Safety Data Sheet
Electric Bikes

SDS Revision Date: 29-Nov-2024
SGS Reference No.: ETA22600065V01

Section 1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product Identity	Electric Bikes
Alternate Names	Electric Bikes
Unique Formula Identifier	

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

Intended Uses and Uses Advised Against	See Technical Data Sheet.

1.3. Details of the supplier of the safety data sheet

Company Name	HK Vanmoof Asia Limited Taiwan Branch No.9, Ln 71, Sec. 1, Hangzhou S. Rd., ZhongZheng Dist., Taipei City 100019, Taiwan
Customer Service	+886 2 2356 8336
Email Address	cindy.wang@vanmoof.com

1.4. Emergency telephone number

Emergency	
24 hour Emergency Telephone No.	+886 2 2356 8336

Section 2. Hazard identification of the product

The product is not classified for GHS. This product and its batteries are defined as “articles”, they are exempt from the requirements of the Hazard Communication Standard.
The hazards indicated below cover the abnormal situation where a battery ruptures.

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Acute toxicity(inhalation), category 3;H331	Toxic if inhaled.
Skin corrosion/irritation category 2;H315	Causes skin irritation.
Serious eye damage / eye irritation, category 1;H318	Causes serious eye damage.
Skin sensitizer category 1;H317	May cause an allergic skin reaction.
Carcinogen, category 1A;H350	May cause cancer.
Specific target organ toxicity, repeated exposure category 1;H372	Causes damage to organs through prolonged or repeated exposure.
Aquatic toxicity (chronic), category 3;H412	Harmful to aquatic life with long lasting effects.

2.2. Label elements

According to REGULATION (EU) 2020/878 amending Regulations EU 2015/830 and (EC) No 1907/2006

Danger

H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H331 Toxic if inhaled.
H350 May cause cancer.
H372 Causes damage to organs through prolonged or repeated exposure.
H412 Harmful to aquatic life with long lasting effects.

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P273 Avoid release to the environment.
P308+313 IF exposed or concerned: Get medical advice or attention.
P310 Immediately call a POISON CENTER, doctor or physician.
P403+233 Store in a well ventilated place. Keep container tightly closed.

2.3. Other hazards

This product contains no PBT/vPvB/vPvM chemicals.
This product contains no endocrine disrupting chemicals.

Section 3. Composition/information on ingredients

3.2. Mixtures

If the product contains substances that present a hazard according to Regulation (EC) No. 1272/2008 [CLP/GHS], they are listed below.

Portion	Ingredient/Chemical Designations	Cas No.	Concentration Range (wt%)
Positive electrode	Lithium transition metal oxidate (Li[M]m[O]n[b]	12031-65-1, 12057-17-9, 12190-79-3, 182442-95-1, 207803-51-8	20~60
Positive electrode's base	Aluminum	7429-90-5	1~10
Negative electrode	Carbon	7782-42-5, 7440-44-0	10~30
Negative electrode's base	Copper	7440-50-8	1~15
Electrolyte	Ethyl methyl carbonate Diethyl carbonate Ethylene carbonate Lithium hexafluorophosphate	96-49-1, 105-58-8, 623-53-0, 21324-40-3	5~25
Outer Case	Aluminum, Iron, aluminum laminated plastic	7429-90-5, 7439-89-6	1~30

^CLP 31 Reference EC No. 1272/2008 1.1.3.1. Notes relating to the identification, classification and labelling of substances (Table 3.1).
*PBT/vPvB - PBT, vPvM or vPvB-substance.
The full texts of the phrases are shown in Section 16.

Section 4. First aid measures

4.1. Description of first aid measures

General In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.

Inhalation Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious, place in the recovery position and obtain immediate medical attention. Give nothing by mouth.

Eye Irrigate copiously with clean water for at least 15 minutes, holding the eyelids apart and seek medical attention.

Skin Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognized skin cleanser.

Ingestion If swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

Overview No specific symptom data available. Treat symptomatically. See section 2 for further details.

Inhalation Toxic if inhaled.

Eye Causes serious eye damage.

Skin May cause an allergic skin reaction. Causes skin irritation.

