

## Material Safety Datasheet according to EU-Regulation 1907/2006

Issued: 31.07.2015

i.a. = inapplicable; n.a. = not available

Name: Lithium-Ion Battery

Manufacturer / Supplier : RKB electronic AG, Otto-Hahn-Str. 19, D-75248 Ölbronn-Dürrn

Phone: +49(0)7237-48634-0 Fax: +49(0)7237-48634-181

### 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

- 1.1 Product description**  
**Product name:** Lithium-Ion Battery  
**Article - no.:** all lithium-ion batteries  
**Formulation no.:** n.a.  
**Registration no.:** n.a.
- 1.2 Use of the substance / preparation**  
 Accumulator product  
 This Material Safety Datasheet covers the in 1.1 named batteries of company RKB.
- 1.3 Identification of the company**
- 1.3.1 Contact information of the company / supplier:**  
 RKB electronic AG, Otto-Hahn-Str. 19, D-75248 Ölbronn-Dürrn  
 Phone : +49(0)7237-48634-0 Fax : +49(0)7237-48634-181
- 1.3.2 Responsible for the Material Safety Datasheet:**  
 RKB electronic AG, Otto-Hahn-Str. 19, D-75248 Ölbronn-Dürrn, info@rkb-ag.de
- 1.4 Emergency phone no.:**  
 Information centre for acute poisoning symptoms (Poison control centre Freiburg) phone : +49(0)761 - 19240  
 Phone no.: of the manufacturer / supplier: +49(0)7237-48634-0 (8.00 am - 4.00 pm UTC+1)

### 2 HAZARDS IDENTIFICATION

- 2.1 For human health** (For additional information see point 11):  
 Regulation 67/548/EWG or regulation 1999/45/EG does not apply.  
 When handling accordingly, no health impairment is to expect or known of.  
 Direkt heat impact, distraction:  
 Leaking liquid: Avoid contact with eyes or skin, causes irritation.  
 Vapours may cause irritation of the eyes, respiratory organs and skin.
- 2.2 For the environment:**  
 When handling accordingly, no environmental impact is to expect or known of.

### 3 COMPOSITION AND INFORMATION ON INGREDIENTS

- 3.1 Chemical composition:**  
 Lithium-Ion Battery
- 3.2 Toxicological data on ingredients:**  
**CAS - no., Index - no., EG - no., description m% - area symbol R - phases**  
 Remark: Classification and labeling of preparation, see point 15.

### 4 FIRST AID MEASURES

- 4.1 Inhalation:**  
 When handling accordingly, no health impairment is to expect or known of.
- 4.2 Skin contact:**  
 When handling accordingly, no health impairment is to expect or known of.
- 4.3 Eye contact**  
 When handling accordingly, no health impairment is to expect or known of.
- 4.4 Ingestion:**  
 When handling accordingly, no health impairment is to expect or known of.
- 4.5 Information for doctor:**  
 Leaking liquid: Avoid contact with eyes or skin, causes irritation.  
 Vapours may cause irritation of the eyes, respiratory organs and skin.  
 Treating the symptoms.
- 4.6 Special equipment required for first aid:** n.a.

### 5 FIRE AND EXPLOSION DATA / FIRE FIGHTING MEASURES

- 5.1 Fire fighting media:** use dry chemical powder, CO<sub>2</sub>, waterspray or "alcohol"-foam.
- 5.2 For safety reasons, do not extinguish with:** Water jet.
- 5.3 Special hazards through substance, combustion products or resulting gases:**  
 Fire or high heat may cause explosion of the packing.  
 Heat or fire may release toxic gases. Burning releases irritating smoke.
- 5.4 Special safety equipment:**  
 Wear a self contained respirator  
 Tightly closed chemical protective suit
- 5.5 Additional Remark: Collect contaminated extinguishing water separately, it must not reach the sewage system.**  
 In the case of fire, cool tanks by spraying with water.

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**6 ACCIDENTAL RELEASE MEASURES**

- 6.1 Personal precautions:**  
See no. 8.2 personal safety equipment.  
Keep away from ignition sources - do not smoke.
- 6.2 Environmental measures and care:**  
Direkt heat impact, distruption:  
leaking liquids: Environmental hazards can not be excluded.  
Spilled material to be collected and disposed in an appropriate container.
- 6.3 Additional remarks:** none

**7 HANDLING AND STORAGE (National Regulations see point 15.2)**

- 7.1 Handling**
- 7.1.1 Remark for safe handling:**  
Provide adequate ventilation, especially in confined areas.  
Protect from heat. Only use clean and dry devices.
- 7.1.2 Precautions against fire and explosion:**  
Keep away from ignition sources - do not smoke.
- 7.2 Storage**
- 7.2.1 Requirements on warehouse and containers:**  
Store in original container. Keep container tightly closed and in a dry, cool and well ventilated area.
- 7.2.2 Information on storage with other products:**  
Do not store together with other metals.
- 7.2.3 Other remarks for storage:**  
Store at temperatures between 0°C and 35°C. Humidity: 45 - 85 %
- 7.3 Specific use:** n.a.

