BATTERY PACK – UN3480
SAFETY INFORMATION SHEET

According to REACH regulation (EC 1907/2006, Art 31) and to OSHA regulation (29 CFR 1910.1200), batteries are ARTICLES with no intended release. As such, they are not covered by legal requirements to generate and supply an SDS or an MSDS.

This Battery Safety Data Sheet is provided solely as an information document for the purpose of assisting our customers.

SECTION 1:

Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form: Article

Trade name: Batterypack – Dangerous Good according to UN3480

Other means of identification:

Product name	Part No.	Version	Technical data	Dimension	Weight
HPR Battery V01	329591.0100	2077C2 INR18650-35E	50.4 V, 6.80 Ah, 360 Wh	370×48×63.5 mm	1.87 kg
HPR Battery V01	329591.0100	2077C3 INR18650M35A	50.4 V, 6.80 Ah, 360 Wh	370×48×63.5 mm	1.87 kg
HPR Battery V01	329591.0100	2077C4 N18650CP	50.4 V, 6.80 Ah, 360 Wh	370×48×63.5 mm	1.87 kg
HPR Battery V01	329591.0100	2077D4 N18650CP	50.4 V, 6.80 Ah, 360 Wh	370×48×63.5 mm	1.87 kg
HPR Battery V01	329591.0100	2077E4 N18650CP	50.4 V, 6.80 Ah, 360 Wh	370×48×63.5 mm	1.87 kg
HPR Battery V01	339283.0100 (SC)	2077C4 N18650CP	50.4 V, 6.80 Ah, 360 Wh	370×48×63.5 mm	1.87 kg
HPR Battery V01	339283.0100 (SC)	2077D4 N18650CP	50.4 V, 6.80 Ah, 360 Wh	370×48×63.5 mm	1.87 kg
HPR Battery V01	339283.0100 (SC)	2077E4 N18650CP	50.4 V, 6.80 Ah, 360 Wh	370×48×63.5 mm	1.87 kg
HPR Range Extender V01	329592.0101	2106C1 INR18650P28A	50.4 V, 2.80 Ah, 160 Wh	Ø 75/190 mm	0.98 kg
HPR Range Extender V01	339285.0101 (SC)	2106C1 INR18650P28A	50.4 V, 2.80 Ah, 160 Wh	Ø 75/190 mm	0.98 kg
HPR Battery V02	336835.0100	2162A1 INR21700-50E	50.8 V, 4.90 Ah, 250 Wh	415×38.2×63.5 mm	1.38 kg
HPR Battery V02	347517.0100 (SC)	2162A1 INR21700-50E	50.8 V, 4.90 Ah, 250 Wh	415×38.2×63.5 mm	1.38 kg
HPR Battery V03	355884.0100	03DFA1 14INR22/71	50.26 V, 5.57 Ah, 290 Wh	415×38.2×63.5 mm	1.45 kg
HPR Battery V03	360367.0100 (SC)	03DFA1 14INR22/71	50.26 V, 5.57 Ah, 290 Wh	415×38.2×63.5 mm	1.45 kg
HPR Battery V05	355885.0100	2222B2 14INR22-71-2	50.26 V, 11.14 Ah, 580 Wh	60.5×65.5x 416,6 mm	2.685 kg
HPR Battery V05	357768.0100(SC)	2222B2 14INR22-71-2	50.26 V, 11.14 Ah, 580 Wh	60.5×65.5x 416.6 mm	2.685 kg

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

Relevant identified uses of the mixture and uses advised against

Identified uses

The HPR Battery V01 pack is made of 28 pcs. 18650 cells in the 14S 2P configuration protected by electronic components

Nominal Voltage:	50.4 V
Rated Capacity:	6.80 Ah
Rated Energy:	342.72 Wh

The HPR Range Extender V01 is made of 14 pcs. 18650 cells in the 14S 1P configuration protected by electronic components

Nominal Voltage:	50.4 V
Rated Capacity:	2.80 Ah
Rated Energy:	141.12 Wh

The HPR Battery V02 pack is made of 14 pcs. 21700 cells in the 14S 1P configuration protected by electronic components

Nominal Voltage:	50.8 V
Rated Capacity:	4.90 Ah
Rated Energy:	248.92 Wh

The HPR Battery V03 pack is made of 14 pcs. 21700 cells in the 14S 1P configuration protected by electronic components

Nominal Voltage:	50.26 V
Rated Capacity:	5.57 Ah
Rated Energy:	279.95 Wh

The HPR Battery V05 pack is made of 28 pcs. 21700 cells in the 14S 2P configuration protected by electronic components

