MATERIAL SAFETY DATA SHEETS

For

Lithium Battery Pack

Prepared for	:	Shenzhen Lesongge Technology Co., Ltd
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Date of Conduct	:	Jan. 30, 2023
Date of Report	:	Jan. 30, 2023 ~ Jan. 30, 2023
Revise Date	:	Feb. 09, 2023

Signed for and on behalf of
EMTEK(Dongguan) Co., Ltd.

Prepared by:	Reviewed by:	Approved by:
Huang Fenglan, Polly	Zeng Xingji, Cindy	Li Wei, Lisa
Report Engineer	Supervisor	Authorized signatory
		Feb. 09, 2023

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MATERIAL SAFETY DATA SHEETS

1- Identification

· 1.1 Product identifier

· Trade name: Lithium Battery Pack

· Registration number: No available data.

· UFI number: No available data.

· Other means of identification:

Battery Model: SH18650-3S3P.

Battery Capacity: 9000mAh

Battery Voltage: 10.8V

Weight：474.85g

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

· Application of the substance/ mixture: Consumer uses, pool cleaning.

· Uses advised against: No available data.

· Reason why uses advised against: No available data.

· 1.3 Details of the supplier of the safety data sheet

· Manufacturer/Supplier:

Shenzhen Lesongge Technology Co., Ltd.

B412, Building H2, OCT East Industrial Zone, 1 Xiangshan East Street, Guanghua Street Community, Shahe Street, Nanshan District, Shenzhen.

Post code: 518055

Tel: +86-755-88893866

Email: yousef.chen@genkinno.com

National contact: Yousef Chen

· Only Representative/other EU contact point:

Shenzhen Lesongge Technology Co., Ltd.

Post code: 518055

Tel: +86-755-88893866

Email: jasper.gu@genkinno.com

National contact: Quancheng Gu

· Further information obtainable from:

Shenzhen Lesongge Technology Co., Ltd.

· 1.4 Emergency telephone number

Tel: +86-755-88893866

(Only available during the following office hours 10:00-19:00, Beijing time, for Chinese service only)

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2 - Hazards Identification

· **2.1 Classification of the substance or mixture**

· **2.1.1 Classification according to regulation (EC) 1272/2008:**

Regulation (EC) No 1272/2008 [CLP]	**Classification procedure**
Acute Tox. 2 (inhal.), H330	Calculation method
Skin Irrit. 2, H315	Calculation method
Skin Sens. 1, H317	Calculation method
Eye Irrit.2, H319	Calculation method
Carc. 1B, H350	Calculation method
STOT RE 1, H372	Calculation method
Aquatic Acute 1, H400	Calculation method
Aquatic Chronic 1, H410	Calculation method

· **2.1.2 Additional information:** For full text of Hazard- and EU Hazard-statements: see SECTION 16**.**

· **2.2 Label elements**

· **Labeling according to Regulation (EC) No 1272/2008:**

The product is labelled according to CLP Regulation.

· **Hazard pictograms:**



GHS06 GHS08 GHS09

· **Signal word:** Danger

· **Hazard-determining components of labelling:** Lithium nickel cobalt aluminium oxide

· **Hazard statements:**

H330 Fatal if inhaled
H315 Causes skin irritation
H317 May cause an allergic skin reaction
H319 Causes serious eye irritation
H350 May cause cancer
H372 Causes damage organs through prolonged or repeated exposure
H410 Very toxic to aquatic life with long lasting effects

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· **Precautionary statement:**

P201	Obtain special instructions before use.
P260	Do not breathe dust/mist.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P308 + P313	IF exposed or concerned: Get medical advice/attention.
P391	Collect spillage.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.

· **Supplemental label elements:**

Restricted to industrial and professional uses.

· **2.3 Other hazards**

None of the ingredients (≥0.1%) meets the criteria for PBT/vPvB in accordance with Annex XIII.

None of the ingredients (≥0.1%) is identified as having endocrine disrupting properties according to Regulation (EU) 2017/2100.

3- Composition / Information on Ingredients

· **3.1 Substance**

Not applicable

· **3.2 Mixtures**

· **Description of the mixture:** genkinno P1.

