Issuing Date No data available

Revision Date 18-May-2016

SAFETY DATA SHEET

Revision Number 3



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

Product identifier

Product Name	200840-11		
Other means of identification			
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	SYNergy ScienTech Corp.		
Supplier Address	7F, No9, Park Avenue II, Science-based Industrial Park HsinChu N/A 30075 TW		
Supplier Phone Number	Phone:886-3-5643700 Fax:886-3-5646767		
Supplier Email	stellah0917@gmail.com		
Emergency telephone number			
Company Emergency Phone Number	886-911254622		

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.

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Skin sensitization	Category 1
Carcinogenicity	Category 1A
Specific target organ toxicity (repeated exposure)	Category 1

GHS Label elements, including precautionary statements

Emergency Overview

 Signal word
 Danger

 Hazard Statements
 Causes skin irritation

 Causes serious eye irritation
 May cause an allergic skin reaction

 May cause cancer
 Causes damage to organs through prolonged or repeated exposure

 Causes damage to organs through prolonged or repeated exposure
 Causes damage to organs through prolonged or repeated exposure

 This product is an article which contains a chemical substance.
 Safety information is given for exposure to the article as sold.

 Intended use of the product should not result in exposure to the chemical substance.
 This is a battery.
 In case of rupture: the above hazards exist.

 Appearance
 No information available
 Physical state
 Solid
 Odor
 No information available

 Precautionary Statements - Prevention
 Prevention
 Solid
 Odor
 No information available

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 Contaminated work clothing should not be allowed out of the workplace Wear protective gloves Do not breathe dust/fume/gas/mist/vapors/spray Do not eat, drink or smoke when using this product Wear eye/face protection

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 Take off contaminated clothing and wash before reuse



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

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

24.51 % of the mixture consists of ingredient(s) of unknown toxicity

Other information

May be harmful in contact with skin 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

No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No	Weight-%	Trade Secret
Lithium Cobalt Oxide (LiCoO2)	12190-79-3	15 - 40	*
Carbon black	1333-86-4	10 - 30	*
Aluminum	7429-90-5	10 - 30	*
Copper	7440-50-8	5 - 10	*
Phosphate(1-), hexafluoro-, lithium	21324-40-3	1 - 5	*
Nickel	7440-02-0	0.1 - 1	*
Propylene imine	75-55-8	0.1 - 1	*

*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 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. May cause an allergic skin reaction. In the case of skin irritation or allergic reactions see a physician.
Inhalation	Remove to fresh air. Get medical attention immediately if symptoms occur.

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Ingestion	Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician.			
Self-protection of the first aider	Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Wear personal protective clothing (see section 8).			
Most important symptoms and effects, both acute and delayed				
Most Important Symptoms and Effects	Burning sensation. Itching. Rashes. Hives. Coughing and/ or wheezing.			
Indication of any immediate medical 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.

<u>Protective equipment and precautions for firefighters</u> 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. Prevent further leakage or spillage if safe to do so.		
Methods and material for containment 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. 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	Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Keep out of the reach of children.
Incompatible Products	Strong acids. Strong oxidizing agents. Strong bases.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Lithium Cobalt Oxide (LiCoO2) 12190-79-3	TWA: 0.02 mg/m ³	-	
Carbon black 1333-86-4	TWA: 3 mg/m ³ inhalable fraction	TWA: 3.5 mg/m ³ (vacated) TWA: 3.5 mg/m ³	IDLH: 1750 mg/m ³ TWA: 3.5 mg/m ³ TWA: 0.1 mg/m ³ Carbon black in presence of Polycyclic aromatic hydrocarbons PAH