Ingestion May be harmful if swallowed.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically. IF SWALLOWED: Call a POISON CENTER, doctor or physician if you feel unwell. IF ON SKIN: Wash with plenty of soap and water. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Get medical advice or attention. Immediately call a POISON CENTER, doctor or physician. Call a POISON CENTER or doctor, physician. Get Medical advice or attention if you feel unwell. If skin irritation or a rash occurs: Get medical advice or attention. Take off contaminated clothing and wash it before reuse.

Section 5. Fire-fighting measures

5.1. Extinguishing media

Recommended extinguishing media; alcohol resistant foam, CO_2, powder, water spray.

Unsuitable extinguishing media: Do not use water jet.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition: No hazardous decomposition data available.

Keep container tightly closed.

Do not breathe dust, fume, mist, vapors or spray. Avoid breathing dust, fume, gas, mist, vapors, spray.

5.3. Advice for fire-fighters

Put on appropriate personal protective equipment (see section 8).

ERG Guide No. 154

Section 6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Put on appropriate personal protective equipment (see section 8).

Do not breathe dust, fume, mist, vapors or spray. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Contaminated work clothing should not be allowed out of the workplace.

6.2. Environmental precautions

Do not allow spills to enter drains or waterways.

Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

Avoid release to the environment. Dispose of contents or container in accordance with local and national regulations.

6.3. Methods and material for containment and cleaning up

Sweep up or pick up.

6.4 Reference to other sections

See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

Section 7. Handling and storage

7.1. Precautions for safe handling

Store in cool, dry ventilated area. Avoid excessive heat. Always keep containers tightly closed when not in use.

Avoid contact with eyes. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Wear protective gloves, eye protection, and face protection.

7.2. Conditions for safe storage, including any incompatibilities

Incompatible materials: No available information

Store in a well ventilated place. Keep container tightly closed. Store locked up.

7.3. Specific end use(s)

No available information

Section 8. Exposure controls / personal protection

8.1. Control parameters

Exposure

CAS No.	Ingredient	Source	Value
96-49-1	Ethylene carbonate	ACGIH	No Established Limit
		DNEL Local Exposure	No Established Limit
		DNEL Systematic Exposure	15 mg/m³
		National	No Established Limit
105-58-8	Diethyl carbonate	ACGIH	No Established Limit
		DNEL Local Exposure	No Established Limit
		DNEL Systematic Exposure	17.6 mg/m³
		National	No Established Limit
623-53-0	Carbonate, methyl ethyl	ACGIH	No Established Limit
		DNEL Local Exposure	No Established Limit
		DNEL Systematic Exposure	10.3 mg/m³
		National	No Established Limit
7429-90-5	Aluminum	ACGIH	1 mg/m³ (R) Respirable fraction
		DNEL Local Exposure	3.72 mg/m³
		DNEL Systematic Exposure	No Established Limit
		National	No Established Limit
7439-89-6	Iron	ACGIH	No Established Limit
		DNEL Local Exposure	3 mg/m³
		DNEL Systematic Exposure	No Established Limit
		National	No Established Limit
7440-44-0	Carbon	ACGIH	No Established Limit
		DNEL Local Exposure	1.84 mg/m³
		DNEL Systematic Exposure	No Established Limit
		National	No Established Limit

7440-50-8	Copper	ACGIH	0.2 mg/m^3
		DNEL Local Exposure	No Established Limit
		DNEL Systematic Exposure	No Established Limit
		National	No Established Limit
7782-42-5	Carbon Nanotubes	ACGIH	2 mg/m^3 (R) Respirable fraction
		DNEL Local Exposure	1.2 mg/m^3
		DNEL Systematic Exposure	1.2 mg/m^3
		National	No Established Limit
12031-65-1	Lithium nickel dioxide	ACGIH	No Established Limit
		DNEL Local Exposure	No Established Limit
		DNEL Systematic Exposure	No Established Limit
		National	No Established Limit
12057-17-9	Lithium manganese oxide (LiMn2O4)	ACGIH	No Established Limit
		DNEL Local Exposure	No Established Limit
		DNEL Systematic Exposure	No Established Limit
		National	No Established Limit
12190-79-3	Cobalt lithium oxide (colio2)	ACGIH	No Established Limit
		DNEL Local Exposure	0.0664 mg/m^3
		DNEL Systematic Exposure	No Established Limit
		National	No Established Limit
21324-40-3	Electrolyte(proprietary)	ACGIH	No Established Limit
		DNEL Local Exposure	No Established Limit
		DNEL Systematic Exposure	0.931 mg/m^3
		National	No Established Limit
182442-95-1	Cobalt Lithium Manganese oxide	ACGIH	No Established Limit
		DNEL Local Exposure	No Established Limit
		DNEL Systematic Exposure	No Established Limit

