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REMS Akku Li-Ion 21,6V, 5,0 Ah

deu-eng	2
fra-eng	13
ita-eng	24
swe-eng	35
nno-eng	46
dan-eng	57
fin-eng	68



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Amtsgericht Stuttgart HRA 728253

Persönlich haftender Gesellschafter: Föll GmbH

Amtsgericht Stuttgart HRB260321

E-Mail: info@rems.de

Internet: www.rems.de

Geschäftsführer:

Dr.-Ing. Christoph Föll-Laubengeiger

Dr.-Ing. Rudolf Wagner

PRODUKTSICHERHEITSDATENBLATT

MATERIAL SAFETY DATA SHEET

Lithium-Ionen-Manganoxid-Batterie
Lithium ion manganese oxide battery

Artikel-Nr.: 571581 R22 / Item no.: 571581 R22

Gemäß Verordnung (EG) Nr. 1907/2006 (REACH) muss ein Sicherheitsdatenblatt lediglich für Stoffe und Zubereitungen zur Verfügung gestellt werden. Batterien sind von den Anforderungen dieser Verordnung nicht betroffen.

According to Regulation (EC) No. 1907/2006 (REACH), a safety data sheet must be provided solely for substances and preparations. Batteries are not affected by the requirements of this Regulation.

1. Bezeichnung des Produkts und Angabe des Herstellers

Product Designation and Name of the Manufacturer

Identifizierung: <i>Identification</i>	Produktkategorie: <i>Product category</i>	Lithium-Ionen-Batterie <i>Lithium-ion battery</i>
	Bezeichnung: <i>Model designation</i>	6S2P
	Nennspannung: <i>Nominal voltage</i>	21.6V
	Nennkapazität: <i>Nominal capacity</i>	5.0Ah
	Nennenergie: <i>Nominal energy</i>	108Wh
	Chemisches System: <i>Chemical system</i>	Lithium-Manganoxid / Graphit <i>Lithium manganese oxide / Graphite</i>
	Wiederaufladbar: <i>Rechargeable</i>	Ja <i>Yes</i>

Hersteller: <i>Manufacturer</i>	Name und Adresse: <i>Name and address</i>	REMS GmbH & Co KG Stuttgarter Straße 83 D-71332 Waiblingen
	Telefon / <i>phone:</i>	+49 (0) 7151 / 1707-0
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2. Mögliche Gefahren

Possible Hazards

Klassifizierung: Die Li-Ion Batterie hat eine Nennenergie von > 100Wh und unterliegt daher bestimmten Sonderbestimmungen im Gefahrgutrecht.

Classification: *This lithium-ion battery has a nominal energy of > 100Wh, which is why it is subject to certain special provisions under the hazardous substances law.*

Gefahren: Lithium-Ionen-Batterien können bei unsachgemäßer Handhabung Feuer entwickeln, explodieren oder chemische Verätzungen verursachen. Batterien keines falls kurzschließen, durchstoßen, in Feuer werfen, quetschen, in Wasser tauchen, erzwungen entladen oder Temperaturen aussetzen, die außerhalb der angegebenen Betriebsspanne des Produktes liegt. Bitte lesen Sie die Bedienungsanleitung sorgfältig. Unter normalen Bedingungen treten keine gefährlichen Stoffe aus und es kann zu keiner Berührung mit toxischen Stoffen kommen. Ein Expositionsrisiko besteht nur im Falle unsachgemäßer Handhabung (mechanisch, thermisch, elektrisch), die zur Aktivierung der Sicherheitsventile und/oder zum Aufbrechen des Gehäuses führt. Auslaufen der Elektrolytflüssigkeit, Reaktion der Elektrodenmaterialien mit Feuchtigkeit/Wasser oder Batterieentlüftung/ Feuer/ Explosion können, abhängig von den Begleitumständen, die Folge sein.

Hazards: *When handled improperly, lithium-ion batteries may explode, or cause fire or chemical burns. Batteries must not be short-circuited, punctured, thrown into fire, crushed, immersed in water, forcibly discharged or exposed to temperatures exceeding the product's specified operating range. Please read the operating instructions thoroughly. The escape of and contact with any hazardous and toxic substances is not possible under normal conditions of use. A risk of exposure only exists in case of improper (mechanical, thermal, electrical) use which leads to the activation of safety valves and/or the rupture of the battery housing. Depending on the surrounding circumstances, the following might occur: electrolyte leakage, reaction of the electrode materials with moisture/water or battery venting/fire/explosion.*

Toxizität: Brennt eine Batterie, so können Reizungen infolge von entstehendem Rauch oder entstehenden Dämpfen an Augen, Haut und Atemwegen auftreten.

Toxicity: *If a battery burns, smoke or vapors are generated. These may cause eye, skin and respiratory tract irritations.*

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3. Zusammensetzung und Angaben zu den Bestandteilen

Composition and Information About the Individual Components

Die folgenden Komponenten sind in der verschlossenen Zelle enthalten:

The following components are contained in the sealed cell

Komponenten	Materialname	Konzentrationsbereich (wt %)	CAS-Nummer
Positive Elektrode	Lithium Übergangsmetall-Oxide Li[M]m[O]n	20~60	12190-79-3 12057-17-9 182442-95-1
Basis positive Elektrode	Aluminium	1~10	7429-90-5
Negative Elektrode	Kohle	10~30	7429-90-5
Basis negative Elektrode	Kupfer	1~15	7440-44-0
Elektrolyt	Organische Elektrolyte beinhalten hauptsächlich Ester Carbonate	5~25	Vertraulich
Äußere Hülle	Aluminium, Eisen, Aluminium laminiertes Plastik	1~30	7429-90-5; 7439-89-6

Component	Material name	Concentration range (wt %)	CAS number
Positive electrode	Lithium transition metal oxidate Li[M]m[O]n	20~60	12190-79-3 12057-17-9 182442-95-1
Positive electrode's base	Aluminum	1~10	7429-90-5
Negative electrode	Carbon	10~30	7429-90-5
Negative electrode's base	Copper	1~15	7440-44-0
Electrolyte	Organic electrolyte principally involves ester carbo- nate	5~25	Confidential
Outer case	Aluminum, iron, aluminum laminated plastic	1~30	7429-90-5; 7439-89-6

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4. Erste-Hilfe-Maßnahmen

First Aid Measures

Die unter Punkt 3 angegebenen Chemikalien befinden sich in einem abgedichteten Gehäuse, sodass sie bei normalem Gebrauch nicht austreten können. Die Gefahr des Austretens besteht nur durch mechanische Beschädigung des Gehäuses.

The chemicals stated in Section 3 are contained in a sealed housing so that they cannot escape during normal use. Leakage may only be caused as a result of mechanical damage to the housing.

Sollten Chemikalien austreten, ist Folgendes zu beachten:

If chemicals do leak, the following must be observed

Einatmen:	Austretende Gase können zu Atemwegbeschwerden führen. Sofort lüften oder an die frische Luft gehen, in schlimmeren Fällen sofort einen Arzt rufen.
<i>Inhalation:</i>	<i>Escaping gases may cause respiratory tract irritation. Immediately ventilate or leave the room to get into fresh air. In more serious cases, call a doctor immediately.</i>
Hautkontakt:	Es können Hautirritationen auftreten. Haut mit Seife und Wasser gründlich waschen.
<i>Skin contact:</i>	<i>Skin irritations may occur. Thoroughly wash the skin with soap and water.</i>
Augenkontakt:	Es kann zu Reizungen an den Augen kommen. Sofort die Augen 15 Minuten lang gründlich mit Wasser spülen, dann einen Arzt aufsuchen.
<i>Eye contact:</i>	<i>Eye irritations may occur. Immediately and thoroughly rinse the eyes with water for 15 minutes then seek medical assistance.</i>

5. Maßnahmen zur Brandbekämpfung

Fire Fighting Measures

Im Brandfall:	Verwenden Sie nur Feuerlöscher der Brandklasse D (Trockenpulver).
<i>In case of fire:</i>	<i>Only use Class D (dry powder) fire extinguishers.</i>
Achtung:	Bevor Sie beginnen das Feuer zu löschen, stellen Sie sich bitte auf die Seite des Feuers, aus der der Wind kommt. So atmen Sie keine giftigen Dämpfe ein.
<i>Caution:</i>	<i>Before you start extinguishing the fire, be sure to go to the side of the fire from which the wind is coming. In this way, you will not inhale any toxic vapours.</i>

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6. Maßnahmen bei unbeabsichtigter Freisetzung

Measures to Be Implemented in Case of Accidental Leakage

Ausgelaufene Elektrolytflüssigkeit sollte mit einem saugfähigen Stück Stoff aufgewischt werden.
Leaked electrolyte fluid should be wiped up with an absorbent cloth.

Im Falle einer größeren Freisetzung sollte Schutzkleidung getragen werden:
Personal protective equipment should be worn in case of larger leakages:

- ↪ **schützende Kleidung**
protective clothing
- ↪ **Gasmaske gegen organische Gase**
gas mask for protection against organic gases
- ↪ **Schutzbrille**
safety goggles
- ↪ **Schutzhandschuhe**
protective gloves

7. Handhabung und Lagerung

Handling and Storage

Handhabung: Die Batterie nicht öffnen, zerquetschen oder zerlegen oder aus großer Höhe fallen lassen oder etwas anlöten.

Handling: *Neither open, crush nor disassemble the battery, nor let it drop from a great height nor solder anything onto it.*

Laden: Die Ladetemperatur muss zwischen 0 °C und +45 °C betragen.
Die Batterie darf nur mit dem dazugehörigen Ladegerät geladen werden.

Charging: *The charging temperature must be between +32 °F and +113 °F.*
Only use the charger designated for this battery.

Entladen: Das Entladen der Batterie darf nur zwischen -20 °C und +60 °C erfolgen.
Discharging: *The battery may only be discharged at temperatures from -4 °F to +140 °F.*

Achtung: Falsche Handhabung kann zu einer Explosion führen oder einen Brand entfachen!
Caution: *Improper handling may cause fire or explosion!*

Lagerung: Temperatur: -20 °C bis +40 °C unter 3 Monaten
Storage: *Temperature: -4 °F to +104°F for less than 3 months*

Luftfeuchtigkeit: 0 % bis 80 %
Humidity range: 0 % to 80 %

Das Lager muss gut durchlüftet sein. / *Store in a well-ventilated place.*

Ein Kurzschluss kann einen Brand verursachen. / *Short circuits may cause fires.*

Die Batterien dürfen nicht mit anderen metallischen Gegenständen gelagert werden. / *Do not store along with other metal objects.*

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8. Überwachen der gelagerten Waren und Schutzausrüstung

Monitoring of the Stored Goods and Personal Protective Equipment

Die Hinweise unter Punkt 7 sind zu beachten. Die Einhaltung der Lagertemperatur innerhalb der vorgegebenen Grenzen muß fortlaufend überwacht werden. Ebenso sind eine gute Durchlüftung und eine Luftfeuchtigkeit in den angegebenen Grenzwerten sicher zu stellen. Für den normalen Umgang mit den Batterien ist keine Schutzausrüstung erforderlich.

Observe the information stated in Section 7. Continuously monitor the storage temperature so as to ensure that it is within the specified limits. Apart from that, it is required to ensure good ventilation and that the humidity does not exceed the specified limits. No protective equipment is required during normal handling.

9. Physikalische und chemische Eigenschaften

Physical and Chemical Properties

Aussehen: 12 Zellen im Gehäuse.

Appearance: Housing with 12 cells

Gewicht: 800 g

Weight: 800 g

Chemische Eigenschaften: siehe Punkt 3

Chemical properties: see Section 3

10. Stabilität und Reaktivität

Stability and Reactivity

Durch eine Lagerung über 12 Monate wird die Kapazität der Batterie reduziert und die voraussichtliche Funktionsdauer wird verkürzt. Das Gehäuse kann durch auslaufenden Elektrolyt von innen beschädigt werden.

Storage periods of more than 12 months will decrease the battery's capacity and expected lifespan. Electrolyte leakages may damage the housing on the inside.

11. Toxikologische Angaben

Toxicological Information

Im normalen Umgang treten keine gefährlichen Stoffe aus der Batterie aus und es kann somit zu keiner Berührung mit toxischen Stoffen kommen.

The escape of and contact with any hazardous and toxic substances is not possible under normal conditions of use.

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12. Umweltspezifische Angaben

Environment-Related Information

Bei normalem Umgang tritt keine Umweltschädigung durch die Batterie auf. Sie muss jedoch nach dem Gebrauch gesondert entsorgt werden, da sie gefährliche Chemikalien enthält. Siehe Punkt 13.

Provided that the battery is handled properly, environmental pollution does not occur. After use, however, the battery must be disposed of separately as it contains hazardous chemicals. See Section 13.

13. Hinweise zur Entsorgung

Disposal Instructions

Eine Batterie ist Sondermüll.

Die Entsorgung der Batterie darf nur über ein zugelassenes Rücknahmesystem erfolgen.

Die Batterie darf auf keinen Fall über den Restmüll entsorgt werden.

Batteries are classified as hazardous waste.

The battery may only be disposed of by returning it to an authorized collection point.

It is prohibited to dispose of the battery with normal household waste.

14. Angaben zum Transport

Transportation information

Allgemeine Erklärung

General explanation

Einschränkende Regularien sind für den Versand dieses Produkts mit Luftfracht, im Straßenverkehr, im Zugverkehr oder auf dem Seeweg maßgeblich. Hinweise auf diese Regularien finden Sie untenstehend. Seit sich die Gesetzgebung regelmäßig ändert, muss der Transporteur sicherstellen, dass die Produkte nach den zum Zeitpunkt des Transports gültigen und maßgeblichen Richtlinien transportiert werden. Sollten Sie in dieser Angelegenheit Hilfe benötigen, wenden Sie sich bitte an den Hersteller der Produkte.

Restrictive regulations are applicable to the product's transport by air, road, rail or sea. Below you will find references to these regulations. As these laws are subject to frequent changes, the transport company shall ensure that the products are transported according to the regulations applicable at the time of shipment. Please contact the manufacturer of the products if you need any assistance in this matter.

Transport der Batterie laut Richtlinie UN 3480/3481 (1).

Da die Nennenergie größer als 100 Wh ist, **muss** die Batterie **als Gefahrgut versendet werden**.

Transportation of the battery according to Directive UN 3480/3481 (1).

As the nominal energy exceeds 100 Wh, the battery **must be shipped as a dangerous good**.

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Die Batterie **muss** gegen Kurzschluss gesichert sein.
The battery **must** be protected against short circuits.

Die Transportregularien richten sich nach den länderspezifischen Verordnungen und der Art des Transportweges.
The transport regulations depend on the country-specific provisions and on the type of transport.

Straße und Bahn: ADR / RID

Road and rail: ADR / RID

- ↪ Klasse / Class: 9
- ↪ Klassifizierungscode / Classification code: M4
- ↪ Verpackungsgruppe / Packaging group: ---
- ↪ Verpackungsvorschriften / Packaging instructions: P903 / P903a / P903b

Tunnelbeschränkung: E, Durchfahrt verboten durch Tunnel der Kategorie E
Tunnel restriction: E, passage prohibited through tunnels of category E

Luft: IATA

Air: IATA

- ↪ Klasse / Class: 9
- ↪ Verpackungsgruppe / Packaging group: ---
- ↪ Verpackungsvorschriften / Packaging instructions: P965 / P966 / P967 (Teil IA / Section IA)

Gewichtsbeschränkung / Weight restriction:

- ↪ Frachtflugzeug: 35 kg pro Packstück
Cargo aircraft: 35 kg per package

See: IMDG-Code

Sea: IMDG Code

- ↪ Klasse / Class: 9
- ↪ Verpackungsgruppe / Packaging group: ---
- ↪ Verpackungsvorschriften / Packaging instructions: P903

Binnenschifffahrt: AND

Inland navigation: ADN

- ↪ Klasse / Class: 9
- ↪ Klassifizierungscode / Classification code: M4
- ↪ Verpackungsgruppe / Packaging group: ---
- ↪ Verpackungsvorschriften / Packaging instructions: P903 / P903a / P903b

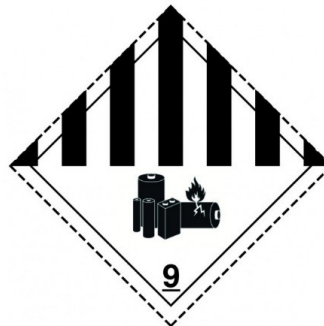
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Jedes Packstück muss mit folgenden Aufklebern gekennzeichnet sein und es muss ein Begleitschreiben, wie unten angegeben, beigelegt sein:

Each package must be marked with the following labels. Furthermore, it is required to enclose an accompanying note as stated below

Aufkleber für Transport auf Straße/Schiene
Labelling for transport by road/rail



Mindestgröße / *minimum size* = 10x10 (CM)

+ Aufkleber mit Absender und Empfänger
+ Label stating the consignor and consignee

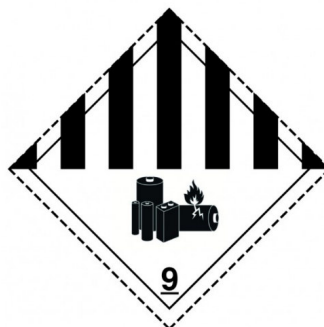
Begleitschreiben / *Accompanying note*: UN 3480 LITHIUM-ION BATTERIES, 9, -, (E)

Aufkleber für Versand / Luftfracht CAO

Maximalgewicht pro Paket bei Versand mit Frachtflugzeug: 35 kg
Für Pakete die ausschließlich per Frachtflugzeug transportiert werden dürfen.

