



EXCAVATION

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MISC.



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MSDS L2844

ITEM: 8YUX7 - Rechargeable LED Work Light

DELIVERY: 6211715650

HU NUMBER: U846800863

MATERIAL SAFETY DATA SHEET (MSDS)

This MSDS should be attached or kept with the respective product with which it is associated.

MATERIAL SAFETY DATA SHEET - L2844

A Red Grainger Items
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PRODUCT INFORMATION AND DATA SHEET

THIS PRODUCT IS A MANUFACTURED ARTICLE AS DESCRIBED IN 29 CFR 1910.1200 AND IS NOT SUBJECT TO OSHA'S HAZARD COMMUNICATION STANDARD REQUIREMENTS FOR PREPARATION OF MATERIAL SAFETY DATA SHEETS (MSDS).

SANYO BATTERIES
SANYO ENERGY (USA) CORP.
2055 SANYO AVE.
SAN DIEGO, CA 92154

TELEPHONE NO.: (619) 661-4888

WWW.SANYOBATTERIES.COM

MANUFACTURER'S NAME:
SANYO ELECTRIC CO., LTD.
TOKONABE-CHO KASAI-CITY
HYOGO, 675-2332
JAPAN

TELEPHONE NO.: 0790-43-2043

IN CASE OF EMERGENCY CONTACT:
CHEMTREC AT: (800) 424-9300

-----SECTION I - PRODUCT INFORMATION -----

PRODUCT: NICKEL METAL HYDRIDE BATTERY

DESIGNATED FOR RECHARGE?:
(X) YES
() NO

CHEMICAL SYSTEM: NICKEL METAL HYDRIDE

TRADE NAME: TWICELL

NOMINAL VOLTAGE: 1.2V

-----SECTION II - COMPOSITION / INFORMATION ON INGREDIENTS -----

THE INGREDIENTS ARE 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. THE BATTERY 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.

CHEMICAL NAME	CAS NO.	OSHA PEL (MG/M3)	ACGIH TLV (MG/M3)
NICKEL (POWDER)	1440-02-0	1 IWA	1 IWA
NICKEL HYDROXIDE	12054-48-7	1 TWA	1 TWA
COBALT	7440-48-4	0.1 TWA 0.005	DUST & FUME
MANGANESE	7439-96-5	FUME: 5 CEILING LIMIT FUME: 1	DUST: 5
LANTHANUM	7439-91-0	NA	NA
CERIUM	7440-45-1	NA	NA
NEODYMIUM	7440-00-8	NA	NA
POTASSIUM HYDROXIDE	1310-58-3	NA	2 CEILING LIMIT
SODIUM HYDROXIDE	1310-73-2	2 TWA	2 CEILING LIMIT
LITHIUM HYDROXIDE	1310-65-2	NA	NA

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 (DEG. F): NA
BOILING POINT (DEG. F): NA

% VOLATILE BY VOLUME: NA

VAPOR PRESSURE (MMHg): NA

EVAPORATION RATE:

VAPOR DENSITY (AIR = 1): NA

SPECIFIC GRAVITY (H2O): NA

SOLUBILITY IN WATER: NA

APPEARANCE AND ODOR: NO ODOR

-----SECTION IV - FIRE AND EXPLOSION HAZARD DATA -----

FLASH POINT: NA

LOWER EXPLOSIVE LIMIT: NA

UPPER EXPLOSIVE LIMIT: NA

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

SPECIAL FIRE FIGHTING PROCEDURES:
EXPOSURE TO TEMPERATURES OF ABOVE 212 DEG. 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.

-----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.

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 IS 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 A 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 -----

VENTILATION REQUIREMENTS: NOT REQUIRED UNDER NORMAL USE.

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 DEG. F AND 95 DEG. 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
RECYCLABLE THROUGH THE RECHARGEABLE BATTERY RECYCLING CORPORATION'S (RBRC)
CHARGE UP TO RECYCLE! PROGRAM. FOR INFORMATION CALL 1-800-8-BATTERY OR SEE
THEIR WEBSITE AT WWW.RBRC.ORG. NICKEL METAL HYDRIDE BATTERIES MUST BE
HANDLED IN ACCORDANCE WITH ALL APPLICABLE STATE AND FEDERAL LAWS AND
REGULATIONS.

