

# Article Information Sheet

# Fiche d'information Article

Product name: Lithium Battery

Printing date: 18-Mar-2020 Nom du produit: Batterie au lithium

Date d'impression: 18-Mar-2020

## Article Information Sheet (AIS)

This Article Information Sheet (AIS) provides relevant battery information to retailers, consumers, OEMs and other users requesting a GHS - compliant SDS. Articles, such as batteries, are exempt from GHS SDS classification criteria. The GHS criteria is not designed or intended to be used to classify the physical, health and environmental hazards of an article. Branded consumer batteries are defined as electro - technical devices. The design, safety, manufacture, and qualification of Energizer branded consumer batteries follow ANSI and IEC battery standards.

### 1. DOCUMENT INFORMATION

Product name: Lithium Battery  
Model: HuaWei 18650 3.7V 2000mAh  
Issue Date: 18-Mar-2020

### 2. COMPANY INFORMATION

Company name(China) Hangzhou Huawei Electronic Co., Ltd  
Address: 9th floor of 2nd building of West Port, XiHu Technology Park, XiHu District, Hangzhou, P. R. China  
E-mail: xuguanglei@hw-battery.com  
Telephone: +86-15088691556

### 3. ARTICLE INFORMATION

Description	Lithium Battery
Use	LITHIUM ION BATTERY
Brand	HUAWEI

## Article Feuille d'information (AIS)

Cette fiche d'information Article (AIS) fournit des informations sur la batterie correspondant aux détaillants, aux consommateurs, aux OEM et aux autres utilisateurs qui demandent un SDS SGH-conforme. Les articles, tels que les piles, sont exemptés de critères de classification SGH SDS. Les critères du SGH ne sont pas conçus ou destinés à être utilisés pour classer les risques physiques, la santé et l'environnement d'un article. batteries de consommation de marque sont définis comme des dispositifs électro-technique. La conception, la sécurité, la fabrication, et la qualification des batteries de consommation de marque Energizer sont conformes aux normes de la batterie ANSI et IEC.

### 1. DOCUMENT D'INFORMATION

Produit Nom: Batterie au lithium  
Modèle: HuaWei 18650 3.7V 2000mAh  
Date d'émission: 18-Mar-2020

### 2. INFORMATIONS SUR LA SOCIÉTÉ

Nom de l'entreprise (Chine) Hangzhou Huawei Electronic Co., Ltd  
Adresse: 9e étage du 2e bâtiment du port ouest, parc technologique de XiHu, district de XiHu, Hangzhou, P.R. Chine  
Email: xuguanglei@hw-battery.com  
Téléphone: + 86-15088691556

### 3. ARTICLE D'INFORMATION

La description	Batterie au lithium
Utilisation	BATTERIE AUX IONS LITHIUM

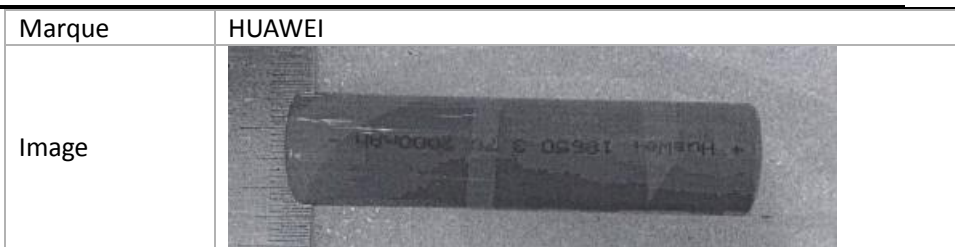
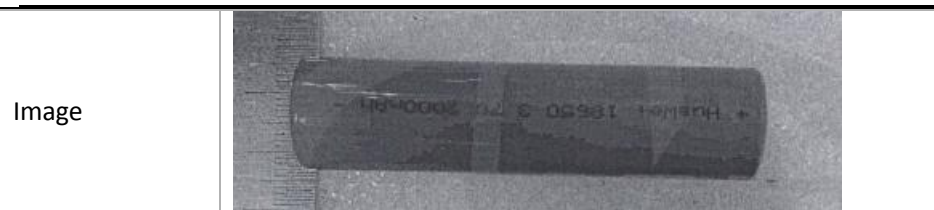
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## 4. ARTICLE CONSTRUCTION

**IMPORTANT NOTE: The battery should not be opened or burned. Exposure to the ingredients contained within or their combustion products could be harmful.**

Chemical name	CAS No.	Concentration%
Lithium Cobalt Oxide (CoLiO <sub>2</sub> )	12190-79-3	36.5
Graphite	7782-42-5	20.8
Phosphate(1-), hexafluoro-, lithium	21324-40-3	20.7
Copper	7440-50-8	8.8
Aluminum	7429-90-5	7.5
Nickel	7440-02-0	3.4
PVC (Chloroethylene, polymer)	9002-86-2	2.3

