Safety Data Sheet
according to WHS Regulations

Printing date 24.03.2021 Revision: 05.06.2020

1 Identification

Product Name: LG Energy Solution JH3 Lithium-Ion Battery Cell

Other Means of Identification: Mixture

Recommended Use of the Chemical and Restriction on Use: Electrical storage

Details of Manufacturer or Importer:
LG Energy Solution Pty Ltd
Unit 12, 35 Dunlop Rd,
Mulgrave, VIC 3170

Phone Number: 0429 066 633

Emergency telephone number: National Poison Information Centre: 13 11 26

2 Hazard(s) Identification

Hazardous Nature:
Not classified as Hazardous according to the Globally Harmonised System of Classification and Labelling of Chemicals (GHS) and Safe Work Australia criteria.
Not classified as Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail. (7th edition)


Skull and crossbones

Acute Toxicity (Inhalation) 2 H330 Fatal if inhaled.


Health hazard

Respiratory Sensitisation 1	H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Toxic To Reproduction 1B	H360	May damage fertility or the unborn child.
STOT RE 1	H372	Causes damage to organs through prolonged or repeated exposure. Route of exposure: Inhalation.

Signal Word Danger

Hazard Statements
H330 Fatal if inhaled.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H360 May damage fertility or the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure. Route of exposure: Inhalation.

Precautionary Statements
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P284 [In case of inadequate ventilation] wear respiratory protection.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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P310 Immediately call a POISON CENTER/doctor.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P320 Specific treatment is urgent (see on this label).
P314 Get medical advice/attention if you feel unwell.
P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national regulations.
Additional Information Batteries are considered as articles and so are exempt from GHS classification.

3 Composition and Information on Ingredients

Chemical Characterization: Mixtures
Description: Mixture of substances listed below with nonhazardous additions.

Hazardous Components:		
CAS: 12190-79-3	Lithium cobaltite Acute Toxicity (Inhalation) 2, H330; Respiratory Sensitisation 1, H334; Toxic To Reproduction 1B, H360; STOT RE 1, H372	20 - 50%
CAS: 7440-50-8	Copper	5 - 20%
CAS: 7429-90-5	Aluminium	2 - 10%

Additional information:
The battery is sealed hermetically and designed to withstand temperatures and pressures encountered during normal use. Thus, the ingredients have no hazard potential except if the battery is violated or dismantled. If exposed to a fire, mechanical shocks, and electric stress by misuse, the battery cell case will be breached and the hazardous materials may be released and acrid gas may be emitted. Therefore the batteries should not be short circuited, overcharged, punctured, incinerated, immersed in water, forced to discharge or exposed to temperatures above the temperature range of the cell or battery.

4 First Aid Measures

Inhalation:
If exposure to fumes of a leaking battery occurs, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical attention if breathing problems develop.

Skin Contact:
If battery is leaking and material contacts the skin, immediately remove contaminated clothing and wash affected areas with water for at least 15 minutes. Seek medical attention if symptoms occur.

Eye Contact:
If battery is leaking and material contacts the eye, rinse cautiously with water for at least 15 minutes. Do not rub eyes. Remove contact lenses, if present and easy to do. Seek medical immediate attention.

Ingestion:
If contents of an opened battery are swallowed do not induce vomiting. Immediately rinse mouth with water. Give a glass of water. Never give anything by mouth to an unconscious person. Seek immediate medical attention.

Symptoms Caused by Exposure:
Inhalation: Contents of an open battery may cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin Contact: Contents of an open battery may cause an allergic skin reaction.
Eye Contact: Contents of an open battery may cause eye irritation.
Ingestion: Contents of an open battery may be harmful if swallowed.

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5 Fire Fighting Measures

Suitable Extinguishing Media: Use fire extinguishing methods suitable to surrounding conditions.

Specific Hazards Arising from the Chemical:
Decomposition products include oxides of carbon and hydrogen fluoride.
Battery may ignite or explode when subjected to excessive heat, overcharged, over-discharged, punctured or crushed.
Containers close to fire should be removed if safe to do so. Cool fire exposed batteries to prevent rupture. Do not approach containers suspected to be hot. Use caution when handling fire-exposed containers.

Special Protective Equipment and Precautions for Fire Fighters:
When fighting a major fire wear self-contained breathing apparatus and protective equipment.