Aluminum	TWA: 1 mg/m ³ respirable fraction	TWA: 15 mg/m ³ total dust	TWA: 10 mg/m ³ total dust
7429-90-5		TWA: 5 mg/m ³ respirable fraction	TWA: 5 mg/m ³ respirable dust
		(vacated) TWA: 15 mg/m ³ total dust	
		(vacated) TWA: 5 mg/m ³ respirable	
		fraction (vacated) TWA: 5 mg/m ³ Al	
		Aluminum	
Copper	TWA: 0.2 mg/m ³ fume TWA: 1 mg/m ³		IDLH: 100 mg/m ³ dust, fume and mist
7440-50-8	Cu dust and mist	TWA: 1 mg/m ³ dust and mist	TWA: 1 mg/m ³ dust and mist
		(vacated) TWA: 0.1 mg/m ³ Cu dust,	TWA: 0.1 mg/m ³ fume
		fume, mist	_
Phosphate(1-), hexafluoro-,	TWA: 2.5 mg/m ³ F	TWA: 2.5 mg/m ³ F	
lithium		TWA: 2.5 mg/m ³ dust	
21324-40-3		(vacated) TWA: 2.5 mg/m ³	
Nickel	TWA: 1.5 mg/m ³	TWA: 1 mg/m ³	IDLH: 10 mg/m ³
7440-02-0	_	(vacated) TWA: 1 mg/m ³	TWA: 0.015 mg/m ³
Propylene imine	STEL: 0.4 ppm	TWA: 2 ppm	IDLH: 100 ppm
75-55-8	TWA: 0.2 ppm	TWA: 5 mg/m ³	TWA: 2 ppm
	S*	(vacated) TWA: 2 ppm	TWA: 5 mg/m ³
		(vacated) TWA: 5 mg/m ³	-
		(vacated) S*	
		S*	

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) See section 15 for national exposure control parameters	
Appropriate engineering controls		
Engineering Measures	Showers Eyewash stations Ventilation systems	
Individual protection measures, su	ch 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. Long sleeved clothing. Impervious gloves.	
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. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. 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

Solid No information available No information available
Values

<u>Property</u> pH

Color

Physical state Appearance

> <u>Values</u> No data available

Odor Odor Threshold No information available No information available

Remarks Method None known



Melting / freezing point	No data available
Boiling point / boiling range	No data available
Flash Point	No data available
Evaporation Rate	No data available
Flammability (solid, gas)	No data available
Flammability Limit in Air	
Upper flammability limit	No data available
Lower flammability limit	No data available
Vapor pressure	No data available
Vapor density	No data available
Specific Gravity	No data available
Water Solubility	No data available
Solubility in other solvents	No data available
Partition coefficient: n-octanol/water	No data available
Autoignition temperature	No data available
Decomposition temperature	No data available
Kinematic viscosity	No data available
Dynamic viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available

Other Information

Softening Point VOC Content (%) Particle Size Particle Size Distribution

No data available No data available No data available None known None known

None known

10. STABILITY AND REACTIVITY

Reactivity

No data available.

<u>Chemical stability</u> Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing. <u>Hazardous Polymerization</u> Hazardous polymerization does not occur.

Conditions to avoid

None known based on information supplied.

Incompatible materials

Strong acids. Strong oxidizing agents. Strong bases.

Hazardous Decomposition Products

Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure



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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. May cause irritation of respiratory tract.			
Eye contact	Specific test data for the substance or mixture is not available. Causes serious eye irritation. (based on components). May cause redness, itching, and pain.			
Skin contact	Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components). Prolonged contact may cause redness and irritation.			
Ingestion	Specific test data for the substance or mixture is not available. Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.			

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Carbon black 1333-86-4	> 15400 mg/kg (Rat)	> 3 g/kg (Rabbit)	-
Nickel 7440-02-0	> 9000 mg/kg (Rat)	-	-
Propylene imine 75-55-8	= 19 mg/kg (Rat)	-	-

Information on toxicological effects

Symptoms

Erythema (skin redness). May cause redness and tearing of the eyes. Itching. Rashes. Hives.

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

Sensitization

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
Lithium Cobalt Oxide (LiCoO2) 12190-79-3	A3	Group 2B		Х
Carbon black 1333-86-4	A3	Group 2B		Х
Nickel 7440-02-0		Group 1	Reasonably Anticipated	Х
Propylene imine 75-55-8	A3	Group 2B	Reasonably Anticipated	Х

ACGIH (American Conference of Governmental Industrial Hygienists) 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) Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen OSHA (Occupational Safety and Health Administration of the US Department of Labor) X - Present



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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 liver effects.
Target Organ Effects	Respiratory system. Eyes. Skin. Gastrointestinal tract (GI). Kidney. Liver. Lymphatic System. Lungs.
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) 7,655.00 mg/kg ATEmix (dermal) 2,896.00 mg/kg (ATE) ATEmix (inhalation-gas) 75,497.55 ppm (4 hr) ATEmix (inhalation-dust/mist) 37.82 mg/l ATEmix (inhalation-vapor) 378.21 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)
Carbon black 1333-86-4				24h EC50: > 5600 mg/L
Copper 7440-50-8		96h LC50: 0.0068 - 0.0156 mg/L (Pimephales promelas) 96h LC50: = 1.25 mg/L (Lepomis macrochirus) 96h LC50: = 0.052 mg/L (Oncorhynchus mykiss) 96h LC50: = 0.2 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)		48h EC50: = 0.03 mg/L
Nickel 7440-02-0	72h EC50: = 0.18 mg/L (Pseudokirchneriella subcapitata) 96h EC50: 0.174 - 0.311 mg/L (Pseudokirchneriella subcapitata)	96h LC50: > 100 mg/L (Brachydanio rerio) 96h LC50: = 1.3 mg/L (Cyprinus carpio) 96h LC50: = 10.4 mg/L (Cyprinus carpio)		48h EC50: > 100 mg/L 48h EC50: = 1 mg/L