Shipping label/cargo aircraft only (CAO)

Maximum weight per package for air freight shipments: 35 kg
For packages which may only be transported by cargo planes.



+ Aufkleber mit Absender und Empfänger
+ Label stating the consignor and consignee

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15. Vorschriften und Regelwerke

Provisions and Regulations

Hinweise auf Vorschriften zur Beförderung gefährlicher Güter:

References to provisions concerning the transport of hazardous goods:

Gefahrgutbeförderungsgesetz (GGBefG)
Transportation of Dangerous Goods Act (GGBefG)

Gefahrgutverordnung Straße, Eisenbahn und Binnenschifffahrt (GGVSEB)
Ordinance on the Transport of Dangerous Goods by Road, Rail and Inland Waterways (GGVSEB)

Gefahrgutverordnung See (GGVSee)
Ordinance on the Transport of Dangerous Goods by Sea (GGVSee)

Luftverkehrsgesetz (LuftVG), Luftverkehrs-Zulassungs-Ordnung (LuftVZO)
Air Traffic Act (LuftVG), Air Traffic Licensing Order (LuftVZO)

Europäisches Übereinkommen über die internationale Beförderung gefährlicher Güter auf der Straße (ADR)
European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)

Ordnung für die internationale Eisenbahnbeförderung gefährlicher Güter (RID)
Regulation concerning the International Carriage of Dangerous Goods by Rail (RID)

Europäisches Übereinkommen über die Beförderung gefährlicher Güter auf Binnenwasserstraßen (ADN)
European Agreement concerning the International Carriage of Dangerous Goods by Inland Navigation (ADN)

Internationaler Code für die Beförderung gefährlicher Stoffe mit Seeschiffen (IMDG-Code)
International Maritime Dangerous Goods Code (IMDG-Code)

International Civil Aviation Organization –
Technische Vorschriften für die Beförderung gefährlicher Güter im Luftverkehr (ICAO-TI)
Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO-TI)

International Air Transport Association –
Vorschriften für die Beförderung gefährlicher Güter (IATA-DGR)
Dangerous Goods Regulations (IATA-DGR)

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16. Ladezustand gemäß Änderung der IATA-Gefahrgutvorschriften ab dem 01. April 2016

State of Charge in Accordance with the Changes to the IATA Dangerous Goods Regulations Effective from 1 April 2016

Entsprechend der Änderung der IATA-Gefahrgutvorschriften, die ab dem 01. April 2016 in Kraft tritt, bestätigt REMS GmbH & Co KG, dass die ab dem 01. April 2016 produzierten Lithium-Ionen-Akkus (UN 3480), mit einem Ladezustand (SoC) von höchstens 30% deren Auslegungskapazität zur Beförderung übergeben werden.

In accordance with the changes to the IATA Dangerous Goods Regulations, which entered into force on 1 April 2016, REMS GmbH & Co KG confirms that all lithium-ion batteries (UN 3480) manufactured from 1 April 2016 will be handed over for transportation with their state of charge (SoC) not exceeding 30% of their design capacity.

17. Sonstige Angaben

Other Information

Diese Informationen wurden nach bestem Wissen und Gewissen sorgfältig zusammengestellt.

REMS GmbH & Co KG schließt jegliche Gewährleistung auf die Genauigkeit, Zuverlässigkeit und Vollständigkeit der aufgeführten Informationen aus! Es liegt in der Verantwortung des Anwenders die Angemessenheit und Vollständigkeit und Aktualität dieser Informationen in Bezug auf seinen besonderen Verwendungszweck zu prüfen.

This information has been meticulously compiled to the best of our knowledge and belief. REMS GmbH & Co KG excludes any warranty whatsoever for the accuracy, reliability or completeness of the information provided herein! It is the user's responsibility to check the information's suitability, completeness and timeliness with regard to the relevant purpose of use.

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FICHE DE DONNÉES DE SÉCURITÉ PRODUIT MATERIAL SAFETY DATA SHEET

Batterie Lithium-ions-oxyde de manganèse
Lithium ion manganese oxide battery

Réf.: 571581 R22/ Item no.: 571581 R22

En respect de l'ordonnance (CE) n° 1907/2006 (REACH), il faut mettre seulement une fiche de données de sécurité à disposition pour les substances et les préparations. Les batteries ne sont concernées par les exigences de cette ordonnance.

According to Regulation (EC) No. 1907/2006 (REACH), a safety data sheet must be provided solely for substances and preparations. Batteries are not affected by the requirements of this Regulation.

1. Désignation du produit et fabricant

Product Designation and Name of the Manufacturer

Identification: <i>Identification</i>	Catégorie de produit: <i>Product category</i>	Batterie Lithium-Ions <i>Lithium-ion battery</i>
	Désignation: <i>Model name</i>	6S2P
	Tension nominale: <i>Nominal voltage</i>	21.6V
	Capacité nominale: <i>Nominal capacity</i>	5.0Ah
	Énergie nominale: <i>Nominal energy</i>	108Wh
	Système chimique: <i>Chemical system:</i>	Lithium-oxyde de manganèse / Graphite <i>Lithium manganese oxide / Graphite</i>
	Rechargeable: <i>Rechargeable</i>	Oui <i>Yes</i>

Fabricant: <i>Manufacturer</i>	Nom et adresse: <i>Name and address</i>	REMS GmbH & Co KG Stuttgarter Straße 83 D-71332 Waiblingen
	Tél. / <i>phone:</i>	+49 (0) 7151-1707-0
	Fax / <i>fax:</i>	+49 (0) 7151-1707-0
	E-mail / <i>e-mail:</i>	info@rems.de

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Amtsgericht Stuttgart HRB260321

E-Mail: info@rems.de
Internet: www.rems.de
Geschäftsführer:
Dr.-Ing. Christoph Föll-Laubengeiger
Dr.-Ing. Rudolf Wagner

2. Risques possibles

Possible Hazards

- Classification:** La batterie Li-Ion possède une énergie nominale de > 100 Wh et est ainsi soumise aux dispositions spécifiques du droit relatif aux marchandises dangereuses.
- Classification:** *This lithium-ion battery has a nominal energy of > 100Wh, which is why it is subject to certain special provisions under the hazardous substances law.*
- Risques:** En cas de manipulation non conforme, les batteries Lithium-Ions peuvent développer du feu, exploser ou provoquer des irritations chimiques. Ne court-circuiter en aucun cas les batteries, ne pas les heurter, les jeter au feu, les écraser, les plonger dans l'eau, les décharger de force ou les exposer à des températures situées en dehors de la plage de tension du produit. Veuillez lire attentivement la notice d'utilisation. Dans des conditions normales, aucune substance dangereuse ne sort et aucun contact avec des substances toxiques ne peut survenir. Un risque d'exposition existe uniquement dans le cas d'une manipulation non conforme (mécanique, thermique, électrique) qui conduit à l'activation des valves de sécurité et/ou à la cassure du boîtier. La fuite du liquide électrolyte, la réaction des matériaux des électrodes avec de l'humidité / de l'eau ou la purge d'air des batteries / l'incendie / l'explosion, en fonction des circonstances annexes, peuvent être la conséquence.
- Hazards:** *When handled improperly, lithium-ion batteries may explode, or cause fire or chemical burns. Batteries must not be short-circuited, punctured, thrown into fire, crushed, immersed in water, forcibly discharged or exposed to temperatures exceeding the product's specified operating range. Please read the operating instructions thoroughly. The escape of and contact with any hazardous and toxic substances is not possible under normal conditions of use. A risk of exposure only exists in case of improper (mechanical, thermal, electrical) use which leads to the activation of safety valves and/or the rupture of the battery housing. Depending on the surrounding circumstances, the following might occur: electrolyte leakage, reaction of the electrode materials with moisture/water or battery venting/fire/explosion.*
- Toxicité:** Si une batterie brûle, des irritations peuvent survenir suite à la formation de fumée ou de vapeurs sur les yeux, la peau et les voies respiratoires.
- Toxicity:** *If a battery burns, smoke or vapours are generated. These may cause eye, skin and respiratory tract irritations.*

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3. Composition et informations sur les composants

Composition and Information About the Individual Components

Les composants suivants sont contenus dans la cellule fermée:

The following components are contained in the sealed cell.

Portion	Nom de la substance	Taux de concentration (poids %)	N° CAS
Électrode positive	Oxyde de métal Transition Lithium Li[M]m[O]n	20~60	12190-79-3 12057-17-9 182442-95-1
Base de l'électrode positive	Aluminium	1~10	7429-90-5
Électrode négative	Carbone	10~30	7429-90-5
Base de l'électrode négative	Cuivre	1~15	7440-44-0
Electrolyte	Électrolyte organique implique principalement l'ester-carbonate	5~25	Confidentiel
Boîtier extérieur	Aluminium, fer, plastique laminé d'aluminium	1~30	7429-90-5; 7439-89-6

Component	Material name	Concentration range (wt %)	CAS number
Positive electrode	Lithium transition metal oxidate Li[M]m[O]n	20~60	12190-79-3 12057-17-9 182442-95-1
Positive electrode's base	Aluminum	1~10	7429-90-5
Negative electrode	Carbon	10~30	7429-90-5
Negative electrode's base	Copper	1~15	7440-44-0
Electrolyte	Organic electrolyte principally involves ester carbo- nate	5~25	Confidential
Outer case	Aluminum, iron, aluminum laminated plastic	1~30	7429-90-5; 7439-89-6

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4. Mesures de premiers secours

First Aid Measures

Les produits chimiques indiqués au point 3 se trouvent dans un boîtier étanche si bien qu'ils ne peuvent pas fuir dans le cadre d'une utilisation normale. Le risque de fuite est uniquement lié à des dégradations mécaniques du boîtier.

The chemicals are contained in a sealed housing so that they cannot escape during normal use. Leakage may only be caused as a result of mechanical damage to the housing.

Si des produits chimiques fuient, observer ce qui suit:

If chemicals do leak, the following must be observed

- | | |
|------------------------------|---|
| Inhalation: | Les gaz sortant peuvent entraîner des lésions des voies respiratoires. Ventiler immédiatement ou se rendre à l'air frais, dans les cas les plus graves, appeler immédiatement un médecin. |
| <i>Inhalation:</i> | <i>Escaping gases may cause respiratory tract irritation. Immediately ventilate or leave the room to get into fresh air. In more serious cases, call a doctor immediately.</i> |
| Contact avec la peau: | Des irritations de la peau peuvent survenir. Laver soigneusement la peau au savon et à l'eau. |
| <i>Skin contact:</i> | <i>Skin irritations may occur. Thoroughly wash the skin with soap and water.</i> |
| Contact visuel: | Des irritations des yeux peuvent survenir. Rincer immédiatement les yeux pendant 15 minutes à l'eau et consulter un médecin. |
| <i>Eye contact:</i> | <i>Eye irritations may occur. Immediately and thoroughly rinse the eyes with water for 15 minutes then seek medical assistance.</i> |

5. Mesures de lutte contre les incendies

Fire Fighting Measures

- | | |
|---------------------------|--|
| En cas d'incendie: | Utilisez uniquement les extincteurs de la classe d'incendie D (poudre sèche). |
| <i>In case of fire:</i> | <i>Only use Class D (dry powder) fire extinguishers.</i> |
| Attention: | Avant de commencer à éteindre le feu, veuillez vous placer sur le côté de l'incendie d'où vient le vent. Ainsi, vous ne respirez pas de vapeurs nocives. |
| <i>Caution:</i> | <i>Before you start extinguishing the fire, be sure to go to the side of the fire from which the wind is coming. In this way, you will not inhale any toxic vapours.</i> |

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6. Mesures à prendre en cas de dispersion accidentelle

Measures to Be Implemented in Case of Accidental Leakage

La fuite de liquide électrolyte doit être essuyée par un morceau de tissu absorbant.

Leaked electrolyte fluid should be wiped up with an absorbent cloth.

En cas de grande libération, porter des vêtements de protection.

Personal protective equipment should be worn in case of larger leakages:

- ↪ **vêtements de protection**
protective clothing
- ↪ **Masque à gaz contre les gaz organiques**
gas mask for protection against organic gases
- ↪ **Lunettes de protection**
safety goggles
- ↪ **Gants de protection**
protective gloves

7. Manipulation et stockage

Handling and Storage

Manipulation: Ne pas ouvrir la batterie, ne pas l'écraser, la démonter, la faire tomber d'une grande hauteur ni la braser.

Handling: *Neither open, crush nor disassemble the battery, nor let it drop from a great height nor solder anything onto it.*

Charger: La température de charge doit être située entre 0°C et +45°C.
La batterie doit être uniquement chargée avec le chargeur correspondant.

Charging: *The charging temperature must be between +32 °F and +113 °F.
Only use the charger designated for this battery.*

Décharger: La batterie doit uniquement se décharger entre -20°C et +60°C.

Discharging: *The battery may only be discharged at temperatures from -4 °F to +140 °F.*

Attention: Une mauvaise manipulation peut entraîner une explosion ou développer un incendie!

Caution: *Improper handling may cause fire or explosion!*

Stockage: Température: -20 °C à +40 °C sous 3 mois

Storage: *Temperature: -4 °F to +104°F, for less than 3 months*

Humidité de l'air: 0 % à 80 %

Humidity range: 0 % to 80 %

Le stock doit être bien ventilé. / *Store in a well-ventilated place.*

Un court-circuit peut entraîner un incendie. / *Short circuits may cause fires.*

Les batteries ne doivent pas être stockées avec d'autres objets métalliques. / *Do not store along with other metal objects.*

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8. Surveillance des marchandises stockées et équipement de protection

Monitoring of the Stored Goods and Personal Protective Equipment

Respecter les consignes du point 7. Le respect de la température de stockage dans les limites prescrites doit être surveillé en permanence. Il faut également garantir une bonne ventilation et une humidité de l'air dans les valeurs-limites indiquées. Aucun équipement de protection n'est nécessaire pour la gestion normale des batteries.

Observe the information stated in Section 7. Continuously monitor the storage temperature so as to ensure that it is within the specified limits. Apart from that, it is required to ensure good ventilation and that the humidity does not exceed the specified limits. No protective equipment is required during normal handling.

9. Propriétés physiques et chimiques

Physical and Chemical Properties

Aspect: 12 cellules dans le boîtier.
Appearance: Housing with 12 cells.

Poids: 800 g
Weight: 800 g

Propriétés chimiques: voir point 3
Chemical properties: voir Section 3

10. Stabilité et réactivité

Stability and Reactivity

En cas de stockage de plus de 12 mois, la capacité de la batterie est réduite et sa durée prévisionnelle de fonctionnement est raccourcie. Le boîtier peut être endommagé à l'intérieur en raison de la fuite d'électrolytes.

Storage periods of more than 12 months will decrease the battery's capacity and expected lifespan. Electrolyte leakages may damage the housing on the inside.

11. Données toxicologiques

Toxicological Information

Dans des conditions normales, aucune substance dangereuse ne sort de la batterie et aucun contact avec des substances toxiques ne peut survenir.

The escape of and contact with any hazardous and toxic substances is not possible under normal conditions of use.

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12. Informations écologiques

Environment-Related Information

Dans le cadre d'une utilisation normale, la batterie n'entraîne aucune dégradation environnementale. Cependant, elle doit être éliminée spécialement après utilisation car elle contient des produits chimiques dangereux. Voir point 13.

Provided that the battery is handled properly, environmental pollution does not occur. After use, however, the battery must be disposed of separately as it contains hazardous chemicals. See Section 13.

13. Remarques sur la mise au rebut

Disposal Instructions

Une batterie est un déchet spécial.

La mise au rebut de la batterie doit être uniquement effectuée par un système de reprise homologué. En aucun cas, la batterie ne doit être mise au rebut avec les déchets ménagers.

Batteries are classified as hazardous waste.

The battery may only be disposed of by returning it to an authorized collection point. It is prohibited to dispose of the battery with normal household waste.

