Safety Data Sheet
29 CFR 1910.1200

Effective Date ： 06/01-2017

Trade Name ： Alkaline Manganese Button Cell (Mercury Free)-Cell

1 Identification

- **Product identifier**
- **Trade name : Alkaline Manganese Button Cell (Mercury Free)-Battery**
- **Item No.:**
- L2366F、L1560F、L1154F、L1142F、L1131F、L1121F、L936F、L926F、L921F、L754F、L736F、L726F、L721F、L626F、L621F、L526F、L521F
- **Recommended use of the chemical and restrictions on use :**
- **Application of the substance / the preparation :** Electronic products
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier :**
  CHUNG PAK BATTERY WORKS LIMITED
  CHUNG PAK (GUANG DONG) BATTERY INDUSTRIAL CO., LTD
- **Full address :**
  7/F., CHUNG PAK COMMERCIAL BUILDING, 2 CHO YUEN STREET, YAU TONG BAY, KOWLOON, HONGKONG
  GANCUN SECTION FOCHEN ROAD CHEN CUN COUNTY SHUNDE DISTRICT FOSHAN CITY GUANGDONG PROVINCE CHINA
  Phone number :
  852-27171338
  Fax : 852 2772 7727
- **Email :** dylan.cai@chungpak.com
- **Other US contact point :** No available
- **Further information obtainable from :**
  CHUNG PAK BATTERY WORKS LIMITED
  CHUNG PAK (GUANG DONG) BATTERY INDUSTRIAL CO., LTD
- **Emergency telephone number :**
  USA Poison Center Tel: +1 800 222 1222
  +86-757-23312338 Dylan
- **Remark :**
  *This sample is likely to be classified as article and is out of scope of a SDS as set out in 29 CFR Part 1910.1200. This SDS is generated for client's reference only.

2 Hazard(s) identification

- **Classification of the substance or mixture**
  Classification according to OSHA Hazard Communication Standard (29 CFR 1910.1200)

GHS08 Health hazard

Carc. 2	H351	Suspected of causing cancer.
STOT RE 1	H372	Causes damage to organs through prolonged or repeated exposure.

GHS05 Corrosion

Skin Corr.	1A	H314	Causes severe skin burns and eye damage.
Eye Dam.	1	H318	Causes serious eye damage.

GHS07

Acute Tox.	4	H302	Harmful if swallowed.
Acute Tox.	4	H332	Harmful if inhaled.
Skin Sens.	1	H317	May cause an allergic skin reaction.

- **Information concerning particular hazards for human and environment :**
  The product has to be labeled due to the calculation procedure of OSHA Hazard Communication Standard (29 CFR 1910.1200).

(Contd. on page 2)

Safety Data Sheet
29 CFR 1910.1200

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(Contd. on page 1)

- **Classification system :**
The classification is according to the latest edition of OSHA Hazard Communication Standard (29 CFR 1910.1200), and extended by company and literature data.
- **Label elements**
- **Labeling according to OSHA Hazard Communication Standard (29 CFR 1910.1200)**
- **Hazard pictograms**

GHS05 GHS07 GHS08

- **Signal word :** Danger
- **Hazard-determining components of labeling :**
manganese dioxide
potassium hydroxide
nickel
potassium fluoride
- **Hazard statements**

H302+H332	Harmful if swallowed or if inhaled.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H351	Suspected of causing cancer.
H372	Causes damage to organs through prolonged or repeated exposure.

- **Precautionary statements**

P260	Do not breathe dusts or mists.
P303+P361+P353	If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a poison center/doctor.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local / regional / national / international regulations.

- **Hazards not otherwise classified (HNOC)** No further relevant information available.

3 Composition / information on ingredients

- **Chemical characterization: Mixtures**
- **Description:**
Mixture of the substances listed below with nonhazardous additions.
For the wording of listed risk phrases refer to section 16.