Nominal Voltage:	50.26 V
Rated Capacity:	11.14 Ah
Rated Energy:	559.9 Wh

Uses advised against

Not identified

1.3. Details of the supplier of the safety data sheet

Supplier

TQ Systems GmbH, Wildmoos 1, 82266 Inning am Ammersee, Germany
Tel. +49 8153 9308 308, E-mail address: ebike-support@tq-group.com

1.4. Emergency telephone number

Emergency telephone number (operating Mo.-Fr. 08:00 – 16:00 CET): **+48 22 701 26 00**

Date of compilation: 2023-06-13

SECTION 2:

Hazards identification

2.1. Classification of the substance or mixture

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

Not classified

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

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

Not required

NOTE! According to the REACH Regulation, the product is considered an article, and therefore is not subject to labeling requirement.

2.3. Other hazards

This mixture meets neither PBT nor vPvB criteria.

SECTION 3:

Composition/information on ingredients

3.1. Mixtures

Product identifier

Batterypack

Mixture components

Each battery consists cells which are an hermetically sealed metallic container containing a number of chemicals and materials of construction of which the following could potentially be hazardous upon release.

Substance	Material name	Concetration range (%)
Positive electrode	Lithium transition metal oxidate	20 – 60
Positive electrode's	Aluminium	1 – 10
Negative electrode	Carbon	10 – 30
Negative electrode's base	Copper	1 – 15
Electrolyte	Organic electrolyte principally involves ester carbonate	5 – 25
Outer case	Aluminium, iron, aluminium laminated plastic	1 – 30

SECTION 4:

First aid measures

4.1. Description of first aid measures

First-aid measures general

The following first aid measures are required only in case of exposure to interior battery components after damage of the external battery casing. Undamaged, closed cells do not represent a danger to the health.

First-aid measures after inhalation

Exposure occurs when product is damaged: remove casualty from exposure site to fresh air, place in reclining or sitting position, keep at rest and protect against heat loss. If necessary, call a physician.

First-aid measures after skin contact

Exposure occurs when product is damaged: in case of pouring fused product, rinse skin immediately with copious amount of water. Do not remove clothing. Cover burns with a sterile dressing. Call a physician.

First-aid measures after eye contact

Exposure occurs when product is damaged: rinse immediately with copious amount of lukewarm water for at least 15 min. Remove contact lenses. To avoid cornea damage, don't use jet stream. If irritation persists, seek ophthalmologist's advice.

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

Product components are hermetically sealed in metal containers, which under normal conditions of use are not hazardous. In case of tear, unseal or corrosion of the article, its content has local toxic and corrosive effect. May cause burns to the skin, conjunctiva, cornea. May cause irritation of the mucous membranes and respiratory system characterized by scratching in the throat, cough. In case of ingestion, there is a risk of burns to mouth, throat, digestive tract, and perforation of the stomach walls. Symptoms: nausea, vomiting, severe pain. In people who are allergic may cause severe allergic reaction to even very small amounts of the product. With repeated exposure to intense inhalation may cause respiratory diseases. May cause cancer by inhalation..

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

In case of an allergic reaction (rash, swelling, redness) call a physician and show him the label or safety data sheet to apply appropriate antihistamines. Provide the assisting physician with SDS.

SECTION 5:

Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Non-flammable mixture. Fire in the surroundings should be extinguished with the media suitable for the materials involved in fire. Product exposed to fire should be cooled from a safe distance with water spray (danger of explosion); if possible, remove them from the endangered area.

Unsuitable extinguishing media media

Do not use a direct water-jet.

5.2. Special hazards arising from the substance or mixture

In case of fire, carbon oxides, metal oxides, hydrogen fluoride may be formed

5.3. Advice for firefighters

Wear gas-tight protective suit and self-contained breathing apparatus

SECTION 6:

Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear protective clothing made of natural fabrics (cotton) or synthetic fibres, gloves made of nitrile (thickness 0.4 ± 0.05 mm, penetration time > 480 min.) or butyl (thickness 0.3 ±x0.05xmm, penetration time > 480 min.), safety goggles. Eliminate sources of ignition (extinguish open fire, announce prohibition of smoking and usage of sparking tools). Remove from the affected area unprotected persons who do not participate in removal of the failure. Avoid direct contact with the contents of damaged or open battery.

6.2. Environmental precautions

Protect from releasing to a sewage system, surface, ground water and soil.