14. Informations sur le transport

Transportation information

Explication générale

General explanation

Les réglementations de restriction font foi pour l'expédition de ce produit par voie aérienne, routière, ferroviaire ou maritime. Vous trouverez ci-dessous ces réglementations. Étant donné que la législation change régulièrement, le transporteur doit garantir que les produits sont transportés en respect des directives en vigueur au moment du transport. Si vous avez besoin d'aide à ce sujet, veuillez vous adresser au fabricant des produits.

Restrictive regulations are applicable to the product's transport by air, road, rail or sea. Below you will find references to these regulations. As these laws are subject to frequent changes, the transport company shall ensure that the products are transported according to the regulations applicable at the time of shipment. Please contact the manufacturer of the products if you need any assistance in this matter.

Transport conformément à la recommandation ONU 3480/3481 (1).

L'énergie nominale étant supérieure à 100 Wh, vous devez déclarer la batterie comme une marchandise dangereuse.

Transportation of the battery according to Directive UN 3480/3481 (1).

As the nominal energy exceeds 100 Wh, the battery must be shipped as a dangerous good.

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La batterie **doit** être sécurisée contre les court-circuits.
*The battery **must** be protected against short circuits.*

Les dispositions de transport se fondent sur les ordonnances nationales et le type de transport.
The transport regulations depend on the country-specific provisions and on the type of transport.

Par rail et par route: ADR/RID

Road and rail: ADR/RID

- ↪ Classe / Class: 9
- ↪ Code de classification / Classification code: M4
- ↪ Groupe d'emballage / Packaging group: ---
- ↪ Instructions d'emballage / Packaging instructions: P903 / P903a / P903b

Restriction de tunnel : E, passage interdit dans les tunnels de catégorie E
Tunnel restriction: E, passage prohibited through tunnels of category E

Par air: IATA

Air: IATA

- ↪ Classe / Class: 9
- ↪ Groupe d'emballage / Packaging group: ---
- ↪ Instructions d'emballage / Packaging instructions: P965 / P966 / P967 (partie IA / Section IA)

Limitation en poids / Weight restriction:

- ↪ Avion Cargo: 35 kg par colis
Cargo aircraft: 35 kg per package

Par mer: IMDG-Code

Sea: IMDG Code

- ↪ Classe / Class: 9
- ↪ Groupe d'emballage / Packaging group: ---
- ↪ Instructions d'emballage / Packaging instructions: P903

Navigation intérieure: ADN

Inland navigation: ADN

- ↪ Classe / Class: 9
- ↪ Code de classification / Classification code: M4
- ↪ Groupe d'emballage / Packaging group: ---
- ↪ Instructions d'emballage / Packaging instructions: P903 / P903a / P903b

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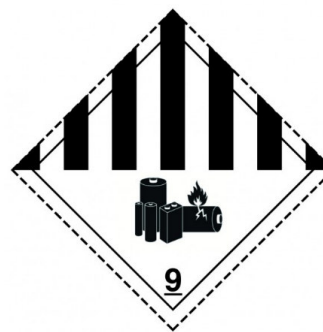
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Chaque cargaison doit porter les étiquettes et la note d'accompagnement figurant ci-dessous:

Each package must be marked with the following labels. Furthermore, it is required to enclose an accompanying note as stated below

Étiquetage pour le transport par route / par rail

Labelling for transport by road/rail



Taille minimum / *minimum size* = 10x10 (CM)

+ étiquette avec adresse de l'expéditeur / du destinataire
+ *Label stating the consignor and consignee*

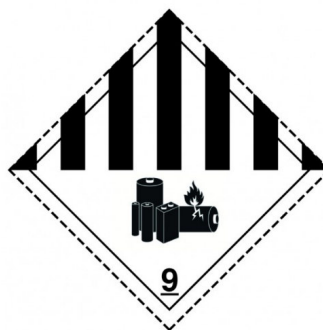
Note d'accompagnement / *Accompanying note*: UN 3480 LITHIUM-ION BATTERIES, 9, -, (E)

Étiquette d'expédition / avion cargo seulement CAO

Poids maximum par colis expédié par fret aérien : 35 kg
Pour les colis qui ne peuvent être transportés que par avion cargo.

Shipping label/cargo aircraft only (CAO)

*Maximum weight per package for air freight shipments: 35 kg
For packages which may only be transported by cargo planes.*



+ étiquette avec adresse de l'expéditeur / du destinataire
+ *Label stating the consignor and consignee*

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15. Directives et règles

Provisions and Regulations

Références aux dispositions concernant le transport de marchandises dangereuses:

References to provisions concerning the transport of hazardous goods:

Loi sur le transport de marchandises dangereuses (GGBefG)
Transportation of Dangerous Goods Act (GGBefG)

Ordonnance sur les marchandises dangereuses route, rail et navigation intérieure (GGVSEB)
Ordinance on the Transport of Dangerous Goods by Road, Rail and Inland Waterways (GGVSEB)

Ordonnance sur les marchandises dangereuses par voies maritimes (GGVSee)
Ordinance on the Transport of Dangerous Goods by Sea (GGVSee)

Loi sur la circulation aérienne (LuftVG), Ordonnance sur les licences de trafic aérien (LuftVZO)
Air Traffic Act (LuftVG), Air Traffic Licensing Order (LuftVZO)

Convention européenne sur le transport international de marchandises dangereuses par route (ADR)
European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)

Commande de transport international de marchandises dangereuses par chemin de fer (RID)
Regulation concerning the International Carriage of Dangerous Goods by Rail (RID)

Convention européenne sur le transport des marchandises dangereuses par voies de navigation intérieures (ADN)
European Agreement concerning the International Carriage of Dangerous Goods by Inland Navigation (ADN)

Code du transport maritime international de marchandises dangereuses (IMDG-Code)
International Maritime Dangerous Goods Code (IMDG-Code)

International Civil Aviation Organization –
Règlements techniques pour le transport de marchandises dangereuses par voie aérienne (ICAO-TI)
Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO-TI)

International Air Transport Association –
Réglementation pour le transport de marchandises dangereuses (IATA-DGR)
Dangerous Goods Regulations (IATA-DGR)

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16. Niveau de charge selon les modifications du règlement IATA en vigueur à compter du 01 avril 2016

State of Charge in Accordance with the Changes to the IATA Dangerous Goods Regulations Effective from 1 April 2016

Conformément aux modifications apportées à la réglementation IATA sur les marchandises dangereuses à compter du 1er avril 2016, REMS GmbH & Co KG confirme qu'à compter du 1er avril 2016, toutes les batteries au lithium-ion fabriquées ne sont envoyées que dans un état de charge ne dépassant pas 30% de leur capacité nominale.

In accordance with the changes to the IATA Dangerous Goods Regulations, which entered into force on 1 April 2016, REMS GmbH & Co KG confirms that all lithium-ion batteries (UN 3480) manufactured from 1 April 2016 will be handed over for transportation with their state of charge (SoC) not exceeding 30% of their design capacity.

17. Autres indications

Other information

Ces informations ont été rassemblées soigneusement en notre âme et conscience. REMS GmbH & Co KG ne garantit pas la précision, la fiabilité et l'intégralité des informations listées ! Il relève de la responsabilité de l'utilisateur de vérifier l'adéquation, l'intégralité et l'actualité de ces informations du point de vue de son utilisation prévue.

This information has been meticulously compiled to the best of our knowledge and belief. REMS GmbH & Co KG excludes any warranty whatsoever for the accuracy, reliability or completeness of the information provided herein! It is the user's responsibility to check the information's suitability, completeness and timeliness with regard to the relevant purpose of use.

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SCHEMA DI SICUREZZA DEL PRODOTTO MATERIAL SAFETY DATA SHEET

Batteria agli ioni di litio-ossido di manganese
Lithium ion manganese oxide battery

N. Articolo: 571581 R22 / Item no.: 571581 R22

Ai sensi del Regolamento (CE) N. 1907/2006 (REACH) l'obbligo di fornire una scheda dei dati di sicurezza sussiste esclusivamente per sostanze e preparati. Le batterie non sono soggette ai requisiti di questo Regolamento.

According to Regulation (EC) No. 1907/2006 (REACH), a safety data sheet must be provided solely for substances and preparations. Batteries are not affected by the requirements of this Regulation.

1. Denominazione del prodotto e dati identificativi del produttore

Product Designation and Name of the Manufacturer

Identificazione: <i>Identification:</i>	Categoria del prodotto: <i>Product category</i>	Batteria agli ioni di litio <i>Lithium-ion battery</i>
	Denominazione: <i>Model name</i>	6S2P
	Tensione nominale: <i>Nominal voltage</i>	21.6V
	Capacità nominale: <i>Nominal capacity</i>	5.0Ah
	Energia nominale: <i>Nominal energy</i>	108Wh
	Sistema chimico: <i>Chemical system</i>	Ossido di litio e manganese/grafite <i>Lithium manganese oxide / Graphite</i>
	Ricaricabile: <i>Rechargeable</i>	Sì <i>Yes</i>

Produttore: <i>Manufacturer</i>	Nome e indirizzo: <i>Name and address</i>	REMS GmbH & Co KG Stuttgarter Straße 81 D-71332 Waiblingen
	Telefono / <i>phone:</i>	+49 (0) 7151-1707-0
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2. Identificazione dei pericoli

Possible Hazards

Classificazione: La batteria agli ioni di litio ha un'energia nominale di > 100 Wh ed è pertanto soggetta a specifiche disposizioni previste dalla legge sulle merci pericolose.

Classification: *This lithium-ion battery has a nominal energy of > 100Wh, which is why it is subject to certain special provisions under the hazardous substances law.*

Pericoli: Le batterie agli ioni di litio, in caso di manipolazione non corretta, possono comportare il rischio di incendi, esplosioni o lesioni chimiche. In alcuni casi cortocircuitare, forare, incenerire, schiacciare, immergere nell'acqua, scaricare forzatamente o esporre a temperature superiori al limite consentito per il prodotto. Leggere attentamente le istruzioni d'uso. In condizioni normali d'uso non si verifica alcuna fuoriuscita di sostanze pericolose né alcun contatto con sostanze tossiche. Un rischio di esposizione sussiste solo nel caso di manipolazione inadeguata (meccanica, termica o elettrica), che determina l'attivazione delle valvole di sicurezza e/o la rottura dell'alloggiamento della batteria. Le conseguenze possono essere la fuoriuscita di liquido elettrolitico, una reazione dei materiali degli elettrodi con l'umidità/l'acqua o sfiato della batteria/incendio/esplosione, a seconda delle circostanze.

Hazards: *When handled improperly, lithium-ion batteries may explode, or cause fire or chemical burns. Batteries must not be short-circuited, punctured, thrown into fire, crushed, immersed in water, forcibly discharged or exposed to temperatures exceeding the product's specified operating range. Please read the operating instructions thoroughly. The escape of and contact with any hazardous and toxic substances is not possible under normal conditions of use. A risk of exposure only exists in case of improper (mechanical, thermal, electrical) use which leads to the activation of safety valves and/or the rupture of the battery housing. Depending on the surrounding circumstances, the following might occur: electrolyte leakage, reaction of the electrode materials with moisture/water or battery venting/fire/explosion.*

Tossicità: Se una batteria si incendia, il fumo o i vapori che si formano possono irritare gli occhi, la cute e le vie respiratorie.

Toxicity: *If a battery burns, smoke or vapours are generated. These may cause eye, skin and respiratory tract irritations.*

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3. Composizione e informazioni sugli ingredienti

Composition and Information About the Individual Components

Nella cella chiusa sono contenuti i componenti riportati di seguito:

The following components are contained in the sealed cell:

Parte	Nome del materiale	Intervallo di concentrazione (wt %)	Numero CAS
Elettrodo positivo	Ossidi dei metalli di transizione del litio Li[M]m[O]n	20~60	12190-79-3 12057-17-9 182442-95-1
Base dell'elettrodo positivo	Alluminio	1~10	7429-90-5
Elettrodo negativo	Carbonio	10~30	7429-90-5
Base dell'elettrodo negativo	Rame	1~15	7440-44-0
Elettrolita	L'elettrolita organico prevede principalmente estere carbonato	5~25	Riservato
Alloggiamento esterno	Alluminio, ferro, plastica laminata in alluminio	1~30	7429-90-5; 7439-89-6

Component	Material name	Concentration range (wt %)	CAS number
Positive electrode	Lithium transition metal oxidate Li[M]m[O]n	20~60	12190-79-3 12057-17-9 182442-95-1
Positive electrode's base	Aluminum	1~10	7429-90-5
Negative electrode	Carbon	10~30	7429-90-5
Negative electrode's base	Copper	1~15	7440-44-0
Electrolyte	Organic electrolyte principally involves ester carbonate	5~25	Confidential
Outer case	Aluminum, iron, aluminum laminated plastic	1~30	7429-90-5; 7439-89-6

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4. Misure di pronto soccorso

First Aid Measures

Le sostanze chimiche citate al punto 3 sono inserite in un contenitore a chiusura ermetica, pertanto non possono fuoriuscire in caso di uso normale. Il pericolo di fuoriuscita sussiste solo in caso di manomissione meccanica del contenitore.

The chemicals stated in Section 3 are contained in a sealed housing so that they cannot escape during normal use. Leakage may only be caused as a result of mechanical damage to the housing.

In caso di fuoriuscita delle sostanze chimiche attenersi alle seguenti istruzioni:

If chemicals do leak, the following must be observed:

- | | |
|--------------------------------|--|
| Inalazione: | I gas rilasciati possono causare irritazione delle vie respiratorie. Aerare immediatamente l'ambiente o spostarsi all'aria aperta, in casi più gravi consultare un medico. |
| <i>Inhalation:</i> | <i>Escaping gases may cause respiratory tract irritation. Immediately ventilate or leave the room to get into fresh air. In more serious cases, call a doctor immediately.</i> |
| Contatto con la pelle: | Il contenuto di una batteria aperta può causare l'insorgere di irritazioni cutanee. Sciacquare abbondantemente la zona interessata con acqua e sapone. |
| <i>Skin contact:</i> | <i>Skin irritations may occur. Thoroughly wash the skin with soap and water.</i> |
| Contatto con gli occhi: | Possono insorgere irritazioni degli occhi. Sciacquare accuratamente con acqua per 15 minuti e consultare un medico. |
| <i>Eye contact:</i> | <i>Eye irritations may occur. Immediately and thoroughly rinse the eyes with water for 15 minutes then seek medical assistance.</i> |

5. Misure antincendio

Fire Fighting Measures

- | | |
|-----------------------------|--|
| In caso di incendio: | Utilizzare solo estintori a polvere della classe antincendio D. |
| <i>In case of fire:</i> | <i>Only use Class D (dry powder) fire extinguishers.</i> |
| Attenzione: | Prima di iniziare a spegnere l'incendio, assicurarsi di essere in una zona sopravento rispetto alle fiamme per evitare di inalare i vapori tossici. |
| <i>Caution:</i> | <i>Before you start extinguishing the fire, be sure to go to the side of the fire from which the wind is coming. In this way, you will not inhale any toxic vapours.</i> |

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6. Misure in caso di rilascio accidentale

Measures to Be Implemented in Case of Accidental Leakage

Rimuovere il liquido elettrolitico con un panno assorbente.

Leaked electrolyte fluid should be wiped up with an absorbent cloth.

In caso di rilascio rilevante indossare quanto segue:

Personal protective equipment should be worn in case of larger leakages:

- ↪ **indumenti di protezione**
protective clothing
- ↪ **maschera antigas per gas organici**
gas mask for protection against organic gases
- ↪ **occhiali di protezione**
safety goggles
- ↪ **guanti di protezione**
protective gloves

7. Manipolazione e stoccaggio

Handling and Storage

Manipolazione: Non aprire, rompere, smontare, far cadere da un'altezza elevata né saldare la batteria.

Handling: Neither open, crush nor disassemble the battery, nor let it drop from a great height nor solder anything onto it.

Carica: La temperatura di carica deve essere tra 0 °C e + 45 °C.

La batteria deve essere caricata solo con l'apposito caricabatterie.

Charging: The charging temperature must be between +32 °F and +113 °F.

Only use the charger designated for this battery.

Scarica: La batteria va scaricata a una temperatura compresa tra -20 °C e +60 °C.

Discharging: The battery may only be discharged at temperatures from -4 °F to +140 °F.

Attenzione: Un uso scorretto può causare un'esplosione o un incendio!

Caution: Improper handling may cause fire or explosion.

