#### Issuing Date 24-Jan-2017

# SAFETY DATA SHEET

Revision Date 24-Jan-2017

Revision Number 3

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## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier	
Product Name	120V 3Ah Rechargeable Lithium Ion Battery Pack 360Wh
Other means of identification	
UN-No.	UN3480
Synonyms	None
Recommended use of the chemical	and restrictions on use
Recommended Use	LITHIUM ION BATTERIES
Uses advised against	No information available
Details of the supplier of the safety	data sheet
Supplier Name	Frictionless World
Supplier Address	1100 West 120th Avenue Suite 600 Westminster CO 80234 US
Supplier Phone Number	Phone:720-287-5182
Supplier Email	kabegg@frictionlessworld.com
Emergency telephone number	
Company Emergency Phone Number	720-287-5182

# 2. HAZARDS IDENTIFICATION

#### **Classification**

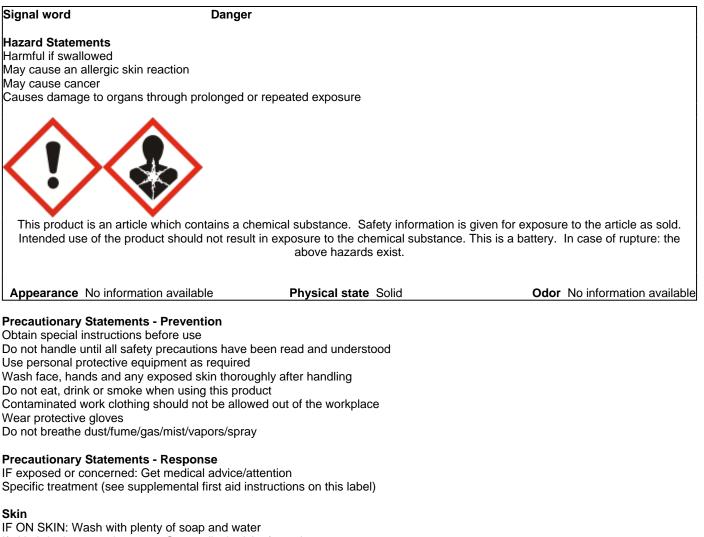
This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). This product is an article which is a sealed battery and as such does not require an MSDS per the OSHA hazard communication standard unless ruptured. The hazards indicated are for a ruptured battery.



Acute toxicity - Oral	Category 4
Skin sensitization	Category 1
Carcinogenicity	Category 1A
Specific target organ toxicity (repeated exposure)	Category 1

#### **GHS Label elements, including precautionary statements**

#### **Emergency Overview**



If skin irritation or rash occurs: Get medical advice/attention

Wash contaminated clothing before reuse

#### 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

#### Hazards not otherwise classified (HNOC)

Not applicable

#### Unknown Toxicity

20 % of the mixture consists of ingredient(s) of unknown toxicity

#### Other information

Very toxic to aquatic life with long lasting effects Repeated or prolonged skin contact may cause allergic reactions with susceptible persons

#### **Interactions with Other Chemicals**

Use of alcoholic beverages may enhance toxic effects.

## **3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical name	CAS No	Weight-%	Trade Secret
Nickel oxide	1313-99-1	10 - 30	*
Manganese dioxide	1313-13-9	10 - 30	*
Cobalt(II) oxide	1307-96-6	10 - 30	*
Aluminum foil	7429-90-5	7 - 13	*
Ci 77400	7440-50-8	3 - 7	*

\*The exact percentage (concentration) of composition has been withheld as a trade secret

## 4. FIRST AID MEASURES

#### First aid measures

General Advice	First aid is upon rupture of sealed battery.	
Eye contact	Rinse thoroughly with plenty of water, also under the eyelids. If symptoms persist, call a physician.	
Skin contact	Wash with soap and water. May cause an allergic skin reaction. In the case of skin irritation or allergic reactions see a physician.	
Inhalation	Remove to fresh air.	
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.	
Most important symptoms and effects, both acute and delayed		
Most Important Symptoms and Effects	Coughing and/ or wheezing. Difficulty in breathing. Itching. Rashes. Hives.	
Indication of any immediate medica	al attention and special treatment needed	
Notes to Physician	May cause sensitization in susceptible persons. Treat symptomatically.	



## **5. FIRE-FIGHTING MEASURES**

## Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

#### Unsuitable extinguishing media

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

#### Specific hazards arising from the chemical

Product is or contains a sensitizer. May cause sensitization by skin contact.