RBRC
NI-Cd

RECYCLE 1.800.822.8837

DO NOT INCINERATE OR SUBJECT BATTERY CELLS TO TEMPERATURES IN EXCESS OF
212 F. SUCH TREATMENT CAN VAPORIZE THE LIQUID ELECTROLYTE CAUSING CELL
RUPTURE. INCINERATION MAY RESULT IN CADMIUM EMISSIONS.

-----SECTION XI - TRANSPORTATION -----

SANYO SEALED NICKEL METAL HYDRIDE BATTERIES ARE CONSIDERED TO "DRY CELL"
BATTERIES AND NOT SUBJECT TO HAZARDOUS MATERIALS (DANGEROUS GOODS)
REGULATIONS 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 ORGANIZATION (IMO).

THE ONLY DOT REQUIREMENT FOR SHIPPING NICKEL METAL HYDRIDE BATTERIES ARE
CONTAINED IN SPECIAL PROVISION 130 WHICH STATES, "BATTERIES, DRY" ARE NOT
SUBJECT TO THE REQUIREMENTS OF THIS SUBCHAPTER WHEN THEY ARE SECURELY
PACKAGED AND OFFERED FOR TRANSPORTATION IN A MANNER THAT PREVENTS THE
DANGEROUS EVOLUTION OF HEAT (FOR EXAMPLE, BY THE EFFECTIVE INSULATION OF
EXPOSED TERMINALS) AND PROTECTS AGAINST SHORT CIRCUITS." A SIMILAR
REQUIREMENT IS CONTAINED IN 49 CFR 173.21(C) OF THE U.S. DOT HAZARDOUS
MATERIALS REGULATIONS.

THE IATA DANGEROUS GOODS REGULATIONS CONTAIN A SIMILAR REQUIREMENT IN
SPECIAL PROVISION A123 WHICH STATES, "THIS ENTRY APPLIES TO BATTERIES,
ELECTRIC STORAGE, NOT OTHERWISE LISTED IN SUBSECTION 4.2 - LIST OF
DANGEROUS GOODS. EXAMPLES OF SUCH BATTERIES ARE ALKALI-MANGANESE,
ZINC-CARBON, NICKEL-METAL HYDRIDE, AND NICKEL CADMIUM BATTERIES. ANY
ELECTRICAL BATTERY OR BATTERY POWERED DEVICE HAVING THE POTENTIAL OF
DANGEROUS EVOLUTION OF HEAT THAT IS NOT PREPARED SO AS TO PREVENT A
SHORT-CIRCUIT (E.G. IN THE CASE OF BATTERIES, BY THE EFFECTIVE INSULATION
OF EXPOSED TERMINALS; OR, IN THE CASE OF EQUIPMENT, BY DISCONNECTION OF THE
BATTERY AND PROTECTION OF EXPOSED TERMINALS) IS FORBIDDEN FROM TRANSPORT."

FAILURE TO COMPLY WITH THESE REQUIREMENTS MAY RESULT IN SUBSTANTIAL CIVIL
PENALTIES.

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.

DATE OF LAST REVISION: MARCH 2006

MSDS L2844

ITEM: 8YUX7 - Rechargeable LED Work Light

DELIVERY: 6211715650

HU NUMBER: U846800863

MATERIAL SAFETY DATA SHEET (MSDS)

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MATERIAL SAFETY DATA SHEET - L2844

A: 8YUX7
ed Grainger Items

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-----SECTION I - PRODUCT INFORMATION-----

PRODUCT: NICKEL METAL HYDRIDE BATTERY

DESIGNATED FOR RECHARGE:

(X) YES
() NO

CHEMICAL SYSTEM: NICKEL METAL HYDRIDE

TRADE NAME: TWICELL

NOMINAL VOLTAGE: 1.2V

-----SECTION II - COMPOSITION / INFORMATION ON INGREDIENTS-----

INGREDIENTS ARE CONTAINED IN A HERMETICALLY SEALED CASE, DESIGNED TO STAND TEMPERATURES AND PRESSURES ENCOUNTERED DURING NORMAL USE. AS A RESULT, DURING NORMAL USE, HAZARDOUS MATERIALS ARE FULLY CONTAINED INSIDE THE BATTERY. THE BATTERY 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.