## 5. HEALTH AND SAFETY

**Ingestion:** Do NOT induce vomiting. Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.

**Inhalation:** Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained

## 4. ARTICLE CONSTRUCTION

**REMARQUE IMPORTANTE: La batterie ne doit pas être ouvert ou brûlé. L'exposition aux ingrédients contenus dans leurs produits ou de combustion pourrait être nocif.**

Nom chimique	N ° CAS.	Concentration%
Lithium oxyde de cobalt (CoLiO <sub>2</sub> )	12190-79-3	36.5
Graphite	7782-42-5	20.8
Phosphate (1-), hexafluoro-, lithium	21324-40-3	20.7
Cuivre	7440-50-8	8.8
Aluminium	7429-90-5	7.5
Nickel	7440-02-0	3.4
PVC (chloroéthylène, polymère)	9002-86-2	2.3

## 5. SANTÉ ET SÉCURITÉ

**Ingestion:** Ne pas faire vomir. Se rincer la bouche et boire beaucoup d'eau. Ne portez rien à la bouche d'une personne inconsciente. Appeler un centre de contrôle médecin ou de poison immédiatement.

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personnel should) give oxygen. Delayed pulmonary edema may occur. Get medical attention immediately if symptoms occur.

Skin contact: Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Immediate medical attention is required. May cause an allergic skin reaction.

Eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Seek immediate medical attention/advice.

Self-protection of the first aider: Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Use personal protective equipment as required. Wear personal protective clothing (see section 8).

## 6. FIRE HAZARD & FIREFIGHTING

Fire Hazard	Batteries may rupture or leak if involved in a fire.
Extinguishing Media	Use any extinguishing media appropriate for the surrounding area.
Special hazards arising from the chemical	In case of fire where lithium batteries are present, flood area with water or smother with a Class D fire extinguishant appropriate for lithium metal, such as Lith-X. Water may not extinguish burning batteries but will cool the adjacent batteries and control the spread of fire. Burning batteries will burn themselves out. Virtually all fires involving lithium batteries can be controlled by flooding with water. However, the contents of the battery will react with

Inhalation:	À l'air frais. Si la respiration est arrêtée, pratiquer la respiration artificielle. Consulter un médecin immédiatement. Ne pas utiliser le bouche-à-bouche si la victime a ingéré ou inhalé la substance; pratiquer la respiration artificielle à l'aide d'un masque de poche muni d'une valve à une voie ou d'un autre appareil médical approprié. Si la respiration est difficile, (du personnel qualifié devrait) donner de l'oxygène. œdème pulmonaire retardé peut se produire. Consulter un médecin si des symptômes apparaissent.
Contact avec la peau:	Laver immédiatement avec du savon et beaucoup d'eau tout en enlevant les vêtements contaminés et les chaussures. Une attention médicale immédiate est nécessaire. Peut provoquer une réaction allergique cutanée.
Lentilles de contact:	Rincer immédiatement et abondamment avec de l'eau, y compris sous les paupières, pendant au moins 15 minutes. Gardez l'œil ouvert pendant le rinçage. Ne pas frotter les zones touchées. lentilles de contact Retirer, si elle est présente et facile à faire. Continuer à rincer. Consulter un / des conseils médicaux immédiats.
Auto-protection du secouriste:	Veiller à ce que le personnel médical sont au courant de la matière (s) impliqués, prendre des précautions pour se protéger et prévenir la propagation de la contamination. Éviter tout contact avec la peau, les yeux ou les vêtements. Éviter tout contact direct avec la peau. Utilisez barrière pour donner la respiration artificielle bouche-à-bouche. Utiliser un équipement de protection individuel requis. Porter des vêtements de protection individuelle (voir la section 8).

## 6. RISQUE D'INCENDIE & POMPIERS

Risque d'incendie	Les piles peuvent se rompre ou fuir si elle est impliquée dans un incendie.
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water and form hydrogen gas. In a confined space, hydrogen gas can form an explosive mixture. In this situation, smothering agents are recommended. A smothering agent will extinguish burning lithium batteries.

Precautions for fire-fighters: Emergency Responders should wear self-contained breathing apparatus. Burning lithium manganese dioxide batteries produce toxic and corrosive lithium hydroxide fumes.

## 7. HANDLING AND STORAGE

**Storage** Store in a cool, well ventilated area. Elevated temperatures can result in shortened battery life. In locations that handle large quantities of lithium batteries, such as warehouses, lithium batteries should be isolated from unnecessary combustibles.

**Handling** Avoid mechanical and electrical abuse. Do not short circuit or install incorrectly. Batteries may rupture or vent if disassembled, crushed, recharged or exposed to high temperatures. Install batteries in accordance with equipment instructions.

**Spills of Large Quantities Batteries (unpacked)** Notify spill personnel of large spills. Irritating and flammable vapors may be released from leaking or ruptured batteries. Spread batteries apart to stop shorting. Eliminate all ignition sources. Evacuate area and allow vapors to dissipate. Clean-up personnel should wear appropriate PPE to avoid eye and skin contact and inhalation of vapors or fumes. Increase ventilation. Carefully collect batteries and place in appropriate container for disposal. Remove any spilled liquid with absorbent material and contain for disposal.