#### Hazardous Combustion Products

Carbon oxides.

#### Explosion Data Sensitivity to Mechanical Impact No.

Sensitivity to Static Discharge No.

#### Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## 6. ACCIDENTAL RELEASE MEASURES

#### Personal precautions, protective equipment and emergency procedures

Personal precautions	Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas.
Other Information	Refer to protective measures listed in Sections 7 and 8.
Environmental precautions	
Environmental precautions	Refer to protective measures listed in Sections 7 and 8.
Methods and material for containme	ent and cleaning up
Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Pick up and transfer to properly labeled containers.



## 7. HANDLING AND STORAGE

#### Precautions for safe handling

 Handling
 In case of rupture: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Use personal protection equipment.

 Conditions for safe storage, including any incompatibilities
 Storage

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

 Incompatible Products
 None known based on information supplied.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Control parameters

#### **Exposure Guidelines**

The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Nickel oxide 1313-99-1	TWA: 0.2 mg/m <sup>3</sup>	TWA: 1 mg/m³ Ni (vacated) TWA: 1 mg/m³ Ni	IDLH: 10 mg/m <sup>3</sup> Ni TWA: 0.015 mg/m <sup>3</sup> except Nickel carbonyl Ni
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/m³ Mn TWA: 1 mg/m³ Mn STEL: 3 mg/m³ Mn
Cobalt(II) oxide 1307-96-6	TWA: 0.02 mg/m <sup>3</sup> Co	-	
Aluminum foil 7429-90-5	TWA: 1 mg/m <sup>3</sup> respirable particulate matter	TWA: 15 mg/m <sup>3</sup> total dust TWA: 5 mg/m <sup>3</sup> respirable fraction (vacated) TWA: 15 mg/m <sup>3</sup> total dust (vacated) TWA: 5 mg/m <sup>3</sup> respirable fraction (vacated) TWA: 5 mg/m <sup>3</sup> Al Aluminum	TWA: 10 mg/m <sup>3</sup> total dust TWA: 5 mg/m <sup>3</sup> respirable dust
Ci 77400 7440-50-8	TWA: 0.2 mg/m <sup>3</sup> fume TWA: 1 mg/m <sup>3</sup> Cu dust and mist	TWA: 0.1 mg/m³ fume TWA: 1 mg/m³ dust and mist (vacated) TWA: 0.1 mg/m³ Cu dust, fume, mist	IDLH: 100 mg/m <sup>3</sup> dust, fume and mist TWA: 1 mg/m <sup>3</sup> dust and mist TWA: 0.1 mg/m <sup>3</sup> fume

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits NIOSH IDLH Immediately Dangerous to Life or Health

**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 Measures** 

Showers Eyewash stations Ventilation systems



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

Eye/face protection	Wear safety glasses with side shields (or goggles).
Skin and body protection	Wear protective gloves and protective 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.
Hygiene Measures	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.

# 9. PHYSICAL AND CHEMICAL PROPERTIES

#### **Physical and Chemical Properties**

Physical state	Solid		
Appearance	No information available	Odor	No information available
Color	No information available	Odor Threshold	No information available
Property_	Values	<b>Remarks Method</b>	
рН	No data available	None known	
Melting / freezing point	No data available	None known	
Boiling point / boiling range	No data available	None known	
Flash Point	No data available	None known	
Evaporation Rate	No data available	None known	
Flammability (solid, gas)	No data available	None known	
Flammability Limit in Air			
Upper flammability limit	No data available		
Lower flammability limit	No data available		
Vapor pressure	No data available	None known	
Vapor density	No data available	None known	
Specific Gravity	No data available	None known	
Water Solubility	Insoluble in water	None known	
Solubility in other solvents	No data available	None known	
Partition coefficient: n-octanol/wa	<b>ter</b> No data available	None known	
Autoignition temperature	No data available	None known	
Decomposition temperature	No data available	None known	
Kinematic viscosity	No data available	None known	
Dynamic viscosity	No data available	None known	
Explosive properties	No data available		
Oxidizing properties	No data available		
Other Information			
Softening Point	No data available		
VOC Content (%)	No data available		
Particle Size	No data available		
Particle Size Distribution			

## **10. STABILITY AND REACTIVITY**

#### **Reactivity**

No data available.

#### Chemical stability

Stable under recommended storage conditions.

## Possibility of Hazardous Reactions

None under normal processing.

#### Hazardous Polymerization

Hazardous polymerization does not occur.

## Conditions to avoid

Excessive heat.

