

UN 3480

BRIX™
SAFETY DATA SHEET
BRIX™ Lithium Ion battery

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

NOTE:

As a solid, manufactured article, exposure to hazardous ingredients is not expected with normal use. This battery is an article pursuant to REACH regulation 1907/2006/EC and, as such, do not require the publication of a safety data sheet.

The information contained in this Material Safety Data Sheet contains valuable information critical to the safe handling and proper use of the product. This information should be retained and available for users of this product.

Product identifier

BRIX™ rechargeable battery for machines with electrical power supply.

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

- Relevant identified uses: Power supply
- Uses advised against: None known

Details of the supplier of the safety data sheet

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2. Hazards identification

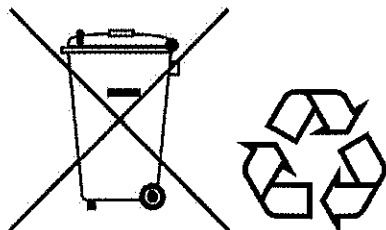
Classification of the substance or mixture

No risks occur during normal use of lithium ion batteries when handled in accordance with the operating instructions supplied with the battery.

However, if exposed to fire, subject to mechanical shock, disintegration or incorrectly connected / charged, the hazardous substances of the battery can be released. Risk of fire or explosion.

Label elements

In accordance with the EU batteries directive and current national legislation, lithium ion batteries must be labeled with a crossed bin with ISO's return / recovery symbol:



The battery is also marked with:



Other hazards

None.

3. Composition/information on ingredients

As a solid, manufactured article, exposure to hazardous ingredients is not expected during normal use.

Substances

See *Mixtures*.

Mixtures

CAS-No.	Chemical name/Name	Classification according to Regulation(EC) No 1278/2008(CLP)	Max. percentage of BRIX weight
12325-84-7	Lithium Nickel Oxide	Not classified	27
7782-42-5	Graphite	Not classified	23
7439-89-6	Iron	Not classified	16
7440-50-8	Copper	Not classified	12
24936-68-3	PC (Polycarbonate)	Not classified	9
9003-56-9	ABS (Acrylonitrile Butadiene Styrene)	Not classified	6
12190-79-3	Cobalt lithium dioxide	Not classified	4
554-12-1	Methyl propanoate	Flam. Liq. 2, H225 Acute Tox. 4, H332	4
7429-90-5	Aluminium	Pyr. Sol. 1, H250 Water-react. 2, H261	4
25929-04-8	PC (Polycarbonate)	Not classified	4
21324-40-3	lithium hexafluorophosphate(1-)	Not classified	2
114435-02-8	4-Fluoro-1,3-dioxolan-2-one	Not classified	2
616-38-6	Dimethyl carbonate	Flam. Liq. 2, H225	2
9002-88-4	Polyethylene	Not classified	2
115-86-6	Phosphoric acid ester	Not classified	2
-	Polypropene + halogen free flame retardant	Not classified	2
7440-02-0	Nickel	Skin Sens. 1, H317 Carc. 2, H351 STOT RE 1, H372 Aquatic Chronic 3, H412	1

4. First aid measures

Description of first aid measures

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.

Exposure	Action
After inhalation	Ensure supply of fresh air. Get medical attention.
After contact with skin	Wash off immediately with plenty of water. Remove all contaminated clothing. Provide first aid to affected skin area. Get medical attention. If skin is exposed to molten plastic, cool down with cool water. Wash with soap and plenty of water. Do not pull off molten plastic from the skin without medical help.
After contact with eyes	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Seek medical treatment by eye specialist.
After ingestion	Let the patient drink plenty of water or milk, provided the patient is conscious and alert. Do not induce vomiting. Get medical attention immediately.

5. Firefighting measures

If possible, immediately move the battery to an open surface outdoors.

Extinguishing media

Cold water in large amounts is applicable, as well as AVD (Aqueous Vermiculite Dispersion) extinguishers designed and tested for lithium ion batteries. If the fire is small, HFC (hydrofluorocarbon) clean-agent fire extinguisher or alcohol resistant foam fire extinguishers can be used.

Special hazards arising from the substance or mixture

May form hydrofluoric acid if cell electrolyte reacts. In case of fire, the formation of the following flue gases cannot be excluded:

- Hydrogen fluoride (HF)
- Carbon monoxide (CO)
- Carbon dioxide (CO₂)
- Hydrogen cyanide (HCN)
- Nitrogen oxides (NO_x)
- Other toxic and flammable gases

If cells vent, flammable gas leaks out from the cell.

Advice for fire fighters

Wear self-contained breathing apparatus and protective suit.

If possible, remove battery from firefighting area. If the battery is heated above 125°C, cells may vent. The battery module is not flammable but internal organic material of the cells will burn if the cell is incinerated or if vented gases are ignited.

There is a risk of reignition, even if the fire has been extinguished at an early stage. Cool with large amounts of water until the battery temperature has stabilized at the surrounding temperature.

6. Accidental release measure

This information is relevant only if the battery is broken and the contents are released.

Personal precautions, protective equipment and emergency procedures

Use personal protective clothing. Avoid contact with skin, eyes and clothing. Avoid breathing fume and gas.

Environmental precautions

Do not discharge into the drains/surface waters/groundwater.

Methods and material for containment and cleaning up

Take up mechanically and send for disposal. The solids are put in a container.