Stoccaggio: Temperatura: da -20 °C a +40 °C in meno di 3 mesi
Storage: Temperature: -4 °F to +104°F for less than 3 months

Umidità: dallo 0 % all'80 %

Humidity range: 0 % to 80 %

L'area di stoccaggio deve essere ben ventilata. / *Store in a well-ventilated place.*

Un cortocircuito può provocare un incendio. / *Short circuits may cause fires.*

Non conservare le batterie con altri oggetti metallici. / *Do not store along with other metal objects.*

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8. Controllo dell'esposizione e protezione personale

Monitoring of the Stored Goods and Personal Protective Equipment

Attenersi alle istruzioni riportate al punto 7. Controllare costantemente che la temperatura di stoccaggio sia entro i limiti prestabiliti. Garantire inoltre una buona ventilazione e l'umidità entro i limiti indicati. Per l'uso normale delle batterie non è necessario alcun dispositivo di protezione.

Observe the information stated in Section 7. Continuously monitor the storage temperature so as to ensure that it is within the specified limits. Apart from that, it is required to ensure good ventilation and that the humidity does not exceed the specified limits. No protective equipment is required during normal handling.

9. Proprietà fisiche e chimiche

Physical and Chemical Properties

Aspetto:	12 celle nell'alloggiamento.
<i>Appearance:</i>	<i>Housing with 12 cells.</i>
Peso:	800 g
<i>Weight:</i>	<i>800 g</i>
Proprietà chimiche:	vedere punto 3
<i>Chemical properties:</i>	<i>see Section 3</i>

10. Stabilità e reattività

Stability and Reactivity

Uno stoccaggio superiore a 12 mesi riduce la capacità e la vita utile prevista della batteria. Perdite interne degli elettroliti possono danneggiare l'alloggiamento.

Storage periods of more than 12 months will decrease the battery's capacity and expected lifespan. Electrolyte leakages may damage the housing on the inside.

11. Informazioni tossicologiche

Toxicological Information

Con uso normale, dalla batteria non ha luogo una fuoriuscita di sostanze pericolose e pertanto non si viene a contatto con sostanze tossiche.

The escape of and contact with any hazardous and toxic substances is not possible under normal conditions of use.

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12. Informazioni ecologiche

Environment-Related Information

Con uso normale della batteria è escluso l'inquinamento ambientale. Tuttavia, poiché contiene sostanze chimiche pericolose, va smaltita separatamente. Vedere punto 13.

Provided that the battery is handled properly, environmental pollution does not occur. After use, however, the battery must be disposed of separately as it contains hazardous chemicals. See Section 13.

13. Norme di smaltimento

Disposal Instructions

La batteria è un rifiuto pericoloso.

Il suo smaltimento può avvenire solo tramite un'azienda autorizzata al ritiro dei rifiuti.

Non è consentito smaltirla con altri rifiuti comuni.

Batteries are classified as hazardous waste.

The battery may only be disposed of by returning it to an authorized collection point.

It is prohibited to dispose of the battery with normal household waste.

14. Informazioni sul trasporto

Transportation information

Spiegazioni generali

General explanation

Per il trasporto di questo prodotto per via aerea, su strada, rotaia o via mare si applicano norme restrittive. Di seguito sono riportati i riferimenti a queste norme. Poiché la legislazione è soggetta a frequenti modifiche, il vettore deve assicurarsi che i prodotti siano trasportati in conformità alle direttive vigenti e applicabili al momento del trasporto. Se necessario, contattare il produttore per assistenza al riguardo.

Restrictive regulations are applicable to the product's transport by air, road, rail or sea. Below you will find references to these regulations. As these laws are subject to frequent changes, the transport company shall ensure that the products are transported according to the regulations applicable at the time of shipment. Please contact the manufacturer of the products if you need any assistance in this matter.

Trasporto della batteria secondo la linea guida UN 3480/3481 (1).

Poiché l'energia nominale è superiore a 100 Wh, è **necessario dichiarare** la batteria **merce pericolosa**.

Transportation of the battery according to Directive UN 3480/3481 (1).

As the nominal energy exceeds 100 Wh, the battery must be shipped as a dangerous good.

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La batteria **deve essere** protetta da cortocircuito.
*The battery **must** be protected against short circuits.*

Le norme per il trasporto dipendono dalle prescrizioni specifiche dei paesi e dalla modalità di trasporto.
The transport regulations depend on the country-specific provisions and on the type of transport.

Strada e ferrovia: ADR / RID

Road and rail: ADR / RID

- ↪ Classe / Class: 9
- ↪ Codice di classificazione / Classification code: M4
- ↪ Gruppo d'imballaggio / Packaging group: ---
- ↪ Istruzioni per l'imballaggio / Packaging instructions: P903 / P903a / P903b

Limitazione delle gallerie: E, passaggio vietato nelle gallerie della categoria E
Tunnel restriction: E, passage prohibited through tunnels of category E

Aria: IATA

Air: IATA

- ↪ Classe / Class: 9
- ↪ Gruppo d'imballaggio / Packaging group: ---
- ↪ Istruzioni per l'imballaggio / Packaging instructions: P965 / P966 / P967 (Teil IA / Section IA)

Limitazione di peso / Weight restriction:

- ↪ Aerei cargo: 35 kg per collo
- ↪ *Cargo aircraft: 35 kg per package*

Mare: IMDG-Code

Sea: IMDG Code

- ↪ Classe / Class: 9
- ↪ Gruppo d'imballaggio / Packaging group: ---
- ↪ Istruzioni per l'imballaggio / Packaging instructions: P903

Navigazione interna: ADN

Inland navigation: ADN

- ↪ Classe / Class: 9
- ↪ Codice di classificazione / Classification code: M4
- ↪ Gruppo d'imballaggio / Packaging group: ---
- ↪ Istruzioni per l'imballaggio / Packaging instructions: P903 / P903a / P903b

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Ogni spedizione deve contenere le seguenti etichette e note di accompagnamento:

Each package must be marked with the following labels. Furthermore, it is required to enclose an accompanying note as stated below:

Etichetta per il trasporto su strada/rotaia

Labelling for transport by road/rail



Dimensione minima / *minimum size* = 10x10 (CM)

+ etichetta con l'indirizzo del mittente/destinatario
+ *Label stating the consignor and consignee*

Nota di accompagnamento / *Accompanying note*: UN 3480 LITHIUM-ION BATTERIES, 9, -, (E)

Etichetta di spedizione/Solo aeromobili cargo CAO

Peso massimo per collo in caso di spedizioni con aeromobili cargo: 35 kg

Per colli trasportabili esclusivamente con aeromobili cargo.

Shipping label/cargo aircraft only (CAO)

Maximum weight per package for air freight shipments: 35 kg

For packages which may only be transported by cargo planes.



+ etichetta con l'indirizzo del mittente/destinatario
+ *Label stating the consignor and consignee*

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15. Direttive e regolamenti

Provisions and Regulations

Riferimenti a norme in materia di trasporto di merci pericolose:

References to provisions concerning the transport of hazardous goods:

Legge sul trasporto di merci pericolose (GGBefG)
Transportation of Dangerous Goods Act (GGBefG)

Regolamento sul trasporto di merci pericolose su gomma, su rotaia e mediante navigazione interna (GGVSEB)
Ordinance on the Transport of Dangerous Goods by Road, Rail and Inland Waterways (GGVSEB)

Regolamento sul trasporto di merci pericolose via mare (GGVSee)
Ordinance on the Transport of Dangerous Goods by Sea (GGVSee)

Legge sul traffico aereo (LuftVG), Regolamento sulle licenze aeronautiche (LuftVZO)
Air Traffic Act (LuftVG), Air Traffic Licensing Order (LuftVZO)

Accordo europeo relativo al trasporto internazionale di merci pericolose su strada (ADR)
European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)

Regolamento concernente il trasporto internazionale di merci pericolose su rotaia (RID)
Regulation concerning the International Carriage of Dangerous Goods by Rail (RID)

Accordo Internazionale per il trasporto di merci pericolose per vie di navigazione interna (ADN)
European Agreement concerning the International Carriage of Dangerous Goods by Inland Navigation (ADN)

Codice internazionale per il trasporto marittimo di merci pericolose (IMDG-Code)
International Maritime Dangerous Goods Code (IMDG-Code)

International Civil Aviation Organization –
Istruzioni tecniche per il trasporto in sicurezza delle merci pericolose per via aerea (ICAO-TI)
Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO-TI)

International Air Transport Association –
Disposizioni per il trasporto di merci pericolose (IATA-DGR)
Dangerous Goods Regulations (IATA-DGR)

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16. Stato di carica in base alle modifiche del regolamento IATA in vigore dal 1° aprile 2016

State of Charge in Accordance with the Changes to the IATA Dangerous Goods Regulations Effective from 1 April 2016

In conformità con le modifiche della normativa IATA sulle merci pericolose in vigore dal 1° aprile 2016, REMS GmbH & Co KG conferma che dal 1° aprile 2016 tutte le batterie agli ioni di litio prodotte vengono spedite esclusivamente con uno stato di carica non superiore al 30% della propria capacità nominale di progetto.

In accordance with the changes to the IATA Dangerous Goods Regulations, which entered into force on 1 April 2016, REMS GmbH & Co KG confirms that all lithium-ion batteries (UN 3480) manufactured from 1 April 2016 will be handed over for transportation with their state of charge (SoC) not exceeding 30% of their design capacity.

17. Altre informazioni

Other Information

Le presenti informazioni sono state compilate secondo scienza e coscienza. REMS GmbH & Co KG non garantisce tuttavia l'accuratezza, l'affidabilità o la completezza delle informazioni riportate! È responsabilità dell'utente verificarne l'adeguatezza, la completezza e l'attualità in correlazione al suo uso specifico.

This information has been meticulously compiled to the best of our knowledge and belief. REMS GmbH & Co KG excludes any warranty whatsoever for the accuracy, reliability or completeness of the information provided herein! It is the user's responsibility to check the information's suitability, completeness and timeliness with regard to the relevant purpose of use.

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PRODUKTSÄKERHETS DATABLAD MATERIAL SAFETY DATA SHEET

Litiumjon-manganoxid-batteri
Lithium ion manganese oxide battery

Artikelnr: 571581 R22 / Item no.: 571581 R22

Enligt förordning (EG) nr 1907/2006 (REACH) behöver endast säkerhetsdatablad tillhandahållas för ämnen och preparat. Batterier påverkas inte av kraven i denna förordning.

According to Regulation (EC) No. 1907/2006 (REACH), a safety data sheet must be provided solely for substances and preparations. Batteries are not affected by the requirements of this Regulation

1. Namnet på ämnet och tillverkaren

Product Designation and Name of the Manufacturer

Identifikation: <i>Identification:</i>	Produktkategori: <i>Product category</i>	Litiumjonbatteri <i>Lithium-ion battery</i>
	Modellnamn: <i>Model name</i>	6S2P
	Nominell spänning: <i>Nominal voltage</i>	21.6V
	Nominell kapacitet: <i>Nominal capacity</i>	5.0Ah
	Nominell energi: <i>Nominal energy</i>	108Wh
	Kemiskt system: <i>Chemical system</i>	Litium mangandioxid / grafit <i>Lithium manganese oxide / Graphite</i>
	Uppladdningsbart <i>Rechargeable</i>	Ja <i>Yes</i>

Tillverkare: <i>Manufacturer:</i>	Namn och adress <i>Name and address</i>	REMS GmbH & Co KG Stuttgarter Straße 83 D-71332 Waiblingen
	Telefon / <i>phone:</i>	+49 (0) 7151-1707-0
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2. Faroidentifizierung

Possible Hazards

- Klassificering:** Detta uppladdningsbara litiumjonbatteri har en nominell energi på > 100Wh. För batteriet finns särskilda bestämmelser i de olika transportförfordningarna.
- Classification:** *This lithium-ion battery has a nominal energy of > 100Wh, which is why it is subject to certain special provisions under the hazardous substances law.*
- Faror:** Litiumjonbatterier kan förorsaka brand, explosion eller kemiska brännskador om de behandlas fel. Förorsaka aldrig kortslutning, punktera, bränn eller krossa aldrig ett batteri, sänk aldrig ned ett batteri i vatten och utsätt det inte för temperaturer över den angivna brukstemperaturen. Läs instruktionerna omsorgsfullt. Vid normal användning befinner sig kemikalierna och metallerna inuti en förseglad behållare och kommer inte i kontakt med utsidan. Risk för exponering uppstår endast vid missbruk (mekaniskt, termiskt, elektriskt) som leder till att säkerhetsventiler aktiveras och/eller sprickor i batterihöljet uppstår. Detta kan, beroende på omständigheterna, leda till läckage av elektrolyt, att elektrodmaterial reagerar i kontakt med fukt/vatten eller att batteriet luftas.
- Hazards:** *When handled improperly, lithium-ion batteries may explode, or cause fire or chemical burns. Batteries must not be short-circuited, punctured, thrown into fire, crushed, immersed in water, forcibly discharged or exposed to temperatures exceeding the product's specified operating range. Please read the operating instructions thoroughly. The escape of and contact with any hazardous and toxic substances is not possible under normal conditions of use. A risk of exposure only exists in case of improper (mechanical, thermal, electrical) use which leads to the activation of safety valves and/or the rupture of the battery housing. Depending on the surrounding circumstances, the following might occur: electrolyte leakage, reaction of the electrode materials with moisture/water or battery venting/fire/explosion.*
- Toxicitet:** Om ett batteri brinner, kan rök och ångor irritera ögon, hud och luftvägar.
- Toxicity:** *If a battery burns, smoke or vapors are generated. These may cause eye, skin and respiratory tract irritations.*

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3. Sammansättning och information om beståndsdelar

Composition and Information About the Individual Components

Batteriet har följande beståndsdelar:

The following components are contained in the sealed cell:

Del	Materialnamn	Koncentration viktprocent	CAS-Nummer
Positiv elektrod	Litiumövergång Metalloxidering Li[M]m[O]n	20~60	12190-79-3 12057-17-9 182442-95-1
Positiv elektrod bas	Aluminum	1~10	7429-90-5
Negativ elektrod	Kol	10~30	7429-90-5
Negativ elektro bas	Koppar	1~15	7440-44-0
Elektrolyt	Organisk elektrolyt innehåller i princip karbonat ester	5~25	Konfidentiellt
Yttre hölje	Aluminum, järn, aluminiumbelagd plast	1~30	7429-90-5; 7439-89-6

Component	Material name	Concentration range (wt %)	CAS number
Positive electrode	Lithium transition metal oxidate Li[M]m[O]n	20~60	12190-79-3 12057-17-9 182442-95-1
Positive electrode's base	Aluminum	1~10	7429-90-5
Negative electrode	Carbon	10~30	7429-90-5
Negative electrode's base	Copper	1~15	7440-44-0
Electrolyte	Organic electrolyte principally involves ester carbo- nate	5~25	Confidential
Outer case	Aluminum, iron, aluminum laminated plastic	1~30	7429-90-5; 7439-89-6

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4. Åtgärder vid första hjälpen

First Aid Measures

Kemikalierna som anges i tabellen befinner sig i slutna behållare. Vid normal användning uppstår risk för exponering endast om batteriet misshandlas mekaniskt.

The chemicals are contained in a sealed housing so that they cannot escape during normal use.

Leakage may only be caused as a result of mechanical damage to the housing.

Om kemikalier läcker ut, följ dessa instruktioner:

If chemicals do leak, the following must be observed:

Inandning: Innehållet i ett öppnat batteri kan förorsaka irritation i luftvägarna. Sörj för frisk luft och kontakta läkare.

Inhalation: *Escaping gases may cause respiratory tract irritation. Immediately ventilate or leave the room to get into fresh air. In more serious cases, call a doctor immediately.*

Hudkontakt: Innehållet i ett öppnat batteri kan förorsaka hudirritation. Tvätta med två och vatten.

Skin contact: *Skin irritations may occur. Thoroughly wash the skin with soap and water.*

Ögonkontakt: Innehållet i ett öppnat batteri kan förorsaka ögonirritation. Skölj omedelbart ögonen rikligt med vatten under 15 minuter och uppsök läkare.

Eye contact: *Eye irritations may occur. Immediately and thoroughly rinse the eyes with water for 15 minutes then seek medical assistance.*

5. Brandbekämpningsåtgärder

Fire Fighting Measures

Vid brand: Använd endast torra kemiska brandsläckare (torrpulver).

In case of fire: *Only use Class D (dry powder) fire extinguishers.*

Observera: Innan du börjar att släcka elden, se till att du har vinden mot dig. På så sätt andas du inte in några giftiga ångor.

Caution: *Before you start extinguishing the fire, be sure to go to the side of the fire from which the wind is coming. In this way, you will not inhale any toxic vapours.*

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6. Åtgärder vid oavsiktliga utsläpp

Measures to Be Implemented in Case of Accidental Leakage

Torka upp utspilld elektrolytvätska med en absorberande trasa.

Leaked electrolyte fluid should be wiped up with an absorbent cloth.

