MATERIAL SAFETY DATA SHEET

SANYO Batteries

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Manufacturer's Name

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Telephone No.: 0790-43-2043

Date of Preparation: 3/11/05

Section I – Product Identification

Product Name: Nickel Metal Hydride Battery ("HR-DP")

Nominal Voltage: 1.2V

Chemical System: Nickel/Metal Hydride

Designated for Recharge:

_X_ Yes ___No

Section II – Hazardous Ingredients

IMPORTANT NOTE: The 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 the battery cell. The battery cell should not be opened or exposed to heat because exposure to the following ingredients contained within could be harmful under some circumstances. The following information is provided for the user's information only.

Hazardous Components (Specific Chemical Identify Common Name(s))	**CAS No.**	**OSHA PEL (mg/m^3)**	**ACGIH TLV(1999)–TWA (mg/m^3)**
Hydrogen Absorbing Alloy	7440-02-0 (Nickel) 7440-48-4 (Cobalt) 7439-96-5 (Manganese) 7429-90-5 (Aluminum)	1 (as Ni) Metal, dust and fume; 0.1 (as Co) Compound and fume; 5 (as Mn) -	1.51 (Ni metal) 0.02 (as Co) 0.2 (as Mn) -

Hazardous Components (Specific Chemical Identify Common Name(s))	CAS No.	OSHA PEL (mg/m^3)	ACGIH TLV(1999)–TWA (mg/m^3)
(Ni-Co-Zn)Hydroxide	7440-02-0 (Nickel) 7440-48-4 (Cobalt) 7440-66-6 (Zinc)	1 (as Ni) Metal, dust and fume; 0.1 (as Co) ZnO dust; 15 ZnO respirable fraction; 5	1.51 (Ni metal) 0.02 (as Co) ZnO fume; 5 ZnO dust; 10
Iron	7439-89-6	-	-
Nickel	7440-02-01	1 (as Ni)	1.51 (Ni metal)
KOH (Potassium Hydroxide)	1310-58-3	2	-
NaOH (Sodium Hydroxide)	1310-73-2	2	-
LiOH (Lithium Hydroxide)	1310-65-2	-	-

The information and recommendations set forth are made in good faith and believed to be accurate as of the date of preparation. SANYO ENERGY CORP. makes no warranty, expressed or implied, with respect to this information and disclaims all liabilities from reliance on it.

Notes: 1.Concentrations vary depending on the state of charge or discharge.

2. TWA is the time weighted average concentration over an 8-hour period.

Section III — Physical Data for Battery

Melting point (°F) NA	Boiling point (°F) NA	% Volatile by Volume NA
Vapor Pressure (mm Hg) NA	Evaporation Rate	Vapor Density (Air = 1) NA
Specific Gravity (H_2O) NA	Solubility in Water NA	Appearance and Odor No Odor

Electrolyte specific gravity : 1.29 g/cm_3
Electrolyte viscosity : 2.4 mPas (* mPas : milli-pascal second)

Section IV - Fire and Explosion Hazard Data

Flash Point: NA Lower Explosive Limit: NA Upper Explosive Limit: NA

Extinguishing Media: Suitable extinguishing media: Dry sand, chemical powder, CO2 gas fire extinguishing medium.

(If the temperature gets high due to heating, it might fire again even after extinguished)

Special Fire Fighting Procedures: Exposure to temperatures of above 212°F can cause venting of the liquid electrolyte. Internal shorting could also cause venting of the electrolyte. There is potential for exposure to iron, nickel, cobalt, rare earth metals (cerium, lanthanum neodymium, and praseodymium), manganese, and aluminum fumes during fire; use self-contained breathing apparatus. Exposure to fire may cause cell to rupture and burn.

Section V - Health Hazard Data

Threshold Limit Values: See Section II

Effects of a Single (Acute) Overexposure:

Inhalation: During normal use inhalation is an unlikely route of exposure due to containment of hazardous materials within the battery case. However, should the batteries be exposed to extreme heat or pressures causing a breach in the battery cell case, exposure to the constituents may occur. Inhalation of cobalt dusts may result in pulmonary conditions.

Ingestion: If the battery case is breached in the digestive tract, the electrolyte may cause localized burns.

Skin Absorption: No evidence of adverse effects from available data.

Skin Contact: Exposure to the electrolyte contained inside the battery may result in chemical burns. Exposure to nickel may cause dermatitis in some sensitive individuals.

Eye Contact: Exposure to the electrolyte contained inside the battery may result in severe irritation and chemical burns.

