

Switch 10

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Date of issue: November 2, 2016 Version: 1.0

SECTION 1: Identification

1.1. Identification

Trade name : Switch 10

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Charger for electronic devices.
Capacity : 11Wh, 3000mAh (3.7V)

1.3. Details of the supplier of the safety data sheet

Goal Zero
675 West 14600 South
Bluffdale, UT 84065
T (888) 794-6250

1.4. Emergency telephone number

Emergency number : US & Canada:1-800-535-5053 International: 1-352-323-3500 (Infotrac)

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

This product is non-hazardous in its current form. If the battery opens or leaks, the following hazards apply:

GHS-US classification

Acute toxicity (oral), Category 4	H302
Skin corrosion/irritation, Category 1A	H314
Serious eye damage/eye irritation, Category 1	H318
Reproductive toxicity, Category 2	H361
Specific target organ toxicity — Repeated exposure, Category 1	H372

Full text of H statements: see section 16

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage
H361 - Suspected of damaging fertility or the unborn child
H372 - Causes damage to organs through prolonged or repeated exposure

Precautionary statements (GHS-US) :

P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P260 - Do not breathe fume, mist, spray, vapors
P264 - Wash hands thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P280 - Wear eye protection, protective gloves, Respiratory protection
P301+P312 - If swallowed: Call a POISON CENTER if you feel unwell
P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P330 - Rinse mouth
P363 - Wash contaminated clothing before reuse
P405 - Store locked up
P501 - Dispose of contents/container to comply with applicable local, national and international regulation

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2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS-US classification
Cobaltate (CoO21-), lithium	(CAS No) 12190-79-3	20 - 50	Repr. 2, H361
Ethylene carbonate	(CAS No) 96-49-1	10 - 20	Eye Irrit. 2A, H319 STOT RE 2, H373
Phosphate(1-), hexafluoro-, lithium	(CAS No) 21324-40-3	10 - 20	Acute Tox. 3 (Oral), H301 Skin Corr. 1A, H314 Eye Dam. 1, H318 STOT RE 1, H372
Copper	(CAS No) 7440-50-8	2 - 10	Acute Tox. 4 (Oral), H302 Aquatic Acute 1, H400 Aquatic Chronic 3, H412

Full text of hazard classes and H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : If a battery ruptures, remove victim to fresh air and keep at rest in a position comfortable for breathing. IF exposed or concerned: Get medical advice/attention.
- First-aid measures after skin contact : If a battery ruptures, remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER or doctor/physician.
- First-aid measures after eye contact : If a battery ruptures, rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.
- First-aid measures after ingestion : If a battery ruptures, drink directly plenty of water or milk. Induce vomiting. Immediately call a POISON CENTER or doctor/physician.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries : If a battery ruptures: Suspected of damaging fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure.
- Symptoms/injuries after inhalation : If a battery ruptures, prolonged exposure to liquid may cause a mild irritation.
- Symptoms/injuries after skin contact : If a battery ruptures, causes severe skin burns.
- Symptoms/injuries after eye contact : If a battery ruptures, causes serious eye damage.
- Symptoms/injuries after ingestion : If a battery ruptures, may be harmful if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Minimal fire hazard. Battery may rupture due to pressure buildup when exposed to excessive heat and may be result in the release of corrosive materials. On combustion, forms: carbon oxides and lithium oxides.
- Explosion hazard : None known.
- Reactivity : None under normal conditions.

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering the environment.
- Protective equipment for firefighters : Do not enter fire area without proper protective equipment, including respiratory protection.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection. For disposal of residues refer to section 13 : Disposal considerations.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Provide good ventilation in process area to prevent formation of vapor. Do not breathe fume, mist, spray, vapors. Avoid contact during pregnancy/while nursing. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

Hygiene measures : Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Comply with applicable regulations.

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Heat sources. Keep container closed when not in use.

Incompatible materials : Oxidizing agents. Strong alkalis. Water.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Cobaltate (CoO21-), lithium (12190-79-3)

Not applicable

Copper (7440-50-8)

ACGIH	ACGIH TWA (mg/m ³)	0.2 mg/m ³ (fume)
OSHA	OSHA PEL (TWA) (mg/m ³)	0.1 mg/m ³ (fume) 1 mg/m ³ (dust and mist)
IDLH	US IDLH (mg/m ³)	100 mg/m ³ (dust, fume and mist)
NIOSH	NIOSH REL (TWA) (mg/m ³)	1 mg/m ³ (dust and mist) 0.1 mg/m ³ (fume)

Ethylene carbonate (96-49-1)

Not applicable

Phosphate(1-), hexafluoro-, lithium (21324-40-3)

Not applicable

8.2. Exposure controls

Appropriate engineering controls : Provide adequate ventilation. Provide local exhaust or general room ventilation to minimize vapor concentrations. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Hand protection : Impervious gloves e.g. PVC, nitrile rubber, butyl rubber if handling an open or leaking battery.

Eye protection : Chemical goggles or face shield if handling an open or leaking battery.

Skin and body protection : If handling an open or leaking battery: Long sleeved protective clothing. Rubber Apron.