Ingredients:

Substance	CAS No.	Index No.	EC No.	w/w, %	CLP Classification	SCL/M-factor/ATE
Lithium nickel cobalt aluminium oxide	193214-24-3	-	-	34.5	Skin Sens. 1, H317 Acute Tox. 2, H330 Carc.1B, H350 STOT RE 1, H372 Aquatic Acute 1, H400 Aquatic Chronic 1, H410	ATE (inhal.) = 0.05mg/l (dusts) M=1 M(Chronic)=1

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Ingredients:						
Substance	**CAS No.**	**Index No.**	**EC No.**	**w/w, %**	**CLP Classification**	**SCL/M-factor/ATE**
Carbon	7440-44-0	-	231-153-3	22.5	None	-
Steel	12597-69-2	-	-	19	None	-
Copper	7440-50-8	-	231-159-6	7.2	None	-
Aluminum	7429-90-5		231-072-3	3.5	None	-
Dimethyl carbonate	616-38-6	607-013-00-6	210-478-4	3	Flam. Liq. 2, H225	-
Ethylene carbonate	96-49-1	-	202-510-0	2.5	Acute Tox. 4, H302 Eye Irrit.2, H319 STOT RE 2, H373	ATE (oral)=500 mg/kg
Ethyl methyl carbonate	623-53-0	-	433-480-9	2.5	Flam. Liq. 2, H225	-
Lithium hexafluorophosphate	21324-40-3	-	244-334-7	2	Acute Tox. 3, H301 Skin Corr. 1A, H314 Eye Dam. 1, H318 STOT RE 1, H372	ATE (oral)=200mg/kg
Polyethylene	9002-88-4	-	-	0.8	None	-
Polyethylene terephthalate	25038-59-9	-	-	0.7	None	-
Carbon black	1333-86-4	-	215-609-9	0.5	None	-
Polyvinylidene fluoride	24937-79-9	-	-	0.4	None	-
Butadiene-styrene rubber	9003-55-8	-	-	0.3	None	-
Sodium carboxymethyl cellulose	9004-32-4	-	-	0.3	None	-
Nickel	7440-02-0	-	231-111-4	0.3	None	-

Additional information:

Full text of H-statements, see SECTION 16

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4 - First Aid Measures

· 4.1 Description of first aid measures

General advice:

IF exposed or concerned: Get medical advice/attention.

After inhalation:

Remove person to fresh air and keep comfortable for breathing.

Call a POISON CENTER/doctor/if you feel unwell.

After skin contact:

Take off immediately all contaminated clothing.

Rinse skin with water/ shower.

Immediately call a POISON CENTER or doctor/physician.

After eye contact:

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.

After swallowing:

Rinse mouth.

Do NOT induce vomiting.

Immediately call a POISON CENTER/doctor.

· 4.2 Most important symptoms and effects, both acute and delayed:

Causes severe skin irritation.

May cause an allergic skin reaction.

Causes severe eye irritation.

May cause cancer.

Causes damage organs through prolonged or repeated exposure.

· 4.3 Indication of any immediate medical attention and special treatment needed:

Treatment according to symptoms, no known specific medicine.

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5 - Fire-Fighting Measures

· 5.1 Extinguishing media

· Suitable extinguishing agents:

Use chemical powder, sand, soil, alcohol resistant foam to extinguish.

· Unsuitable extinguishing media:

Water.

· 5.2 Special hazards arising from the substance or mixture:

May produce corrosive dust/ mist.

· 5.3 Advice for firefighters

Protective equipment:

Wear an approved positive pressure self-contained breathing apparatus (Comply with EN 133).

6 - Accidental Release Measures

· 6.1 Personal precautions, protective equipment and emergency procedures

· 6.1.1 For non-emergency personnel

Protective equipment:

Protective gloves/ protective clothing/ eye protection/ face protection and respiration protection.

Emergency procedures:

Evacuate quickly.

Ensure good ventilation.

Wear protective gloves/ protective clothing/ eye protection/ face protection and respiration protection.

Avoid contact with skin and eyes.

· 6.1.2 For emergency responders

Personal protective equipment:

Protective gloves/ protective clothing/ eye protection/ face protection and respiration protection

· 6.2 Environmental precautions:

Prevent further leakage or spillage if safe to do so.

Prevent spillage from entering drains, sewer, basement or confined areas.

