PRODUCT SAFETY DATA SHEET

Product Name: Lithium-Ion Battery Packs (less than or equal to 100 Watt Hours)

* * * Section 1 – Identification * * *

Product Identifier: **Detachable Battery Packs**

BLACK+DECKER
- (7 Volt) - VPX0111
- (10.8 Volt) - BL1110, BL1310, BL1510, BL1512, BK1512
- (12 Volt Max) - LB12, LBX12, LBXR12, LBXR1512, BCB001
- (14.4 Volt) - A1114L, A1514L, BL1114, BL1314, BL1514
- (16 Volt Max) - LB16, LBX16, LBXR16
- (18 Volt) - A1518L, A1118L, LB018, BL1118, BL1318, BL1518, BL1518ST, BL2018, BL2018ST, BL4018
- (20 Volt Max) - LB20, LBX20, LBXR20, LBXR2020, LB2X4020, LBXR20BT
- (36 Volt) - BL1336, BL1536, BL2036, BL20362
- (40 Volt Max) - LBX36, LBXR36, LBX1540, LBXR2040, LBX2540, LBXR2540
- (18 Volt/54 Volt) - BL1554
- (20V Max/60 Volt Max) - LBX1560

BOSTITCH
- (3.6 Volt) - 9B12070R, 9B12072R
- (12/10.8 Volt) - 9R201436, 9R201498, 9R209111, 9R209775
- (18 Volt) - BCB182, BCB183, BTCB182, BTCB183, BTCN183, BTCN182
- (20 Volt) - BCB203, BCB204

DEWALT
- (8 Volt) - DCB080
- (10.8 Volt) - DCB121, DCB123, DCB125, DCB127
- (12 Volt Max) - DCB120, DCB127
- (14.4 Volt) - DC9140, DE9140, DE9141, DC9144, DCB140, DCB141, DCB142, DCB143, DCB144, DCB145
- (18 Volt) - DC9180, DE9180, DC9181, DE9181, DC9182, DE9182, DCB180, DCB181, DCB182, DCB183, DCB183B, DCB184, DCB184B, DCB185, DCB187
- (20 Volt Max) - DCB200, DCB201, DCB203, DCB203BT, DCB204, DCB204BT, DCB205, DCB205BT, DCB207, DCB230
- (18 Volt/54 Volt) - DCB546 with Transport Cap. Battery pack is considered 3 batteries each having a Whr rating of 36 Whr with Transport Cap in place,
  DCB547 with Transport Cap. Battery pack is considered 3 batteries each having a Whr rating of 54 Whr with Transport Cap in place
- (20Volt Max/60Volt Max) - DCB606 with Transport Cap. Battery pack is considered 3 batteries each having a Whr rating of 40 Whr with Transport Cap in place,
  DCB609 with Transport Cap. Battery pack is considered 3 batteries each having a Whr rating of 60 Whr with Transport Cap in place
- (28 Volt) - DC9280, DE9280
- (36 Volt) - DC9360, DE9360, DCB361

DuBuis
- (18 Volt) - AB18LI300, AB18LI150, AB18LI200S, AB18LI400S, AB18LI500S

Facom
- (10.8 Volt) - CL3.BA1018, CL3.BA1015, CL3.BA1020
- (18 Volt) - CL3.BA1815, CL3.BA1830, CL3.BA1820, CL3.BA1840, CL3.BA1850

PRODUCT SAFETY DATA SHEET

Product Name: Lithium-Ion Battery Packs (less than or equal to 100 Watt Hours)

MAC Tools
- (12 Volt Max) - MB120, MB127, MBR127
- (20 Volt Max) - MB200, MB201, MB203, MB204, MB205, MBR203, MBR204, MBR205
- (10.8V) - MB120-UK, MB127-UK, MBR127-UK
- (18 Volt) - MB200-UK, MB201-UK, MB203-UK, MB204-UK, MB205-UK, MBR183-UK, MBR184-UK