		National	No Established Limit
207803-51-8	0207803-51-8	ACGIH	No Established Limit
		DNEL Local Exposure	No Established Limit
		DNEL Systematic Exposure	No Established Limit
		National	No Established Limit

8.2. Exposure controls

Respiratory If workers are exposed to concentrations above the exposure limit they must use the appropriate, certified respirators.

Eyes Wear safety glasses with side shields to protect the eyes. An eye wash station is suggested as a good workplace practice.

Skin Avoid skin contact. Use chemical resistant gloves classified under Standard EN 374: Protective gloves against chemicals and micro-organisms. Recommended: Viton or Nitrile gloves. When prolonged or frequently repeated contact may occur, a glove with a protection class of 6 (breakthrough time greater than 480 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 2 or higher (breakthrough time greater than 30 minutes according to EN 374) is recommended. The user must check that the final choice of type of glove selected for handling this product is the most appropriate and takes into account the particular conditions of use, as included in the user's risk assessment. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/ specifications provided by the glove supplier. Barrier creams may help to protect the exposed areas of the skin but should not be applied once exposure has occurred.

Engineering Controls Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapor below occupational exposure limits suitable respiratory protection must be worn.

Other Work Practices Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

Section 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical State	Color: Metallic color or black (without tube if it has tube) Physical State: Solid Form：Cylindrical or Prismatic or Pouch (laminated)
Color	Odorless
Odor	No available information
Melting point / freezing point	No available information
Initial boiling point and boiling range	No available information
Flammability (solid, gas)	No available information
Upper/lower flammability or explosive limits	No available information
Flash Point	No available information
Auto-ignition temperature	No available information
Decomposition temperature	No available information
pH	No available information
Viscosity (cSt)	No available information
Solubility in Water	Insoluble
Partition coefficient n-octanol/water (Log Kow)	No available information
Vapor pressure	No available information
Relative Density	No available information
Vapor Density	No available information
Particle Characteristics	No available information
Evaporation rate (Ether = 1)	No available information
Oxidising properties	No available information
Explosive properties	No available information

9.2. Other information

No other relevant information.

Section 10. Stability and reactivity

10.1. Reactivity

Hazardous Polymerization will not occur.

10.2. Chemical stability

Stable under normal circumstances.

10.3. Possibility of hazardous reactions

No available information

10.4. Conditions to avoid

Avoid high temperatures and contact with incompatible material

10.5. Incompatible materials
No available information
10.6. Hazardous decomposition products
No hazardous decomposition data available.

Section 11. Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008
Acute toxicity

Note: When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapour LC50, mg/L/4hr	Inhalation Dust/Mist LC50, mg/L/4hr	Inhalation Gas LC50, ppm
Ethylene carbonate - (96-49-1)	No data available.	No data available.	No data available.	No data available.	No data available.
Diethyl carbonate - (105-58-8)	No data available.	No data available.	No data available.	No data available.	No data available.
Carbonate, methyl ethyl - (623-53-0)	No data available.	No data available.	No data available.	No data available.	No data available.
Aluminum - (7429-90-5)	> 15,900.00, *Rat* - Category: NA	No data available.	No data available.	> 0.89, *Rat* - Category: NA	No data available.
Iron - (7439-89-6)	No data available.	No data available.	No data available.	No data available.	No data available.
Carbon - (7440-44-0)	No data available.	No data available.	No data available.	No data available.	No data available.
Copper - (7440-50-8)	> 2,500.00, *Rat* - Category: NA	> 2,000.00, *Rat* - Category: NA	No data available.	> 5.11, *Rat* - Category: NA	No data available.
Carbon Nanotubes - (7782-42-5)	> 2,000.00, *Rat* - Category: NA	No data available.	No data available.	> 2,000.00, *Rat* - Category: NA	No data available.
Lithium nickel dioxide - (12031-65-1)	> 2,000.00, *Rat* - Category: NA	No data available.	No data available.	No data available.	No data available.
Lithium manganese oxide (LiMn2O4) - (12057-17-9)	No data available.	No data available.	No data available.	No data available.	No data available.
Cobalt lithium oxide (colio2) - (12190-79-3)	> 5,000.00, *Rat* - Category: NA	> 2,000.00, *Rat* - Category: NA	No data available.	5.05, *Rat* - Category: 5	No data available.
Electrolyte(proprietary) - (21324-40-3)	175.00, *Rat* - Category: 3	No data available.	No data available.	No data available.	No data available.
Cobalt Lithium Manganese oxide - (182442-95-1)	No data available.	No data available.	No data available.	No data available.	No data available.
0207803-51-8 - (207803-51-8)	No data available.	No data available.	No data available.	No data available.	No data available.