6 Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures:
Wear approved respiratory and protective equipment. Evacuate all non-essential personnel from affected area. Do not breathe vapours. Ensure adequate ventilation. Extinguish all sources of ignition. Avoid sparks and open flames. No smoking

Environmental Precautions: In the event of a major spill, prevent spillage from entering drains or water courses.

Methods and Materials for Containment and Cleaning Up:
The material contained within the battery is released only in the case of mechanical, electrical or thermal abuse. In the event of battery rapture and leakage allow the batteries to cool and the vapour to dissipate. Ensure adequate ventilation. Stop leak if safe to do so and absorb spill with sand, earth, vermiculite or some other absorbent material. Collect the spilled material and place into a suitable container for disposal. Clean the spill area with water and detergent.

7 Handling and Storage

Precautions for Safe Handling:
Do not recharge, short-circuit, force discharge, disassemble, crush, deform, expose to high temperatures or incinerate. Do not mix battery types. Do not allow battery terminals to contact each other or other metals. Do not weld, solder or in any way modify batteries. Install batteries in accordance with instructions. Do not install batteries incorrectly. Batteries may explode, pyrolise or vent if disassembled, crushed, overcharged or exposed to high temperatures.
Use of safe work practices are recommended to avoid eye or skin contact and inhalation of vapours. Use only outdoors or in a well-ventilated area.
Food, beverages and tobacco products should not be stored or consumed where this material is in use. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use. Contaminated work clothing must not be allowed out of the workplace.
Provide eyewash fountains and safety showers in close proximity to points of potential exposure.

Conditions for Safe Storage:
Store in a cool, dry and well ventilated area. Protect from heat, sparks, open flames, hot surfaces and direct sunlight. Do not overcharge, disassemble, heat, dispose of in fire or short circuit. Elevated temperatures may shorten battery life. Protect from physical damage. Keep away from strong oxidising agents.

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8 Exposure Controls and Personal Protection

Exposure Standards:	
CAS: 7440-50-8 Copper	
WES	TWA: 1* 0.2** mg/m³ *dust&mists **fume
CAS: 7429-90-5 Aluminium	
WES	TWA: 10* 5** mg/m³ *metal dust;**welding, pyro powders

Engineering Controls:
Not necessary under conditions of normal use.
Ensure adequate ventilation of the working area.

Respiratory Protection:
Respiratory protection is not required under normal use conditions.
Use an approved type AX-P organic vapour respirator under conditions where exposure to the substance is apparent (e.g. In the case of abuse and leakage of liquid or emission of fumes) and engineering controls are not feasible. See Australian Standards AS/NZS 1715 and 1716 for more information.

Skin Protection:
Not necessary under conditions of normal use.
In case of spill wear butyl rubber gloves. See Australian/New Zealand Standard AS/NZS 2161 for more information. When selecting gloves for use against certain chemicals, the degradation resistance, permeation rate and permeation breakthrough time should be considered.
Occupational protective clothing (depending on conditions in which it has to be used, in particular as regards the period for which it is worn, which shall be determined on the basis of the seriousness of the risk, the frequency of exposure to the risk, the characteristics of the workstation of each worker and the performance of the protective clothing). See Australian/New Zealand Standard AS/NZS 4501 for more information.

Eye and Face Protection:
Eye protection is not required under normal use conditions.
Wear eye and face protectors for protection against splashing materials or liquids in case of spills. See Australian/ New Zealand Standard AS/NZS 1337 for more information.

9 Physical and Chemical Properties

Appearance:	
Form:	Solid
Colour:	No information available
Odour:	No information available
Odour Threshold:	No information available
pH-Value:	No information available
Melting point/freezing point:	No information available
Initial Boiling Point/Boiling Range:	No information available
Flash Point:	No information available
Flammability:	Product is non flammable.
Auto-ignition Temperature:	No information available
Decomposition Temperature:	No information available

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Explosion Limits:	
Lower:	No information available
Upper:	No information available
Vapour Pressure:	No information available
Relative Density:	No information available
Vapour Density:	No information available
Evaporation Rate:	No information available
Solubility in Water:	Insoluble
Partition Coefficient (n-octanol/water):	No information available
Viscosity:	No information available

10 Stability and Reactivity

Possibility of Hazardous Reactions: Hazardous polymerisation will not occur.

Chemical Stability: Stable at ambient temperature and under normal conditions of storage and use.

