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Product Identification  
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Product ID:NICKEL CADMIUM BATTERY TYPE NO: CADNICA

MSDS Date:01/01/1999

FSC:6140

NIIN:01-452-0154

Status Code:A

MSDS Number: CJHGK

=== 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:619-661-6620

CAGE:00JU0

=== Contract

or Identification ===

Company Name:KAMPI COMPONENTS CO., INC.

Address:210 RT 13

Box:721

City:BRISTOL

State:PA

ZIP:19007-3517

Country:US

Phone:215-736-2000

Contract Num:SP0430-98-M-JP70

CAGE:7Z016

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

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Composition/Information on Ingredients  
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Ingred Name:CADMIUM

CAS:7440-43-9

RTECS #:EU9800000

Minumum % Wt:11.

Maxumum % Wt:26.

Othe

r REC Limits:NONE RECOMMENDED  
OSHA PEL:0.005 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.  
Other REC Limits:NONE RECOMMENDED  
OSHA PEL:0.005 MG/M3 TWA  
ACGIH TLV:0.05 MG/M3 TWA

Ingred Name:NICKEL (POWDER)  
CAS:7440-02-0  
RTECS #:QR5950000  
Minumum % Wt:8.  
Maxumum % Wt:17.  
Other REC Limits:NONE RECOMMENDED  
OSHA PEL:1 MG/M3  
ACGIH TLV:1 MG/M3

Ingred Name:NICKEL HYDROXIDE  
CAS:120  
54-48-7  
RTECS #:QR7040000  
Minumum % Wt:5.  
Maxumum % Wt:12.  
Other REC Limits:NONE RECOMMENDED  
OSHA PEL:1 MG/M3  
ACGIH TLV:1 MG/M3  
EPA Rpt Qty:10 LBS  
DOT Rpt Qty:10 LBS

Ingred Name:POTASSIUM HYDROXIDE  
CAS:1310-58-3  
RTECS #:TT2100000  
&lt; Wt:3.  
Other REC Limits:NONE RECOMMENDED  
OSHA PEL:2 MG/M3 CEILLING  
ACGIH TLV:2 MG/M3 CEILLING  
EPA Rpt Qty:1000 LBS  
DOT Rpt Qty:1000 LBS

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

Routes of Entry: Inhalation:NO Skin:NO Ingestion:NO  
Repor

ts of Carcinogenicity:NTP:YES IARC:YES OSHA:YES

Health Hazards Acute and Chronic:TARGET ORGANS: EYES, SKIN, LIVER, KIDNEY, RESPIRATORY AND GI TRACTS (HMIS). ACUTE - BATTERY IS HERMETICALLY SEALED. SHOULD BATTERIES BE EXPOSED TO EXTREME HEAT/PRESSURE CAUSING A BREACH IN CASE, DUSTS AND FUMES INHALATION MAY CAUSE IRRITATION OF RESPIRATORY TRACT, EXTREME RESTLESSNESS, PNEUMONITIS. IN CASE OF HIGH CONCENTRATION EXPOSURES, DEATH MAY OCCUR WITHIN SEVERAL DAYS AFTER EXPOSURE.

RE. ELECTROLYTE CAN CAUSE

SEVERE EYE AND SKIN IRRITATION, CHEMICAL BURNS. NICKEL MAY CAUSE DERMATITIS. INGESTION MAY CAUSE LOCALIZED BURNS. CHRONIC - LUNG CANCER, LIVER AND KIDNEY DYSFUNCTION, SKELETAL DISEASE, REPRODUCTIVE TOXICITY, DERMATITIS.

Explanation of Carcinogenicity:CONTAINS CADMIUM AND NICKEL.

Effects of Overexposure:PAIN, NAUSEA, VOMITING, DIARRHEA, SEVERE IRRITATION, CHEMICAL BURNS, RESTLESSNESS, IRRITABILITY, CHOKING, SALIVATION, ANEMIA

Medical Condition Aggravated by Exposure:

A KNOWLEDGE OF THE AVAILABLE TOXICOLOGY INFORMATION AND THE PHYSICAL AND CHEMICAL PROPERTIES OF THE MATERIAL SUGGESTS THAT OVEREXPOSURE IS UNLIKELY TO AGGRAVATE EXISTING MEDICAL CONDITIONS.

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

First Aid:INHALATION: IF POTENTIAL FOR EXPOSURE TO CADMIUM OR NICKEL FUMES OR DUSTS OCCURS, REMOVE TO FRESH AIR IMMEDIATELY AND SEEK MEDICAL ATTENTION. EYES: IF THE CONTENTS FROM AN OPENED BATTERY

COMES INTO CONTACT WITH THE EYES, IMMEDIATELY FLUSH EYES THOROUGHLY WITH WATER FOR AT LEAST 15 MINUTES. SEEK MEDICAL ATTENTION. SKIN: IF THE INTERNAL CELL MATERIALS OF AN OPENED BATTERY COMES INTO CONTACT WITH THE SKIN, IMMEDIATELY FLUSH WITH WATER FOR 15 MINUTES. SWALLOWING: DO NOT INDUCE VOMITING. SEEK IMMEDIATE MEDICAL ATTENTION.