POP
- (18 Volt) - EBC180, EBC181, EBC182, EBC183, EBC184

PORTER-CABLE
- (12 Volt) - PC12BL, PC12BLX, PC12BLXLW
- (18 Volt) - PC18BL, PC18BLX, PC18BLEX
- (20 Volt Max) - PCC680L, PCC681L, PCC685L, PCC682L

Sidchrome
- (10.8 Volt) - SCMT90050, SCMT90053
- (18 Volt) - SCMT90051, SCMT90052, SCMT90055, SCMT90056

Stanley FatMax
- (10.8 Volt) - FMC085L, FMC086L
- (12 Volt Max) - FMC080L
- (14.4 Volt Max) - FMC585L
- (18/20 Volt) - FMC680L, FMC684L, FMC685L, FMC686L, FMC687L, FMC688L, FMC689L

Integral Battery Packs (contained within products, non-removable)

3.6 Volt – SW9007+, EPP36L15+, BDCSFL20BP, BDCSFS30BP, ORB36+
7.2 Volt- DB72L+, ORB72L+, MPP72L+, EPP72L15D+, EPP72L20D+, G9L72+, SW9007A+
8 Volt – 18650-2S
10.8 Volt – DB108L+, 315LPF+, MPP108L+, MPP108LP+, G9L108+, FL108+, G95L108+, PH108L+, G3L108+
14.4 Volt – DB144L+, 415LPF+, MPP144L+, G2L144+, G3L144+, G9L144+
18 Volt – DB18L+, FV18L+, 515LPF+, MPP18L+, BFH18L+, BFS18L+, G2L18+, G3L18+, G9L18+, BFH18+, BFS18+
21.6 Volt – HPP6CL+
32.4 Volt – HPP9CL+

Note: + can be replaced by additional letters or numbers.

Notes: 1. A suffix following Catalog Number (i.e., "-XJ") may be used to designate end market.
2. Batteries may be shipped in kits with the products they are intended to power.

Manufacturer Name: Stanley Black & Decker

Manufacturer Address: 1000 Stanley Drive
New Britain, CT 06053

Phone Number: 1-860-225-5111

Emergency Phone Number: 1-888-698-2571

Recommended Use: To power Stanley Black & Decker products

Uses advised against: See instruction manual provided with product.

* * * Section 2 - Hazards Identification * * *

Classification

These batteries are not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). The batteries referenced in this document are considered "Articles," not "Materials," as defined by the Occupational Safety and Health Administration's Hazard Communication Standard, and as such are exempted from the requirements to publish MSDS sheets per the Code of Federal Regulations 29 CFR 1910.1200 (b)(6)(v). The hazards indicated below cover the abnormal situation where a battery ruptures.

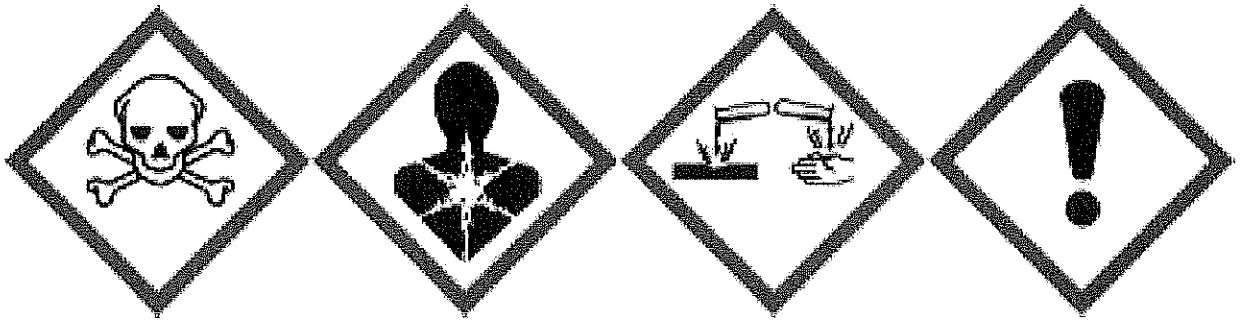
Acute Toxicity – Oral	Category 4
Acute Toxicity – Dermal	Category 4
Acute Toxicity – Inhalation (Vapors)	Category 3
Acute Toxicity – Inhalation (Dusts/Mists)	Category 2
Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1
Carcinogenicity	Category 1A
Reproductive Toxicity	Category 1A
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 1