**Moyens d'extinction** Utilisez tous les moyens d'extinction appropriés pour la région environnante.

**Dangers particuliers résultant de la substance chimique** En cas d'incendie où des batteries au lithium sont présents, zone inondable avec de l'eau ou avec un ÉTOUFFER approprié incendie Classe d'extinction D pour le métal de lithium, comme Lith-X. L'eau ne peut pas éteindre les piles qui brûlent mais refroidir les batteries adjacentes et contrôler la propagation du feu. Les piles qui brûlent va se brûler. Pratiquement tous les feux impliquant des piles au lithium peuvent être contrôlés par les inondations avec de l'eau. Cependant, le contenu de la batterie réagiront avec

l'eau et sous forme d'hydrogène gazeux. Dans un espace confiné, le gaz d'hydrogène peut former un mélange explosif. Dans cette situation, les agents étouffants sont recommandés. Un agent étouffant éteindra la combustion des batteries au lithium.

**Précautions à prendre pour les pompiers** Équipe d'intervention doivent porter un appareil respiratoire autonome. La combustion des piles de dioxyde de manganèse au lithium produisent toxique et corrosif fumées lithium hydroxyde.

## 7. MANIPULATION ET STOCKAGE

**Espace de rangement** Conserver dans un endroit frais et bien ventilé. Les températures élevées peuvent entraîner dans la vie de la batterie raccourcie. Dans les endroits qui traitent de grandes quantités de  
Les piles au lithium, tels que les entrepôts, les batteries au lithium doivent être isolés à partir de combustibles inutiles.

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## 8. DISPOSAL CONSIDERATIONS

Dispose of used (or excess) batteries in compliance with federal, state/provincial and local regulations. Do not accumulate large quantities of used batteries for disposal as accumulations could cause batteries to short-circuit. Do not incinerate. In countries, such as Canada and the EU, where there are regulations for the collection and recycling of batteries, consumers should dispose of their used batteries into the collection network at municipal depots and retailers. They should not dispose of batteries with household trash.

## 9. Transport information

The transportation of primary lithium cells and batteries is regulated by the International Civil Aviation Organization, International Air Transport Association, International Maritime Dangerous Goods Code and the US Department of Transportation. The batteries must meet the following criteria for shipment: 1. Air shipments must meet the requirements listed in Special Provision A45 of the International Air Transport Association Dangerous Goods Regulations. 2. Meet the requirements for the US Department of Transportation listed in 49 CFR 173.185. 3. The transport of primary lithium batteries is prohibited aboard passenger aircraft. Refer to the Federal Register December 15, 2004 (Hazardous Materials; Prohibited on the Transportation of Primary Lithium Batteries and Cells Aboard Passenger Aircraft; Final Rule)

Lithium batteries shipped as "Lithium batteries", "Lithium batteries packed with equipment", or "Lithium batteries contained in equipment" may not be classified as "Dangerous Goods" when shipped in accordance with "special provision A45 of IATA-DGR" or "special provision 188 of IMO-IMDG Code"

- (a) UN number 3480&3481
- (b) UN Proper shipping name LITHIUM ION BATTERIES (including lithium ion polymer batteries) or;  
LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT or LITHIUM ION BATTERIES

Manipulation Éviter les abus mécaniques et électriques. Ne pas court-circuiter ou installer correctement. Les piles peuvent se rompre ou de ventilation si elles sont démontées, écrasées, rechargées ou exposé à une forte températures. Installez les piles conformément aux instructions du fabricant.

Déversements de grandes quantités Informer le personnel de déversement de grands déversements. Irritant et vapeurs inflammables peuvent être libérés de

Batteries (non emballés) fuites ou les piles endommagées. piles écartez pour arrêter les courts-circuits. éliminer tous les sources d'allumage. Évacuer la zone et laisser les vapeurs se dissipent. Le personnel de nettoyage devrait porter des EPI appropriés pour éviter les yeux et contact avec la peau et l'inhalation des vapeurs ou fumées. Augmenter la ventilation. batteries cueillent et les placer dans un récipient approprié pour disposition. Retirez tout liquide déversé avec une matière absorbante et contiennent pour l'élimination.

## 8. CONSIDERATIONS RELATIVES À L'ÉLIMINATION

Jetez les piles usagées (ou excédent) conformément aux règlements fédéraux, provinciaux / provinciaux et locaux. Ne pas accumuler de grandes quantités de piles usagées pour l'élimination comme accumulations pourraient provoquer un court-circuit. Ne pas incinérer. Dans les pays, comme le Canada et l'Union européenne, où il existe des règlements pour la collecte et le recyclage des batteries, les consommateurs devraient disposer de leurs piles usagées dans le réseau de collecte dans les dépôts municipaux et les détaillants. Ils ne doivent pas jeter les piles avec les ordures ménagères.