Om en stor mängd elektrolyt har läckt ut, använd:

Personal protective equipment should be worn in case of larger leakages:

- ☞ Skyddskläder
protective clothing
- ☞ Gasmask för organiska gaser
gas mask for protection against organic gases
- ☞ Skyddsglasögon
safety goggles
- ☞ Skyddshandskar
protective gloves

7. Hantering och förvaring

Handling and Storage

- Hantering:** Öppna inte batteriet. Batteriet får inte krossas, monteras isär, tappas i marken eller lödas ihop med något.
- Handling:* *Neither open, crush nor disassemble the battery, nor let it drop from a great height nor solder anything onto it.*
- Laddning:** Laddningstemperaturen måste ligga mellan 0 °C och +45 °C. Batteriet får endast laddas med en laddare som är specialkonstruerad för detta batteri.
- Charging:* *The charging temperature must be between +32 °F and +113 °F. Only use the charger designated for this battery.*
- Urladdning:** Batteriet får endast laddas ur vid temperaturer mellan -20 °C och +60 °C.
- Discharging:* *The battery may only be discharged at temperatures from -4 °F to +140 °F.*
- Observera:** Fel hantering kan leda till eldsvåda eller explosion!
- Caution:* *Improper handling may cause fire or explosion!*
- Förvaring:** Temperatur: -20 °C till +40 °C under mindre än 3 månader
- Storage:* *Temperature: -4 °F to +104 °F, for less than 3 months*
- Luftfuktighet: 0 % - 80 %
- Humidity range: 0 % to 80 %*
- Förvaringsutrymmet måste ha god ventilation. / *Store in a well-ventilated place.*
- Kortslutning kan leda till eldsvåda. / *Short circuits may cause fires.*
- Förvaras inte tillsammans med föremål av metall. / *Do not store along with other metal objects.*

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8. Exponeringskontroll och personligt skydd

Monitoring of the Stored Goods and Personal Protective Equipment

Råden som ges i punkt 7 måste efterföljas. Se till att förvaringstemperaturen alltid ligger inom gränserna. Sörj även för god ventilation och se till att fuktigheten håller sig inom gränserna. Vid normal användning behövs ingen skyddsutrustning.

Observe the information stated in Section 7. Continuously monitor the storage temperature so as to ensure that it is within the specified limits. Apart from that, it is required to ensure good ventilation and that the humidity does not exceed the specified limits. No protective equipment is required during normal handling.

9. Fysiska och kemiska egenskaper

Physical and Chemical Properties

Utseende:	12 celler i ett hölje
<i>Appearance:</i>	<i>Housing with 12 cells</i>
Vikt:	800 g
<i>Weight:</i>	<i>800 g</i>
Kemiska egenskaper:	Se punkt 3
<i>Chemical properties:</i>	<i>see Section 3</i>

10. Stabilitet och reaktivitet

Stability and Reactivity

Om batteriet lagras över 12 månader kommer dess kapacitet att minska och livslängden bli kortare. Om elektrolyt skulle läcka ut kan höljet av plast skadas.

Storage periods of more than 12 months will decrease the battery's capacity and expected lifespan. Electrolyte leakages may damage the housing on the inside.

11. Toxikologisk information

Toxicological Information

Vid normal användning kommer inget läckage att uppträda, och därför uppstår inte heller någon kontakt med batteriets giftiga beståndsdelar.

The escape of and contact with any hazardous and toxic substances is not possible under normal conditions of use.

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12. Ekologisk information

Environment-Related Information

Vid normal användning av batteriet förekommer inga miljöföroreningar. Batteriet innehåller dock kemikalier som kan skada miljön. Följ därför instruktionerna som beskrivs under punkt 13 när batteriet ska kasseras.

Provided that the battery is handled properly, environmental pollution does not occur. After use, however, the battery must be disposed of separately as it contains hazardous chemicals. See Section 13.

13. Avfallshantering

Disposal Instructions

Batterier är farligt avfall.

De får inte kastas i hushållssoporna.

Om batteriet är oanvändbart, kassera det enligt gällande föreskrifter för återvinning.

Batteries are classified as hazardous waste.

The battery may only be disposed of by returning it to an authorized collection point.

It is prohibited to dispose of the battery with normal household waste.

14. Transportinformation

Transportation information

Allmän förklaring:

General explanation

För transporten av dessa produkter med flyg, vägtransport, järnväg eller båt gäller begränsande bestämmelser. Hänvisningar till dessa bestämmelser finns nedan. Eftersom lagstiftningen ofta ändras, är det upp till transportören att se till att varorna transporteras enligt den lagstiftning som är giltig och tillämplig vid tidpunkten för transporten. Om så behövs, ta kontakt med tillverkaren för råd.

Restrictive regulations are applicable to the product's transport by air, road, rail or sea. Below you will find references to these regulations. As these laws are subject to frequent changes, the transport company shall ensure that the products are transported according to the regulations applicable at the time of shipment. Please contact the manufacturer of the products if you need any assistance in this matter.

Transport av batteriet enligt riktlinje UN 3480/3481 (1).

Eftersom den nominella energin är större än 100 Wh, **måste** batteriet **skickas som farligt gods**.

Transportation of the battery according to Directive UN 3480/3481 (1).

As the nominal energy exceeds 100 Wh, the battery **must** be **shipped as a dangerous good**.

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Batteriet **måste** skyddas mot kortslutning.
*The battery **must** be protected against short circuits.*

Vilka transportregler som gäller beror på respektive land och transportsätt.
The transport regulations depend on the country-specific provisions and on the type of transport.

Väg och järnväg: ADR / RID

Road and rail: ADR / RID

- ↪ Klass / Class: 9
- ↪ Klassificeringskod / Classification code: M4
- ↪ Förpackningsgrupp / Packaging group: ---
- ↪ Förpackningsföreskrifter / Packaging instructions: P903 / P903a / P903b

Tunnelbegränsning: E, passage förbjuden genom kategori E-tunnlar
Tunnel restriction: E, passage prohibited through tunnels of category E

Luft: IATA

Air: IATA

- ↪ Klass / Class: 9
- ↪ Förpackningsgrupp / Packaging group: ---
- ↪ Förpackningsföreskrifter / Packaging instructions: P965 / P966 / P967 (Teil IA / Section IA)

Viktbegränsning / Weight restriction:

- ↪ Fraktflyg: 35 kg per paket
- ↪ Cargo aircraft: 35 kg per package

Se: IMDG- kod

Sea: IMDG Code

- ↪ Klass / Class: 9
- ↪ Förpackningsgrupp / Packaging group: ---
- ↪ Förpackningsföreskrifter / Packaging instructions: P903

Inlandssjöfart: ADN

Inland navigation: ADN

- ↪ Klass / Class: 9
- ↪ Klassificeringskod / Classification code: M4
- ↪ Förpackningsgrupp / Packaging group: ---
- ↪ Förpackningsföreskrifter / Packaging instructions: P903 / P903a / P903b

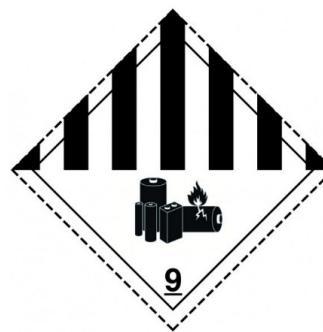
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Varje paket måste vara märkt med följande etiketter och åtföljas av ett följebrev enligt nedan:

Each package must be marked with the following labels. Furthermore, it is required to enclose an accompanying note as stated below

Klistermärke för transport på väg/järnväg
Labelling for transport by road/rail



Minsta storlek / *minimum size* = 10x10 (CM)

+ Klistermärke med avsändare och mottagare
+ *Label stating the consignor and consignee*

Följebrev / *Accompanying note*: UN 3480 LITHIUM-ION BATTERIES, 9, -, (E)

Klistermärke för frakt/flygfrakt CAO

Maximal vikt per paket för transport med flygfrakt: 35 kg
För paket som endast får transporteras med fraktflygplan.

Shipping label/cargo aircraft only (CAO)

*Maximum weight per package for air freight shipments: 35 kg
For packages which may only be transported by cargo planes.*



+ Klistermärke med avsändare och mottagare
+ *Label stating the consignor and consignee*

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15. Gällande föreskrifter

Provisions and Regulations

Hänvisningar till bestämmelser om transport av farligt gods:

References to provisions concerning the transport of hazardous goods

Lagen om transport av farligt gods (GGBefG)

Transportation of Dangerous Goods Act (GGBefG)

Förordning om transport av farligt gods på väg, järnväg och inre vattenvägar (GGVSEB)

Ordinance on the Transport of Dangerous Goods by Road, Rail and Inland Waterways (GGVSEB)

Förordning om transport av farligt gods till sjöss (GGVSee)

Ordinance on the Transport of Dangerous Goods by Sea (GGVSee)

Lufttrafiklagen (LuftVG), Lufttrafiklicensordning (LuftVZO)

Air Traffic Act (LuftVG), Air Traffic Licensing Order (LuftVZO)

Europeiska överenskommelsen om internationell transport av farligt gods på väg (ADR)

European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)

Förordning om internationell järnvägstransport av farligt gods (RID)

Regulation concerning the International Carriage of Dangerous Goods by Rail (RID)

Europeiska överenskommelsen om internationell transport av farligt gods på inre vattenvägar (ADN)

European Agreement concerning the International Carriage of Dangerous Goods by Inland Navigation (ADN)

Internationella koden för sjötransport av farligt gods (IMDG-Code)

International Maritime Dangerous Goods Code (IMDG-Code)

International Civil Aviation Organization –

Tekniska instruktioner för säker transport av farligt gods med flyg (ICAO-TI)

Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO-TI)

International Air Transport Association –

Förordningarna för farligt gods (IATA-DGR)

Dangerous Goods Regulations (IATA-DGR)

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16. Laddningsstatus i enlighet med ändringen i IATA-föreskrifter för farligt gods från och med den 1 april 2016

State of Charge in Accordance with the Changes to the IATA Dangerous Goods Regulations Effective from 1 April 2016

I enlighet med ändringen i IATA-föreskrifter för farligt gods, som träder i kraft 1 april 2016, bekräftar REMS GmbH & Co KG att litiumjonbatterierna (UN 3480), som tillverkats från och med den 1 april 2016 har laddningsstatus (SoC) på högst 30 % av sin designkapacitet när de lämnas till transpor.

In accordance with the changes to the IATA Dangerous Goods Regulations, which entered into force on 1 April 2016, REMS GmbH & Co KG confirms that all lithium-ion batteries (UN 3480) manufactured from 1 April 2016 will be handed over for transportation with their state of charge (SoC) not exceeding 30% of their design capacity.

17. Övrig information

Other information

Denna information har sammanställts efter bästa förmåga och i god tro. REMS GmbH & Co. KG kan dock inte garantera att informationen är korrekt, pålitlig och fullständig. Det är användarens eget ansvar att försäkra sig om att informationen är lämplig, fullständig samt relevant för den specifika tillämpningen.

This information has been meticulously compiled to the best of our knowledge and belief. REMS GmbH & Co KG excludes any warranty whatsoever for the accuracy, reliability or completeness of the information provided herein! It is the user's responsibility to check the information's suitability, completeness and timeliness with regard to the relevant purpose of use.

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PRODUKT-SIKKERHETS DATABLAD

MATERIAL SAFETY DATA SHEET

Litium-ion-manganoksid-batteri
Lithium ion manganese oxide battery

Artikkel nr.: 571581 R22 / Item no.: 571581 R22

I henhold til direktiv (EF) nr. 1907/2006 (Reach) må et sikkerhetsdatablad kun utstedes for stoffer og preparater. Batterier berøres ikke av kravene i dette direktivet.

According to Regulation (EC) No. 1907/2006 (REACH), a safety data sheet must be provided solely for substances and preparations. Batteries are not affected by the requirements of this Regulation.

1. Identifikasjon av stoffet og fabrikanten

Product Designation and Name of the Manufacturer

Identifikasjon:*Identification***Produktkategori:***Product category*

Litium-ion-batteri

*Lithium-ion battery***Betegnelse:***Model name*

6S2P

Nominell spenning:*Nominal voltage*

21.6V

Nominell kapasitet:*Nominal capacity*

5.0Ah

Nominell energi:*Nominal energy*

108Wh

Kjemisk system:*Chemical system*

Litium-manganoksid / Grafitt

*Lithium manganese oxide / Graphite***Oppladbart:***Rechargeable*

Ja

Yes

Fabrikant:*Manufacturer***Navn og adresse:***Name and address***REMS GmbH & Co KG**

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2. Vurdering av farer

Possible Hazards

Klassifisering: Dette oppladbare litium-ion-batteriet har en nominell energi på > 100Wh. Det er spesielle bestemmelser i de ulike transportforskriftene.

Classification: *This lithium-ion battery has a nominal energy of > 100Wh, which is why it is subject to certain special provisions under the hazardous substances law.*

Farer: Litium-ion-batterier kan innebære fare for brann eller eksplosjon eller kjemisk etsning ved feil behandling. Må ikke kortsluttes, gjennombores, brennes, klemmes, senkes i vann, utlades med tvang eller utsettes for temperaturer høyere enn produktets angitte driftstemperaturområde. Les instruksjonene nøye. Under normale bruksforhold befinner kjemikaliene og metallene seg i et forseglet hylster og blir ikke eksponert for det utenforliggende området. Det er kun fare for eksponering i tilfelle misbruk (mekanisk, termisk eller elektrisk) som fører til aktivering av sikkerhetsventiler og/eller revning av batteribeholderen. Elektrolyttlekkasje, elektrodematerialer som reagerer med fuktighet/vann eller batteri-avlufing/brann/eksplosjon kan bli følgen, avhengig av forholdene.

Hazards: *When handled improperly, lithium-ion batteries may explode, or cause fire or chemical burns. Batteries must not be short-circuited, punctured, thrown into fire, crushed, immersed in water, forcibly discharged or exposed to temperatures exceeding the product's specified operating range. Please read the operating instructions thoroughly. The escape of and contact with any hazardous and toxic substances is not possible under normal conditions of use. A risk of exposure only exists in case of improper (mechanical, thermal, electrical) use which leads to the activation of safety valves and/or the rupture of the battery housing. Depending on the surrounding circumstances, the following might occur: electrolyte leakage, reaction of the electrode materials with moisture/water or battery venting/fire/explosion.*

Toksisitet: Hvis et batteri brenner, kan dampene irritere øynene, huden og luftveiene.

Toxicity: *If a battery burns, smoke or vapors are generated. These may cause eye, skin and respiratory tract irritations.*

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3. Sammensetning og informasjon om ingredienser

Composition and Information About the Individual Components

Batteriet inneholder følgende:

The following components are contained in the sealed cell:

Del	Navn materiale	Konsentrasjonsområde (wt %)	CAS-nummer
Positiv elektrode	Lithium transition metal oxidate Li[M]m[O]n	20~60	12190-79-3 12057-17-9 182442-95-1
Positiv elektrode base	Aluminium	1~10	7429-90-5
Negativ elektrode	Karbon	10~30	7429-90-5
Negativ elektrode base	Kobber	1~15	7440-44-0
Elektrolytt	Organisk elektrolytt som hovedsakelig inneholder ester karbonat	5~25	Konfidensielt
Ytre kapsel	Aluminium, jern, aluminium laminert plastikk	1~30	7429-90-5; 7439-89-6

Component	Material name	Concentration range (wt %)	CAS number
Positive electrode	Lithium transition metal oxidate Li[M]m[O]n	20~60	12190-79-3 12057-17-9 182442-95-1
Positive electrode's base	Aluminum	1~10	7429-90-5
Negative electrode	Carbon	10~30	7429-90-5
Negative electrode's base	Copper	1~15	7440-44-0
Electrolyte	Organic electrolyte principally involves ester carbo- nate	5~25	Confidential
Outer case	Aluminum, iron, aluminum laminated plastic	1~30	7429-90-5; 7439-89-6

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4. Førstehjelpstiltak

First Aid Measures

Kjemikaliene befinner seg i forseglede hylstre. Under normale bruksforhold er det kun fare for eksponering ved mekanisk skade av batteriet.

The chemicals are contained in a sealed housing so that they cannot escape during normal use. Leakage may only be caused as a result of mechanical damage to the housing.