GHS Label elements, including precautionary statements

Emergency Overview

Signal Word **Danger**

Hazard Statements
Harmful if swallowed
Harmful in contact with skin
Fatal if inhaled
Causes severe skin burns and eye damage
May cause an allergic skin reaction
May cause cancer
May damage fertility or the unborn child
May cause respiratory irritation
Causes damage to organs through prolonged or repeated exposure



This product is an article (battery) which contains chemical substances. Intended use of the product should not result in exposure to the chemical substances. In case of rupture, the above hazards exist.

Appearance Solid **Physical state** Solid **Odor** None

*** Section 3 - Composition / Information on Ingredients ***

This battery is an article as defined by 29 CFR 1910.1200. Exposure to hazardous ingredients is not anticipated under normal product use.

Chemical Name	CAS No.	Weight - %	Trade Secret
Copper	7440-50-8	10-30	*
Steel Manufacture, chemicals	65997-19-5	7-13	*
Lithium hexafluorophosphate (LiPF6)	21324-40-3	1-3	*
Aluminum	7429-90-5	7-13	*
Lithium manganese oxide (LiMn2O4)	12057-17-9	5-10	*
Lithium Cobalt Oxide (LiCoO2)	12190-79-3	5-10	*
Lithium Nickel Manganese Cobalt Oxide (LiNiMnCoO2)	346417-97-8	5-10	*
Lithium nickel cobalt aluminum oxide (LiNiCoAlO2)	193214-24-3	5-10	*
Nickel	7440-02-0	3-7	*
Mixed Organic carbonates		10-14	*

* The exact percentage (concentration) of composition has been withheld as a trade secret.
Composition of organic carbonates in the electrolyte solvent varies.

*** Section 4 – First-Aid Measures ***

First Aid: Eyes

Flush eyes with lukewarm water for at least 30 minutes while holding the eyelids open. Seek immediate medical care.

First Aid: Skin

Remove contaminated clothing, shoes and leather goods. Flush with water for at least 30 minutes. Seek medical attention if symptoms persist.

First Aid: Ingestion

Never give anything by mouth if victim is unconscious. Rinse mouth thoroughly water. Do not induce vomiting. Seek immediate medical attention.

First Aid: Inhalation

Remove person to fresh air away from source of contamination.

*** Section 5 – Fire-Fighting Measures ***

General Fire Hazards

See Section 9 for Flammability Properties.
Battery cells may rupture when exposed to excessive heat. Electrolyte solution is flammable.

Hazardous Combustion Products

May release toxic fumes if burned or exposed to fire.

Extinguishing Media

Use appropriate extinguishing agent for surrounding fire. For damaged or ruptured cells, use Class D extinguisher or other appropriate agent. Class C fire extinguishers should be used to extinguish electrical fires. Do not use water to extinguish electrical or ruptured cell related fires.

Fire Fighting Equipment/Instructions

Firefighters should wear full protective gear.

NFPA Ratings: Health: 0 **Fire:** 0 **Reactivity:** 0
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

*** Section 6 - Accidental Release Measures ***

Containment Procedures

Stop the flow of material, if this is without risk.

Clean-Up Procedures

Absorb spill with inert material. Shovel material into appropriate container for disposal. Clean spill area with detergent and water; collect wash water for proper disposal.

Evacuation Procedures

Isolate area. Keep unnecessary personnel away.