## 9. Informations de transport

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	PACKED WITH EQUIPMENT (including lithium ion polymer batteries)			
<b>(c) Transport hazard class(es)</b>	9			
<b>(d) Packing group (if applicable)</b>	IA			
<b>(e) Marine pollutant (Yes/No)</b>	No			
<b>(f) Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code)</b>	No information available.			
<b>(g) Special precautions</b>	No information available.			
<b>(h) Organizations governing the transport of lithium batteries</b>	<b>Area</b>	<b>Method</b>	<b>Organization</b>	<b>Special Provision</b>
	U.S.A	Air, Rail, Road, Marine	DOT	49 CFR Section 173.185

Le transport des piles au lithium primaire et les batteries est réglementé par l'Organisation internationale de l'aviation civile, l'Association internationale du transport aérien, Code maritime international des marchandises dangereuses et le Département américain des Transports. Les batteries doivent répondre aux critères suivants pour l'expédition: 1. les livraisons d'air doivent satisfaire aux exigences énumérées à disposition spéciale A45 de l'Association internationale du transport aérien des marchandises dangereuses Règlement. 2. Répondre aux exigences du ministère américain des Transports répertoriés dans 49 CFR 173,185. 3. Le transport des piles au lithium primaire est interdit à bord des avions de passagers. Reportez-vous au Registre fédéral de 15 Décembre 2004 (matières dangereuses, interdites sur le transport des piles au lithium primaire et cellules Aboard passagers d'avion Règle finale)

Les piles au lithium expédiés comme « batteries au lithium », « Les piles au lithium emballées avec un équipement » ou « piles au lithium contenues dans l'équipement » ne peuvent pas être considérés comme des « marchandises dangereuses » lorsqu'ils sont expédiés conformément à la « disposition A45 spéciale de IATA-DGR » ou " disposition spéciale 188 du code de l'OMI-IMDG »

**(A) Numéro** 3480 & 3481

**ONU**

**(B) l'ONU Nom d'expédition** Batteries lithium-ion (y compris les piles de polymère au lithium-ion) ou; Batteries lithium-ion contenues dans un équipement ou LITHIUM ION batteries emballées avec un équipement (y compris les piles de polymère au lithium-ion)

**(C) classe de danger pour le transport (s)** 9

**(D) des groupes** IA

**d'emballage (le cas échéant)**

**(E) Polluant marin (Oui /** Non

## 10. REGULATORY INFORMATION

*(a) Safety, health and environmental regulations specific for the product in question*

CAS No.	USA TSCA	EU EINECS	Japan ENCS	Korea ECL	China IECSC	Canada DSL
12190-79-3	Listed	Listed	Listed	Listed	Listed	Listed
7782-42-5	Listed	Listed	Not listed	Listed	Not listed	Listed
21324-40-3	Not listed	Not listed	Listed	Not listed	Listed	Not listed
7440-50-8	Not listed	Not listed	Listed	Not listed	Listed	Not listed
7429-90-5	Listed	Listed	Listed	Not listed	Listed	Listed
7440-02-0	Not listed	Listed	Listed	Listed	Not listed	Not listed
9002-86-2	Listed	Not listed	Listed	Listed	Listed	Listed

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## 11. OTHER INFORMATION

TSCA: Toxic Substances Control Act, The American chemical inventory.  
 DSL Domestic Substances List  
 EINECS: European Inventory of Existing Commercial chemical Substances  
 ENCS Japanese Existing and New Chemical Substances  
 ECL: Existing Chemicals List, the Korean chemical inventory.  
 IECS: Inventory of existing chemical substances in China.

Because all of our batteries are defined as "articles", they are exempted from the requirements of the Hazard Communication Standard. The information in this AIS is provided all the relevant data fully and truly. However, the information is provided without any warranty on their absolute extensiveness and accuracy. This AIS was prepared to provide safety preventive measures for the users who have got professional training. The personal user who obtained this AIS should make independent judgment for the applicability of this AIS under special conditions. In these special cases, we do not assume responsibility for the damage.

----- End of the AIS -----

Non)

(F) de Pas d'information disponible.

transport en vrac (selon l'Annexe II de MARPOL 73/78 et au recueil IBC)

(g) Précautions particulières Pas d'information disponible.

(H) Les organisations régissant le transport des batteries au lithium	Zone	Méthode	Organisation	Provision SPECIALE
	Etats-Unis	Aérien, ferroviaire, routier, maritime	POINT	49 CFR Section 173,185

## 10. INFORMATIONS RÉGLEMENTAIRES

(A) la sécurité, de santé et de l'environnement spécifique pour le produit en question

N ° CAS.	Etats-Unis TSCA	UE Eines	Japon ENCS	Corée ECL	Chine IECSC	Canada DSL
12190-79-3	Listed	Listed	Listed	Listed	Listed	Listed
7782-42-5	Listed	Listed	Non listé	Listed	Non listé	Listed
21324-40-3	Non listé	Non listé	Listed	Non listé	Listed	Non listé
7440-50-8	Non listé	Non listé	Listed	Non listé	Listed	Non listé
7429-90-5	Listed	Listed	Listed	Non listé	Listed	Listed
7440-02-0	Non listé	Listed	Listed	Listed	Non listé	Non listé

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9002-86-2	Listed	Non listé	Listed	Listed	Liste d	Listed
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## 11. LES AUTRES INFORMATIONS