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===== 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 212F CAN CAUSE EVAPORATION OF THE LIQUID CONTENT OF THE POTASSIUM HYDROXIDE ELECTROLYTE RESULTING IN THE RUPTURE OF THE CELLS. POTENTIAL FOR EXPOSURE TO CADMIUM FUMES DURING FIRE; USE SELF-CONTAINED BREATHING APPARATUS.

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

Spill Release Procedures:SPILL AND LEAKS ARE UNLIKELY BECAUSE CELLS ARE CONTAINED IN

AN HERMETICALLY SEALED CASE. IF THE BATTERY CASE IS BREACHED, WEAR PROTECTIVE CLOTHING THAT IS IMPERVIOUS TO CAUSTIC MATERIALS AND ABSORB OR PACK SPILL RESIDUES IN INERT MATERIALS. PLACE IN AN APPROPRIATE CONTAINER FOR DISPOSAL.

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

Handling and Storage Precautions:STORE IN COOL (~31F TO 95F) PLACE, BUT PREVENT CONDENSATION ON CELL OR BATTERY TERMINALS. AVOID BREAKING, CRUSHING OR OTHERWISE DESTROYING THE PHYSICAL INTEGRITY OF THE CELL OR BATTERY. ELEVATED TEMPERATURES CAN RESULT IN SHORTENED BATTERY LIFE. DO NOT OBSTRUCT SAFETY RELEASE VENTS ON BATTERIES.

Other Precautions:CHARGING: THIS BATTERY IS DESIGNED FOR RECHARGING. A LOSS OF VOLTAGE AND CAPACITY OF BATTERIES DUE TO SELF-DISCHARGE DURING PROLONGED STORAGE IS UNAVOIDABLE. CHARGE BATTERY BEFORE USE. OBSERVE THE SPECIFIED CHARGE RATE.

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===== 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.

Supplemental Safety and Health

P/N: BKB191205/2. PRODUCT IS A MANUFACTURED ARTICLE AS DESCRIBED IN 29 CFR 1910.1200. THE BATTERY CELL IS CONTAINED IN A HERMETICALLY-SEALED CASE, DESIGNED TO WITHSTAND TEMPERATURES AND PRESSURES ENCOUNTERED DURING NORMAL USE. AS A RESULT, DURING NORMAL USE, HAZARDOUS MATERIALS ARE FULLY CONTAINED INSIDE BATTERY CELL.

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

HCC:Z5  
Spec Gravity:8.65 CADMIUM  
Solubility in Water:SOLUBLE (POTASSIUM HYDRO)  
Appearance and Odor:SEALED BATTERY

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===== 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

ITH ACIDS, ALDEHYDES, AND CARBAMATE COMPOUNDS.

Stability Condition to Avoid:HEAT, OPEN FLAMES, SPARKS, AND MOSITURE.

Hazardous Decomposition Products:OXIDES OF CADMIUM AND NICKEL

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

Waste Disposal Methods:RETURN TO SANYO ENERGY CORP. FOR RECYCLE.

CONTACT YOUR SANYO REPRESENTATIVE FOR MORE INFORMATION ON THE EARTH SAVER 2001 RECYCLING PROGRAM. BATTERIES MUST BE HANDLED IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, AND FEDERAL LAWS AND

REGULATIONS. DO NOT INCINERATE OR SUBJECT BATTERY CELLS TO TEMPERATURES IN EXCESS OF 212F.

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

Transport Information:A NON-SPILLABLE WET ELECTRIC STORAGE BATTERY IS EXCEPTED FROM ALL OTHER REQUIREMENTS OF THIS SUBCHAPTER IF: 1. THE BATTERY IS PROTECTED AGAINST SHORT CIRCUIT; 2. FOR BATTERIES MANUFACTURED AFTER SEPTEMBER 30,1995, THE BATTERY AND THE OUTER PACKAGING MUST BE PLAINLY AND DUR

ABLY MARKED "NONSPILLABLE" OR

:NONSPILLABLE BATTERY", AND 3. THE BATTERY MUST BE CAPABLE OF WITHSTANDING THE FOLLOWING TWO TESTS WITHOUT LEAKAGE OF BATTERY FLUID FROM THE BATTERY: (I) VIBRATION TEST; (II) PRESSURE DIFFERENTIAL TEST. SEE 49 CFR 173.159(D).

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

SARA Title III Information:SECTION 302: EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355): NONE OF THE CHEMICALS ARE SECTION 302 HAZARDS. SECTION 311/312

: MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370) : BY MANUFACTURER'S HAZAR D EVALUATION, THIS PRODUCT IS HAZARDOUS.IT SHOULD BE REPORTED UNDER THE FOLLOWING EPA HAZARD. "IMMEDIATE (ACUTE) HEALTH HAZARD". SECTION 313: LIST OF TOXIC CHEMICALS (40 CFC 372): NONE OF THE CHEMICAL S ARE 313 TOXIC CHEMICALS.

Federal Regulatory Information:MSDS COMPLIES WITH OSHA'S HAZARD COMMUNICATION RULE, 29 CFR 1910.1200. TOXIC SUBSTANCE CONTROL ACT (TSCA), ALL SUBSTANCES ARE TSCA

LISTED.

State Regulatory Information: CALIFORNIA PROPOSITION 65: NONE OF THE  
CHEMICALS ARE ON THE PROPOSITION 65 LIST.

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

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