SAFETY DATA SHEET

Issuing Date 17- March -2024 Revision Date 17- March -2024 **Revision Number** 1

NGHS / English



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1. IDENTIFICATION

IP-03-8535-001 Product identifier

Product Name Rechargeable Li-Ion Battery

Other means of identification

Product Code(s)

Recommended use of the chemical and restrictions on use

Recommended Use LITHIUM ION BATTERIES

Restrictions on use No information available

Details of the supplier of the safety data sheet

Inventus Power, Inc **Supplier Identification**

Address 1200 Internationale Parkway, Woodridge, IL 60517 USA

> Woodridge Illinois 60517 US

Telephone Phone:86.20.39298880

Fax:86.20.39958318

E-mail ligang@inventuspower.com

Emergency telephone number

Company Emergency Phone

Number

86.20.39298880-6802

2. HAZARDS IDENTIFICATION

Classification

Acute toxicity - Oral Category 4



Skin sensitization	Category 1
Carcinogenicity	Category 1A
Specific target organ toxicity (repeated exposure)	Category 1

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 May cause an allergic skin reaction May cause cancer Causes damage to organs through prolonged or repeated exposure



Precautionary Statements - Prevention

Obtain special instructions before use

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

Wear protective gloves/protective clothing/eye protection/face protection

Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product

Contaminated work clothing must not be allowed out of the workplace

Do not breathe dust/fume/gas/mist/vapors/spray

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention

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

Skin

IF ON SKIN: Wash with plenty of water and soap

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

Wash contaminated clothing before reuse

Ingestion

IF SWALLOWED: Call a POISON CENTER or doctor 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

Causes mild skin irritation. Very toxic to aquatic life with long lasting effects.

Unknown acute toxicity 100 % of the mixture consists of ingredient(s) of unknown toxicity



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80 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

100 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)

100 % 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	Percent	Hazardous Material Information Review Act registry number (HMIRA registry #)	Date HMIRA filed and date exemption granted (if applicable)
Nickel	7440-02-0	5	-	-
Cobalt lithium manganese nickel oxide	182442-95-1	31	-	-
Carbon	7440-44-0	23	-	-
Ethylene Carbonate	96-49-1	4	-	-
Diethyl Carbonate	105-58-8	3	-	-
Phosphate(1-), hexafluoro-, lithium	21324-40-3	19	-	-
Copper	7440-50-8	5	-	-
Aluminium	7429-90-5	5	-	-
Iron	7439-89-6	5	-	-

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. IF exposed or concerned: Get medical advice/attention.

Inhalation Remove to fresh air.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids.

Consult 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.

Ingestion Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water.

Never give anything by mouth to an unconscious person. Call a physician.

Most important symptoms and effects, both acute and delayed

Symptoms Itching. Rashes. Hives.

Indication of any immediate medical attention and special treatment needed



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Note to physicians May cause sensitization in susceptible persons. Treat symptomatically.

5. FIRE-FIGHTING MEASURES

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 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

Personal precautions Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal

protective equipment as required. Evacuate personnel to safe areas. Keep people away

from and upwind of spill/leak.

Other Information Refer to protective measures listed in Sections 7 and 8.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning upPick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling In case of rupture: Handle in accordance with good industrial hygiene and safety practice.

Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Do not eat, drink or smoke when using this

product. Take off contaminated clothing and wash before reuse.

Conditions for safe storage, including any incompatibilities

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

of children. Store locked up.