Persistence and Degradability

No information available.

Bioaccumulation

No information available

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.

Chemical name	RCRA - Halogenated Organic Compounds	RCRA - P Series Wastes	RCRA - F Series Wastes	RCRA - K Series Wastes
Propylene imine 75-55-8		P067		

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
Lithium Cobalt Oxide (LiCoO2) 12190-79-3	Toxic
Aluminum 7429-90-5	Ignitable powder
Copper 7440-50-8	Toxic
Nickel 7440-02-0	Toxic powder 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"
DOT Proper Shipping Name Hazard Class Emergency Response Guide Number	NOT REGULATED NON-REGULATED N/A 147
TDG	Not regulated



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International Inventories

TSCA DSL Complies All components are listed either on the DSL or NDSL.

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	Weight-%	SARA 313 - Threshold Values %
Lithium Cobalt Oxide (LiCoO2) - 12190-79-3	12190-79-3	15 - 40	0.1
Aluminum - 7429-90-5	7429-90-5	10 - 30	1.0
Copper - 7440-50-8	7440-50-8	5 - 10	1.0
Nickel - 7440-02-0	7440-02-0	0.1 - 1	0.1
Propylene imine - 75-55-8	75-55-8	0.1 - 1	0.1
SARA 311/312 Hazard Categories			
Acute Health Hazard	No		

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
Copper 7440-50-8		Х	Х	



Nickel	Х	Х	
7440-02-0			

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
Nickel 7440-02-0	100 lb		RQ 100 lb final RQ RQ 45.4 kg final RQ
Propylene imine 75-55-8	1 lb	1 lb	RQ 1 lb final RQ RQ 0.454 kg final RQ

US State Regulations

<u>California Proposition 65</u> This product contains the following Proposition 65 chemicals.

Chemical name	California Proposition 65
Carbon black - 1333-86-4	Carcinogen
Nickel - 7440-02-0	Carcinogen
Propylene imine - 75-55-8	Carcinogen
1,3-Propane sultone - 1120-71-4	Carcinogen

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
Lithium Cobalt Oxide (LiCoO2) 12190-79-3	X		X	Х	Х
Carbon black 1333-86-4	Х	Х	Х		Х
Aluminum 7429-90-5	Х	Х	Х	Х	
Copper 7440-50-8	Х	Х	Х	Х	Х
Ethylene carbonate 96-49-1		Х	Х		
Diethyl carbonate 105-58-8	Х	Х	Х		
Phosphate(1-), hexafluoro-, lithium 21324-40-3	Х				
Nickel 7440-02-0	Х	Х	Х	Х	Х
Propylene imine 75-55-8	Х	Х	Х	Х	Х

International Regulations

Mexico

.

National occupational exposure limits

Chemical name	Carcinogen Status	Exposure Limits	
Carbon black		Mexico: TWA 3.5 mg/m ³	
		Mexico: STEL 7 mg/m ³	
Aluminum		Mexico: TWA= 10 mg/m ³	
Copper		Mexico: TWA= 1 mg/m ³	
		Mexico: TWA= 0.2 mg/m^3	
		Mexico: STEL= 2 mg/m ³	
Nickel		Mexico: TWA 1 mg/m ³	
Propylene imine	A3	Mexico: TWA 2 ppm	



	Mexico: TWA 5 mg/m ³
A3 - Confirmed Animal Carcinogen	
Mexico - Occupational Exposure Limits - Carcinogens	
Canada	
WHMIS Hazard Class	
Non-controlled	
16 OTH	R INFORMATION

	16. OTHER INFORMATION	
NFPA	• •	Physical and Chemical Hazards -
HMIS		Personal Protection
Prepared By	Product Stewardship 23 British American Blvd. Latham, NY 12110 1-800-572-6501	
Revision Date Revision Note	18-May-2016 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