Hvis det lekker kjemikalier må instruksjonene følges:

If chemicals do leak, the following must be observed:

Innånding:	Innholdet av et åpnet batteri kan irritere luftveiene. Sørg for frisk luft og kontakt lege.
<i>Inhalation:</i>	<i>Escaping gases may cause respiratory tract irritation. Immediately ventilate or leave the room to get into fresh air. In more serious cases, call a doctor immediately.</i>
Hudkontakt:	Innholdet av et åpnet batteri kan irritere huden. Vask huden grundig med såpe og vann.
<i>Skin contact:</i>	<i>Skin irritations may occur. Thoroughly wash the skin with soap and water.</i>
Kontakt med øynene:	Innholdet av et åpnet batteri kan irritere øynene. Skyll øynene straks øynene: nøye med vann i 15 minutter og kontakt lege.
<i>Eye contact:</i>	<i>Eye irritations may occur. Immediately and thoroughly rinse the eyes with water for 15 minutes then seek medical assistance.</i>

5. Tiltak ved brannslukking

Fire Fighting Measures

Ved brann:	Bruk bare pulverslokkingsapparater.
<i>In case of fire:</i>	<i>Only use Class D (dry powder) fire extinguishers.</i>
Advarsel:	Før du begynner å slokke brannen, må du sørge for at du befinner deg på den siden vinden kommer fra i forhold til brannen. Da innånder du ikke giftige damper.
<i>Caution:</i>	<i>Before you start extinguishing the fire, be sure to go to the side of the fire from which the wind is coming. In this way, you will not inhale any toxic vapours.</i>

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Geschäftsführer:
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6. Tiltak ved utilsiktet utslipp

Measures to Be Implemented in Case of Accidental Leakage

Tørk opp lekket elektrolyttvæske med et absorberende stykke stoff.
Leaked electrolyte fluid should be wiped up with an absorbent cloth.

Hvis det har lekket mye elektrolytt må du bruke:
Personal protective equipment should be worn in case of larger leakages:

- ↪ **Verneklær**
protective clothing
- ↪ **Gassmaske mot organiske gasser**
gas mask for protection against organic gases
- ↪ **vernebriller**
safety goggles
- ↪ **vernehansker**
protective gloves

7. Håndtering og oppbevaring

Handling and Storage

Håndtering: Batteriet må ikke åpnes. Må ikke klemmes, demonteres, slippes eller loddes.
Handling: *Neither open, crush nor disassemble the battery, nor let it drop from a great height nor solder anything onto it.*

Lading: Må lades innenfor temperaturgrensen på 0 °C til +45 °C. Må bare lades med den spesifiserte laderen som hører til dette batteriet.
Charging: *The charging temperature must be between +32 °F and +113 °F. Only use the charger designated for this battery.*

Utladning: Må utlades innenfor temperaturgrensen på -20 °C til +60 °C.
Discharging: *The battery may only be discharged at temperatures from -4 °F to +140 °F.*

Advarsel: Feil håndtering kan føre til brann eller eksplosjon!
Caution: *Improper handling may cause fire or explosion!*

Lagring: Temperatur: -20 °C til +40 °C i mindre enn 3 måneder
Storage: *Temperature: -4 °F to +104 °F, for less than 3 months*
Luftfuktighet: 0 % til 80 %
Humidity range: 0 % to 80 %

Lagres på er godt ventilert sted. / *Store in a well-ventilated place.*
Kortslutning kan forårsake brann. / *Short circuits may cause fires.*
Må ikke lagres sammen med metallgjenstander. / *Do not store along with other metal objects.*

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8. Eksponeringskontroll og personlig verneutstyr

Monitoring of the Stored Goods and Personal Protective Equipment

Anbefalingene i punkt 7 må følges. Man må overvåke at lagringstemperaturen er innenfor grensene til enhver tid. Sørg også for god ventilasjon og at luftfuktigheten er innenfor grensene. Ved normal bruk kreves det ikke verneutstyr.

Observe the information stated in Section 7. Continuously monitor the storage temperature so as to ensure that it is within the specified limits. Apart from that, it is required to ensure good ventilation and that the humidity does not exceed the specified limits. No protective equipment is required during normal handling.

9. Fysiske og kjemiske egenskaper

Physical and Chemical Properties

Utseende:	12 celler i hus
<i>Appearance:</i>	<i>Housing with 12 cells</i>
Vekt:	800 g
<i>Weight:</i>	<i>800 g</i>
Kjemiske egenskaper:	se punkt 3
<i>Chemical properties:</i>	<i>see Section 3</i>

10. Stabilitet og reaktivitet

Stability and Reactivity

Ved lagring over 12 måneder avtar kapasiteten og batteriets levetid blir kortere. Hvis det skulle lekke elektrolytt, kan plasthuset bli skadet.

Storage periods of more than 12 months will decrease the battery's capacity and expected lifespan. Electrolyte leakages may damage the housing on the inside.

11. Informasjon om giftighet

Toxicological Information

Ved normal bruk vil det ikke oppstå lekkasje, og derfor vil det ikke være noen kontakt med giftige stoffer fra batteriet.

The escape of and contact with any hazardous and toxic substances is not possible under normal conditions of use.

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12. Økologisk informasjon

Environment-Related Information

Ved normal bruk av batteriet oppstår det ikke miljøforurensning. Batteriet inneholder imidlertid kjemikalier som kan innebære en fare for miljøet. Når brukte batterier skal kastes, må man alltid følge instruksjonene som beskrives i punkt 13.

Provided that the battery is handled properly, environmental pollution does not occur. After use, however, the battery must be disposed of separately as it contains hazardous chemicals. See Section 13.

13. Fjerning av avfall

Disposal Instructions

Batteriet er spesialavfall.

Det er ikke tillatt å kaste det sammen med restavfall.

Hvis batteriet ikke skal brukes mer, må det kastes i samsvar med gjeldende regler for gjenvinning.

Batteries are classified as hazardous waste.

The battery may only be disposed of by returning it to an authorized collection point.

It is prohibited to dispose of the battery with normal household waste.

14. Informasjon om transport

Transportation information

Generell erklæring:

General explanation

Det er begrensende forskrifter for transport av disse produktene med fly, bil, tog eller båt. Nedenfor vises referanser til disse forskriftene. Siden lovgivningen er gjenstand for hyppige endringer, skal transportøren sørge for at varene transporteres i samsvar med lovgivningen som gjelder på tidspunktet for forsendelse. Hvis det er nødvendig, kontaktes fabrikanten for hjelp i den forbindelse.

Restrictive regulations are applicable to the product's transport by air, road, rail or sea. Below you will find references to these regulations. As these laws are subject to frequent changes, the transport company shall ensure that the products are transported according to the regulations applicable at the time of shipment. Please contact the manufacturer of the products if you need any assistance in this matter.

Transport av batteriet i henhold til retningslinje UN 3480/3481 (1).

Siden den nominelle energien er større enn 100 Wh, må batteriet sendes som farlig gods.

Transportation of the battery according to Directive UN 3480/3481 (1).

As the nominal energy exceeds 100 Wh, the battery must be shipped as a dangerous good.

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Batteriet **må** beskyttes mot kortslutning.
*The battery **must** be protected against short circuits.*

Transportbestemmelsene avhenger av regionen og transportmetoden.
The transport regulations depend on the country-specific provisions and on the type of transport.

Vei og jernbane: ADR / RID

Road and rail: ADR / RID

- ↪ Klasse / Class: 9
- ↪ Klassifiseringskode / Classification code: M4
- ↪ Emballasjegruppe / Packaging group: ---
- ↪ Emballasjeinstruksjoner / Packaging instructions: P903 / P903a / P903b

Tunnelbegrensning: E, gjennomkjøring forbudt i kategori E-tunneler
Tunnel restriction: E, passage prohibited through tunnels of category E

Luft: IATA

Air: IATA

- ↪ Emballasjegruppe / Class: 9
- ↪ Emballasjegruppe / Packaging group: ---
- ↪ Emballasjeinstruksjoner / Packaging instructions: P965 / P966 / P967 (del IA / Section IA)

Vektgrense / Weight restriction:

- ↪ Fraktfly: 35 kg per pakke
- ↪ Cargo aircraft: 35 kg per package

Se: IMDG-kode

Sea: IMDG Code

- ↪ Klasse / Class: 9
- ↪ Emballasjegruppe / Packaging group: ---
- ↪ Emballasjeinstruksjoner / Packaging instructions: P903

Innenlands vannveier: ADN

Inland navigation: ADN

- ↪ Klasse / Class: 9
- ↪ Klassifiseringskode / Classification code: M4
- ↪ Emballasjegruppe / Packaging group: ---
- ↪ Emballasjeinstruksjoner / Packaging instructions: P903 / P903a / P903b

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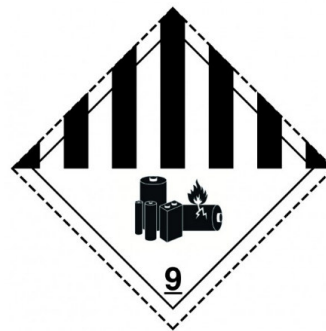
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Hver pakke må merkes med følgende etiketter og ledsages av et følgebrev som angitt nedenfor:

Each package must be marked with the following labels. Furthermore, it is required to enclose an accompanying note as stated below

Klistremerke for transport på vei/jernbane

Labelling for transport by road/rail



Minimum størrelse / *minimum size* = 10x10 (CM)

+ Klistremerke med avsender og mottaker
+ *Label stating the consignor and consignee*

Følgebrev / *Accompanying note*: UN 3480 LITHIUM-ION BATTERIES, 9, -, (E)

Klistremerke for frakt /flyfrakt CAO

Maksimal vekt per pakke for forsendelser med luftfrakt: 35 kg

For pakker som bare kan transporteres med fraktfly.

Shipping label/cargo aircraft only (CAO)

Maximum weight per package for air freight shipments: 35 kg

For packages which may only be transported by cargo planes.



+ Klistremerke med avsender og mottaker
+ *Label stating the consignor and consignee*

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15. Opplysninger om lover og forskrifter

Bestemmelser og forskrifter

Henvisninger til bestemmelser om transport av farlig gods:

References to provisions concerning the transport of hazardous goods

Lov om transport av farlig gods (GGBefG)

Transportation of Dangerous Goods Act (GGBefG)

Forordning om transport av farlig gods på vei, jernbane og innlands-navigasjon (GGVSEB)

Ordinance on the Transport of Dangerous Goods by Road, Rail and Inland Waterways (GGVSEB)

Forordning om transport av farlig gods til havs (GGVSee)

Ordinance on the Transport of Dangerous Goods by Sea (GGVSee)

Lov om luftfart (LuftVG), lisensieringsordre luftfart (LuftVZO)

Air Traffic Act (LuftVG), Air Traffic Licensing Order (LuftVZO)

Europeisk overenskomst angående internasjonal transport av farlig gods på vei (ADR)

European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)

Forskrift om internasjonal transport av farlig gods med jernbane (RID)

Regulation concerning the International Carriage of Dangerous Goods by Rail (RID)

Europeisk avtale om internasjonal transport av farlig gods ved innlandsnavigasjon (ADN)

European Agreement concerning the International Carriage of Dangerous Goods by Inland Navigation (ADN)

I Internasjonal kode for maritim frakt av farlig gods (IMDG)

International Maritime Dangerous Goods Code

International Civil Aviation Organization –

Tekniske instruksjoner for sikker transport av farlig gods med fly (ICAO-TI)

Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO-TI)

International Air Transport Association –

Regler for farlig gods (IATA-DGR)

Dangerous Goods Regulations (IATA-DGR)

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16. Ladestatus i samsvar med IATA-forskriftene om farlig gods fra 1. april 2016

State of Charge in Accordance with the Changes to the IATA Dangerous Goods Regulations Effective from 1 April 2016

I samsvar med endringen i IATA-forskriftene om farlig gods, som trådte i kraft 1. april 2016, bekrefter REMS GmbH & Co KG at litium-ionbatteriene (UN 3480) produsert etter 1. april 2016 har ladetilstand (SoC) på maksimalt 30 % av sin kapasitet når de overføres for transport.

In accordance with the changes to the IATA Dangerous Goods Regulations, which entered into force on 1 April 2016, REMS GmbH & Co KG confirms that all lithium-ion batteries (UN 3480) manufactured from 1 April 2016 will be handed over for transportation with their state of charge (SoC) not exceeding 30% of their design capacity.

17. Andre opplysninger

Other Information

Disse opplysningene er etter vår mening og kjennskap samlet på en nøyaktig måte. REMS GmbH & Co. KG utelukker imidlertid enhver garanti for nøyaktighet, pålitelighet eller fullstendighet av informasjonen. Det er brukerens ansvar å påse at denne informasjonen er egnet til og komplett ved en spesifikk bruk.

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SIKKERHEDSDATAARK FOR PRODUKT MATERIAL SAFETY DATA SHEET

Lithium-ion manganoxid batteri
Lithium ion manganese oxide battery

Produkt nr.: 571581 R22 / Item no.: 571581 R22

I henhold til forordning (EF) nr. 1907/2006 (REACH) skal der kun stilles et sikkerhedsdatablad til rådighed for stoffer og præparater. Batterier er ikke omfattet af kravene i denne forordning.

According to Regulation (EC) No. 1907/2006 (REACH), a safety data sheet must be provided solely for substances and preparations. Batteries are not affected by the requirements of this Regulation.

1. Produktnavn og producentens oplysninger

Product Designation and Name of the Manufacturer

Identifikation:*Identification***Produktkategori:***Product category*

Lithium-ion-batteri

*Lithium-ion battery***Betegnelse:***Model designation*

6S2P

Nominelle spænding:*Nominal voltage*

21.6V

Nominelle kapacitet:*Nominal capacity*

5.0Ah

Nominel energi:*Nominal energy*

108Wh

Kemisk system:*Chemical system*

Lithiummanganoxid/grafit

*Lithium manganese oxide / Graphite***Genopladelige:***Rechargeable*

Ja

Yes

Producent:*Manufacturer***Navn og adresse:***Name and address***REMS GmbH & Co KG**

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D-71332 Waiblingen

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2. Mulige farer

Possible Hazards

- Klassificering:** Li-Ion-batteriet har en nominel energi på > 100 Wh, og er derfor underlagt visse særlige bestemmelser i lovgivningen om farligt gods.
- Classification:** *This lithium-ion battery has a nominal energy of > 100Wh, which is why it is subject to certain special provisions under the hazardous substances law.*
- Farer:** Lithium-ion-batterier kan ved forkert håndtering udvikle brand, eksplodere eller forårsage kemiske forbrændinger. Udsæt aldrig for kortslutning, gennemboring, åben ild, knusning, nedsækning i vand, tvungen udtømning eller for temperaturer uden for produktets specificerede driftsområde. Læs venligst brugsanvisningen omhyggeligt.
Under normale forhold udsendes der ingen farlige stoffer, og der kan ikke opstå kontakt med giftige stoffer. Der findes kun en risiko for eksponering ved forkert håndtering (mekanisk, termisk, elektrisk), hvilket fører til aktivering af sikkerhedsventilerne og/eller nedbrydning af kabinettet. Det kan, afhængigt af omstændighederne, resultere i udsvingning af elektrolytvæsken, elektrodematerialernes reaktion med fugt/vand eller batteriudluftning/brand/eksplosion.
- Hazards:** *When handled improperly, lithium-ion batteries may explode, or cause fire or chemical burns. Batteries must not be short-circuited, punctured, thrown into fire, crushed, immersed in water, forcibly discharged or exposed to temperatures exceeding the product's specified operating range. Please read the operating instructions thoroughly. The escape of and contact with any hazardous and toxic substances is not possible under normal conditions of use. A risk of exposure only exists in case of improper (mechanical, thermal, electrical) use which leads to the activation of safety valves and/or the rupture of the battery housing. Depending on the surrounding circumstances, the following might occur: electrolyte leakage, reaction of the electrode materials with moisture/water or battery venting/fire/explosion.*
- Toksicitet:** Hvis et batteri brænder, kan det forårsage irritation, på grund af røg eller opståede dampe, af øjne, hud og luftveje.
- Toxicity:** *If a battery burns, smoke or vapors are generated. These may cause eye, skin and respiratory tract irritations.*

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3. Sammensætning og oplysning om indholdsstoffer

Composition and Information About the Individual Components

De følgende komponenter er indeholdt i den forseglede celle:

The following components are contained in the sealed cell

Komponent	Materialenavn	Koncentrations område (vægt %)	CAS-nummer
Positiv elektrode	Lithiumovergang metalloxide Li[M]m[O]n	20~60	12190-79-3 12057-17-9 182442-95-1182442-95-1
Positiv elektrodens base	Aluminium	1~10	7429-90-5
Negativ elektrode	Kulstof	10~30	7429-90-5
Negativ elektrodens base	Kobber	1~15	7440-44-0
Elektrolyt	Organisk elektrolyt hovedsagelig baseret på estere af carbonsyre	5~25	Fortroligt
Ydre beholder	Aluminium, jern, aluminium-lamineret plastik	1~30	7429-90-5; 7439-89-6

Component	Material name	Concentration range (wt %)	CAS number
Positive electrode	Lithium transition metal oxidate Li[M]m[O]n	20~60	12190-79-3 12057-17-9 182442-95-1
Positive electrode's base	Aluminum	1~10	7429-90-5
Negative electrode	Carbon	10~30	7429-90-5
Negative electrode's base	Copper	1~15	7440-44-0
Electrolyte	Organic electrolyte principally involves ester carbo- nate	5~25	Confidential
Outer case	Aluminum, iron, aluminum laminated plastic	1~30	7429-90-5; 7439-89-6

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4. Førstehjælpsforanstaltninger

First Aid Measures

De kemikalier, der er anført under punkt 3, er indeholdt i et forsejlet kabinet, så de ikke kan sive ud under normalt brug. Risikoen for udsivning skyldes kun mekaniske skader på kabinettet.