8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Limits

Chemical name		ACGIH T	LV	03	SHA PEL		NIOSH IDLH
Cobalt lithium manganese	nickel				: 3 mg/m³ Ni		IDLH: 10 mg/m ³
oxide		particulate n	natter	(vacated)	TWA: 1 mg/m ³ Ni		TWA: 5 mg/m ³
182442-95-1 Carbon		TWA: 2 mg/m ³	rooniroblo	T\\\\\\ 1 F \	ng/m ³ total dust		IDLH: 1250 mg/m ³
7440-44-0		particulate matte			ynthetic	Τ\Λ/Δ	: 2.5 mg/m ³ respirable
7110110		except graphit			g/m³ respirable	. ***	dust
				fractio	n synthetic		
					TWA: 2.5 mg/m ³		
					e dust natural		
					VA: 10 mg/m ³ total synthetic		
) TWA: 5 mg/m ³		
					raction synthetic		
				TWA: 15	5 mppcf natural		
Copper		TWA: 0.2 mg/m ³ f			1 mg/m ³ fume		: 100 mg/m ³ dust, fume
7440-50-8		mg/m ³ Cu dust	and mist		m ³ dust and mist	and r	mist IDLH: 100 mg/m³ Cu
					WA: 0.1 mg/m ³ Cu , fume, mist	T\\\/ \.	dust and mist 1 mg/m ³ dust and mist
				uusi	, rume, mist		0.1 mg/m ³ fume TWA:
							g/m ³ Cu dust and mist
Aluminum		TWA: 1 mg/m ³	respirable	TWA: 15 n	ng/m ³ total dust		A: 10 mg/m ³ total dust
7429-90-5		particulate n	natter		g/m ³ respirable		A: 5 mg/m ³ respirable
				· ·	fraction		ust TWA: 5 mg/m ³ Al
				(vacated) I v	VA: 15 mg/m³ total dust		
				(vacated)) TWA: 5 mg/m ³		
					fraction (vacated)		
				TWA: 5 mg	/m³ Al Àluminum		
Chemical name		Alberta	British C		Ontario TWAE		Quebec
Cobalt lithium	T۱	WA: 0.5 mg/m ³	TWA: 0.0)8 mg/m ³	TWA: 0.5 mg/n	N ³	TWA: 1 mg/m ³
manganese nickel oxide 182442-95-1							
Carbon	7	ΓWA: 2 mg/m ³	TWA: 2	2 mg/m ³	TWA: 2 mg/m	3	TWA: 2 mg/m ³
7440-44-0		<u>.</u>	2	9,			
Copper		WA: 0.2 mg/m ³	TWA: 1	mg/m³	TWA: 0.2 mg/n	n ³	TWA: 0.2 mg/m ³
7440-50-8		ΓWA: 1 mg/m ³		2 mg/m ³	TWA: 1 mg/m		TWA: 1 mg/m ³
Aluminum	TWA:	: 10 mg/m ³ TWA: 5	TWA: 1.	0 mg/m ³	TWA: 1 mg/m	3	TWA: 10 mg/m ³ TWA: 5
7429-90-5		mg/m³					mg/m ³

Other Exposure Guidelines

Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992). See section 15 for national exposure control parameters.

Appropriate engineering controls

Engineering controls

Showers

Eyewash stations Ventilation systems.



Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Hand protection Wear suitable gloves.

Skin and body protection Wear suitable 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.

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

None known

None known

None known

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 Remarks Method 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

No data available

Flammability (solid, gas) 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 Relative density No data available None known

Water Solubility Insoluble in water Solubility(ies) No data available Partition coefficient: n-octanol/waterNo 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

Other Information

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

10. STABILITY AND REACTIVITY



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Reactivity No information available.

Chemical stability Stable under normal conditions.

Possibility of Hazardous Reactions None under normal processing.

Hazardous Polymerization Hazardous polymerization does not occur.

Conditions to avoidNone known based on information supplied.

Incompatible materialsNone 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. May cause sensitization by

skin contact. (based on components). Repeated or prolonged skin contact may cause

allergic reactions with susceptible persons.

Ingestion Specific test data for the substance or mixture is not available. Harmful if swallowed. (based

on components).

Information on toxicological effects

Symptoms Itching. Rashes. Hives.

Numerical measures of toxicity

Acute Toxicity

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

ATEmix (oral) 963.00 mg/kg

Unknown acute toxicity 100 % of the mixture consists of ingredient(s) of unknown toxicity

80 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

100 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)

100 % 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	= 984 mg/kg (Rat)	-	-



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

Skin corrosion/irritationNo information available.