Classification	Category	Hazard Description
Acute toxicity (oral)	---	---
Acute toxicity (dermal)	---	---
Acute toxicity (inhalation)	3	Toxic if inhaled.
Skin corrosion/irritation	2	Causes skin irritation.
Serious eye damage/irritation	1	Causes serious eye damage.
Respiratory sensitization	---	---
Skin sensitization	1	May cause an allergic skin reaction.
Germ cell mutagenicity	---	---
Carcinogenicity	1A	May cause cancer.
Reproductive toxicity	---	---
STOT-single exposure	---	---
STOT-repeated exposure	---	---
Aspiration hazard	---	---

11.2 Information on other hazards

11.2.1. Endocrine disrupting properties

This product contains no endocrine disrupting chemicals.

Section 12. Ecological information

12.1. Toxicity

Harmful to aquatic life with long lasting effects.

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/L	48 hr EC50 crustacea, mg/L	ErC50 algae, mg/L	3hr IC50 Bacteria mg/L	Biodegradability %
Ethylene carbonate - (96-49-1)	No data available.	No data available.	No data available.	---	---
Diethyl carbonate - (105-58-8)	No data available.	No data available.	No data available.	---	---
Carbonate, methyl ethyl - (623-53-0)	> 100.00, *Oncorhynchus tshawytscha*	> 100.00, *Daphnia magna*	> 62.00, *Desmodesmus subspicatus*	---	98.00
Aluminum - (7429-90-5)	6.17, *Pimephales promelas*	0.72, *Ceriodaphnia dubia*	0.02, *Raphidocelis subcapitata*	---	---
Iron - (7439-89-6)	No data available.	No data available.	No data available.	---	---
Carbon - (7440-44-0)	No data available.	No data available.	No data available.	---	---
Copper - (7440-50-8)	0.19, *Pimephales promelas*	0.01, *Daphnia magna*	0.15, *Raphidocelis subcapitata*	---	---
Carbon Nanotubes - (7782-42-5)	> 100.00, *Danio rerio*	> 100.00, *Daphnia magna*	> 100.00, *Raphidocelis subcapitata*	> 1,012.50	---
Lithium nickel dioxide - (12031-65-1)	No data available.	No data available.	No data available.	---	---

Lithium manganese oxide (LiMn2O4) - (12057-17-9)	No data available.	No data available.	No data available.	---	---
Cobalt lithium oxide (colio2) - (12190-79-3)	85.30, *Danio rerio*	42.70, Not Defined	71.31, *Dunaliella tertiolecta*	---	---
Electrolyte(proprietary) - (21324-40-3)	369.00, *Oryzias latipes*	> 100.00, *Daphnia magna*	> 100.00, *Raphidocelis subcapitata*	> 1,000.00	Readily biodegradable
Cobalt Lithium Manganese oxide - (182442-95-1)	No data available.	No data available.	No data available.	---	---
0207803-51-8 - (207803-51-8)	No data available.	No data available.	No data available.	---	---