If the spillage contaminates rivers, lakes or drains inform respective authorities.

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· 6.3 Methods and material for containment and cleaning up:
Neutralize the liquid with alkali, then absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Do not use water flush.
Ensure good ventilation.
Dispose contaminated material as waste according to section 13.

· 6.4 Reference to other sections:
See section 7 for information on safe handing.
See section 8 for information on personal protection equipment.
See section 13 for disposal in formation.

7 - Handling and Storage

· 7.1 Precautions for safe handling:
Ensure good ventilation/ exhaustion at the workplace.
Absorb spillage to prevent material damage.
Do not breathing dust.
Wear protective gloves/protective clothing/eye protection/face protection.
Use respiratory protective device against the effects of dust.
Prevent to contact with eyes and skin.
Avoid release to the environment.
· Information about fire and explosion protection:
Keep away from heat source.

· 7.2 Conditions for safe storage, including any non-compatibility
· Requirements to be met by storerooms and receptacles:
Store in a well-ventilated place. Keep cool.
· Information about storage in one common storage facility:
Store in the original container.
· Further information about storage conditions:
Store locked up.
· Storage class:
Not applicable.

· 7.3 Specific end use(s):
See section 1.2.

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8 - Exposure Controls / Personal Protection

· 8.1 Control parameters

· Ingredients with limit values that require monitoring at the workplace:

Country	Limit value - Eight hours	Limit value - Short term
1333-86-4 Carbon black		
Belgium	3.5 mg/m³	-
Denmark	3.5 mg/m³	7.0 mg/m³
Finland	3.5 mg/m³	7 mg/m³ 15 minutes reference period
France	3.5 mg/m³	-
Ireland	3.5 mg/m³	7 mg/m³ 15 minutes reference period
Spain	3.5 mg/m³	-
Sweden	3 mg/m³	-
United Kingdom	3.5 mg/m³	7.0 mg/m³

· DNELs:

DNEL type		**DNEL worker value**	**DNEL consumer value**
1333-86-4 Carbon black			
Systemic Effects	Long-term, inhalation exposure	1 mg/m³	0.06 mg/m³
Local Effects	Long-term, inhalation exposure	2 mg/m³	1.75 mg/m³

· PNECs:

PNEC type	**Value**
1333-86-4 Carbon black	
Freshwater	5-50 mg/L
Marine water	5 mg/L

· Additional information:

The lists valid during the marking were used as basis.

· 8.2 Exposure controls

· Based on the composition shown in section 3, the following measures are suggested for occupational safety measure.

· Appropriate engineering controls:

Handle in accordance with good industrial hygiene and safety practice; See section 7 for information about design of technical facilities.

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· **Personal protective equipment**

· **Eye and face protection:**



Safety glasses

Protective goggles with side-shields.

· **Skin protection**

· **Hand protection:**



Protective gloves

Gloves made from butyl rubber Neoprene™ rubber, nitrile rubber (thickness> 0.3mm; breakthrough times up to 480 minutes).

· **Other skin protection:**

Anti-acid gauntlets, boots, bodysuit are necessary.

· **Respiration protection:**

Use positive pressure breathing mask if concentrations in air could exceed occupational exposure standard.

· **Thermal hazards:**

All the personal protective equipment must be heat-resistant.

· **Environmental exposure controls:**

Control measures must be made in accordance with Community environmental protection legislation.

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9 - Physical and Chemical Properties

· 9.1 Information on basic physical and chemical properties	
· Physical state	Solid
· Color	Mainly white and grey
· Odor & Odor threshold	Odorless
· Melting point/freezing point (or softening point/range)	Not determined
· Boiling point or initial boiling point and boiling range	Not determined
· Flammability	Not flammable solid
· Lower and upper explosion limit	Not applicable
· Flash point	Not applicable
· Auto-ignition temperature	Not applicable
· Decomposition temperature	Not determined
· pH	Not determined, this product is insoluble in water.
· Kinematic viscosity (mm^2/s)	Not determined
· Solubility	Not determined
· Partition coefficient n-octanol/water (log value)	Not determined
· Vapor pressure	Not determined
· Density and/or relative density	Not determined
· Relative vapor density	Not determined
· Particle characteristics	Not determined
· 9.2 Other information	
· 9.2.1 Information with regard to physical hazard classes:	
· Explosives	Not applicable
· Flammable gases	Not applicable
· Aerosols	Not applicable
· Oxidising gases	Not applicable
· Gases under pressure	Not applicable
· Flammable liquids	Not applicable
· Flammable solids	Not applicable
· Self-reactive substances and mixtures	Not applicable
· Pyrophoric liquids	Not applicable
· Pyrophoric solids	Not applicable
· Self-heating substances and mixtures	Not applicable
· Substances and mixtures, which emit flammable gases in contact with water	Not applicable