TSCA: Toxic Substances Control Act, l'inventaire chimique américain.  
DSL Liste intérieure  
Einecs: Inventaire européen des substances chimiques existantes commerciales  
ENCS Existantes et nouvelles substances chimiques japonaises  
ECL: Liste des produits chimiques existants, l'inventaire chimique coréenne.  
IECSC: Inventaire des substances chimiques existantes en Chine.  
Parce que toutes nos batteries sont définis comme des « articles », ils sont exemptés des exigences de la norme de communication des risques. Les informations contenues dans ce AIS est fourni tous les pleinement et véritablement les données pertinentes. Cependant, les informations sont fournies sans aucune garantie sur leur extensification absolue et la précision. Cet AIS a été préparé à des mesures préventives de sécurité pour les utilisateurs qui ont obtenu la formation professionnelle. L'utilisateur personnel qui a obtenu ce SIA devrait porter un jugement indépendant pour l'applicabilité de cette AIS dans des conditions particulières. Dans ces cas particuliers, nous n'assumons la responsabilité pour les dommages.

----- Fin de l'AIS -----

# SAFETY DATA SHEET

Issuing Date 05-Sep-2017

Revision Date 04-Sep-2017

Revision Number 1

NGHS / English



The supplier identified below generated this SDS using the UL SDS template. UL did not test, certify, or approve the substance described in this SDS, and all information in this SDS was provided by the supplier or was reproduced from publically available regulatory data sources. UL makes no representations or warranties regarding the completeness or accuracy of the information in this SDS and disclaims all liability in connection with the use of this information or the substance described in this SDS. The layout, appearance and format of this SDS is © 2014 UL LLC. All rights reserved.

## 1. IDENTIFICATION

### Product identifier

Product Name CR2032

### Other means of identification

Product Code(s) 1416209

### Recommended use of the chemical and restrictions on use

Recommended Use Lithium Primary/Metal Batteries

Restrictions on use No information available

### Details of the supplier of the safety

data sheet

### Supplier Identification

ChangZhou Anyida Power Technology Co., Ltd

### Address

ChangZhou Xinbei District TianShan Road No. 60  
Changzhou  
Jiangsu  
213000  
CN

### Telephone

Phone:0519-83270441  
j10732@163.com

### E-mail

### Emergency telephone number

0519-83270441

Company Emergency Phone  
Number

## 2. HAZARDS IDENTIFICATION

### Classification

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Vapors)	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A



Reproductive toxicity

Category 1B

This is a battery. In case of rupture: the above hazards exist.

**Appearance** No information available

**Physical state** Solid

**Odor** No information available

**GHS Label elements, including precautionary statements**

**Danger**

**Hazard statements**

Harmful if swallowed

Harmful if inhaled

Causes skin irritation

Causes serious eye irritation

May damage fertility or the unborn child



**Precautionary Statements - Prevention**

Obtain special instructions before use

Do not handle until all safety precautions have been read and understood

Use personal protective equipment as required

Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product

Avoid breathing dust/fume/gas/mist/vapors/spray

Use only outdoors or in a well-ventilated area

**Precautionary Statements - Response**

IF exposed or concerned: Get medical advice/attention

Specific treatment (see supplemental first aid instructions on this label)

**Eyes**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

If eye irritation persists: Get medical advice/attention

**Skin**

IF ON SKIN: Wash with plenty of soap and water

If skin irritation occurs: Get medical advice/attention

Take off contaminated clothing and wash before reuse

**Inhalation**

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

**Ingestion**

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

Rinse mouth

**Precautionary Statements - Storage**

Store locked up

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Other information**

Harmful to aquatic life with long lasting effects.

**Unknown acute toxicity** 93.6 % of the mixture consists of ingredient(s) of unknown toxicity 6.6 % of the mixture consists of ingredient(s) of unknown acute oral toxicity  
 93.6 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity  
 62.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)  
 62.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)  
 61.6 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### Substance

Not applicable.

#### Mixture

Chemical name	CAS No.	Weight-%	Hazardous Material Information Review Act registry number (HMIRA registry #)	Date HMIRA filed and date exemption granted (if applicable)
Iron	7439-89-6	52	-	-
Manganese dioxide	1313-13-9	30	-	-
Graphite	7782-42-5	4.6	-	-
Propylene carbonate	108-32-7	3	-	-
Lithium	7439-93-2	2	-	-
Ethylene glycol dimethyl ether	110-71-4	2	-	-
1,3-Dioxolane	646-06-0	1.3	-	-

### 4. FIRST AID MEASURES

#### First aid measures

##### **General advice**

First aid is upon rupture of sealed battery. Show this safety data sheet to the doctor in attendance.

##### **Inhalation**

Remove to fresh air. Get medical attention immediately if symptoms occur. If breathing has stopped, give artificial respiration. Get medical attention immediately. If symptoms persist, call a physician.

##### **Eye contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Remove contact lenses, if present and easy to do. Continue rinsing. Do not rub affected area. Get medical attention if irritation develops and persists.

##### **Skin contact**

Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.