Special Procedures

Avoid skin contact with the spilled material.

*** Section 7 - Handling and Storage ***

Handling Procedures

Avoid damaging or rupturing battery.

Storage Procedures

Store in a dry location at room temperature. Avoid extreme heat or fire. Keep out of reach of children.

*** Section 8 - Exposure Controls / Personal Protection ***

A: Component Exposure Limits

ACGIH, OSHA, and NIOSH have not developed exposure limits for any of this product's components.

Engineering Controls

Not necessary under normal product use conditions.

PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment: Eyes/Face

Not necessary under normal product use conditions. Wear safety glasses if handling a damaged battery.

Personal Protective Equipment: Skin

Not necessary under normal product use conditions. Wear neoprene or natural rubber gloves when handling a damaged battery.

Personal Protective Equipment: Respiratory

Not necessary under normal product use conditions.

Personal Protective Equipment: General

Eyewash fountains and emergency showers are required.

*** Section 9 - Physical and Chemical Properties ***

Appearance:	Various shaped battery	**Odor:**	None
Physical State:	Solid	**pH:**	NA
Vapor Pressure:	NA	**Vapor Density:**	NA
Boiling Point:	NA	**Melting Point:**	NA
Solubility (H2O):	Insoluble	**Specific Gravity:**	NA
Evaporation Rate:	NA	**VOC:**	NA
Octanol/H2O Coeff.:	NA	**Flash Point:**	NA
Flash Point Method:	NA	**Upper Flammability Limit (UFL):**	NA
Lower Flammability Limit (LFL):	NA	**Burning Rate:**	NA
Auto Ignition:	NA		

* * * Section 10 - Stability and Reactivity * * *

Chemical Stability
This is a stable material.
Chemical Stability: Conditions to Avoid
Avoid exposure to elevated temperatures and fire.
Incompatibility
Not Available.
Hazardous Decomposition
May release toxic fumes if burned or exposed to fire.
Possibility of Hazardous Reactions
Not Available.

* * * Section 11 - Toxicological Information * * *

Acute Dose Effects
A: General Product Information
If product is ruptured, material may cause irritation to the skin, eyes and respiratory tract.
B: Component Analysis - LD50/LC50
No LD50/LC50's are available for this product's components.
Carcinogenicity
A: General Product Information
No information available for the product.
B: Component Carcinogenicity
None of this product's components are listed by ACGIH, IARC, OSHA, NIOSH, or NTP.

* * * Section 12 - Ecological Information * * *

Ecotoxicity
A: General Product Information
No information available for the product.
B: Component Analysis - Ecotoxicity - Aquatic Toxicity
No ecotoxicity data are available for this product's components.

* * * Section 13 - Disposal Considerations * * *

US EPA Waste Number & Descriptions

Component Waste Numbers
No EPA Waste Numbers are applicable for this product's components.

Disposal Instructions
Recycle battery. Do not dispose of in water bodies or sewer system. All wastes must be handled in accordance with local, state and federal regulations.
See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

* * * Section 14 – Transport Information * * *

Lithium-ion batteries comply with all applicable shipping regulations as prescribed by industry and legal standards which include UN Recommendations on the Transport of Dangerous Goods; the 58th Edition of the IATA Dangerous Goods Regulations and US DOT requirements. Cells and Batteries have been tested to section 38.3 of the UN Recommendations on the Transport of Dangerous Goods Manual of Tests and Criteria. All of the batteries listed in this Safety Data Sheet are less than or equal to 100 Whrs; therefore, air shipment of up to 2 batteries without equipment in a package can be shipped as an "excepted" quantity and does not require being shipped as a fully regulated Class 9 Hazardous Material. If more than 2 batteries without equipment are being shipped in one package, using air transportation, then the package is considered a fully regulated shipment and must meet the more stringent documentation, marking, and labeling requirements. Effective April 1st, 2016, all air shipments of lithium ion batteries without equipment require the state of charge of the battery to be no greater than 30% of the rated design capacity and are banned from shipment on passenger aircraft (Cargo Aircraft Only).