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LITHIUM HYDROXIDE	1310-65-2	NA	NA

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 (DEG. F): NA
BOILING POINT (DEG. F): NA

% VOLATILE BY VOLUME: NA

VAPOR PRESSURE (MMHg): NA

EVAPORATION RATE:

DENSITY (AIR = 1): NA

SPECIFIC GRAVITY (H2O): NA

SOLUBILITY IN WATER: NA

APPEARANCE AND ODOR: NO ODOR

-----SECTION IV - FIRE AND EXPLOSION HAZARD DATA-----

FLASH POINT: NA

LOWER EXPLOSIVE LIMIT: NA

UPPER EXPLOSIVE LIMIT: NA

EXTINGUISHING MEDIA:

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

SPECIAL FIRE FIGHTING PROCEDURES:

EXPOSURE TO TEMPERATURES OF ABOVE 212 DEG. 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.

-----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.

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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 IS 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.

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OXIDES OF NICKEL, COBALT, MANGANESE, LANTHANUM, AND CERIUM.

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-----SECTION VII - SPILL AND LEAK PROCEDURES-----

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-----SECTION VIII - SAFE HANDLING AND USE-----

VENTILATION REQUIREMENTS: NOT REQUIRED UNDER NORMAL USE.

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 DEG. F AND 95 DEG. F.

MECHANICAL CONTAINMENT:
IF THERE ARE SPECIAL ENCAPSULATION OR SEALING REQUIREMENTS, CONSULT YOUR
SANYO ENERGY CORP. REPRESENTATIVE ABOUT POSSIBLE CELL HAZARD PRECAUTIONS OR
LIMITATIONS.

HAZARDING:
ACCIDENTAL SHORT CIRCUIT WILL BRING HIGH TEMPERATURE ELEVATION TO THE
BATTERY AS WELL AS SHORTEN THE BATTERY LIFE. BE SURE TO AVOID PROLONGED
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DEVICES CAN BE THE SOURCE OF SHORT CIRCUITS; APPLY INSULATING MATERIAL TO
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PRECAUTIONS TO PREVENT SEAL DAMAGE OR EXTERNAL SHORT CIRCUIT.

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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
RECYCLABLE THROUGH THE RECHARGEABLE BATTERY RECYCLING CORPORATION'S (RBRC)
CHARGE UP TO RECYCLE! PROGRAM. FOR INFORMATION CALL 1-800-8-BATTERY OR SEE
THEIR WEBSITE AT WWW.RBRC.ORG. NICKEL METAL HYDRIDE BATTERIES MUST BE
HANDLED IN ACCORDANCE WITH ALL APPLICABLE STATE AND FEDERAL LAWS AND
REGULATIONS.

RBRC
NI-Cd

RECYCLE 1.800.822.8837

DO NOT INCINERATE OR SUBJECT BATTERY CELLS TO TEMPERATURES IN EXCESS OF
212 F. SUCH TREATMENT CAN VAPORIZE THE LIQUID ELECTROLYTE CAUSING CELL
RUPTURE. INCINERATION MAY RESULT IN CADMIUM EMISSIONS.

----SECTION XI - TRANSPORTATION ----

SANYO SEALED NICKEL METAL HYDRIDE BATTERIES ARE CONSIDERED TO "DRY CELL"
BATTERIES AND NOT SUBJECT TO HAZARDOUS MATERIALS (DANGEROUS GOODS)
REGULATIONS 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 ORGANIZATION (IMO).

THE ONLY DOT REQUIREMENT FOR SHIPPING NICKEL METAL HYDRIDE BATTERIES ARE
CONTAINED IN SPECIAL PROVISION 130 WHICH STATES, "BATTERIES, DRY" ARE NOT
SUBJECT TO THE REQUIREMENTS OF THIS SUBCHAPTER WHEN THEY ARE SECURELY
PACKAGED AND OFFERED FOR TRANSPORTATION IN A MANNER THAT PREVENTS THE
DANGEROUS EVOLUTION OF HEAT (FOR EXAMPLE, BY THE EFFECTIVE INSULATION OF
EXPOSED TERMINALS) AND PROTECTS AGAINST SHORT CIRCUITS." A SIMILAR
REQUIREMENT IS CONTAINED IN 49 CFR 173.21(C) OF THE U.S. DOT HAZARDOUS
MATERIALS REGULATIONS.