- **Composition:**

1313-13-9	manganese dioxide Acute Tox.4, H302; Acute Tox. 4, H332	25.1-29.7%
7439-89-6	iron	40.2-48%
7440-66-6	zinc	9-10.7%
7732-18-5	water	4.57-5.96%
1310-58-3	potassium hydroxide Skin Corr. 1A, H314; Acute Tox. 4, H302	3.72-4.88%
7440-50-8	copper	0.03-0.04%
7782-42-5	Graphite	3.43-4.12%
25038-54-4	Polyamide (iminocarbonylpentamethylene)	1.61-2.2%

(Contd. on page 3)

Trade Name ： Alkaline Manganese Button Cell (Mercury Free)-Cell

(Contd. on page 2)

7440-02-0	nickel Carc 2, H351; STOT RE 1, H372; Skin Sens. 1, H317	1.48-1.57%
9004-34-6	Cellulose	0.35-0.88%
1314-13-2	zinc oxide	0.37-0.62%
9003-04-7	2-Propenoic acid, homopolymer, sodium salt Eye Irrit. 2A, H319	0.1-0.2%
9003-01-4	Polyacrylic acid	0.02-0.08%
7789-23-3	potassium fluride Acute Tox. 3, H301; Acute Tox., H311; Acute Tox. 3, H331	0.05-0.1%
20661-21-6	indium trihydroxide Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335	0.05-0.1%
21645-51-2	aluminium hydroxide	0.05-0.08%

- **Remark：**

zinc (CAS: 7440-66-6)
Note: Zn

manganese dioxide (CAS: 1313-13-9)
Note: MnO_2

potassium hydroxide (CAS: 1310-58-3)
Note: KOH

Graphite (CAS: 7782-42-5)
Note: Carbon(C)

iron (CAS: 7439-89-6)
Note: Fe

Poly(iminocarbonylpentamethylene) (CAS: 25038-54-4)
Note: Polyamide 6

2-Propenoic acid, homopolymer, sodium salt (CAS: 9003-04-7)
Note: 12.Sodium Polyacrylic Acid

4 First-aid measures

- **Description of first aid measures**
- **General description:**

Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

- **After inhalation:**

In case of unconsciousness place patient stably in side position for transportation.
Get medical aid immediately. Remove from exposure and move to fresh air immediately. Use oxygen if available. Use oxygen device such as mask or bag.

- **After skin contact:**

Get medical aid at once. Immediately remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Discard contaminated clothing in a manner which limits further exposure.

- **After eye contact:** Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.
- **After swallowing:**

Drink copious amounts of water and provide fresh air. Immediately call a doctor.
Do not induce vomiting; immediately call for medical help.

- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

(Contd. on page 4)

(Contd. on page 3)

5 Fire-fighting measures

- **Suitable extinguishing agents:**
  CO_2、extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture:** No further relevant information available.
- **Special protective equipment and precautions for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures:**
  Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**
  Do not allow product to reach sewage system or any water course.
  Inform respective authorities in case fo seepage into water course or sewage system.
  Do not allow to enter sewers/surface or ground water.
- **Methods and material for containment and cleaning up:**
  Use neutralizing agent.
  Dispose contaminated material as waste according to item 13.
  Ensure adequate ventilation.

7 Handling and storage

- **Precautions for safe handling:**
  Thorough dedusting.
  Ensure good ventilation/exhaustion at the workplace.
  For the general occupational hygienic measures refer to Section 8.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.

8 Exposure controls / personal protection

- **Components with limit values that require monitoring at the workplace:**

1313-13-9 manganese dioxide (25.1-29.7%)	
PEL (USA)	Ceiling limit value: 5mg/m^3 as Mn
REL (USA)	Short-term: 3mg/m^3 Long-term: 1mg/m^3 as Mn
TLV (USA)	Long-term: 0.02*0.1* mg/m^3 as Mn； * respirable **inhalable fraction
1310-58-3 potassium hydroxide (3.72-4.88%)	
REL (USA)	Ceiling limit value: 2mg/m^3
TLV(USA)	Ceiling limit value: 2mg/m^3
7782-42-5 Graphite (3.42-4.12%)	
PEL (USA)	Long-term value: 15mppcf*mg/m^3 *impinge samples counted by light field techn.
REL (USA)	Long-term value:2.5*mg/m^3 *respirable dust
TLV(USA)	Long-term value:2*mg/m^3 all forms except graphite fibers; *resp. fraction
7440-02-0 nickel(1.48-1.57%)	
PEL (US)	Long-term value:1mg/m^3
REL (US)	Long-term value: 0.015mg/m^3