Conditions to Avoid:
Protect from heat, sparks, open flames, hot surfaces and direct sunlight. Do not recharge, disassemble, heat, dispose of in fire or short circuit. Elevated temperatures may shorten battery life. Protect from physical damage.

Incompatible Materials: Strong oxidising agents.

Hazardous Decomposition Products: Oxides of carbon and hydrogen fluoride.

11 Toxicological Information

Toxicity:

LD50/LC50 Values Relevant for Classification:		
CAS: 7440-50-8 Copper		
Oral	LD50	>2,000 mg/kg (rat)

Acute Health Effects
Inhalation: Contents of an open battery may cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin: Contents of an open battery may cause an allergic skin reaction.
Eye: Contents of an open battery may cause eye irritation.
Ingestion: Contents of an open battery may be harmful if swallowed.

Skin Corrosion / Irritation: Based on classification principles, the classification criteria are not met.

Serious Eye Damage / Irritation: Based on classification principles, the classification criteria are not met.

Respiratory or Skin Sensitisation:
May cause an allergic skin reaction.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Germ Cell Mutagenicity: Based on classification principles, the classification criteria are not met.

Carcinogenicity:
Cobalt and cobalt compounds are classified by IARC as Group 2B - Possibly carcinogenic to humans.

Reproductive Toxicity: Based on classification principles, the classification criteria are not met.

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Specific Target Organ Toxicity (STOT) - Single Exposure:
Based on classification principles, the classification criteria are not met.

Specific Target Organ Toxicity (STOT) - Repeated Exposure:
Based on classification principles, the classification criteria are not met.

Aspiration Hazard: Based on classification principles, the classification criteria are not met.

Chronic Health Effects: No information available

Existing Conditions Aggravated by Exposure: No information available

Additional toxicological information: No information available

12 Ecological Information

Ecotoxicity:

Aquatic toxicity:	
CAS: 7440-50-8 Copper	
EC50/48 h	0.792 mg/l (daphnia)
EC50/72 h	0.333 mg/l (algae)
LC50/96 h	0.0068-0.0156 mg/l (fathead minnow)
	0.0081 mg/l (fish)

Persistence and Degradability: No further relevant information available.

Bioaccumulative Potential: Some materials in this product may bioaccumulate.

Mobility in Soil: No further relevant information available.
Other adverse effects: No further relevant information available.

13 Disposal Considerations

Disposal Methods and Containers: Dispose according to applicable local and state government regulations.

Special Precautions for Landfill or Incineration:
Please consult your state Land Waste Management Authority for more information.

14 Transport Information

UN Number
ADG, IMDG, IATA UN3480

Proper Shipping Name
ADG, IMDG, IATA LITHIUM ION BATTERIES

Dangerous Goods Class
ADG Class: 9 Miscellaneous dangerous substances and articles.
Subsidiary Risk:

Packing Group: Not applicable

Marine pollutant:

EMS Number: F-A,S-I

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Hazchem Code: 4W

Special Provisions: 188, 230, 310, 348, 376, 377, 384, 387

Limited Quantities: 0

Packagings & IBCs - Packing Instruction: P903, P908, P909, P910, LP903, LP904

15 Regulatory Information

Australian Inventory of Industrial Chemicals:	
CAS: 12190-79-3	Lithium cobaltite
CAS: 7440-50-8	Copper
CAS: 7440-44-0	Activated carbon
CAS: 24937-79-9	Ethene, 1,1-difluoro-, homopolymer

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Poison Schedule:
Not Scheduled.

16 Other Information

Date of Preparation or Last Revision: 05.06.2020

Prepared by: MSDS.COM.AU Pty Ltd www.msds.com.au

Abbreviations and acronyms:
ADG: Australian Dangerous Goods
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
IARC: International Agency for Research on Cancer
STEL: Short Term Exposure Limit
TWA: Time Weighted Average
NES: National Exposure Standard (Safe Work Australia - Workplace Exposure Standards For Airborne Contaminants)
Acute Toxicity (Inhalation) 2: Acute toxicity - inhalation – Category 2
Respiratory Sensitisation 1: Respiratory sensitisation, Hazard Category 1
Toxic To Reproduction 1B: Reproductive toxicity – Category 1B
STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1

Disclaimer
This SDS is prepared in accord with the Safe Work Australia document “Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals - July 2020”
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