THE IATA DANGEROUS GOODS REGULATIONS CONTAIN A SIMILAR REQUIREMENT IN
SPECIAL PROVISION A123 WHICH STATES, "THIS ENTRY APPLIES TO BATTERIES,
ELECTRIC STORAGE, NOT OTHERWISE LISTED IN SUBSECTION 4.2 - LIST OF
DANGEROUS GOODS. EXAMPLES OF SUCH BATTERIES ARE ALKALI-MANGANESE,
ZINC-CARBON, NICKEL-METAL HYDRIDE, AND NICKEL CADMIUM BATTERIES. ANY
ELECTRICAL BATTERY OR BATTERY POWERED DEVICE HAVING THE POTENTIAL OF
DANGEROUS EVOLUTION OF HEAT THAT IS NOT PREPARED SO AS TO PREVENT A
SHORT-CIRCUIT (E.G. IN THE CASE OF BATTERIES, BY THE EFFECTIVE INSULATION
OF EXPOSED TERMINALS; OR, IN THE CASE OF EQUIPMENT, BY DISCONNECTION OF THE
BATTERY AND PROTECTION OF EXPOSED TERMINALS) IS FORBIDDEN FROM TRANSPORT."

FAILURE TO COMPLY WITH THESE REQUIREMENTS MAY RESULT IN SUBSTANTIAL CIVIL
PENALTIES.

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.

DATE OF LAST REVISION: MARCH 2006

MSDS L2844

ITEM: 8YUX7 - Rechargeable LED Work Light

DELIVERY: 6211715650

HU NUMBER: U846800863

MATERIAL SAFETY DATA SHEET (MSDS)

This MSDS should be attached or kept with the respective product with which it is associated.

MATERIAL SAFETY DATA SHEET - L2844

A. ed Grainger Items
8YU...

PRODUCT INFORMATION AND DATA SHEET

THIS PRODUCT IS A MANUFACTURED ARTICLE AS DESCRIBED IN 29 CFR 1910.1200 AND IS NOT SUBJECT TO OSHA'S HAZARD COMMUNICATION STANDARD REQUIREMENTS FOR PREPARATION OF MATERIAL SAFETY DATA SHEETS (MSDS).

SANYO BATTERIES
SANYO ENERGY (USA) CORP.
2055 SANYO AVE.
SAN DIEGO, CA 92154

TELEPHONE NO.: (619) 661-4888

WWW.SANYOBATTERIES.COM

MANUFACTURER'S NAME:
SANYO ELECTRIC CO., LTD.
TOKONABE-CHO KASAI-CITY
HYOGO, 675-2332
JAPAN

TELEPHONE NO.: 0790-43-2043

IN CASE OF EMERGENCY CONTACT:
CHEMTREC AT: (800) 424-9300

---SECTION I - PRODUCT INFORMATION---

PRODUCT: NICKEL METAL HYDRIDE BATTERY

DESIGNATED FOR RECHARGE:

(X) YES
() NO

CHEMICAL SYSTEM: NICKEL METAL HYDRIDE

TRADE NAME: TWICELL

NOMINAL VOLTAGE: 1.2V

---SECTION II - COMPOSITION / INFORMATION ON INGREDIENTS---

INGREDIENTS ARE CONTAINED IN A HERMETICALLY SEALED CASE, DESIGNED TO STAND TEMPERATURES AND PRESSURES ENCOUNTERED DURING NORMAL USE. AS A RESULT, DURING NORMAL USE, HAZARDOUS MATERIALS ARE FULLY CONTAINED INSIDE THE BATTERY. THE BATTERY 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.

CHEMICAL NAME	CAS NO.	OSHA PEL (MG/M3)	ACGIH TLV (MG/M3)
NICKEL (POWDER)	7440-02-0	1 TWA	1 TWA
NICKEL HYDROXIDE	12054-48-7	1 TWA	1 TWA
COBALT	7440-48-4	0.1 TWA 0.005	DUST & FUME
MANGANESE	7439-96-5	FUME: 5 CEILING LIMIT	DUST: 5
LANTHANUM	7439-91-0	NA	NA
CERIUM	7440-45-1	NA	NA
NEODYMIUM	7440-00-8	NA	NA
POTASSIUM HYDROXIDE	1310-58-3	NA	2 CEILING LIMIT
SODIUM HYDROXIDE	1310-73-2	2 TWA	2 CEILING LIMIT
LITHIUM HYDROXIDE	1310-65-2	NA	NA