Batteries Alone

UN3480, Lithium Ion Batteries

Air Shipments (IATA) – Packing Instruction 965 (Section IB for greater than 2 batteries per package, Section II for less than or equal to 2 batteries per package)

Sea Shipments (IMO-IMDG) – Special Provision 188

Europe Road Transportation (ADR) – Special Provision 188

US Road Transportation (DOT) – 49 CFR 173.185(c)

Batteries with or in Equipment

UN3481, Lithium Ion Batteries packed with equipment OR Lithium Ion Batteries contained in equipment.

Air Shipments (IATA) – Packing Instruction 966 or 967, Section II

Sea Shipments (IMO-IMDG) – Special Provision 188

Europe Road Transportation (ADR) – Special Provision 188

US Road Transportation (DOT) – 49 CFR 173.185(c)

* * * Section 15 - Regulatory Information * * *

US Federal Regulations

A: General Product Information

All components are on the U.S. EPA TSCA Inventory List.

B: Component Analysis

None of this products components are listed under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), or CERCLA (40 CFR 302.4).

State Regulations

A: General Product Information

No additional information available.

B: Component Analysis - State

None of this product's components are listed on the state lists from CA, MA, MN, NJ, PA, or RI.

Canadian WHMIS Information

A: General Product Information

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations.

B: Component Analysis - WHMIS IDL

No components are listed in the WHMIS IDL.

Additional Regulatory Information

None

* * * Section 16 - Other Information * * *

Other Information

The information herein is presented in good faith and believed to be accurate as of the effective date given. However, no warranty, expressed or implied, is given. It is the buyer's responsibility to ensure that its activities comply with Federal, State or provincial, and local laws.

Key/Legend

EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration., NJTSR = New Jersey Trade Secret Registry, WHMIS = Workplace Hazardous Materials Information System (Canada)

Revision date: Dec.25, 2014
Effective date: Jan.1, 2015

Reference number CA-CE-E01-16

Safety data sheet for chemical products (SDS)

1.PRODUCT AND COMPANY IDENTIFICATION

- Product name : Nickel Cadmium Battery
- Company name : Automotive & Industrial Systems Company of Panasonic Group
  SANYO Electric Co., Ltd. Portable Rechargeable Battery Business Division
- Address : 222-1, kaminaizen, Sumoto City, Hyogo, Japan
- Telephone number : +81-799-24-4111
- Telefax number : +81-799-23-2995
- Emergency telephone number : [Weekday] +81-799-23-2881
  [Night and holiday] +81-799-24-4131

2.HAZARDS IDENTIFICATION

For the battery cell, chemical materials are stored in a hermetically sealed metal case, designed to withstand temperatures and pressures encountered during normal use. As a result, during normal use, there is no physical danger of ignition or explosion and chemical danger of hazardous materials' leakage.

However, if exposed to a fire, added mechanical shocks, decomposed, added electric stress by misuse, the gas release vent will be operated. The battery cell case will be breached at the extreme. Hazardous materials may be released.

Moreover, if heated strongly by the surrounding fire, acrid or harmful fume may be emitted.

- Most important hazard and effects

Human health effects:

Inhalation: The electrolyte inhalation affects the respiratory tract membrane and the lugs. Cadmium fume may cause a cough, chest pain and dyspnea. Bronchitis and pneumonia will be occurred. Probably, it is carcinogen.

Skin contact: The electrolyte skin contact affects the skin seriously and may cause dermatitis.

Eye contact: The electrolyte leaked from the battery cell is strong alkali. When it goes into an eye, the cornea may be affected and it may lead to blindness.

Ingestion: The electrolyte ingestion irritates the mouth and the throat seriously results in vomiting, nausea, hematemesis, stomach pains and diarrhea.