12.2. Persistence and degradability
There is no data available on the preparation itself.
12.3. Bioaccumulative potential
No available information
12.4. Mobility in soil
No available information
12.5. Results of PBT and vPvB assessment
This product contains no PBT/vPvB/vPvM chemicals.
12.6 Endocrine disrupting properties
This product contains no endocrine disrupting chemicals.
12.7. Other adverse effects
No available information

Section 13. Disposal considerations

13.1. Waste treatment methods
Observe all federal, state and local regulations when disposing of this substance.

Section 14. Transport information

	ADR/RID	IMO / IMDG (Ocean Transportation)	ICAO/IATA
14.1. UN number	UN3171	UN3171	UN3171
14.2. UN proper shipping name	Battery-powered vehicle or Battery-powered equipment	Battery-powered vehicle or Battery-powered equipment	Battery-powered vehicle or Battery-powered equipment
14.3. Transport hazard class(es)	**DOT Hazard Class:** 9 **Sub Class:** Not Applicable	**IMDG:** 9 **Sub Class:** Not Applicable	**Air class:** 9 **Sub Class:** Not Applicable

14.4. Packing group	Not Applicable	Not Applicable	Not Applicable

14.5. Environmental hazards

Marine Pollutant: No;

14.6. Special precautions for user

No available information

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not Applicable

Section 15. Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
EU Legislation

REGULATION (EU) 2020/878 amending Regulations EU 2015/830 and (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH). REGULATION (EC) 1272/2008 on the classification, labeling and packaging of substances and mixtures (CLP).

Candidate List of SVHC for Authorisation: Not Applicable

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles:

Aluminum (Use restricted. See item 40.)
Diethyl carbonate (Use restricted. See item 40.)
Ethylene carbonate (Use restricted. See item 3. (liquid))
Lithium nickel dioxide (Use restricted. See item 28.)

15.2. Chemical Safety Assessment

No Chemical Safety Assessment has been carried out.

Section 16. Other information

Revision Date 29-Nov-2024

Revision Number

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is:

H225 Highly flammable liquid and vapor.
H226 Flammable liquid and vapor.
H301 Toxic if swallowed.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H330 Fatal if inhaled.
H332 Harmful if inhaled.
H350 May cause cancer.
H372 Causes damage to organs through prolonged or repeated exposure.
H373 May cause damage to organs through prolonged or repeated exposure.
H411 Toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.
H413 May cause long lasting harmful effects to aquatic life.

ACGIH - American Conference of Governmental Industrial Hygienists
ADR - International Carriage of Dangerous Goods by Road (Accord Dangereux Routier)
CAS - Chemical Abstract Service
CLP - Classification Labeling and Packaging
EC50 - Half maximal effective concentration
ErC50 - The concentration of test substance which results in a 50 percent reduction in growth rate (ErC50) relative to the control within 72hrs exposure.
GHS - Globally Harmonized System
IARC - International Agency for Research on Cancer
IATA - International Civil Aviation Organization
IC50 - The amount of a substance suspended in the air required to kills 50% of a test animals during a predetermined observation period.
ICAO - International Civil Aviation Organization
IMDG - International Maritime Dangerous Goods
IMO - International Maritime Organization
LC50 - Is the Lethal Concentration of a substance at which 50% of test animals die.
LD50 - Is the Lethal Dose at which 50% of the animals will be expected to die.
NIOSH - National Institute for Occupational Safety and Health
NTP - National Toxicology Program
OSHA - Occupational Safety and Health Administration
PBT - Persistent, Bioaccumulative and Toxic Chemicals
PEL - Permissible Exposure Limit
REACH - Registration, Evaluation, Authorization and Restriction of Chemicals
RID - Regulations concerning the international carriage of dangerous goods by rail)
STEL - Short Term Exposure Limit
TWA - Time Weighted Average
vPvB - Very Persistent and very Bio-accumulative
WGK - Water Hazard Class

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Acute toxicity(inhalation), category 3;H331	Calculation method
Skin corrosion/irritation category 2;H315	Calculation method
Serious eye damage / eye irritation, category 1;H318	Calculation method

Skin sensitizer category 1;H317	Calculation method
Carcinogen, category 1A;H350	Calculation method
Aquatic toxicity (chronic), category 3;H412	Calculation method

Note：

This test report supersedes the previous document bearing the report number ETA22600065, the report ETA22600065 was voided.

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