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· Oxidizing liquids	Not applicable
· Oxidizing solids	Not applicable
· Organic peroxides	Not applicable
· Corrosive to metals	Not applicable
· Desensitised explosives	Not applicable
· 9.2.2 Other safety characteristics	
· Mechanical sensitivity	Not applicable
· Self-accelerating polymerisation temperature	Not applicable
· Formation of explosible dust/air mixtures	Not applicable
· Acid/alkaline reserve	Not applicable
· Evaporation rate	Not applicable
· Miscibility	Not applicable
· Conductivity	Not applicable
· Corrosiveness	Not applicable
· Gas group	Not applicable
· Redox potential	Not applicable
· Radical formation potential	Not applicable
· Photocatalytic properties	Not applicable
· Other physical and chemical parameters	Not determined

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10 - Stability and Reactivity

· 10.1 Reactivity:

The product is non-reactive under normal conditions of use, storage and transport.

· 10.2 Chemical stability:

Under storage at normal ambient temperatures, the product is stable.

· 10.3 Possibility of hazardous reactions:

No known hazardous reaction.

· 10.4 Conditions to avoid:

High temperature and flame.

· 10.5 Incompatible materials:

Acid.

· 10.6 Hazardous decomposition products:

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11 - Toxicological Information

· 11.1 Information on toxicological effects

· Acute toxicity:

Fatal if inhaled.

ATE_{mix} (inhal.)	=	0.14 mg/l/dust

· Skin corrosion/irritation:

Causes severe skin irritation.

· Serious eyes damage/ irritation:

Causes serious eye irritation.

· Respiratory or skin sensitization:

May cause an allergic skin reaction.

· Germ cell mutagenicity:

Based on available data, the classification criteria are not met.

· Carcinogenicity:

May cause cancer.

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· **Reproductive toxicity:**
Based on available data, the classification criteria are not met.

· **Summary of evaluation of the CMR properties:**
Based on available data, the classification criteria are not met.

· **STOT-single exposure:**
Based on available data, the classification criteria are not met.

· **STOT-repeated exposure:**
Cause damage to organ through prolonged or repeated exposure.

· **Aspiration hazard:**
Based on available data, the classification criteria are not met.

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties:
None of the ingredients (≥0.1%) is considered to have endocrine-disrupting properties with respect to humans, as none of them meet the criteria set out in section A of Regulation (EU) No 2017/2100.

11.2.2 Other information: No known other relevant information on adverse health effects.

12 - Ecological Information

· **12.1 Toxicity:** No available data.

· **12.2 Persistence and degradability:** No available data.

· **12.3 Bio-accumulative potential:** No available data.

· **12.4 Mobility in soil:** No available data.

· **12.5 Results of PBT and vPvB assessment**
This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

· **12.6 Endocrine disrupting properties:**
None of the ingredients (≥0.1%) is considered to have endocrine-disrupting properties with respect to non-target organisms, as none of them meet the criteria set out in section B of Regulation (EU) No 2017/2100.

· **12.7 Other adverse effects:**
No known other adverse effects.

· **12.8 Additional ecological information**

· **General notes:**

Do not allow the product to reach ground water, water course or sewage system, even little quantities.

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13 - Disposal Considerations

· **13.1 Waste treatment methods**

· **Recommendation:**

Must not be disposed together with household garbage.

· **13.2 Un-cleaned packaging**

· **Recommendation:**

Dispose of contents/container in according to the local/regional/national/ international regulation.