#### Incompatible materials

None known based on information supplied.

#### **Hazardous Decomposition Products**

Carbon oxides.

# **11. TOXICOLOGICAL INFORMATION**

## Information on likely routes of exposure

Product Information	Product does not present an acute toxicity hazard based on known or supplied information. In case of rupture:.
Inhalation	Specific test data for the substance or mixture is not available.
Eye contact	Specific test data for the substance or mixture is not available.
Skin contact	Specific test data for the substance or mixture is not available.
Ingestion	Specific test data for the substance or mixture is not available. Harmful if swallowed. (based on components).

#### **Component Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Nickel oxide	> 5000 mg/kg (Rat)	-	-
1313-99-1			
Manganese dioxide	= 9000 mg/kg (Rat)	-	-
1313-13-9			
Cobalt(II) oxide	= 159 mg/kg (Rat) = 202 mg/kg (	-	-
1307-96-6	Rat )		

#### Information on toxicological effects

#### Symptoms

Coughing and/ or wheezing. Itching. Rashes. Hives.



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

Sensitization	May cause sensitization in susceptible persons. May cause sensitization by skin contact.
Mutagenic Effects	No information available.

Carcinogenicity

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
Nickel oxide 1313-99-1	A1	Group 1	Known	X
Cobalt(II) oxide 1307-96-6	A3	Group 2B		Х

ACGIH (American Conference of Governmental Industrial Hygienists) A1 - Known Human Carcinogen A3 - Animal Carcinogen IARC (International Agency for Research on Cancer) Group 1 - Carcinogenic to Humans Group 2B - Possibly Carcinogenic to Humans NTP (National Toxicology Program) Known - Known Carcinogen OSHA (Occupational Safety and Health Administration of the US Department of Labor)

X - Present

Reproductive toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	Causes damage to organs through prolonged or repeated exposure. Based on classification criteria from the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200), this product has been determined to cause systemic target organ toxicity from chronic or repeated exposure. (STOT RE).
Chronic Toxicity	Contains a known or suspected carcinogen. Avoid repeated exposure. Prolonged exposure may cause chronic effects. May cause adverse effects on the bone marrow and blood-forming system. May cause adverse liver effects.
Target Organ Effects	Respiratory system. Skin. Eyes. Gastrointestinal tract (GI). Blood. Central Nervous System (CNS). Central Vascular System (CVS). Kidney. Liver. Lungs. Nasal cavities. Digestive System. Endocrine system. Heart. Thyroid. Cardiovascular system.
Aspiration Hazard	No information available.

#### Numerical measures of toxicity Product Information

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

ATEmix (oral) 1,000.00 mg/kg ATEmix (inhalation-gas) 18,000.00 ppm ATEmix (inhalation-dust/mist) 6.00 mg/l ATEmix (inhalation-vapor) 44.00 ATEmix



## **12. ECOLOGICAL INFORMATION**

## Ecotoxicity

Very toxic to aquatic life with long lasting effects.

Chemical name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Nickel oxide	72h EC50: > 127.3 mg/L	96h LC50: > 100 mg/L		48h EC50: > 100 mg/L
1313-99-1	(Pseudokirchneriella subcapitata)	(Brachydanio rerio)		
Ci 77400	96h EC50: 0.031 - 0.054	96h LC50: 0.0068 - 0.0156		48h EC50: = 0.03 mg/L
7440-50-8		mg/L (Pimephales promelas)		
	subcapitata) 72h EC50:	96h LC50: = 1.25 mg/L		
	0.0426 - 0.0535 mg/L	(Lepomis macrochirus) 96h		
	(Pseudokirchneriella	LC50: = 0.052 mg/L		
	subcapitata)	(Oncorhynchus mykiss) 96h		
		LC50: = 0.2 mg/L		
		(Pimephales promelas) 96h		
		LC50: < 0.3 mg/L		
		(Pimephales promelas) 96h		
		LC50: = 0.112 mg/L		
		(Poecilia reticulata) 96h		
		LC50: = 0.3 mg/L (Cyprinus		
		carpio) 96h LC50: = 0.8		
		mg/L (Cyprinus carpio)		

# Persistence and Degradability No information available.

## **Bioaccumulation**

Chemical name	Log Pow
Manganese dioxide	<0
1313-13-9	

## Other adverse effects

No information available.

## **13. DISPOSAL CONSIDERATIONS**

#### Waste treatment methods

Disposal methods	This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.
Contaminated Packaging	Dispose of contents/containers in accordance with local regulations.