Serious eye damage/eye irritation No information available.

Respiratory or skin sensitization May cause sensitization by skin contact.

Germ cell mutagenicity No information available.

Carcinogenicity Classification based on data available for ingredients. Contains a known or suspected

carcinogen.

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

Chemical name	ACGIH	IARC	NTP	OSHA
Cobalt lithium	A1	Group 1	Known	X
manganese nickel oxide 182442-95-1				

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)

A1 - Known Human Carcinogen

IARC (International Agency for Research on Cancer)

Group 1 - 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 exposureCauses damage to organs through prolonged or repeated exposure.

Aspiration hazard No information available.

12. ECOLOGICAL INFORMATION

Marine Pollutant This product contains a chemical which is listed as a severe marine pollutant according to

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Ecotoxicity Very toxic to aquatic life with long lasting effects.

Chemical name	Toxicity to Algae	Toxicity to Fish	Toxicity to	Daphnia Magna (Water
			Microorganisms	Flea)
Iron	-	96h LC50: = 13.6 mg/L	-	-
		(Morone saxatilis)		
Copper	96h EC50: 0.031 -	96h LC50: 0.0068 -	-	48h EC50: = 0.03 mg/L
	0.054 mg/L	0.0156 mg/L (Pimephales		
	(Pseudokirchneriella	promelas) 96h LC50: =		
	subcapitata) 72h EC50:	1.25 mg/L (Lepomis		
	0.0426 - 0.0535 mg/L	macrochirus) 96h LC50:		
	(Pseudokirchneriella	= 0.052 mg/L		



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subo	apitata)	(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 There is no data for this product.

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 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
Copper 7440-50-8	Toxic
Aluminum 7429-90-5	Ignitable powder

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"

Proper Shipping Name
NOT REGULATED
NON-REGULATED

Hazard Class N/A

Marine Pollutant This product contains a chemical which is listed as a severe marine pollutant according to

DOT 147

Emergency Response Guide

Number

TDG

Not regulated

Marine Pollutant This product contains a chemical which is listed as a severe marine pollutant according to

TDG.

MEX Not regulated

ICAO Not regulated

<u>IATA</u> Not regulated

Proper Shipping Name NON REGULATED

Hazard Class N/A

IMDG/IMO Not regulated

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

TSCA Contact supplier for inventory compliance status.

DSL/NDSL Contact supplier for inventory compliance status.

EINECS/ELINCS Contact supplier for inventory compliance status.

ENCS Contact supplier for inventory compliance status.

KECL Contact supplier for inventory compliance status.

PICCS 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



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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	Percent	SARA 313 - Threshold Values %
Cobalt lithium manganese nickel oxide 182442-95-1	182442-95-1	31	0.1
Copper - 7440-50-8	7440-50-8	5	1.0
Aluminum - 7429-90-5	7429-90-5	5	1.0

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
Cobalt lithium manganese nickel oxide 182442-95-1		X		
Copper 7440-50-8		X	X	

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
Copper 7440-50-8	5000 lb		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		
Lithium nickel oxide (LiNiO2) - 12031-65-1	Carcinogen		

U.S. State Right-to-Know Regulations

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

Chemical name	New Jersey	Massachusett Pennsyl	Ivania	Rhode Island	Illinois



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		S			
Cobalt lithium manganese nickel oxide 182442-95-1	Х		X	Х	Х
Graphite 7782-42-5	Х	Х	Х		
Copper 7440-50-8	Х	Х	X	Х	X
Aluminum 7429-90-5	X	X	X	X	

16. OTHER INFORMATION

NFPA Health hazards 1 Flammability 0 Instability 0 Physical and Chemical

Properties -

Health hazards 0 Flammability 0 Physical hazards 0 Personal Protection X

Prepared By Product Stewardship

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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