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Respiratory protection	: NIOSH/MSHA approved air purifying respirator should be used if operating conditions produce airborne concentrations that exceed exposure limits for any individual components. If conditions immediately dangerous to life or health exist, use NIOSH/MSHA self contained breathing apparatus (SCBA) when handling an open or leaking battery.
Other information	: Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Colour	: Colourless
Odour	: Odourless (smells of medical ether if leaks)
Odour threshold	: No data available
pH	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Flammability (solid, gas)	: Non flammable.
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Solubility	: Insoluble in water
Log Pow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive limits	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

None under normal conditions.

10.2. Chemical stability

Stable under normal conditions of use.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Overcharging. Humidity.

10.5. Incompatible materials

oxidizing agents. Strong alkalis. Water.

10.6. Hazardous decomposition products

On combustion, forms carbon oxides and lithium Oxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Oral: Harmful if swallowed.

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ATE US (oral)	454.545 mg/kg bodyweight
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Skin corrosion/irritation	: Causes severe skin burns.
Serious eye damage/irritation	: Causes serious eye damage.
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Suspected of damaging fertility or the unborn child.
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Causes damage to organs through prolonged or repeated exposure.
Aspiration hazard	: Not classified
Symptoms/injuries after inhalation	: If a battery ruptures, prolonged exposure to liquid may cause a mild irritation.
Symptoms/injuries after skin contact	: If a battery ruptures, causes severe skin burns.
Symptoms/injuries after eye contact	: If a battery ruptures, causes serious eye damage.
Symptoms/injuries after ingestion	: If a battery ruptures: May be harmful if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
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Copper (7440-50-8)	
LC50 fish 1	0.0068 - 0.0156 mg/l (Exposure time: 96 h - Species: Pimephales promelas)
EC50 Daphnia 1	0.03 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
LC50 fish 2	< 0.3 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])

12.2. Persistence and degradability

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Persistence and degradability	Not established.

12.3. Bioaccumulative potential

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Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on global warming	: No known effects from this product.
GWPmix comment	: No known effects from this product.
Other information	: Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations	: Dispose of contents/container to comply with applicable local, national and international regulation.
Ecology - waste materials	: Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description	: UN3481 Lithium ion batteries, contained in equipment including lithium ion polymer batteries, 9
UN-No.(DOT)	: UN3481
Proper Shipping Name (DOT)	: Lithium ion batteries, contained in equipment including lithium ion polymer batteries
Hazard labels (DOT)	: 9 - Class 9 (Miscellaneous dangerous materials)

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DOT Packaging Non Bulk (49 CFR 173.xxx)	: 185
DOT Packaging Bulk (49 CFR 173.xxx)	: 185
DOT Special Provisions (49 CFR 172.102)	: A54 - Lithium batteries or lithium batteries contained or packed with equipment that exceed the maximum gross weight allowed by Column (9B) of the 172.101 Table may only be transported on cargo aircraft if approved by the Associate Administrator
DOT Packaging Exceptions (49 CFR 173.xxx)	: 185
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 5 kg
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 35 kg
DOT Vessel Stowage Location	: A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel
Emergency Response Guide (ERG) Number	: 147
Other information	: No supplementary information available.

TDG

Not applicable

Transport by sea

UN-No. (IMDG)	: 3481
Proper Shipping Name (IMDG)	: LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT
Class (IMDG)	: 9 - Miscellaneous dangerous substances and articles
Limited quantities (IMDG)	: N/A
Provision (IMDG)	: 188

Air transport

UN-No. (IATA)	: 3481 (Section 1B)
Proper Shipping Name (IATA)	: Lithium ion batteries contained in equipment
Class (IATA)	: 9 - Miscellaneous Dangerous Goods
Packing Instructions	: 967 (57 th Edition)

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

Copper	CAS No 7440-50-8	2 - 10%
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Copper (7440-50-8)

CERCLA RQ	5000 lb no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm
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15.2. International regulations

CANADA

Cobaltate (CoO21-), lithium (12190-79-3)

Listed on the Canadian DSL (Domestic Substances List)

Copper (7440-50-8)

Listed on the Canadian DSL (Domestic Substances List)

Ethylene carbonate (96-49-1)

Listed on the Canadian DSL (Domestic Substances List)

Phosphate(1-), hexafluoro-, lithium (21324-40-3)

Listed on the Canadian NDSL (Non-Domestic Substances List)

EU-Regulations

Cobaltate (CoO21-), lithium (12190-79-3)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

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Copper (7440-50-8)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Ethylene carbonate (96-49-1)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Phosphate(1-), hexafluoro-, lithium (21324-40-3)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

Cobaltate (CoO21-), lithium (12190-79-3)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Japanese Pollutant Release and Transfer Register Law (PRTR Law)

Copper (7440-50-8)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the Canadian IDL (Ingredient Disclosure List)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on CICR (Turkish Inventory and Control of Chemicals)

Ethylene carbonate (96-49-1)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

Phosphate(1-), hexafluoro-, lithium (21324-40-3)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

Date of Issue : November 2, 2016

Other information : None.

Full text of H-statements:

H301	Toxic if swallowed
H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
H319	Causes serious eye irritation
H361	Suspected of damaging fertility or the unborn child
H372	Causes damage to organs through prolonged or repeated exposure
H373	May cause damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H412	Harmful to aquatic life with long lasting effects

Abbreviations and acronyms:

PVC	(Polyvinyl chloride).
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SDS US (GHS HazCom 2012)

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This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product