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 (DEG. F): NA
BOILING POINT (DEG. F): NA

% VOLATILE BY VOLUME: NA

VAPOR PRESSURE (MMHg): NA

EVAPORATION RATE:

RELATIVE DENSITY (AIR = 1): NA

SPECIFIC GRAVITY (H2O): NA

SOLUBILITY IN WATER: NA

APPEARANCE AND ODOR: NO ODOR

---SECTION IV - FIRE AND EXPLOSION HAZARD DATA---

FLASH POINT: NA

LOWER EXPLOSIVE LIMIT: NA

UPPER EXPLOSIVE LIMIT: NA

EXTINGUISHING MEDIA:

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

SPECIAL FIRE FIGHTING PROCEDURES:

EXPOSURE TO TEMPERATURES OF ABOVE 212 DEG. 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.

---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.

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 IS 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 A 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---

VENTILATION REQUIREMENTS: NOT REQUIRED UNDER NORMAL USE.

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 DEG. F AND 95 DEG. F.

MECHANICAL CONTAINMENT:
IF THERE ARE SPECIAL ENCAPSULATION OR SEALING REQUIREMENTS, CONSULT YOUR SANYO ENERGY CORP. REPRESENTATIVE ABOUT POSSIBLE CELL HAZARD PRECAUTIONS OR LIMITATIONS.

HAZARDING:
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 RECYCLABLE THROUGH THE RECHARGEABLE BATTERY RECYCLING CORPORATION'S (RBRC) CHARGE UP TO RECYCLE! PROGRAM. FOR INFORMATION CALL 1-800-8-BATTERY OR SEE THEIR WEBSITE AT WWW.RBRC.ORG. NICKEL METAL HYDRIDE BATTERIES MUST BE HANDLED IN ACCORDANCE WITH ALL APPLICABLE STATE AND FEDERAL LAWS AND REGULATIONS.

RBRC
NI-Cd

RECYCLE 1.800.822.8837

DO NOT INCINERATE OR SUBJECT BATTERY CELLS TO TEMPERATURES IN EXCESS OF 212 F. SUCH TREATMENT CAN VAPORIZE THE LIQUID ELECTROLYTE CAUSING CELL RUPTURE. INCINERATION MAY RESULT IN CADMIUM EMISSIONS.

----SECTION XI - TRANSPORTATION ----

SANYO SEALED NICKEL METAL HYDRIDE BATTERIES ARE CONSIDERED TO "DRY CELL" BATTERIES AND NOT SUBJECT TO HAZARDOUS MATERIALS (DANGEROUS GOODS) REGULATIONS 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 ORGANIZATION (IMO).

THE ONLY DOT REQUIREMENT FOR SHIPPING NICKEL METAL HYDRIDE BATTERIES ARE CONTAINED IN SPECIAL PROVISION 130 WHICH STATES, "BATTERIES, DRY" ARE NOT SUBJECT TO THE REQUIREMENTS OF THIS SUBCHAPTER WHEN THEY ARE SECURELY PACKAGED AND OFFERED FOR TRANSPORTATION IN A MANNER THAT PREVENTS THE DANGEROUS EVOLUTION OF HEAT (FOR EXAMPLE, BY THE EFFECTIVE INSULATION OF EXPOSED TERMINALS) AND PROTECTS AGAINST SHORT CIRCUITS." A SIMILAR REQUIREMENT IS CONTAINED IN 49 CFR 173.21(C) OF THE U.S. DOT HAZARDOUS MATERIALS REGULATIONS.

THE IATA DANGEROUS GOODS REGULATIONS CONTAIN A SIMILAR REQUIREMENT IN SPECIAL PROVISION A123 WHICH STATES, "THIS ENTRY APPLIES TO BATTERIES, ELECTRIC STORAGE, NOT OTHERWISE LISTED IN SUBSECTION 4.2 - LIST OF DANGEROUS GOODS. EXAMPLES OF SUCH BATTERIES ARE ALKALI-MANGANESE, ZINC-CARBON, NICKEL-METAL HYDRIDE, AND NICKEL CADMIUM BATTERIES. ANY ELECTRICAL BATTERY OR BATTERY POWERED DEVICE HAVING THE POTENTIAL OF DANGEROUS EVOLUTION OF HEAT THAT IS NOT PREPARED SO AS TO PREVENT A SHORT-CIRCUIT (E.G. IN THE CASE OF BATTERIES, BY THE EFFECTIVE INSULATION OF EXPOSED TERMINALS; OR, IN THE CASE OF EQUIPMENT, BY DISCONNECTION OF THE BATTERY AND PROTECTION OF EXPOSED TERMINALS) IS FORBIDDEN FROM TRANSPORT."