The chemicals stated in Section 3 are contained in a sealed housing so that they cannot escape during normal use. Leakage may only be caused as a result of mechanical damage to the housing.

Hvis kemikalier siver ud, skal du være opmærksom på følgende:

If chemicals do leak, the following must be observed

- | | |
|----------------------|--|
| Inhalering: | Udslip af gasser kan føre til åndedrætsbesvær. Ventil straks eller gå ud i frisk luft, i værre tilfælde skal du straks kontakte en læge. |
| <i>Inhalation:</i> | <i>Escaping gases may cause respiratory tract irritation. Immediately ventilate or leave the room to get into fresh air. In more serious cases, call a doctor immediately.</i> |
| Hudkontakt: | Hudirritation kan forekomme. Vask huden grundigt med sæbe og vand. |
| <i>Skin contact:</i> | <i>Skin irritations may occur. Thoroughly wash the skin with soap and water.</i> |
| Øjenkontakt: | Der kan forekomme irritation i øjnene. Skyl øjeblikkeligt øjnene med vand i 15 minutter, og konsulter derefter en læge. |
| <i>Eye contact:</i> | <i>Eye irritations may occur. Immediately and thoroughly rinse the eyes with water for 15 minutes then seek medical assistance.</i> |

5. Bandbekæmpelse

Fire Fighting Measures

- | | |
|-----------------------------|--|
| I tilfælde af brand: | Brug kun brandslukkere i brandklasse D (tørpulver). |
| <i>In case of fire:</i> | <i>Only use Class D (dry powder) fire extinguishers.</i> |
| Advarsel: | Før du begynder at slukke branden, skal du stå på den side af branden, hvorfra vinden kommer. Så du ikke inhalerer giftige dampe. |
| <i>Caution:</i> | <i>Before you start extinguishing the fire, be sure to go to the side of the fire from which the wind is coming. In this way, you will not inhale any toxic vapours.</i> |

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6. Forholdsregler ved uheldige udslip

Measures to Be Implemented in Case of Accidental Leakage

Lækket elektrolytvæske skal tørres op med et absorberende stykke stof.

Leaked electrolyte fluid should be wiped up with an absorbent cloth.

I tilfælde af større udslip skal beskyttelsestøj anvendes:

Personal protective equipment should be worn in case of larger leakages:

- ↪ **beskyttelsesbeklædning**
protective clothing
- ↪ **gasmaske mod organiske gasser**
gas mask for protection against organic gases
- ↪ **beskyttelsesbriller**
safety goggles
- ↪ **beskyttelseshandsker**
protective gloves

7. Håndtering og opbevaring

Handling and Storage

Håndtering: Batteriet må ikke åbnes, knuses eller skilles ad eller falde fra større højde eller påloddet noget.

Handling: *Neither open, crush nor disassemble the battery, nor let it drop from a great height nor solder anything onto it.*

Opladning: Opladningstemperaturen skal være mellem 0 °C og +45 °C. Batteriet må kun oplades med den tilhørende oplader.

Charging: *The charging temperature must be between +32 °F and +113 °F. Only use the charger designated for this battery.*

Afladning: Batteriet kan kun aflades mellem -20 °C og +60 °C.

Discharging: *The battery may only be discharged at temperatures from -4 °F to +140 °F.*

Advarsel: Forkert håndtering kan forårsage en eksplosion eller forårsage brand!

Caution: *Improper handling may cause fire or explosion!*

Opbevaring: Temperatur: -20 °C till +40 °C i mindre end 3 måneder

Storage: *Temperature: -4 °F to +104°F for less than 3 months*

Fugtighed: 0 % til 80 %

Humidity range: 0 % to 80 %

Opbevaringspladsen skal være godt ventileret. / *Store in a well-ventilated place.*

En kortslutning kan forårsage brand. / *Short circuits may cause fires.*

Batterierne må ikke opbevares sammen med andre metalgenstande. / *Do not store along with other metal objects.*

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Geschäftsführer:

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8. Overvågning af opbevarede varer og beskyttelsesudstyr

Monitoring of the Stored Goods and Personal Protective Equipment

Instruktionerne under punkt 7 skal overholdes. Overholdelse af opbevaringstemperaturen inden for de specificerede grænser skal overvåges kontinuerligt. Der skal ligeledes sikres en god ventilation og en fugtighed indenfor de specificerede grænser. Der kræves ikke noget beskyttelsesudstyr til normal håndtering af batterierne.

Observe the information stated in Section 7. Continuously monitor the storage temperature so as to ensure that it is within the specified limits. Apart from that, it is required to ensure good ventilation and that the humidity does not exceed the specified limits. No protective equipment is required during normal handling.

9. Fysiske og kemiske egenskaber

Physical and Chemical Properties

Udseende: 12 Celler i kabinettet.
Appearance: Housing with 12 cells

Vægt: 800 g
Weight: 800 g

Kemiske Egenskaber: se punkt 3
Chemical properties: see Section 3

10. Stabilitet og reaktivitet

Stability and Reactivity

Opbevaring i mere end 12 måneder reducerer batteriets kapacitet, og forkorter den forventede levetid. Kabinettet kan blive beskadiget indefra af udsivende elektrolytter.

Storage periods of more than 12 months will decrease the battery's capacity and expected lifespan. Electrolyte leakages may damage the housing on the inside.

11. Toksikologiske oplysninger

Toxicological Information

Ved normal håndtering slipper ingen farlige stoffer ud af batteriet, og der kan derfor ikke opstå kontakt med giftige stoffer.

The escape of and contact with any hazardous and toxic substances is not possible under normal conditions of use.

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12. Miljøoplysninger

Environment-Related Information

Under normale forhold skader batteriet ikke miljøet. Dog skal det bortskaffes separat efter brug, da det indeholder farlige kemikalier. Se punkt 13.

Provided that the battery is handled properly, environmental pollution does not occur. After use, however, the battery must be disposed of separately as it contains hazardous chemicals. See Section 13.

13. Henvisninger vedrørende bortskaffelse

Disposal Instructions

Et batteri er farligt affald.

Batteriet må kun bortskaffes via et godkendt retursystem.

Batteriet må ikke bortskaffes som restaffald.

Batteries are classified as hazardous waste.

The battery may only be disposed of by returning it to an authorized collection point.

It is prohibited to dispose of the battery with normal household waste.

14. Transportoplysninger

Transportation information

Generel erklæring

General explanation

Restriktive regler regulerer forsendelsen af dette produkt med luftfragt, vejtransport, jernbane eller ad søvejen. Henvisninger til disse regler findes nedenfor. Da lovgivningen ændres regelmæssigt, skal transportøren sikre sig, at produkterne transporteres i henhold til de relevante og gyldige retningslinjer på transporttidspunktet. Hvis du har brug for hjælp i denne sag, bedes du kontakte producenten af produkterne.

Restrictive regulations are applicable to the product's transport by air, road, rail or sea. Below you will find references to these regulations. As these laws are subject to frequent changes, the transport company shall ensure that the products are transported according to the regulations applicable at the time of shipment. Please contact the manufacturer of the products if you need any assistance in this matter.

Transport af batteriet i henhold til retningslinje UN 3480/3481 (1).

Da den nominelle energi er større end 100 Wh, skal batteriet sendes som farligt gods.

Transportation of the battery according to Directive UN 3480/3481 (1).

As the nominal energy exceeds 100 Wh, the battery must be shipped as a dangerous good.

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Batteriet **skal** beskyttes mod kortslutning.
The battery **must** be protected against short circuits.

Transportreglerne er baseret på de landsspecifikke forordninger og typen af transport.
The transport regulations depend on the country-specific provisions and on the type of transport.

Vej og jernbane: ADR / RID

Road and rail: ADR / RID

- ↪ Klasse / Class: 9
- ↪ Klassifikationskode / Classification code: M4
- ↪ Emballagegruppe / Packaging group: ---
- ↪ Emballageforskrifter / Packaging instructions: P903 / P903a / P903b

Tunnelbegrænsning: E, passage gennem kategori E-tunneler forbudt
Tunnel restriction: E, passage prohibited through tunnels of category E

Luft: IATA

Air: IATA

- ↪ Klasse / Class: 9
- ↪ Emballagegruppe / Packaging group: ---
- ↪ Emballageforskrifter / Packaging instructions: P965 / P966 / P967 (del IA)

Vægtbegrænsning / Weight restriction:

- ↪ Fragtfly: 35 kg pr. pakke
- ↪ Cargo aircraft: 35 kg per package

Se: IMDG-kode

Sea: IMDG Code

- ↪ Klasse / Class: 9
- ↪ Emballagegruppe / Packaging group: ---
- ↪ Emballageforskrift / Packaging instructions: P903

Indenlandsk skibsfart: ADN

Inland navigation: ADN

- ↪ Klasse / Class: 9
- ↪ Klassifikationskode / Classification code: M4
- ↪ Emballagegruppe / Packaging group: ---
- ↪ Emballageforskrift / Packaging instructions: P903 / P903a / P903b

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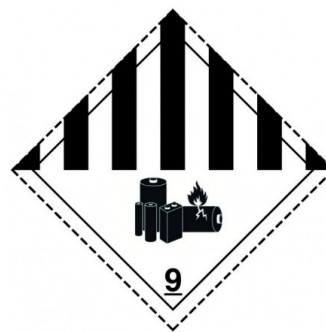
Dr.-Ing. Rudolf Wagner

Hver pakke skal være forsynet med følgende mærkater og med et følgebrev, som angivet nedenfor:

Each package must be marked with the following labels. Furthermore, it is required to enclose an accompanying note as stated below

Mærkat for transport på vej/jernbane

Labelling for transport by road/rail



Minimum størrelse / *minimum size* = 10x10 (CM)

+ mærkat med afsender og modtager

+ *Label stating the consignor and consignee*

Følgebrev / *Accompanying note* : FN 3480 LITHIUM-ION-BATTERIER, 9, -, (E)

Mærkat til fragt / luftfragt CAO

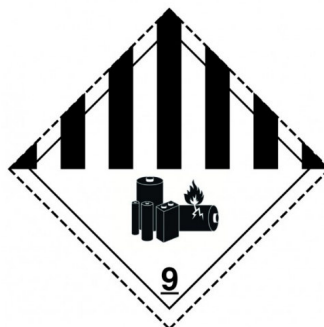
Maksimal vægt pr. pakke for luftfragtforsendelser: 35 kg

For pakker, der kun må transporteres med fragtfly.

Shipping label/cargo aircraft only (CAO)

Maximum weight per package for air freight shipments: 35 kg

For packages which may only be transported by cargo planes.



+ mærkat med afsender og modtager

+ *Label stating the consignor and consignee*

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15. Bestemmelser og forordninger

Provisions and Regulations

Henvisninger til bestemmelser vedrørende transport af farligt gods:

References to provisions concerning the transport of hazardous goods:

Lov om transport af farligt gods (GGBefG)

Transportation of Dangerous Goods Act (GGBefG)

Forordning om transport af farligt gods ad landevej, jernbane og indlands-vandveje (GGVSEB)

Ordinance on the Transport of Dangerous Goods by Road, Rail and Inland Waterways (GGVSEB)

Forordning om transport af farligt gods ad søvejen (GGVSee)

Ordinance on the Transport of Dangerous Goods by Sea (GGVSee)

Lufttrafikloven (LuftVG), Licensiering af lufttrafiklicenser (LuftVZO)

Air Traffic Act (LuftVG), Air Traffic Licensing Order (LuftVZO)

Den europæiske konvention om international transport af farligt gods ad vej (ADR)

European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)

Reglement for international transport af farligt gods med jernbane (RID)

Regulation concerning the International Carriage of Dangerous Goods by Rail (RID)

Den europæiske konvention om international transport af farligt gods ad indlands-vandveje (ADN)

European Agreement concerning the International Carriage of Dangerous Goods by Inland Navigation (ADN)

Internationalt kodeks for søtransport af farligt gods (IMDG-Code)

International Maritime Dangerous Goods Code (IMDG-Code)

International Civil Aviation Organization –

Tekniske instruktioner til sikker transport af farligt gods med luft (ICAO-TI)

Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO-TI)

International Air Transport Association –

Forordninger om farligt gods (IATA-DGR)

Dangerous Goods Regulations (IATA-DGR)

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16. Opladningsniveau i henhold til ændringen i IATA-reglerne for farligt gods fra 1. april 2016

State of Charge in Accordance with the Changes to the IATA Dangerous Goods Regulations Effective from 1 April 2016

I overensstemmelse med ændringen i IATA-reglerne for farligt gods, der trådte i kraft den 1. april 2016, bekræfter REMS GmbH & Co KG, at litiumionbatterierne (UN 3480), der blev produceret fra den 1. april 2016, transporteres med et opladningsniveau (SoC) på højst 30 % af den kapacitet, som de er beregnet til.

In accordance with the changes to the IATA Dangerous Goods Regulations, which entered into force on 1 April 2016, REMS GmbH & Co KG confirms that all lithium-ion batteries (UN 3480) manufactured from 1 April 2016 will be handed over for transportation with their state of charge (SoC) not exceeding 30% of their design capacity.

17. Andre oplysninger

Other Information

Denne information er omhyggeligt udarbejdet efter vores bedste overbevisning. REMS GmbH & Co KG udelukker enhver garanti for nøjagtighed, pålidelighed og fuldstændighed af de nævnte oplysninger! Det er brugerens ansvar at verificere, om denne information er relevant, fuldstændig og aktuel i forhold til den særlige anvendelse.

This information has been meticulously compiled to the best of our knowledge and belief. REMS GmbH & Co KG excludes any warranty whatsoever for the accuracy, reliability or completeness of the information provided herein! It is the user's responsibility to check the information's suitability, completeness and timeliness with regard to the relevant purpose of use.

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KÄYTTÖTURVALLISUUSTIEDOTE

MATERIAL SAFETY DATA SHEET

Litiumioni-mangaanioksidiakku
Lithium ion manganese oxide battery

Tuotenumero: 571581 R22 / Item no.: 571581 R22

Asetuksen (EY) N:o 1907/2006 (REACH) mukaan käyttöturvallisuustiedote pitää laatia vain aineille ja valmisteille.

Asetuksen vaatimukset eivät siten koske akkuja.

According to Regulation (EC) No. 1907/2006 (REACH), a safety data sheet must be provided solely for substances and preparations. Batteries are not affected by the requirements of this Regulation.

1. Aineen tai seoksen ja yhtiön tai yrityksen tunnistetiedot

Product Designation and Name of the Manufacturer

Tuotetunniste:

Identification

Tuoteryhmä:

Product category

Litiumioniakku

Lithium-ion battery

Tunnuskoodi:

Model name

6S2P

Nimellisjännite:

Nominal voltage

21.6V

Nennkapazität:

Nominal capacity

5.0Ah

Nimellisteho:

Nominal energy

108Wh

Kemiallinen järjestelmä:

Chemical system

Litium-mangaanioksidi / grafiitti

Lithium manganese oxide / Graphite

Uudelleenladattava:

Rechargeable

Kyllä

Yes

Valmistaja:

Manufacturer

Nimi ja osoite:

Name and address

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2. Vaaran yksilöinti:

Possible Hazards

- Luokitus:** Litiumioniakun nimellisteho on > 100 Wh. Se on siten tiettyjen, vaarallisten aineiden kuljetusta koskevien erityismääräysten alainen.
- Classification:** *This lithium-ion battery has a nominal energy of > 100Wh, which is why it is subject to certain special provisions under the hazardous substances law.*
- Vaarat:** Litiumioniakut voivat epäasianmukaisesti käsiteltyinä syttyä tuleen, räjähtää tai aiheuttaa kemiallista korroosiota. Akuille ei saa koskaan aiheuttaa oikosulkua eikä niitä saa lävistää, heittää tuleen, murskata, upottaa veteen, syväpurkaa tai altistaa lämpötiloille, jotka ovat tuotteelle ilmoitettujen käyttölämpötilojen vastaisia. Lue käyttöohje huolellisesti. Normaalisissa käytössä akusta ei vapaudu vaarallisia aineita, eikä myrkyllisiin aineisiin voi syntyä kosketusta. Altistumisriski on olemassa vain, jos akun käsittely on (mekaanisesti, termisesti tai sähköisesti) epäasianmukaista ja johtaa turvaventtiin käynnistymiseen ja/tai kotelon halkeamiseen. Tapahtumaan liittyvistä olosuhteista riippuen siitä voi seurata nestemäisen elektrolyytin vuoto, elektrodimateriaalien reaktio kosteuden/veden kanssa tai akun tyhjentyminen / palo / räjähdys.
- Hazards:** *When handled improperly, lithium-ion batteries may explode, or cause fire or chemical burns. Batteries must not be short-circuited, punctured, thrown into fire, crushed, immersed in water, forcibly discharged or exposed to temperatures exceeding the product's specified operating range. Please read the operating instructions thoroughly.*
The escape of and contact with any hazardous and toxic substances is not possible under normal conditions of use. A risk of exposure only exists in case of improper (mechanical, thermal, electrical) use which leads to the activation of safety valves and/or the rupture of the battery housing. Depending on the surrounding circumstances, the following might occur: electrolyte leakage, reaction of the electrode materials with moisture/water or battery venting/fire/explosion.
- Muut vaarat:** Jos akku syttyy tuleen, palossa muodostuva savu tai kaasut voivat aiheuttaa silmien, ihon ja hengitysteiden ärsytystä.
- Toxicity:** *If a battery burns, smoke or vapors are generated. These may cause eye, skin and respiratory tract irritations.*

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3. Koostumus ja tiedot aineosista

Composition and Information About the Individual Components

Akkukkenno sisältää seuraavat aineosat.