##### **Ingestion**

Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Get medical attention.

##### **Self-protection of the first aider**

Avoid contact with skin, eyes or clothing. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid breathing dust/fume/gas/mist/vapors/spray. Use personal protective equipment as required. See section 8 for more information.

#### Most important symptoms and effects, both acute and delayed

##### **Symptoms**

Burning sensation. Coughing and/ or wheezing. Difficulty in breathing.



**Indication of any immediate medical attention and special treatment needed**

Note to physicians                      Treat symptomatically.

**5. FIRE-FIGHTING MEASURES**

**Suitable Extinguishing Media**                      Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Large Fire**                                              CAUTION: Use of water spray when fighting fire may be inefficient.

**Unsuitable extinguishing media**                      Do not scatter spilled material with high pressure water streams.  
No information available.

**Specific hazards arising from the chemical**                                              No information available.

**Hazardous Combustion Products**                      Carbon oxides

**Explosion Data**  
     **Sensitivity to Mechanical Impact**                      None.  
     **Sensitivity to Static Discharge**                      None.

**Special protective equipment for fire-fighters**                      Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

**6. ACCIDENTAL RELEASE MEASURES**

**Personal precautions, protective equipment and emergency procedures**                      Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Avoid generation of dust. Do not breathe dust.

**Personal precautions**                                              Refer to protective measures listed in Sections 7 and 8.

**Other Information**                                              Prevent further leakage or spillage if safe to do so.

**Methods and material for containment and cleaning up**                      Pick up and transfer to properly labeled containers

**Methods for containment**

**Methods for cleaning up**

**7. HANDLING AND STORAGE**

**In case of rupture: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes. Take off contaminated clothing and wash before reuse. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid generation of dust. Ensure adequate ventilation.**

**Precautions for safe handling**

**Advice on safe handling**

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach

**Conditions for safe storage, including any incompatibilities**

**Storage Conditions**





of children. Store locked up.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Control parameters**

**Exposure Limits**

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH	
Manganese dioxide 1313-13-9	TWA: 0.02 mg/m <sup>3</sup> Mn respirable particulate matter TWA: 0.1 mg/m <sup>3</sup> Mn inhalable particulate matter	(vacated) Ceiling: 5 mg/m <sup>3</sup> Ceiling: 5 mg/m <sup>3</sup> Mn	IDLH: 500 mg/m <sup>3</sup> Mn TWA: 1 mg/m <sup>3</sup> Mn STEL: 3 mg/m <sup>3</sup> Mn	
Graphite 7782-42-5	TWA: 2 mg/m <sup>3</sup> respirable particulate matter all forms except graphite fibers	TWA: 15 mg/m <sup>3</sup> total dust synthetic TWA: 5 mg/m <sup>3</sup> respirable fraction synthetic (vacated) TWA: 2.5 mg/m <sup>3</sup> respirable dust natural (vacated) TWA: 10 mg/m <sup>3</sup> total dust synthetic (vacated) TWA: 5 mg/m <sup>3</sup> respirable fraction synthetic TWA: 15 mppcf natural	IDLH: 1250 mg/m <sup>3</sup> TWA: 2.5 mg/m <sup>3</sup> respirable dust	
1,3-Dioxolane 646-06-0	TWA: 20 ppm	-		
Chemical name	Alberta	British Columbia	Ontario TWAEV	Quebec
Manganese dioxide 1313-13-9	TWA: 0.2 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup> TWA: 0.02 mg/m <sup>3</sup>	TWA: 0.02 mg/m <sup>3</sup> TWA: 0.1 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup>
Graphite 7782-42-5	TWA: 2 mg/m <sup>3</sup>	TWA: 2 mg/m <sup>3</sup>	TWA: 2 mg/m <sup>3</sup>	TWA: 2 mg/m <sup>3</sup>
Ethylene glycol dimethyl ether 110-71-4			TWA: 5 ppm TWA: 18 mg/m <sup>3</sup> Skin	
1,3-Dioxolane 646-06-0	TWA: 20 ppm TWA: 61 mg/m <sup>3</sup>	TWA: 20 ppm	TWA: 20 ppm	

**Other Exposure Guidelines** Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

**Appropriate engineering controls**

**Engineering controls** Showers  
Eyewash stations  
Ventilation systems.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection** If splashes are likely to occur, wear safety glasses with side-shields.