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(Contd. on page 4)

	as Ni; See Pocket Guide App. A
TLV (US)	Long-term value: 1.5*mg/ m^3 elemental,*inhalable fraction
9004-34-6 Cellulose (1.0-1.5%)	
PEL (USA)	Long-term value: 15* 5** mg/m^3 *total dust **respirable fraction
REL (USA)	Long-term value: 10* 5** mg/m^3 *total dust **respirable fraction
TLV(USA)	Long-term value:: 10mg/m^3
1314-13-2 zinc oxide (0.37-0.62%)	
PEL (US)	Long-term value: 15*5**mg/m^3 *total dust **respirable fraction and fume
REL (US)	Short-term value: 10**mg/m^3 Long-term value: 5*5**mg/m^3 Ceiling limit value: 15*mg/m^3 *dust only **fume
TLV (US)	Short-term value: 10*mg/ m^3 Long-term value: 2* mg/m^3 *as respirable fraction
7789-23-3 potassium fluoride (0.05-0.1%)	
PEL (US)	Long-term value: 2.5mg/m^3 as F
REL (US)	Long-term value: 2.5mg/m^3 as F
TLV (US)	Long-term value: 2.5mg/m^3 as F，BEI
21645-51-2 aluminium hydroxide (0.05-0.08%)	
REL (US)	Long-term value: 2mg/m^3 as Al
TLV (US)	Long-term value: 1*mg/m^3 as Al；*as respirable fraction
7440-50-8 copper (0.5-1.0%)	
PEL (USA)	Long-term value: 1*0.1**mg/m^3 as Cu *dusts and mists **fume
REL (USA)	Long-term value: 1*0.1**mg/m^3 as Cu *dusts and mists **fume
TLV(USA)	Long-term value: 1*0.2**mg/m^3 *dusts and mists **fume; as Cu

• **Ingredients with biological limit values:**	
7789-23-3 potassium fluoride	
BEI (US)	2mg/L Medium: urine Time: prior to shift Parameter: Fluoride (background, nonspecific) 3mg/L Medium: urine Time: end to shift Parameter: Fluoride (background, nonspecific)

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Based on the composition shown in Section 3, the following measures are suggested for occupational safety measure.**
- **Appropriate engineering controls:**

Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.

(Contd. on page 6)

(Contd. on page 5)

Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
See Section 7 for information about design of technical facilities.

- **Personal protective equipment:**
- **Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

Protection of hands ：

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- **Penetration time of glove material:**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:**

Tightly sealed goggles

9 Physical and chemical properties

· General Information	
· Appearance:	
Form:	Solid, button cell
Color:	Silvery
· Odor:	Odorless
· Odour threshold:	Not available
· pH-value:	Not applicable. Not available
· Change in condition	
Melting point/ Melting range:	Not available
Freezing point：	Not available
Boiling point/ Boiling range:	Not available
· Flash point:	Not available
· Flammability (solid, gaseous):	Not available
· Auto-Ignition temperature:	Not available
· Decomposition temperature:	Not available
· Explosion limits：	
Lower:	Not available
Upper:	Not available
· Vapor pressure:	Not available
· Density:	Not available
· Relative density:	Not available

(Contd. on page 7)

(Contd. on page 6)

· Vapour density:	Not available
· Evaporation rate:	Not available
· Solubility in/ Miscibility with Water:	Not available
· Partition coefficient (n-octanol/water)	Not available
· Viscosity:	
Dynamic:	Not available
Kinematic:	Not available
· Other information	Voltage: 1.5V

10 Stability and reacivity

· **Reactivity:** Data not available
· **Chemical stability:** Stable under normal operating and storage conditions.
· **Possibility of hazardous reactions:** No dangerous reactions known.
· **Conditions to avoid:** No further relevant information available.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** No dangerous decomposition products known.

· 11 Toxicological information

· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**		
1310-58-3 potassium hydroxide		
Oral	LD50	273 mg/kg (rat)
7439-89-6 iron		
Oral	LD50	30000 mg/kg (rat)
9004-34-6 Cellulose		
Oral	LD50	＞5000 mg/kg (rat)
9003-04-7 2-Propenoic acid, homopolymer, sodium salt		
Oral	LD50	＞40000 mg/kg (rat)
7789-23-3 potassium fluoride		
Oral	LD50	245 mg/kg (rat)

· **skin corrosion/irritation:** Caustic effect on skin and mucous membranes.
· **Serious eye damage/irritation:** Strong caustic effect.
· **Respiratory or skin sensitization:** Sensitizing possible through skin contact.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
Corrosive
Irritant
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**		
25038-54-4	Poly(iminocarbonylpentamethylene)	3
7440-02-0	nickel	1
7789-23-3	potassium fluoride	3
9003-01-4	Polyacrylic acid	3