The following components are contained in the sealed cell.

Osa	Materiaalin nimi	Pitoisuuden vaihteluväli (paino-%)	CAS-rekisterinumero
Positiivinen elektrodi	Lithium transition metal oxidate Li[M]m[O]n	20~60	12190-79-3 12057-17-9 182442-95-1
Positiivisen elektrodin kanta	Alumiini	1~10	7429-90-5
Negatiivinen elektrodi	Hiili	10~30	7429-90-5
Negatiivisen elektrodin kanta	Kupari	1~15	7440-44-0
Elektrolyytti	Orgaaninen elektrolyytti muodostuu pääasiassa esteri-karbonaateista	5~25	Luottamuksellinen
Kotelon ulko-osat	Alumiini, rauta, alumiinimuovilaminaatti	1~30	7429-90-5; 7439-89-6

Component	Material name	Concentration range (wt %)	CAS number
Positive electrode	Lithium transition metal oxidate Li[M]m[O]n	20~60	12190-79-3 12057-17-9 182442-95-1
Positive electrode's base	Aluminum	1~10	7429-90-5
Negative electrode	Carbon	10~30	7429-90-5
Negative electrode's base	Copper	1~15	7440-44-0
Electrolyte	Organic electrolyte principally involves ester carbo- nate	5~25	Confidential
Outer case	Aluminum, iron, aluminum laminated plastic	1~30	7429-90-5; 7439-89-6

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4. Ensiaputoimenpiteet

First Aid Measures

Kohdassa 3 ilmoitetut kemialliset aineet on pakattu umpinaiseen koteloon, josta ne eivät normaalissa käytössä pääse ulos. Aineiden vuotamisen vaara on olemassa vain, jos kotelolle aiheutetaan mekaanista vahinkoa.

The chemicals are contained in a sealed housing so that they cannot escape during normal use. Leakage may only be caused as a result of mechanical damage to the housing.

Jos akusta vuotaa aineita, noudata seuraavia ohjeita:

If chemicals do leak, the following must be observed:

Ainetta hengitetty: Akusta vuotavat kaasut voivat aiheuttaa hengitysteiden ärsytystä. Tuuletettava heti tai mentävä raittiiseen ilmaan, vakavissa tapauksissa otettava heti yhteys lääkäriin.

Inhalation:

Escaping gases may cause respiratory tract irritation.

Immediately ventilate or leave the room to get into fresh air. In more serious cases, call a doctor immediately.

Aine koskettanut ihoa: Voi aiheuttaa ihon ärsytystä. Iho pestävä huolellisesti vedellä ja saippualla.

Skin contact:

Skin irritations may occur. Thoroughly wash the skin with soap and water.

Ainetta mennyt silmään: Voi aiheuttaa silmien ärsytystä. Silmiä huuhdeltava heti perusteellisesti 15 minuutin ajan vedellä, sitten käytävä lääkäriin.

Eye contact:

Eye irritations may occur. Immediately and thoroughly rinse the eyes with water for 15 minutes then seek medical assistance.

5. Palontorjuntatoimenpiteet

Fire Fighting Measures

Sammutusaineet: Käytä ainoastaan paloluokan D sammutusaineita (sammutusjauheita).

In case of fire:

Only use Class D (dry powder) fire extinguishers.

Varoitus:

Siirry ennen sammutustöiden aloittamista tulen tuulenpuoleiselle puolelle. Silloin et hengitä myrkyllisiä kaasuja.

Caution:

Before you start extinguishing the fire, be sure to go to the side of the fire from which the wind is coming. In this way, you will not inhale any toxic vapours.

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6. Toimenpiteet onnettomuuspäästöissä

Measures to Be Implemented in Case of Accidental Leakage

Akusta vuotanut nestemäinen elektrolyytti tulee imeyttää imukykyiseen liinaan.
Leaked electrolyte fluid should be wiped up with an absorbent cloth.

Jos elektrolyyttiä on vuotanut runsaasti, on käytettävä seuraavia suojaimia:
Personal protective equipment should be worn in case of larger leakages:

-  **suojavaatetus**
protective clothing
-  **kaasunsuodatinsuojain joka suojaa orgaanisilta kaasuilta**
gas mask for protection against organic gases
-  **suojalasit**
safety goggles
-  **suojakäsineet**
protective gloves

7. Käsittely ja varastointi

Handling and Storage

- Käsittely:** Akkua ei saa avata, murskata, purkaa osiin, pudottaa korkealta tai juottaa.
Handling: *Neither open, crush nor disassemble the battery, nor let it drop from a great height nor solder anything onto it.*
- Lataaminen:** Akku on ladattava lämpötilassa 0 °C ... +45 °C. Lataamiseen saa käyttää vain sitä varten tarkoitettua laturia.
Charging: *The charging temperature must be between +32 °F and +113 °F. Only use the charger designated for this battery.*
- Purkaminen:** Akku on purettava lämpötilassa -20 °C ... +60 °C.
Discharging: *The battery may only be discharged at temperatures from -4 °F to +140 °F.*
- Varoitus:** Vääränlainen käsittely voi aiheuttaa räjähdyksen tai tulipalon!
Caution: *Improper handling may cause fire or explosion!*
- Varastointi:**
Storage:
- | | |
|-----------------|--|
| Lämpötila: | -20 °C - +40 °C alle 3 kuukautta |
| Temperature: | -4 °F to +104 °F, for less than 3 months |
| Ilmankosteus: | 0 % - 80 % |
| Humidity range: | 0 % to 80 % |
- Varastotilassa pitää olla hyvä ilmanvaihto. / *Store in a well-ventilated place.*
Oikosulku voi aiheuttaa tulipalon. / *Short circuits may cause fires.*
Akkuja ei saa säilyttää muiden metalliesineiden kanssa. / *Do not store along with other metal objects.*

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8. Altistumisen ehkäiseminen ja henkilönsuojaimet

Monitoring of the Stored Goods and Personal Protective Equipment

Kohdassa 7 annetut ohjeet on huomioitava. Varastointilämpötilaa on valvottava jatkuvasti sen varmistamiseksi, että lämpötila pysyy sallituissa rajoissa. Lisäksi on varmistettava hyvä ilmanvaihto ja ilmankosteuden pysyminen sallituissa rajoissa. Akun normaalissa käsittelyssä ei tarvita henkilönsuojaimia.

Observe the information stated in Section 7. Continuously monitor the storage temperature so as to ensure that it is within the specified limits. Apart from that, it is required to ensure good ventilation and that the humidity does not exceed the specified limits. No protective equipment is required during normal handling.

9. Fysikaaliset ja kemialliset ominaisuudet

Physical and Chemical Properties

Olomuoto: 12 kennoa kotelossa
Appearance: Housing with 12 cells

Paino: 800 g
Weight: 800 g

Kemialliset ominaisuudet: katso kohta 3
Chemical properties: see Section 3

10. Stabiilisuus ja reaktiivisuus

Stability and Reactivity

Yli 12 kuukautta kestävä varastoinnin seurauksena akun kapasiteetti pienenee ja sen odotettavissa oleva käyttöikä lyhenee. Jos akusta vuotaa elektrolyyttiä, kotelo vahingoittuu sisältä käsin.

Storage periods of more than 12 months will decrease the battery's capacity and expected lifespan. Electrolyte leakages may damage the housing on the inside.

11. Myrkyllisyyteen liittyvät tiedot

Toxicological Information

Normaalisti käsiteltynä akusta ei vuoda vaarallisia aineita eikä myrkyllisiin aineisiin voi siten syntyä kosketusta.

The escape of and contact with any hazardous and toxic substances is not possible under normal conditions of use.

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12. Tiedot vaarallisuudesta ympäristölle

Environment-Related Information

Normaalisti käsiteltynä akku ei vahingoita ympäristöä. Akku on kuitenkin käyttöikänsä lopussa hävitettävä muusta jätteestä erillään ja toimitettava erityiseen keräyspisteeseen, koska se sisältää vaarallisia aineita. Katso kohta 13.

Provided that the battery is handled properly, environmental pollution does not occur. After use, however, the battery must be disposed of separately as it contains hazardous chemicals. See Section 13.

13. Jätteiden käsittelyyn liittyvät näkökohdat

Disposal Instructions

Akku on myrkkijätettä.

Akku pitää aina palauttaa sitä varten tarkoitettua palautusjärjestelmää käyttämällä.

Akkua ei koskaan saa hävittää kotitalousjätteen mukana.

Batteries are classified as hazardous waste.

The battery may only be disposed of by returning it to an authorized collection point.

It is prohibited to dispose of the battery with normal household waste.

14. Kuljetustiedot

Transportation information

Yleistä:

General explanation

Tämän tuotteen kuljetus lentoteitse, maanteitse, rautateitse tai meritse on rajoittavien määräysten alainen. Kyseiset rajoitukset esitetään alla. Koska lainsäädäntöön tehdään aika ajoin muutoksia, kuljettajan on varmistettava, että tuotteet kuljetetaan kulloinkin voimassa olevien ja sovellettavien määräysten mukaisesti. Jos haluat tarkempia neuvoja, ota yhteyttä tuotteen valmistajaan.

Restrictive regulations are applicable to the product's transport by air, road, rail or sea. Below you will find references to these regulations. As these laws are subject to frequent changes, the transport company shall ensure that the products are transported according to the regulations applicable at the time of shipment. Please contact the manufacturer of the products if you need any assistance in this matter.

Akun kuljetus suositusten UN 3480/3481 (1) mukaisesti.

Koska nimellisenergia on yli 100 Wh, **täytyy akku lähettää vaarallisena aineena.**

Transportation of the battery according to Directive UN 3480/3481 (1).

As the nominal energy exceeds 100 Wh, the battery **must be shipped as a dangerous good.**

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Akku **on** suojattava oikosululta.
The battery **must** be protected against short circuits.

Kuljetusmääräykset riippuvat maantieteellisestä alueesta ja käytettävästä kuljetustavasta.
The transport regulations depend on the country-specific provisions and on the type of transport.

Maantie- ja rautatiekuljetukset: ADR / RID

Road and rail: ADR / RID

- ↳ Luokka / Class: 9
- ↳ Luokituskoodi / Classification code: M4
- ↳ Pakkausryhmä / Packaging group: ---
- ↳ Pakkausohjeet / Packaging instructions: P903 / P903a / P903b

Tunnelirajoitus: E, kuljetus kielletty luokan E tunneleissa
Tunnel restriction: E, passage prohibited through tunnels of category E

Ilmakuljetus: IATA

Air: IATA

- ↳ Luokka / Class: 9
- ↳ Pakkausryhmä / Packaging group: ---
- ↳ Pakkausohjeet / Packaging instructions: P965 / P966 / P967 (osa IA / Section IA)

Painorajoitus / Weight restriction:

- ↳ Rahtilentokone: 35 kg / kolli
- ↳ Cargo aircraft: 35 kg per package

Merikuljetus: IMDG-koodi

Sea: IMDG Code

- ↳ Luokka / Class: 9
- ↳ Pakkausryhmä / Packaging group: ---
- ↳ Pakkausohjeet / Packaging instructions: P903

Sisävesikuljetus: ADN

Inland navigation: ADN

- ↳ Luokka / Class: 9
- ↳ Luokituskoodi / Classification code: M4
- ↳ Pakkausryhmä / Packaging group: ---
- ↳ Pakkausohjeet / Packaging instructions: P903 / P903a / P903b

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Jokainen kolli on merkittävä seuraavilla tarroilla ja varustettava seuraavalla saatteella:

Each package must be marked with the following labels. Furthermore, it is required to enclose an accompanying note as stated below

Tarra maantie-/rautatiekuljetuksiin
Labelling for transport by road/rail



Vähimmäiskoko / *minimum size* = 10x10 (CM)

+ Osoitetarra lähettäjän ja vastaanottajan tiedoilla
+ *Label stating the consignor and consignee*

Saate / *Accompanying note*: UN 3480 LITHIUM-ION BATTERIES, 9, -, (E)

Lähetystarra/lentorahti CAO

Pakkauksen enimmäispaino lentokuljetuksissa: 35 kg
Kolleille, joita saa kuljettaa vain rahtikoneilla.

Shipping label/cargo aircraft only (CAO)

Maximum weight per package for air freight shipments: 35 kg
For packages which may only be transported by cargo planes.



+ Osoitetarra lähettäjän ja vastaanottajan tiedoilla
+ *Label stating the consignor and consignee*

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15. Lainsäädäntöä koskevat tiedot

Provisions and Regulations

Viittaukset vaarallisten aineiden kuljetusta koskeviin määräyksiin:

References to provisions concerning the transport of hazardous goods

Laki vaarallisten aineiden kuljetuksesta (GGBefG)

Transportation of Dangerous Goods Act (GGBefG)

Asetus vaarallisten aineiden kuljettamisesta tie-, rautatie- ja sisävesiväylillä (GGVSEB)

Ordinance on the Transport of Dangerous Goods by Road, Rail and Inland Waterways (GGVSEB)

Asetus vaarallisten aineiden merikuljetuksista (GGVSee)

Ordinance on the Transport of Dangerous Goods by Sea (GGVSee)

Ilmailulaki (LuftVG), Lentoliikenteen lisensointi (LuftVZO)

Air Traffic Act (LuftVG), Air Traffic Licensing Order (LuftVZO)

Eurooppalainen sopimus vaarallisten tavaroiden kansainvälisistä tiekuljetuksista (ADR)

European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)

Asetus vaarallisten aineiden kansainvälisestä rautatiekuljetuksesta (RID)

Regulation concerning the International Carriage of Dangerous Goods by Rail (RID)

Eurooppalainen sopimus vaarallisten aineiden kansainvälisistä sisävesikuljetuksista (ADN)

European Agreement concerning the International Carriage of Dangerous Goods by Inland Navigation (ADN)

Kansainväliset vaarallisia aineita koskevat merikuljetussäännöt (IMDG-Code)

International Maritime Dangerous Goods Code (IMDG-Code)

International Civil Aviation Organization –

Tekniset ohjeet vaarallisten aineiden turvalliselle ilmakuljetukselle (ICAO-TI)

Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO-TI)

International Air Transport Association –

Vaarallisia aineita koskevat määräykset (IATA-DGR)

Dangerous Goods Regulations (IATA-DGR)

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16. Varaustila IATA:n vaarallisia aineita koskeviin määräyksiin tehdyn muutoksen mukaisesti 1. huhtikuuta 2016 alkaen

State of Charge in Accordance with the Changes to the IATA Dangerous Goods Regulations Effective from 1 April 2016

REMS GmbH & Co KG vahvistaa IATA:n vaarallisia aineita koskevien määräysten 1. huhtikuuta 2016 voimaan astuneen muutoksen mukaisesti, että kuljetukseen luovutetaan 1. huhtikuuta 2016 alkaen valmistettuja litiumioniakkuja (UN 3480), joiden varaustila (SoC) on korkeintaan 30 % nimelliskapasiteetista.

In accordance with the changes to the IATA Dangerous Goods Regulations, which entered into force on 1 April 2016, REMS GmbH & Co KG confirms that all lithium-ion batteries (UN 3480) manufactured from 1 April 2016 will be handed over for transportation with their state of charge (SoC) not exceeding 30% of their design capacity.

17. Muut tiedot

Other information

Nämä tiedot on koottu mahdollisimman huolellisesti ja johdonmukaisesti. REMS GmbH & Co. KG ei kuitenkaan voi taata esitettyjen tietojen tarkkuutta, luotettavuutta eikä täydellisyyttä. On käyttäjän vastuulla tarkastaa näiden tietojen soveltuvuus, täydellisyys ja ajantasaisuus oman käyttökohteensa osalta.

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