**Hand protection** Wear suitable gloves. Impervious gloves.

**Skin and body protection** Wear suitable protective clothing. Long sleeved clothing.

**Respiratory protection** No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.



**General hygiene considerations** Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product. Wear suitable gloves and eye/face protection. Avoid contact with skin, eyes or clothing. Avoid breathing dust/fume/gas/mist/vapors/spray.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Physical and Chemical Properties

<b>Physical state</b>	Solid
<b>Appearance</b>	No information available
<b>Odor</b>	No information available
<b>Color</b>	No information available
<b>Odor Threshold</b>	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks Method</u>
<b>pH</b>	No data available	None known
<b>Melting / freezing point</b>	No data available	None known
<b>Boiling point / boiling range</b>	No data available	None known
<b>Flash Point</b>	No data available	None known
<b>Evaporation Rate</b>	No data available	None known
<b>Flammability (solid, gas)</b>	No data available	None known
<b>Flammability Limit in Air</b>		None known
<b>Upper flammability limit</b>	No data available	
<b>Lower flammability limit</b>	No data available	
<b>Vapor pressure</b>	No data available	None known
<b>Vapor density</b>	No data available	None known
<b>Relative density</b>	No data available	None known
<b>Water Solubility</b>	Insoluble in water	
<b>Solubility(ies)</b>	No data available	None known
<b>Partition coefficient: n-octanol/water</b>	No data available	None known
<b>Autoignition temperature</b>	No data available	None known
<b>Decomposition temperature</b>	No data available	None known
<b>Kinematic viscosity</b>	No data available	None known
<b>Dynamic viscosity</b>	No data available	None known

### Other Information

<b>Explosive properties</b>	No information available
<b>Oxidizing properties</b>	No information available
<b>Softening Point</b>	No information available
<b>Molecular Weight</b>	No information available
<b>VOC Content (%)</b>	No information available
<b>Liquid Density</b>	No information available
<b>Bulk Density</b>	No information available
<b>Particle Size</b>	No information available
<b>Particle Size Distribution</b>	No information available

## 10. STABILITY AND REACTIVITY

<b>Reactivity</b>	No information available.
<b>Chemical stability</b>	Stable under normal conditions.
<b>Possibility of Hazardous Reactions</b>	None under normal processing.
<b>Hazardous Polymerization</b>	Hazardous polymerization does not occur.
<b>Conditions to avoid</b>	Excessive heat.

**Incompatible materials** Strong acids. Strong bases. Strong oxidizing agents.

**Hazardous Decomposition Products** Carbon oxides.

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

<b>Product Information</b>	Product does not present an acute toxicity hazard based on known or supplied information In case of rupture:
<b>Inhalation</b>	Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract. Harmful by inhalation. (based on components).
<b>Eye contact</b>	Specific test data for the substance or mixture is not available. Causes serious eye irritation. (based on components). Irritating to eyes.
<b>Skin contact</b>	Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components).
<b>Ingestion</b>	Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Harmful if swallowed. (based on components).

### Information on toxicological effects

**Symptoms** Redness. May cause redness and tearing of the eyes. Coughing and/ or wheezing.

### Numerical measures of toxicity

#### Acute Toxicity

The following values are calculated based on chapter 3.1 of the GHS document .

<b>ATEmix (oral)</b>	862.00 mg/kg
<b>ATEmix (dermal)</b>	41,622.45 mg/kg
<b>ATEmix (inhalation-gas)</b>	5,217.00 mg/L
<b>ATEmix (inhalation-dust/mist)</b>	1.80 mg/L
<b>ATEmix (inhalation-vapor)</b>	12.75 mg/L

**Unknown acute toxicity** 93.6 % of the mixture consists of ingredient(s) of unknown toxicity  
 6.6 % of the mixture consists of ingredient(s) of unknown acute oral toxicity  
 93.6 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity  
 62.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)  
 62.9 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)  
 61.6 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

#### Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Iron	= 30 g/kg ( Rat )	-	-
Manganese dioxide	= 9000 mg/kg ( Rat )	-	> 1500 mg/m <sub>3</sub> ( Rat ) 4 h
Graphite	-	-	> 2000 mg/m <sub>3</sub> ( Rat ) 4 h
Propylene carbonate	= 29000 mg/kg ( Rat )	> 3000 mg/kg ( Rabbit )	-
Ethylene glycol dimethyl ether	> 4000 mg/kg ( Rat ) = 775 mg/kg ( Rat )	1000 - 2000 mg/kg ( Rabbit )	20 - 63 mg/L ( Rat ) 6 h
1,3-Dioxolane	= 3 g/kg ( Rat )	= 8480 mg/kg ( Rabbit ) = 15 g/kg ( Rat ) = 8480 µL/kg ( Rabbit )	= 20650 mg/m <sub>3</sub> ( Rat ) 4 h = 68.4 mg/L ( Rat ) 4 h

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

<b>Skin corrosion/irritation</b>	<b>Classification based on data available for ingredients. Irritating to skin. Classification based on data available for ingredients. Irritating to eyes. No information available.</b>
<b>Serious eye damage/eye irritation</b>	
<b>Respiratory or skin sensitization</b>	
<b>Germ cell mutagenicity</b>	
<b>Carcinogenicity</b>	<b>No information available.</b>
<b>Reproductive toxicity</b>	Classification based on data available for ingredients. Contains a known or suspected reproductive toxin.
<b>STOT - single exposure</b>	No information available.
<b>STOT - repeated exposure</b>	No information available.
<b>Aspiration hazard</b>	No information available.