(Contd. on page 8)

(Contd. on page 7)

• NTP (National Toxicology Program)		
7440-02-0	nickel	R

• OSHA-Ca (Occupational Safety & Health Administration)
None of the ingredients is listed.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability:** No further relevant information available.
- **Bioaccumulative potential:** No further relevant information available.
- **Mobility in soil:** No further relevant information available.
- **Other adverse effects:** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
  Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- Alkaline Manganese Button Cell (Mercury Free) is exempt from dangerous goods. It is considered non-dangerous goods by the International Civil Aviation Organization (ICAO), the International Air Transport Association (IATA), International Martine Dangerous Goods regulations (IMDG), the 《Recommendations on the Transport of Dangerous Goods Model Regulations》(17th) and also is not classified as dangerous goods under the 58th Edition of the IATA Dangerous Good Regulation 2017 Special Provision A123.
  Separate batteries when shipping to prevent short-circuiting. They should be packed in strong packaging for support during transport. Take in a cargo of them without falling, dropping, and breakage. Prevent collapse of cargo piles and wet by rain.
  Transport Fashion: By air, by sea, by road.

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Sara**

• Section 335 (extremely hazardous substances):
None of the ingredients is listed.

• Section 313 (specific toxic chemical listings):	
1313-13-9	manganese dioxide
7440-02-0	nickel
1314-13-2	zinc oxide
7440-50-8	copper

• TSCA (Toxic Substances Control Act):	
7439-89-6	iron
1313-13-9	manganese dioxide
1310-58-3	potassium hydroxide

(Contd. on page 9)

(Contd. on page 8)

7782-42-5	Graphite
25038-54-4	Poly (iminocarbonylpentamethylene)
7440-02-0	nickel
9004-34-6	Cellulose
1314-13-2	zinc oxide
9003-04-7	2-Propenoic acid, homopolymer, sodium salt
7789-23-3	potassium fluoride
20661-21-6	indium trihydroxide
9003-01-4	Polyacrylic acid
21645-51-2	aluminium hydroxide
7440-50-8	copper
7732-18-5	water

· Proposition 65

· Chemical known to cause cancer:	
7440-02-0	nickel

· Chemicals known to cause reproductive toxicity for females:
None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:
None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:
None of the ingredients is listed.

· Cancerogenity categories

· EPA (Environmental Protection Agency)		
1313-13-9	manganese dioxide	D
7440-66-6	zinc	II
1314-13-2	zinc oxide	D, I , II
7440-50-8	copper	D

TLV (Threshold Limit Value established by ACGIH)		
7440-02-0	nickel	A5
7789-23-3	potassium fluoride	A4

· NIOSH-Ca (National Institution for Occupational Safety & Health)	
7440-02-0	nickel

16 Other information

· Relevant phrases

H301 Toxic if swallowed.
H302 Harmful if swallowed.
H311 Toxic in contact with skin.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H331 Toxic if inhaled.
H332 Harmful if inhaled.
H351 Suspected of causing cancer.
H372 Cause damage to organs through prolonged or repeated exposure.

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(Contd. on page 10)

(Contd. on page 9)

The contents and format of this SDS are in accordance with 29 CFR 1910.1200 (g)

DISCLAIMER OF LIABILITY

The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in anyway connected with the handling, storage, use or disposal of the product. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable.

Remark:

*This sample is likely to be classified as article and is out of scope of a SDS as set out in 29 CFR Part 1910.1200. This SDS is generated for client's reference only.

- **Date of preparation/last revision** 2017.01.06/-

- **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
Acute Tox. 3: Acute toxicity，Hazard Category 3
Acute Tox. 4: Acute toxicity，Hazard Category 4
Skin Corr. 1A: Skin corrosion/irritation，Hazard Category 1A
Skin Corr. 1B: Skin corrosion/irritation，Hazard Category 1B
Eye Dam . 1: Serious eye damage/eye irritation，Hazard Category 1
Skin Sen . 1: Sensitisation – skin, Hazard Category 1
Carc. 2: Carcinogenicity, Hazard Category 2
STOT RE 1: Specific target organ toxicity – Repeated exposure, Hazard Category 1

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