Reference to other sections

See 8. *Exposure controls/personal protection* and 13. *Disposal considerations*.

7. Handling and storage

Precautions for safe handling

- Avoid short circuit.

- Avoid reverse polarity (incorrect connection) during installation.
- Keep the battery dry.
- Do not expose the battery to strong oxidizing agents.
- Do not damage or remove the battery cover.
- Keep away from open flames, hot surfaces and sources of ignition.
- Do not solder directly on the battery.
- Do not damage or deform the battery. Protect the poles from mechanical impact.
- Use only manufacturer-approved charger or charging method.

Conditions for safe storage, including any incompatibilities

- Do not store the batteries with metal products, water, strong acid or strong oxidizing agents.
- Store indoors, between -20 °C and +35 °C in a dry environment, air humidity 45-85%. Optimum temperature is just below 20 °C.
- Avoid direct sunlight, high temperature and high humidity.
- Keep in closed original container to prevent short circuit.

Specific end use(s)

Power supply.

8. Exposure controls/personal protection

Control parameters

Not specified. During normal charging and discharging no release of any hazardous substances occur.

Exposure controls

During normal charging and discharging no release of any hazardous substances occur. The following applies to electrolyte leaks:

Proper actions:	Use general ventilation or spot extraction to keep exposure below hygiene limits. Avoid direct contact with the electrolyte. Emergency shower and eye shower should be in the workplace.
Respiratory protection:	In case of insufficient ventilation use respiratory protection adapted for the specific conditions of use.
Skin / body protection:	Use chemical resistant gloves. Use full protective clothing and chemical resistant apron.
Eye protection:	Wear safety glasses.

9. Physical and chemical properties

Information on basic physical and chemical properties

The battery consists of an outer cover where the lid and the cover are made of polypropylene plastic.

Form:	Solid
Color:	Various
Odor:	Odourless
pH value:	Not applicable
Flash point:	Not applicable
Lower explosion limit:	Not applicable
Vapor pressure:	Not applicable
Density:	Not applicable
Water solubility:	Insoluble
Ignition temperature:	Not applicable

Other information

No information available.

10. Stability and reactivity

Reactivity

Not expected to be reactive. In case of leakage, the electrolyte reacts with water.

Chemical stability

Stable under normal conditions of use and storage.

Possibility of hazardous reactions

No dangerous reactions are known.

Conditions to avoid

- Short circuit.
- Mechanical impact that can cause deformation.
- Temperature above 85 °C.
- Direct sunlight.
- High humidity.

Incompatible materials

- Electrically conductive material.
- Water.
- Strong oxidizing agents.
- Strong acids.

Hazardous decomposition products

No decomposition occurs during storage and use as instructed.

In case of fire and open cells, there is the possibility of hydrofluoric acid and carbon monoxide release.

11. Toxicological information

If appropriately handled and if in accordance with the general hygienic rules, no damages to health have become known. However, the product contains substances that are considered to be hazardous to health.

Information on toxicological effects

Acute toxicity:	LD50 oral > 2 000 mg/kg or more.
Irritating nature:	Irritative to skin and eyes.
Mutagen:	Not applicable
Chronic effects of overexposure:	Not applicable

12. Ecological information

Ecological injuries are not known or expected under normal use. There is no mercury (Hg), cadmium (Cd) or lead (Pb) in the battery.

13. Disposal considerations

Waste treatment methods

Batteries should be handled as hazardous waste and shall be recycled in special facilities approved for the purpose. Spent lithium ion batteries (EWC 16 06 01) are subject to regulation of the EU Battery Directive (2006/66/EC) and its adoption into national legislation on the composition and end-of-life management of batteries. Suggested waste code 16 06 05 (EWC code). Cleaned packaging material is recycled in accordance with national regulations.

14. Transport information

The battery is packed on a pallet. Standard accessories and documentation are included. Check that the delivery is complete and not damaged. Report any damage directly to the carrier. Transport the battery system in its packaging to the installation site. Note labels and warnings on the packaging.

	UN number	UN proper shipping name	Transport hazard class(es)	Packing group
ADR/RID	UN3480	Lithium ion batteries	9	188, 230, 310, 636, P903, P903a, P903b
IMDG	UN3480	Lithium ion batteries	9	188, 230, 310, P903
IATA/CAO	UN3480	Lithium ion batteries	9	A68, A99, A154, A164, P965, P966, P967, P968, P969, P970

Special precautions for user

Not applicable.

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

Not applicable.

15. Regulatory information

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

In accordance with the EU Battery Directive and the respective national legislation, lithium ion batteries have to be marked by a crossed out dust bin.

Lithium ion batteries are regulated by the EU Battery Directive (2006/66 / EC) and its implementations in national legislation on the composition and management of end-of-life batteries.

16. Other information

Release date: 2017-09-29

Revision date: 2020-08-04

Doc.no. A00371 rev03

Print p/n. 6515103

Data of sections 4 to 8, as well as 10 to 12, do not necessarily refer to the use and the regular handling of the product (in this sense consult package leaflet and expert information), but to release of major amounts in case of accidents and irregularities. The information describes exclusively the safety requirements for the product(s) and is based on the present level of our knowledge. This data does not constitute a guarantee for the characteristics of the product(s) as defined by the legal warranty regulations.

The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.