**12. ECOLOGICAL INFORMATION****Ecotoxicity** Harmful to aquatic life with long lasting effects

Chemical name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Iron	-	96h LC50: = 13.6 mg/L (Morone saxatilis)	-	-
Graphite	-	96h LC50: > 100 mg/L (Danio rerio)	-	-
Propylene carbonate	72h EC50: > 500 mg/L (Desmodesmus subspicatus)	96h LC50: = 5300 mg/L (Leuciscus idus) 96h LC50: > 1000 mg/L (Cyprinus carpio)	EC50 > 10000 mg/L 17 h	48h EC50: > 500 mg/L

**Persistence and Degradability** No information available.**Bioaccumulation**

Chemical name	Log Pow
Manganese dioxide	<0
Propylene carbonate	0.48
1,3-Dioxolane	-0.37

**Mobility** No information available.**Other adverse effects** No information available.**13. DISPOSAL CONSIDERATIONS****Waste treatment methods****Waste from residues/unused products** Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

**Contaminated packaging** Do not reuse empty containers.

**California Waste Codes** 141

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical name	California Hazardous Waste
Lithium 7439-93-2	Corrosive Ignitable Reactive

**14. TRANSPORT INFORMATION**

**Note:** The transportation of primary lithium cells and batteries is regulated by the International Civil Aviation Organization, International Air Transport Association, International Maritime Dangerous Goods Code and the US Department of Transportation. The batteries must meet the following criteria for shipment: 1. Air shipments must meet the requirements listed in Special Provision A45 of the International Air Transport Association Dangerous Goods Regulations. 2. Meet the requirements for the US Department of Transportation listed in 49 CFR 173.185. 3. The transport of primary lithium batteries is prohibited aboard passenger aircraft. Refer to the Federal Register December 15, 2004 (Hazardous Materials; Prohibited on the Transportation of Primary Lithium Batteries and Cells Aboard Passenger Aircraft; Final Rule)  
Lithium batteries shipped as "Lithium batteries", "Lithium batteries packed with equipment", or "Lithium batteries contained in equipment" may not be classified as "Dangerous Goods" when shipped in accordance with "special provision A45 of IATA-DGR" or "special provision 188 of IMO-IMDG Code"

**DOT** NOT REGULATED  
**Proper Shipping Name** NON-REGULATED  
**Emergency Response Guide Number** 138

**TDG** Not regulated

**MEX** Not regulated

**ICAO** Not regulated

**IATA** Not regulated  
**Proper Shipping Name** NON REGULATED  
**Hazard Class** N/A

**IMDG/IMO** Not regulated  
**Proper Shipping Name** NON-REGULATED PER SP 188  
**Hazard Class** N/A  
**EmS-No.** F-A, S-I

**RID** Not regulated

**ADR** Not regulated

**ADN** Not regulated

**15. REGULATORY INFORMATION**



**Safety, health and environmental regulations/legislation specific for the substance or mixture****International Regulations**

Ozone-depleting substances (ODS) Not applicable

Persistent Organic Pollutants Not applicable

Export Notification requirements Not applicable

**International Inventories**

<b>TSCA</b>	Contact supplier for inventory compliance status.
<b>DSL/NDSL</b>	Contact supplier for inventory compliance status.
<b>EINECS/ELINCS</b>	Contact supplier for inventory compliance status.
<b>ENCS</b>	Contact supplier for inventory compliance status.
<b>KECL</b>	Contact supplier for inventory compliance status.
<b>PICCS</b>	Contact supplier for inventory compliance status.
<b>AICS</b>	Contact supplier for inventory compliance status.

**Legend****TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances**ENCS** - Japan Existing and New Chemical Substances**KECL** - Korean Existing and Evaluated Chemical Substances **PICCS** -Philippines Inventory of Chemicals and Chemical Substances **AICS** -

Australian Inventory of Chemical Substances

**US Federal Regulations****SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical name	CAS No.	Weight-%	SARA 313 - Threshold Values %
Manganese dioxide - 1313-13-9	1313-13-9	30	1.0
Ethylene glycol dimethyl ether - 110-71-4	110-71-4	2	1.0

**SARA 311/312 Hazard Categories**

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications. Under the amended regulations at 40 CFR 370, EPCRA 311/312 Tier II reporting for the 2017 calendar year will need to be consistent with updated hazard classifications.

**CWA (Clean Water Act)**

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

**US State Regulations****California Proposition 65**

This product does not contain any Proposition 65 chemicals.



**U.S. State Right-to-Know Regulations**

This product may contain substances regulated by state right-to-know regulations.

Chemical name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
Manganese dioxide 1313-13-9	X		X	X	X
Graphite 7782-42-5	X	X	X		
Lithium 7439-93-2	X	X	X		
Ethylene glycol dimethyl ether 110-71-4	X	X	X	X	X
1,3-Dioxolane 646-06-0	X	X	X		

**16. OTHER INFORMATION**

<b>NFPA</b>	Health hazards 1	Flammability 0	Instability 0	Physical and Chemical Properties -
<b>HMIS</b>	Health hazards 0	Flammability 0	Physical hazards 0	Personal Protection X

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**Issuing Date** 05-Sep-2017

**Revision Date** 04-Sep-2017

**Revision Note** No information available

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of Safety Data Sheet**