200. BATTERY CELL IS CONTAINED IN A HERMETICALLY SEALED CASE, DESIGNED TO WITHSTAND TEMPERATURES AND PRESSURES ENCOUNTERED DURING NORMAL USE.

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