BATTERY PACK 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 MIXTURE AND OF THE COMPANY

1.1 Product identifier

Battery pack 3S3P NCR18650AC, project no. 764

1.2 Relevant identified uses of the mixture and uses advised against

Identified uses:
The battery pack is made of 9 Panasonic NCR18650AC cells in the 3S3P configuration protected by electronic components.

Nominal Voltage:	10,8 V
Rated Capacity:	8,7 Ah
Rated Energy:	93,96 Wh

Uses advised against: Not identified.

1.3 Details of the supplier of the safety data sheet:

Supplier:
Register office:
Wamtechnik Sp. z o.o.
7/3 Wilanowska Avenue
02-765 Warszawa
Management Office, Trading Office, Address for correspondence:
Wamtechnik Sp. z o.o.
Techniczna 2
05-500 Piaseczno
Phone.: +48 22 701 26 00
Fax: + 48 22 701 26 00

E- mail address: office@wamtechnik.pl

1.4 Emergency telephone number

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

Date of compilation: 10.01.2020

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the mixture

The product is an article as defined in the REACH Regulation. Therefore, SDS is not required. As a whole (article), the product is not hazardous to human health and the environment.

In case of tear, unseal or corrosion of the article, the following hazards resulting from the classification of the mixture - components inside the package, are possible (see Section 3 of the safety data sheet):

Carcinogenicity, Hazard Category 1A (Carc. 1A)

May cause cancer by inhalation. (H350i)

Specific target organ toxicity — Repeated exposure, Hazard Category 1 (STOT RE 1)

Causes damage to organs through prolonged or repeated exposure (inhalation) (H372)

Skin corrosion, Hazard Category 1A (Skin Corr. 1A)

Causes severe skin burns and eye damage. (H314)

Acute toxicity (oral), Hazard Category 3 (Acute Tox. 3)

Toxic if swallowed. (H301)

Acute toxicity (inhalation), Hazard Category 4 (Acute Tox. 4)

Harmful if inhaled. (H332)

Sensitisation — Skin, Hazard Category 1 (Skin Sens. 1)

May cause an allergic skin reaction. (H317)

Hazardous to the aquatic environment — Acute Hazard, Category 1 (Aquatic Acute 1)

Very toxic to aquatic life. (H400)

Hazardous to the aquatic environment — Chronic Hazard, Category 1 (Aquatic Chronic 1)

Very toxic to aquatic life with long lasting effects. (H410)

Classification according to Directive (EC) No. 1272/2008:

Carcinogenic, Category 1

May cause cancer by inhalation. (R49)

Corrosive (C)

Causes severe burns. (R35)

Toxic (T)

Toxic: danger of serious damage to health by prolonged exposure through inhalation. (R48/23)

Toxic if swallowed. (R25)

Harmful (Xn)

Harmful by inhalation. (R20)

May cause sensitisation by skin contact. (R43)

Dangerous to the environment (N)

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. (R50/53)

Harmful effects on human health:

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.

Environmental effects:

Very toxic to aquatic life with long lasting effects.

Adverse effects associated with physico-chemical properties:

Unknown hazardous effects associated with physicochemical properties. With normal use there is no risk of fire or explosion, or the danger of electrolyte leakage from the product. Contact of product poles with other metals can lead to heating or leakage.

2.2 Label elements

Pictogram: Not required.
Signal Word: Not required.
Hazard Statements: Not required.
Precautionary statements: 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: *Battery pack*

Mixture components:

Each battery consist 9 cell 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 transistion metal oxidate	20 - 60
Positive electrode's base	Alumnium	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

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.

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.

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.

Ingestion: Exposure occurs when product is damaged: if swallowed, don't provoke vomiting. Rinse mouth with water. Make casualty drink large amount of water (unless unconscious). If necessary, consult a physician

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:

Do not use a direct water-jet.

5.2 Special hazards arising from the 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 ± 0.05 mm, 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 materials 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.

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

a) Appearance

Mixture in hermetically sealed containers.

b) Odour

Odourless.

c) Odour threshold

Not applicable since the mixture is odourless.

d) pH

No data available.

a) Melting/freezing point

No data available.

b) Initial boiling point and boiling range

No data available.

c) Flash point

The mixture - contents of the accumulator is non-flammable.

d) Evaporation rate

Negligible.

e) Flammability

Non-flammable mixture.

f) Upper/lower flammability or explosive limits

Not applicable. The mixture does not pose an explosion hazard.

g) Vapour pressure

No data available.

h) Vapour density

No data available.

i) Relative density

No data available.

j) Solubility(ies)

Water insoluble.

k) Partition coefficient: n-octanol/water

No data available.

l) Auto-ignition temperature

No data available.

m) Decomposition temperature

No data available.

n) Viscosity

No data available.

o) Explosive properties

No explosion hazard.

p) Oxidising properties

Not expected to have oxidising properties.

9.2 Other information

No data.

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 2,000mg/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 data 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 data available.

12.5 Results of PBT and vPvB assessment

The mixture meets neither PBT nor vPvB criteria.

12.6 Other adverse effects

No data 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

ADR/RID, IMDG, IATA

14.1 UN number

3480 (or 3481 when packed in equipment)

14.2 UN proper shipping name

LITHIUM ION BATTERIES (including lithium ion polymer batteries)

14.3 Transport hazard class(es)

9

14.4 Packing group

-

14.5 Environmental hazards

The mixture is not hazardous to the environment according to the UN Model Regulations.

14.6 Special precautions for user

No special precautions.

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

Not applicable.

14.8 Worldwide air transportation

IATA [Packing Instruction 965 section IA and IB, 966 or 967 when Section II applied]

149.9 Europe, road transportation:

ADR [Packing Instruction 903]

14.10 Worldwide, sea transportation:

IMO-IMDG

In the case of transportation, avoid exposure to high temperature and prevent the formation of any condensation. Take in a cargo of them without falling, dropping and breakage. Prevent collapse of cargo piles and wet by rain. The container must be handled carefully. Do not give shocks that results in mark of hitting on a battery. Please refer to section 7-HANDLING AND STORAGE also.

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.