14 - Transport Information

· **IMO/IMDG (40-20)**	This product is not subject to IMO/IMDG code according to special provision 188.
· **ADR/RID (2021 Edition)**	This product is not subject to ADR/RID according to special provision 188.
· **14.1 UN-Number** **IATA-DGR (63th)**	UN3481
· **14.2 UN proper shipping name** **IATA-DGR (63th)**	LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT
· **14.3 Transport hazard class (es)** **IATA-DGR (63th)** **Class** **Label**	 9 Miscellaneous dangerous substances and articles 9
· **14.4 Packing group** **IATA-DGR (63th)**	Not applicable
· **14.5 Marine pollution**	No
· **14.6 Special precautions for user** · **Danger code (Kemler)** · **EMS number**	Not applicable Not applicable F-A, S-I
· **14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**	Not applicable

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15 - Regulatory Information

· 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

· MAK (German Maximum Workplace Concentration):

1333-86-4	Carbon black	3

· Directive 2012/18/EU

· Named dangerous substances-ANNEX I:

None of the ingredients is listed.

· Named dangerous substances-ANNEX I:

H2 ACUTE TOXIC

E1 Hazardous to the Aquatic Environment

· Seveso category: Not applicable

· Qualifying quantity (tonnes) for the application of lower-tier requirements: 50.

· Qualifying quantity (tonnes) for the application of upper-tier requirements: 200.

· Other regulations, limitations and prohibitive regulations

· SVHC Candidate list of REACH Regulation Annex XIV Authorization:

None of the ingredients is listed.

· REACH Regulation Annex XVII Restriction:

193214-24-3	Lithium nickel cobalt aluminium oxide	Entry no. 27

· REACH Regulation Annex XIV Authorization List:

None of the ingredients is listed.

· 15.2 Chemical safety assessment:

A Chemical Safe Assessment has not been carried out.

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16 - Other Information

· 16.1 Indication of changes:

None.

16.2 Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road).
IMDG: International Maritime Code for Dangerous Goods.
IATA: International Air Transport Association.
CAS: Chemical Abstracts Service (division of the American Chemical Society)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
PBT: Persistent, Bio accumulative and Toxic
vPvB: very persistent and very bio accumulative
SVHC: Substance of Very High Concern
Acute Tox. 2: Acute toxicity, hazard category 2
Acute Tox. 3: Acute toxicity, hazard category 3
Skin Corr. 1A: Skin corrosion/irritation, hazard category 1A
Skin Sens. 1: Skin sensitization, hazard category 1
Eye Dam. 1: Eye damage/irritation, hazard category 1
Carc. 1B: Carcinogenicity, hazard category 1B
STOT RE 1: Specific target organ toxicity after repeated exposure, hazard category 1
Aquatic Acute 1: Short-term (acute) aquatic hazard, hazard category 1
Aquatic Chronic 1: Long-term (chronic) aquatic hazard, hazard category 1

· 16.3 Key literature references and sources for data:

https://echa.europa.eu/
https://chem.nlm.nih.gov/
https://www.osha.gov/
http://www.unece.org/
http://www.imo.org/
https://www.dguv.de/
https://epa.govt.nz/
http://www.ilo.org/
https://www.phmsa.dot.gov/

· 16.4 Classification for mixtures and used evaluation method according to regulation (EC) 1207/2008 [CLP]:

See SECTION 2.1 (classification).

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· 16.5 Relevant H- and EUH-phrases (number and full text):

H301 Toxic if swallowed

H330 Toxic if swallowed

H314 Causes severe skin burns and eye damage

H317 May cause an allergic skin reaction

H318 Causes serious eye damage

H350 May cause cancer

H372 Causes damage to organs through prolonged or repeated exposure

H400 Very toxic to aquatic life

H410 Very toxic to aquatic life with long lasting effects

· 16.6 Training advice:

Workers must be trained in general and specific aspects of safe work procedures for this chemical. Workers need easy to understand guidelines and instructions for safe working with this chemical. Instructions, guidelines and legally required documents need to be available for workers in easy to understand language.

· 16.7 Further information:

The contents and format of this SDS are in accordance with Regulation (EC) No 1907/2006, its amendment Regulation (EU) No 2020/878 and (EC) No 1272/2008.

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This report is only applicable to products containing batteries.

Declaration: Report EDG2301300074C00101R was repealed and replaced by Report EDG2301300074C00101RM1.

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