Environmental effects:

Since a battery cell remains in the environment, do not throw out it into the environment.

- Specific hazards :

As previously described.

3.COMPOSITION / INFORMATION ON INGREDIENTS

- Substance or preparation : Preparation
- Information about the chemical nature of product :

Common chemical name / General name	CAS number	Concentration / Concentration range	Classification and hazard labelling
Nickel,Nickel Compounds	7440-02-0	15-40%	Specific hazard
Cadmium,Cadmium Compounds	7440-43-9	10-40%	Specific hazard
Cobalt Compounds	7440-48-4	0-3%	Specific hazard
Carbon Black	1333-86-4	0-1%	Specific hazard
Iron	7439-89-6	20-65%	-
Potassium Hydroxide	1310-58-3	0-5%	acute toxicity corrosivity irritant property
Sodium Hydroxide	1310-73-2		
Lithium Hydroxide	1310-65-2		

Cadmium corresponds to the Substance of Very High Concern (SVHC) of REACH regulation.

4.FIRST-AID MEASURES

Internal cell materials of an opened battery cell

- Inhalation :
  Cover the victim in a blanket, move to the place of fresh air and keep quiet. Seek medical attention immediately. When dyspnea (breathing difficulty) or asphyxia (breath-hold), give artificial respiration immediately.
- Skin contact :
  Remove contaminated clothes and shoes immediately. Wash the adherence or contact region with soap and plenty of water.
- Eye contact :
  Immediately flush eyes with water continuously for at least 15 minutes. Seek medical attention immediately.

A battery cell and internal cell materials of an opened battery cell

- Ingestion :
  Do not induce vomiting. Seek medical attention immediately.

5.FIRE-FIGHTING MEASURE

Although a battery cell is not flammability, in case of fire, move it to the safe place quickly.
The following measures are taken when it cannot be moved.

- Suitable extinguishing media: Dry sand, chemical powder fire extinguishing medium.
- Specific hazards: Acrid or harmful fume is emitted during fire.
- Special protective equipment for firefighters : Protective equipment written in Section 8.

6.ACCIDENTAL RELEASE MEASURES

Internal cell materials, such as electrolyte leaked from battery cell, are carefully dealt with according to the followings.

- Personal precautions :
  Forbid unauthorized person to enter. Remove leaked materials with protective equipment written in Section 8.
- Environmental precautions: Do not throw out into the environment.
- Method of recovery and neutralization :
  Dilute the leaked electrolyte with water and neutralize with diluted sulfuric acid. The leaked solid is moved to a container. The leaked place is fully flushed with water.

7.HANDLING AND STORAGE

- Handling
  Technical measures
  Prevention of user exposure: Not necessary under normal use.
  Prevention of fire and explosion: Not necessary under normal use.
  Precaution for safe handling: Do not damage or remove the external tube.
  Specific safe handling advice: Never throw out cells in a fire or expose to high temperatures. Do not soak cells in water and seawater. Do not expose to strong oxidizers. Do not give a strong mechanical shock or throw down. Never disassemble, modify or deform. Do not connect the positive terminal to the negative terminal with electrically conductive material. In the case of charging, use only dedicated charger or charge according to the conditions specified by Sanyo.
- Storage
  Technical measures
  Storage conditions (suitable to be avoided): Avoid direct sunlight, high temperature, high humidity.
  Store in cool place (temperature : -30 ~ 35 degree C, humidity : 45 ~ 85%).
  Incompatible products: Conductive materials, water, seawater, strong oxidizers and strong acids
  Packing material (recommended, not suitable): Insulative and tear-proof materials are recommended.