6.3. Methods and material for containment and cleaning up

Leakage is possible from damaged or unsealed package. Secure sink basins. Damaged packaging place in an overpack. Vapours dilute with water spray. Eliminate sources of ignition (extinguish open fire, announce prohibition of smoking and usage of sparking tools). Small amounts absorb into chemically inert binding material (sand, diatomaceous earth), transfer to tight containers and deliver to an authorized waste recipient. Wash contaminated surface with large amount of water.Leakage is possible from damaged or unsealed package. Secure sink basins. Damaged packaging place in an overpack. Vapours dilute with water spray. Eliminate sources of ignition (extinguish open fire, announce prohibition of smoking and usage of sparking tools). Small amounts absorb into chemically inert binding material (sand, diatomaceous earth), transfer to tight containers and deliver to an authorized waste recipient. Wash contaminated surface with large amount of water.

6.4. Reference to other sections

Remove according to recommendations listed in „SECTION 13:“ on page 10.

SECTION 7:

Handling and storage

7.1. Precautions for safe handling

Do not open, disassemble, crush or burn the product. Do not connect the positive terminal o the negative terminal with electrical wire or chain. Avoid polarity reverse connection when installing the battery to an instrument. Do not wet the battery with water, seawater, drink or acid; or expose to strong oxidizer. Do not give a mechanical shock or deform. Do not use unauthorized charger or other charging method. Protect from exposure to heat or open flame. It is recommended to take special precautions when working with an open or damaged product to avoid contact with skin and eyes. Protect from releasing to a sewage system, surface, ground water and soil. Do not eat, drink or smoke while handling. Wash hands during intervals and after finishing work. Take off contaminated clothing and wash before reusing.

7.2. Conditions for safe storage, including any incompatibilities

Store in original containers, in a dry, ventilated storage room at temperatures up to 30 °C. Keep away from heat and ignition sources, oxidizers, acids. Temperatures above 70 °C may cause bursting of the product and leakage of the electrolyte. Protect from sunlight. Keep away from water and moisture.

7.3. Specific end use(s)

Follow Manufacturers recommendations regarding maximum recommended currents and operating temperature range. Applying pressure on deforming the battery may lead to disassembly followed by eye, skin and throat irritation.

SECTION 8:

Exposure controls/personal protection

8.1. Exposure controls

8.1.1. Appropriate engineering controls

Install proper general and local workplace ventilation.

8.1.2. Individual protective measures such as personal protective equipment

Eye/face protection:

In case of contact with contents of open or damaged product wear safety goggles.

Hands and skin protection:

In case of contact with contents of open or damaged product wear protective clothing and gloves made of nitrile (thickness 0.4 ± 0.05 mm, penetration time > 480 min.) or butyl (thickness 0.3 ± 0.05 mm, penetration time > 480 min).

Respiratory protection:

In normal conditions not required. In case of contact with contents of open or damaged product and exceeding permissible concentrations of vapours, use respiratory protection with particle filter marked white and labelled P2 and vapour filter marked brown and labelled A. You can apply combined filters AP.

Occupational hygiene:

General industrial hygiene rules apply. Don't allow exceeding occupational exposure levels. After finishing work remove contaminated clothes. Wash hands and face before work breaks. Wash entire body after finishing work. Do not drink, eat and smoke during handling and use.

8.1.3. Environmental exposure controls

Prevent from draining to a municipal sewage system and watercourses.

SECTION 9:

Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Solid
Colour	Various
Odour	Odourless
Odour threshold	Not available
Melting point	Not available
Freezing point	Not available
Boiling point	Not available
Flammability	Non flammable
Explosive limits	Not applicable
Lower explosive limit (LEL)	Not applicable
Upper explosive limit (UEL)	Not applicable
Flash point	Not applicable
Auto-ignition temperature	Not applicable
Decomposition temperature	Not available
pH	Not available
pH solution	Not available
Viscosity, kinematic	No data available
Solubility	Not available
Partition coefficient n-octanol/water (Log Kow)	Not available
Vapour pressure	Not available
Vapour pressure at 50 °C	Not available
Relative density	Not available
Relative vapour density at 20 °C	Not applicable
Particle size	Not available
Particle size distribution	Not available
Particle shape	Not available
Particle aspect ratio	Not available
Particle aggregation state	Not available
Particle agglomeration state	Not available
Particle specific surface area	Not available
Particle dustiness	Not available

9.2. Other information

No additional information available

SECTION 10:

Stability and reactivity

10.1. Reactivity

No reactivity if stored and used according to the identified uses.

10.2. Chemical stability

Stable in standard conditions of storage and use.

10.3. Possibility of hazardous reactions

None identified.

10.4. Conditions to avoid

Sources of ignition, open flame.

10.5. Incompatible materials

Water, strong oxidizing agents, strong acids.

10.6. Hazardous decomposition products

None identified.

SECTION 11:

Toxicological information

11.1. Information on toxicological effects

Efficient and tight battery pack is not hazardous to human health. The battery pack is a threat in case of tear, unseal or corrosion, resulting in possibility of releasing its contents.