FAILURE TO COMPLY WITH THESE REQUIREMENTS MAY RESULT IN SUBSTANTIAL CIVIL PENALTIES.

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.

DATE OF LAST REVISION: MARCH 2006

MSC

SAFETY DATA SHEET

74103
Oct 14, 2014
Battery Terminal Cleaner

SECTION 1) CHEMICAL PRODUCT AND SUPPLIER'S IDENTIFICATION

Product ID : 74103
Product Name : Battery Terminal Cleaner
Revision Date : Oct 14, 2014
Version: 1.0
Manufacturer's Name : IBS Inc.
Address : 740 Clay St NW, Auburn, WA 98001
Emergency Phone : 1-800-255-3924
Information Phone : 1-800-678-1906
Fax :

Date Printed : May 05, 2015
Supersedes Date : N/A

Product/Recommended Uses: Battery Terminal Cleaner windshield

SECTION 2) HAZARDS IDENTIFICATION

Classification:

Skin Irritation - Category 3
Eye Irritation - Category 2
Acute toxicity Oral Category 5
Aerosol - Category 3

Pictograms:



Signal Word:

Warning

Hazardous Statements - Physical:

H227 - Combustible Liquid
H229 - Pressurized container. May burst if heated

Hazardous Statements - Health:

H303 - May be harmful if swallowed
H316 - Causes mild skin irritation
H319 - Causes serious eye irritation

Precautionary Statements - General:

P101 - If medical advice is needed, have product container or label at hand.
P102 - Keep out of reach of children.
P103 - Read label before use.

Precautionary Statements - Prevention:

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P264 - Wash thoroughly after handling.
P251 - Do not pierce or burn, even after use.

74103

Page 1 of 7

Precautionary Statements - Response:

P370 + P378 - In case of fire: Use water fog, dry chemical or carbon dioxide to extinguish.
P332 + P313 - If skin irritation occurs: Get medical advice/attention.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 - If eye irritation persists: Get medical advice/attention.

Precautionary Statements - Storage:

P403 - Store in a well-ventilated place.
P410 - Protect from sunlight.
P412 - Do not expose to temperatures exceeding 50 °C/122 °F.

Precautionary Statements - Disposal:

P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

SECTION 3) COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Chemical Name	% by Weight
0007732-18-5	WATER	54% - 95%
000106-97-8	BUTANE	2% - 4%
000144-55-8	SODIUM BICARBONATE	2% - 3%
000111-76-2	ETHYLENE GLYCOL MONOBUTYL ETHER	1% - 2%
000074-98-6	PROPANE	1% - 2%
000075-28-5	ISOBUTANE	1% - 2%

SECTION 4) FIRST-AID MEASURES

Inhalation:

Remove source of exposure or move person to fresh air and keep comfortable for breathing.
If exposed/fel unwell/concerned: Call a POISON CENTER/doctor.
Eliminate all ignition sources if safe to do so.

Eye Contact:

Remove source of exposure or move person to fresh air. Rinse eyes cautiously with lukewarm, gently flowing water for several minutes, while holding the eyelids open. Remove contact lenses, if present and easy to do. Continue rinsing for a duration of 15-20 minutes. Take care not to rinse contaminated water into the unaffected eye or onto the face. If eye irritation persists: Get medical advice/attention.

Skin Contact:

Take off immediately all contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Gently blot or brush away excess product. Wash plenty of clean, gently flowing water for a duration of 15-20 minutes. Call a POISON CENTER/doctor if you feel unwell. Store contaminated clothing under water and wash before reuse or discard.

Ingestion:

Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor. If vomiting occurs naturally, lie on your side, in the recovery position.
Never give anything by mouth to an unconscious or convulsing victim. Keep person warm and quiet.

SECTION 5) FIRE-FIGHTING MEASURES

Suitable Extinguishing Media:

Use water, fog, dry chemical, or carbon dioxide.
Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.