8.EXPOSURE CONTROLS / PERSONAL PROTECTION

- Engineering measures :
  No engineering measure is necessary during normal use. In case of internal cell materials' leakage, the information below will be useful.
- Control parameters

Common chemical name / General name	ACGIH(2014)	
	TLV-TWA	BEI
Nickel,Nickel Compounds	(As Ni) Metal : 1.5mg/m^3 Soluble compounds : 0.1mg/m^3 Insoluble compounds : 0.2mg/m^3	-
Cadmium,Cadmium Compounds	(As Cd) Simple substance : 0.01mg/m^3 Compounds : 0.002mg/m^3	In urine : 5 micro g/g In blood : 5 micro g/l
Cobalt Compounds	(As Co) 0.02mg/m^3	In urine : 15 micro g/l In blood : 1 micro g/l
Carbon Black	3mg/m^3	-
Potassium Hydroxide	-	-
Sodium Hydroxide	-	-
Lithium Hydroxide	0.025mg/m^3	-

ACGIH: American Conference of Governmental Industrial Hygienists, Inc.
TLV-TWA: Threshold Limit Value-time weighted average concentration
BEI: Biological Exposure Indices

- Personal protective equipment
  Respiratory protection: Protective mask
  Hand protection: Protective gloves
  Eye protection: Protective glasses designed to protect against liquid splashes
  Skin and body protection: Working clothes with long sleeve and long trousers

- A battery cell is not applied to Toxic Substances Control Act (TSCA), because it is not a chemical substance but an article.

9.PHYSICAL AND CHEMICAL PROPERTIES

- Appearance
  Physical state: Solid
  Form: Cylindrical
  Color: Metallic color (without tube)
  Odor: No odor
- pH : NA
- Specific temperatures/temperature ranges at which changes in physical state occur :
  There is no useful information for the product as a mixture.
- Flash point : NA
- Explosion properties : NA
- Density : about 2.4～4.0g/cm^3
- Solubility ,with indication of the solvent(s) : Insoluble in water

10.STABILITY AND REACTIVITY

- Stability : Stable under normal use
- Hazardous reactions occurring under specific conditions
  By misuse of a battery cell or the like, oxygen or hydrogen accumulates in the cell and the internal pressure rises. These gases may be emitted through the gas release vent. When fire is near, these gases may take fire.
  When a battery cell is heated strongly by the surrounding fire, acrid or harmful fume may be emitted.
- Conditions to avoid : Direct sunlight, high temperature and high humidity
- Materials to avoid : Conductive materials, water, seawater, strong oxidizers and strong acids
- Hazardous decomposition products: Acrid or harmful fume is emitted during fire.

11.TOXICOLOGICAL INFORMATION

There is no data available on the product itself.
(in case of electrolyte leakage from the battery)

Cadmium,Cadmium Compounds

- Acute toxicity:
  - oral: GHS: Category 4 (Swallowing is harmful.)
  - skin: Unknown.
  - inhalation (dust): GHS: Category 1 (it is dangerous in the life when inhaling.)
- Skin corrosivity : Unknown.
- Serious damage and irritant property for eyes: Unknown.
- Respiratory or skin sensitization: Unknown.
- Germline mutagenicity:
  GHS: Category 2
  The hereditary disorder might be caused.
- Carcinogenicity:
  GHS: Category 1A
  ACGIH : A2 – Suspected human carcinogen
  NIOSH : potential occupational carcinogen
  NTP : Known to be a human carcinogen
  IARC : Group 1 carcinogenic to human
- Reproduction Toxicity :
  GHS: Category 2
  Harmful effects on reproductive capacity or fetus might be exerted.
- Certain target organ/ Systemic toxicity (single exposure):
  GHS: Category 1
  Damage of lungs and the respiratory organ is caused.
  Overexposure causes the pulmonary disorder.
- Certain target organ/ Systemic toxicity (repeated exposure):
  GHS: Category 1
  The disorder of the kidney, lungs, blood, bone, and respiratory organ is caused by long-term or repeated exposure.