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Carcinogenicity:

Nickel has been identified by the National Toxicology Program (NTP) as reasonably anticipated to be a carcinogen. Cobalt

has been identified by IARC as a 2B carcinogen.

Other Effects of Repeated (Chronic) Exposure:

Chronic overexposure to nickel may result in cancer; dermal contact may result in dermatitis in sensitive individuals.

Medical Conditions Aggravated by Overexposure:

A knowledge of the available toxicology information and of the physical and chemical properties of the material suggests that overexposure in unlikely to aggravate existing medical conditions.

Emergency and First Aid Procedures:

Swallowing: Do not induce vomiting. Seek medical attention immediately.

Skin: If the internal cell materials of an opened battery cell comes into contact with the skin, immediately flush with water for at least 15 minutes.

Inhalation: If potential for exposure to fumes or dusts occurs, remove immediately to fresh air and seek medical attention.

Eyes: If the contents from an opened battery comes into contact with the eyes, immediately flush eyes with water continuously for at least 15 minutes. Seek medical attention.

Section VI - Reactivity Data

The batteries are stable under normal operating conditions.

Hazardous polymerization will not occur.

Hazardous decomposition products: oxides of nickel, cobalt, manganese, lanthanum, and cerium.

Conditions to avoid: heat, open flames, sparks, and moisture.

Potential incompatibilities (i.e., materials to avoid contact with): 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 carbamate compounds.

Section VII - Spill and Leak Procedures

Spill and leaks are unlikely because cells are contained in an hermetically-sealed case. If the battery case is breached, don protective clothing that is impervious to caustic materials and absorb or pack spill residues in inert material. Dispose in accordance with applicable state and federal regulations.

Section VIII - Safe Handling and Use (Personal Protective Equipment)

Ventilation Requirements: Not required under normal use.

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Respiratory Protection:	Not required under normal use.
Eye Protection:	Not required under normal use.
Gloves:	Not required under normal use.

Section IX- Precautions for Safe Handling and Use

Storage: 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 -31°F and 95°F.

Mechanical Containment: If there are special encapsulation or sealing requirements, consult your SANYO Energy Corp. representative about possible cell hazard precautions or limitations.

Handling: Accidental short circuit will bring high temperature elevation to the battery as well as shorten the battery life. Be sure to avoid prolonged short circuit since the heat can burn attendant skin and even rupture of the battery cell case. Batteries packaged in bulk containers should not be shaken. Metal covered tables or belts used for assembly of batteries into devices can be the source of short circuits; apply insulating material to assembly work surface. If soldering or welding to the case of the battery is required, consult your Sanyo Energy Corp. representative for proper precautions to prevent seal damage or external short circuit.

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 since higher rates can cause a rise in internal gas pressure which may result in damaging heat generation or cell rupture and/or venting.

Labeling: If normal label warnings are not visible, it is important to provide a device label stating:

> CAUTION: Do not dispose in fire, mix with other battery types, charge above specified rate, connect improperly, or short circuit, which may result in overheating, explosion or leakage of cell contents.

Section X - Recycling and Disposal

SANYO encourages battery recycling. Our Nickel Metal Hydride batteries are not defined by the federal government as hazardous waste and are safe for disposal in the normal municipal waste stream. These batteries, however, do contain recyclable materials and are accepted for recycling through Kinsbursky Brothers Inc. at (800)548-8797 or see their website at www.kinsbursky.com.

DO NOT INCINERATE or subject battery cells to temperatures in excess of 212°F. Such treatment can cause cell rupture.

Section XI – Transportation

SANYO sealed Nickel Metal Hydride batteries are considered to be "dry cell" batteries and are not subject to dangerous goods regulation for the purpose of transportation by the U.S. Department of Transportation (DOT), the International Civil Aviation Organization (ICAO), the International Air Transport Association (IATA) or the International Maritime Dangerous Goods regulations (IMDG). More information concerning shipping, testing, marking and packaging can be obtained from Labelmaster at http://www.labelmaster.com. The only DOT requirement for shipping Nickel Metal Hydride batteries is Special Provision 130 which states: "Batteries, dry are not subject to the requirements of this subchapter only when they are offered for transportation in a manner that prevents the dangerous evolution of heat (for example, by the effective insulation of exposed terminals)." IATA requires that batteries being transported by air must be protected from short-circuiting and protected from movement that could lead to short-circuiting. Each SANYO cell or battery has been tested under provisions of the UN Manual of Tests and Criteria, Part III, Sub-section 38.3.

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