Organic Electrolyte

Acute toxicity

LD_{50} – oral – rat 2,000 mg/kg or more

Irritating nature

Irritative to skin and eye

SECTION 12:

Ecological information

12.1. Toxicity

Product components are hermetically sealed, which under normal conditions of use are not hazardous to the environment. In case of tear, unseal or corrosion of the article, the mixture is very toxic to aquatic life with long lasting effects

12.2. Persistence and degradability

No additional information available.

12.3. Bioaccumulative potential

Partition coefficient octanol/water: (K_{ow}): Not determined for the mixture.

Bioconcentration factor (BCF): Not determined for the mixture

12.4. Mobility in soil

No additional information available.

12.5. Results of PBT and vPvB assessment

The mixture meets neither PBT nor vPvB criteria.

12.6. Endocrine disrupting properties

No additional information available.

SECTION 13:

Disposal considerations

13.1. Waste treatment methods

Do not dispose together with municipal waste. Do not allow ground, surface, ground water contamination.

European Waste Code: 16 06 05 – other batteries and accumulators.

SECTION 14:

Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

14.1. UN number or ID number

ADR	IMDG	IATA	ADN	RID
UN 3480	UN 3480	UN 3480	UN 3480	UN 3480

14.2. UN proper shipping name

ADR	IMDG	IATA	ADN	RID
Lithium ion batteries	Lithium ion batteries	Lithium ion batteries	Lithium ion batteries	Lithium ion batteries
Transport document description				
UN 3480 Lithium ion batteries, 9, (E)	UN 3480 Lithium ion batteries, 9	UN 3480 Lithium ion batteries, 9	UN 3480 Lithium ion batteries, 9	UN 3480 Lithium ion batteries, 9

14.3. Transport hazard class(es)

ADR	IMDG	IATA	ADN	RID
9A	9A	9A	9A	9A

14.4. Packing group

ADR	IMDG	IATA	ADN	RID
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

14.5. Environmental hazards

ADR	IMDG	IATA	ADN	RID
Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant : No	Dangerous for the environment: No	Dangerous for the environment: No	Dangerous for the environment: No

No supplementary information available

14.6. Special precautions for user

Overland transport

Classification code (ADR) M4
Special provisions (ADR) 230, 376, 377, 636
Limited quantities (ADR) 0
Excepted quantities (ADR) E0
Transport category (ADR) 2
Tunnel restriction code (ADR) E

Transport by sea

Special provisions (IMDG) 230, 376, 377, 384
Packing instructions (IMDG) P903, P908, P909 , P910, LP903, LP904
EmS-No. (Fire) F-A
EmS-No. (Spillage) S-I
Stowage category (IMDG) A
Stowage and handling (IMDG) SW19
MFAG-No 147

Air transport

PCA Excepted quantities (IATA) E0
PCA Limited quantities (IATA) Forbidden
PCA limited quantity max net quantity (IATA) Forbidden
PCA packing instructions (IATA) Forbidden
PCA max net quantity (IATA) Forbidden
CAO packing instructions (IATA) See 965
CAO max net quantity (IATA) See 965
Special provisions (IATA) A88, A99, A154, A164, A183, A201, A206, A331
ERG code (IATA) 9F

Inland waterway transport

Classification code (ADN) M4
Special provisions (ADN) 230, 376, 377, 636
Limited quantities (ADN) 0
Excepted quantities (ADN) E0
Equipment required (ADN) PP
Number of blue cones/lights (ADN) 0

Rail transport

Classification code (RID) M4
Special provisions (RID) 230, _376, 377, 387, 636
Limited quantities (RID) 0
Excepted quantities (RID) E0
Packing instructions (RID) P903, 908, 909, P910, P911, LP903, LP904, LP905, LP906
Transport category (RID) 2
Hazard identification number (RID) 90

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15:

Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the mixture

COMMISSION REGULATION (EU) No 109/2012 of 9 February 2012 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) as regards Annex XVII (CMR substances);

REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (OJ EU L353 of December, 31 2008, with later amendments 1–6 ATP);

REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC (OJ EU L396 of December 30, with later amendments).

Council Directive 67/548/EEC of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances (Series I Volume 1967 P. 234 – 256) Directive 1999/45/EC of the European Parliament and of the Council of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations (OJ L 200, 30.7.1999, p. 1–68)

Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)(OJ L 133, 31.5.2010, p. 1–43)

15.2. Chemical safety assessment

Supplier has not assessed the chemical safety of the mixture

SECTION 16:

Other information

The information contained in this safety data sheet describes the product exclusively from the safety requirements perspective. The user is responsible for setting up the conditions for safe use of the product and bears a sole responsibility for the consequences of its incorrect use.