Potassium Hydroxide

- Acute toxicity:
  - oral: GHS: Category 3. Harmful if swallowed.
  - skin: GHS: It is not possible to classify.
  - inhalation (steam): GHS: It is not possible to classify.
  - inhalation (dust): GHS: It is not possible to classify.
- Skin corrosivity : GHS: Category 1B.
  Serious chemical wound of the skin and damage of eyes is caused.
- Serious damage and irritant property for eyes: GHS: Category 1.
- Respiratory or skin sensitization:
  Respiratory sensitization: GHS: It is not possible to classify.
  Skin sensitization: GHS: out of Category.
- Germline mutagenicity : GHS: out of Category.
- Carcinogenicity : GHS: It is not possible to classify.
- Reproduction Toxicity : GHS: It is not possible to classify.
- Certain target organ/ Systemic toxicity (single exposure):
  GHS: Category 1.
  The disorder of the respiratory system is caused.
- Certain target organ/ Systemic toxicity (repeated exposure)
  GHS: It is not possible to classify.

12.ECOLOGICAL INFORMATION

- Persistence/degradability :
  Since a battery cell and the internal materials remain in the environment, do not bury or throw out into the environment.
- Bioaccumulation :
  Cadmium bioaccumulation occurs in plants and marine food in human food chain.

13.DISPOSAL CONSIDERATIONS

- Recommended methods for safe and environmentally preferred disposal :

Product (waste from residues)

Do not throw out a used battery cell. Recycle it through the recycling company.

Contaminated packaging

Neither a container nor packing is contaminated during normal use. When internal materials leaked from a battery cell contaminates them, dispose them as industrial wastes subject to special control.

14.TRANSPORT INFORMATION

This battery doesn't correspond to dangerous article of the United Nations transportation regulations.

Moreover, this article doesn't correspond to dangerous article to which transportation is restricted by the following decree and guideline.

- TECHNICAL INSTRUCTINS FOR THE SAFE TRANSPORT OF DANGEROUS GOODS BY AIR(ICAO)
- IATA Dangerous Goods Regulations(IATA)
- INTERNATIONAL MARITIME DANGEROUS GOODS CODE(IMO)
- code of federal regulations(U.S.DOT)

However, it is necessary to obey the IATA Dangerous Goods Regulations(A123).

In the case of transportation, confirm no leakage and no spillage from a container. Take in a cargo of them without falling, dropping and breakage. Prevent collapse of cargo piles and wet by rain. The container must be handled carefully. Do not give shocks that result in a mark of hitting on a cell. Take the protection measures not short-circuited.

Moreover, do not damage or remove the external tube. Never throw out cells in a fire or expose to high temperatures. Do not soak cells in water and seawater. Never disassemble, modify or deform. Avoid direct sunlight, high temperature, high humidity.

15.REGULATORY INFORMATION

- Regulations specifically applicable to the product :
  Wastes Management and Public Cleaning Law (Japan)
  Law for Promotion Effective Utilization of Resources (Japan)
  Mercury-containing and Rechargeable Battery Management Act (USA)
  Commission Directive 2006/66/EC (EU)
  Regulation concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (EU)

16.OTHER INFORMATION

- The information contained in this Safety data sheet is based on the present state of knowledge and current legislation.
- This safety data sheet provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for particular applications.

・Reference

Chemical substances information: Japan Advanced Information center of Safety and Health
International Chemical Safety Cards (ICSCs):
International Occupational Safety and Health Information Center (CIS)
2014 TLVs and BEIs : American Conference of Governmental Industrial Hygienists (ACGIH)
NIOSH CARCINOGEN LIST: National Institute for Occupational Safety and Health (NIOSH)
The Ninth Report on Carcinogen: National Toxicology Program (NTP)
IARC Monographs Program on the Evaluation of Carcinogenic Risks to Humans:
International Agency for Research on Cancer (IARC)
Globally Harmonized System of Classification and Labeling of Chemicals (GHS)
National Institute of Technology and Evaluation (NITE)
Dangerous Goods Regulations – 56th Edition Effective 1 January 2015: International Air Transport Association (IATA)

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