Unsuitable Extinguishing Media:

Water may be ineffective but can be used to cool containers exposed to heat or flame.

Specific Hazards in Case of Fire:

Contents under pressure. Keep away from ignition sources and open flames. Exposure of containers to extreme heat and flames can cause them to rupture often with violent force.

74103

Page 2 of 7

Lower Explosion Level	1.8
Upper Explosion Level	9.5
Melting Point	N.A.
Vapor Density	Slower than ether
Freezing Point	N.A.
Low Boiling Point	0 °F
High Boiling Point	212 °F
Decomposition Pt	0
Auto Ignition Temp	N.A.
Evaporation Rate	Slower than ether
SECTION 10) STABILITY AND REACTIVITY	
Stability:	
Stable.	
Conditions to Avoid:	
High temperatures.	
Incompatible Materials:	
None known.	
Hazardous Reactions/Polymerization:	
Will not occur.	
Hazardous Decomposition Products:	
In fire, will decompose to carbon dioxide, carbon monoxide.	

SECTION 11) TOXICOLOGICAL INFORMATION

Skin Corrosion/Irritation:	
Overexposure will cause deslating of skin.	
Causes mild skin irritation	
Serious Eye Damage/Irritation:	
Overexposure will cause redness and burning sensation.	
Causes serious eye irritation	
Carcinogenicity:	
No data available	
Germ Cell Mutagenicity:	
No data available	
Reproductive Toxicity:	
No data available	
Respiratory/Skin Sensitization:	
No data available	
Specific Target Organ Toxicity - Single Exposure:	
No data available	
Specific Target Organ Toxicity - Repeated Exposure:	
No data available	
Aspiration Hazard:	
No data available	
Acute Toxicity:	
Inhalation: effect of overexposure include irritation of respiratory tract, headache, dizziness, nausea, and loss of coordination. Extreme overexposure may result in unconsciousness and possibly death.	

0000111-76-2	ETHYLENE GLYCOL MONOBUTYL ETHER
LC50 (female rat): 450 ppm (4-hour exposure) (2)	
LC50 (male rat): 466 ppm (4-hour exposure) (2)	
LD50 (oral, male weanling rat): 3000 mg/kg (1)	
LD50 (oral, 6-week old male rat): 2400 mg/kg (1)	
LD50 (oral, yearling male rat): 560 mg/kg (1)	
LD50 (oral, female rat): 350 mg/kg (1)	
LD50 (oral, male rat): 2500 mg/kg (1)LD50 (oral, male mouse): 1230 mg/kg (1)	
LD50 (dermal, male rat): 320 mg/kg (1)	
LD50 (dermal, male rabbit): 406 mg/kg (cited as 0.45 mL/kg) (1)	
0000075-28-5	ISOBUTANE
LC50 (mouse, inhalation): 520,000 ppm (52%); 2-hour exposure.(4)	
0000106-97-8	BUTANE
LC50 (mouse): 202000 ppm (481000 mg/m3) (4-hour exposure); cited as 680 mg/L (2-hour exposure) (9)	
LC50 (rat): 276000 ppm (658000 mg/m3) (4-hour exposure); cited as 658 mg/L (4-hour exposure) (9)	
Potential Health Effects - Miscellaneous	
0000111-76-2	ETHYLENE GLYCOL MONOBUTYL ETHER
Can be absorbed through the skin in harmful amounts. May cause injury to the kidneys, liver, blood and/or bone marrow. Repeated overexposure may result in damage to the blood. Eye contact may cause corneal injury. Has been toxic to the fetus in laboratory animals at doses that are toxic to the mother.	

SECTION 12) ECOLOGICAL INFORMATION

Toxicity:	
No data available.	
Persistence and Degradability:	
No data available.	
Bio-Accumulative Potential:	
No data available.	
Mobility in Soil:	
No data available.	
Other Adverse Effects:	
No data available.	

SECTION 13) DISPOSAL CONSIDERATIONS

Water Disposal:	
Under RCRA, it is the responsibility of the user of the product, to determine a the time of disposal whether the product meets RCRA criteria for hazardous waste. Waste management should be in full compliance with federal, state, and local laws.	
Empty containers retain product residue which may exhibit hazards of material, therefore do not pressurize, cut, glaze, weld or use for any other purposes. Return drums to reclamation centers for proper cleaning and reuse.	