#### California Hazardous 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
Cobalt(II) oxide 1307-96-6	Тохіс
Aluminum foil 7429-90-5	Ignitable powder
Ci 77400 7440-50-8	Тохіс

# **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 Iisted 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 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 UN-No. Proper Shipping Name Hazard Class Description Emergency Response Guide Number	UN3480 LITHIUM ION BATTERIES 9 UN3480, LITHIUM ION BATTERIES, 9 147
TDG UN-No. Proper Shipping Name Hazard Class Marine Pollutant Description	UN3480 LITHIUM ION BATTERIES 9 This product contains a chemical which is listed as a severe marine pollutant according to TDG. UN3480, LITHIUM ION BATTERIES, 9

UN3480

UN3480

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9

9

9

9 F-A, S-I

9

9

M4

M4

LITHIUM ION BATTERIES

UN3480, LITHIUM ION BATTERIES, 9

MEX
UN-No.
Proper Shipping Name
Hazard Class

Description ICAO UN-No.

Proper Shipping Name Hazard Class Description

#### <u>IATA</u>

UN-No. Proper Shipping Name Hazard Class Description

#### IMDG/IMO

UN-No. Proper Shipping Name Hazard Class EmS-No. Description

### RID

UN-No. Proper Shipping Name Hazard Class Classification code Description

#### <u>ADR</u>

UN-No. Proper Shipping Name Hazard Class Classification code Description

## <u>ADN</u>

UN-No.UN3480Proper Shipping NameLITHIUM ION BATTERIESHazard Class9Classification codeM4Special Provisions188, 230, 310, 348, 636, 661DescriptionUN3480, LITHIUM ION BATTERIES, 9Limited Quantity0

## **15. REGULATORY INFORMATION**

#### International Inventories

TSCA DSL Not determined Not determined

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory **DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

## 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	SARA 313 - Threshold Values %	
Nickel oxide - 1313-99-1	1313-99-1	10 - 30	0.1
Manganese dioxide - 1313-13-9	1313-13-9	10 - 30	1.0
Cobalt(II) oxide - 1307-96-6	1307-96-6	10 - 30	0.1
Aluminum foil - 7429-90-5	7429-90-5	7 - 13	1.0
Ci 77400 - 7440-50-8	7440-50-8	3 - 7	1.0
SARA 311/312 Hazard Categories			
Acute Health Hazard	No		
Chronic Health Hazard	No		
Fire Hazard	No		
Sudden release of pressure hazard	No		
Reactive Hazard	No		

#### CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Nickel oxide 1313-99-1		Х		

## CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Aluminum foil 7429-90-5			
Ci 77400 7440-50-8			RQ 5000 lb final RQ RQ 2270 kg final RQ

## US State Regulations

#### California Proposition 65

This product contains the following Proposition 65 chemicals.

Chemical name	California Proposition 65		
Cobalt(II) oxide - 1307-96-6	Carcinogen		
Nickel oxide - 1313-99-1	Carcinogen		

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

Chemical name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
Cobalt(II) oxide 1307-96-6	Х		Х	Х	Х
Manganese dioxide 1313-13-9	Х		Х	Х	Х
Nickel oxide 1313-99-1	Х	Х	Х	Х	Х
Aluminum foil 7429-90-5	Х	Х	Х	Х	
Ci 77400 7440-50-8	Х	X	Х	Х	Х

## International Regulations



## Mexico

## National occupational exposure limits

Chemical name	Carcinogen Status	Exposure Limits	
Manganese dioxide		Mexico: TWA= 0.2 mg/m <sup>3</sup>	
Aluminum foil		Mexico: TWA 10 mg/m <sup>3</sup>	
Ci 77400		Mexico: TWA 0.2 mg/m <sup>3</sup> Mexico: TWA 1 mg/m <sup>3</sup> Mexico: STEL 2 mg/m <sup>3</sup>	

Mexico - Occupational Exposure Limits - Carcinogens

#### Canada

## WHMIS Hazard Class

Non-controlled

## **16. OTHER INFORMATION**

NFPA	Health Hazards 1	Flammability 0	Instability 0	Physical and Chemical Hazards -
HMIS	Health Hazards 0	Flammability 0	Physical Hazard 0	Personal Protection X
Prepared By	Product Stewardship 23 British American Blvd. Latham, NY 12110 1-800-572-6501			
Issuing Date Revision Date Revision Note	24-Jan-20 24-Jan-20 No inform			

#### 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