SECTION 14) TRANSPORT INFORMATION

U.S. DOT Information:	
Consumer Commodity, ORM-D	
IMDG Information:	
Consumer Commodity, ORM-D	
IATA Information:	
Consumer Commodity, ORM-D	

SECTION 15) REGULATORY INFORMATION


SAFETY DATA SHEET

74109
Oct 16, 2014
Battery Terminal Protector

SECTION 1) CHEMICAL PRODUCT AND SUPPLIER'S IDENTIFICATION

Product ID : 74109
Product Name : Battery Terminal Protector
Revision Date : Oct 16, 2014
Version: 1.0
Date Printed : May 06, 2015
Supersedes Date : N/A
Manufacturer's Name : IBS Inc.
Address : 740 Clay St NW, Auburn, WA 98001
Emergency Phone : 1-800-255-3924
Information Phone : 1-800-678-1906
Fax :
Product/Recommended Uses: Battery Terminal Protector

SECTION 2) HAZARDS IDENTIFICATION

Classification:
Flammable Liquids Category 3
Aerosol - Category 1
Pictograms:

Signal Word:
Danger
Hazardous Statements - Physical:
H226 - Flammable liquid and vapor
H222, H229 - Extremely flammable aerosol, Pressurized container may burst if heated

Precautionary Statements - General:
P101 - If medical advice is needed, have product container or label at hand.
P102 - Keep out of reach of children.
P103 - Read label before use.
Precautionary Statements - Prevention:
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P211 - Do not spray on an open flame or other ignition source.
P251 - Do not pierce or burn, even after use.

Precautionary Statements - Response:
P303 - IF ON SKIN (or hair):
P361 - Take off immediately all contaminated clothing.
P353 - Rinse skin with water or shower.
P370 - In case of fire:
P378 - Use water fog, dry chemical or carbon dioxide to extinguish.

74109

Precautionary Statements - Storage:

- P235 - Keep cool.
- P403 - Store in a well-ventilated place.
- P410 - Protect from sunlight.
- P412 - Do not expose to temperatures exceeding 50°C/122°F.

Precautionary Statements - Disposal:

- P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

SECTION 3) COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Chemical Name	% by Weight
000074-98-6	PROPANE	2% - 3%
000106-97-8	BUTANE	0.1% - 2.8%
000952-41-3	STOODARD SOLVENT	0.1% - 2.7%

SECTION 4) FIRST-AID MEASURES

Inhalation:

Remove source of exposure or move person to fresh air and keep comfortable for breathing.

If exposed/fel unwell/concerned: Call a POISON CENTER/doctor.

Eliminate all ignition sources if safe to do so.

Eye Contact:

Remove source of exposure or move person to fresh air. Rinse eyes cautiously with lukewarm, gently flowing water for several minutes, while holding the eyelids open. Remove contact lenses, if present and easy to do. Continue rinsing for a duration of 15-20 minutes. Take care not to rinse contaminated water into the unaffected eye or onto the face. If eye irritation persists. Get medical advice/attention.

Skin Contact:

Take off immediately all contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Gently blot or brush away excess product. Wash with plenty of lukewarm, gently flowing water for a duration of 15-20 minutes. Call a POISON CENTER/doctor if you feel unwell. Store contaminated clothing under water and wash before reuse or discard.

Ingestion:

Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor. If vomiting occurs naturally, lie on your side, in the recovery position.

Never give anything by mouth to an unconscious or convulsing victim. Keep person warm and quiet.

SECTION 5) FIRE-FIGHTING MEASURES

Suitable Extinguishing Media:

Use water, fog, dry chemical, or carbon dioxide.
Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.

Unsuitable Extinguishing Media:

Water may be ineffective but can be used to cool containers exposed to heat or flame.

Specific Hazards in Case of Fire:

Contents under pressure. Keep away from ignition sources and open flames. Exposure of containers to extreme heat and flames can cause them to rupture often with violent force.

Aerosol cans may rupture when heated.

Heated cans may burst.

In fire, will decompose to carbon dioxide, carbon monoxide

Fire-Fighting Procedures:

Isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done safely. Move undamaged containers from immediate hazard area if it can be done safely. Water spray may be useful in minimizing or dispersing vapors and to protect personnel.

Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

Special Protective Actions:

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