**8 EXPOSURE CONTROLS / PERSONAL PROTECTION**

- 8.1 Exposure Limits:**  
**Name of the substance monitoring value:**
- 8.2 Limiting and monitoring of exposure**
- 8.2.1 Limiting and monitoring of exposure at work:**  
Employees must wash hands before breaks and when finishing work. Do not eat, drink or smoke when using.
- 8.2.1a Respiratory protection:** Normally no personal respiratory protection is required.
- 8.2.1b Hand protection:** Normally no hand protection is required.  
The protective gloves must always be checked for their suitability for use at the specific workplace
- 8.2.1c Eye protection :** Normally, no eye protection is required.
- 8.2.1d Body protection:** Not required.
- 8.2.1e Others:** Pay attention to wear time limits
- 8.2.2 Limitation and monitoring of environmental exposure:** n.a.

**9 PHYSICAL AND CHEMICAL PROPERTIES**

- 9.1 General data**
- 9.1.1 Form:** Product / Accumulator 9.1.2 9.1.3
- 9.1.2 Colour:** various  
**Scnt:** none
- 9.2 Important information for health- and environmental protection as well as safety**
- 9.2.1** pH (1% soln/water): n.a.
- 9.2.2** Boiling point (°C): n.a., melting point (°C): n.a.
- 9.2.3** Flashpoint closed up test (°C): n.i.,
- 9.2.4** Flamability (EG A10 / A13): No
- 9.2.5** Ignition temperature (°C): n.a.
- 9.2.6** Auto ignition (EG A16): No
- 9.2.7** Oxidizing properties: No
- 9.2.8** Risk of explosion: No
- 9.2.9** Explosive limit (Vol.%) lower: n.i., upper : n.i.
- 9.2.10** Vapour pressure: n.a.
- 9.2.11** Density (g / ml): n.a.
- 9.2.12** Solubility (in water): n.a.
- 9.2.13** Partition coefficient, n - octanol / water : n.a.
- 9.2.14** Viscosity: n.i.
- 9.2.15** Solvent-separation test: n.i.
- 9.2.16** Solvent content(Gew.%): n.a.
- 9.3 Others**
- 9.3.1** Thermal decomposition (°C): n.a.
- 9.3.2** Vapour density (air = 1): n.a.
- 9.3.3** Evaporation number: n.i.

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**10 STABILITY AND REACTIVITY**

- 10.1 Conditions to avoid:**  
Heat, flames and sparks, strong sunlight over a long period of time.
- 10.2 Substances to avoid:**  
Metals
- 10.3 Hazardous decomposition products:**  
No composition when used appropriately
- 10.4 Others:**  
None

**11 TOXICOLOGICAL INFORMATION**

- 11.1 Toxicological tests**
- 11.1.1 Acute toxicity**  
Inhaling, LC50, (mg / l / 4h): n.a.  
Swallowing, LD50, (mg / kg): n.a.  
Skincontact, LD50, (mg / kg): n.a.  
Irritant - / caustic effect (on skin / eyes): none  
Substances: causes irritations on eyes, skin and mucous membranes  
Sensitisation: n.a.
- 11.1.2 Subacute / chronic toxicity:**  
Carcinogenicity: n.a.  
Mutagenicity: n.a.  
Teratogenicity: n.a.  
Narcotic effect: none
- 11.2 Practical experience:**
- 11.2.1** Observations relevant for classification:  
None
- 11.2.2** Other observations:  
None
- 11.3 Remarks:**  
Contains no mercury, Lithiummetal, cadmium

**12 ECOLOGICAL INFORMATION**

- 12.1 Ecotoxicity**  
Environmental risk can not be excluded when handling or disposing improperly.
- 12.2 Mobility:**  
n.a.
- 12.3 Persistence and degradability:**  
n.i.
- 12.4 Bioaccumulation potential**  
n.a.
- 12.5 Determining the PBT - properties**  
n.a.
- 12.6 Other ecological information**
- 12.6.1** CSB - value, mg / g: n.a.
- 12.6.2** BSB5 - value, mg / g: n.a.
- 12.6.3** AOX - Remark: n.i.
- 12.6.4** Ecological important substances: Does not apply
- 12.6.5** Other harmful effects: none

**13 INFORMATION ON DISPOSAL (National Regulations see point 15.)**

- 13.1 For product remains**
- 13.1.1** Recommendations: D5 waste code - No.: 16 06 05 / 20 01 34  
Additionally follow local and official regulations.
- 13.1.2** Safe handling, see point 7 and 15.
- 13.2 For uncleaned packaging**
- 13.2.1** Recommendation: clean with appropriate cleaner. Otherwise as product remains.
- 13.2.2** Safe handling: As for product remains

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**14 TRANSPORT INFORMATION****14.1 Overland: Classification after ADR and RID / GGVSE****Remark: No subject to the regulations of ADR when applying to special provision S 230****Naming:****UN 3480 Lithium-Ion Batteries****UN 3481 Lithium-Ion Batteries contained in equipment****UN 3481 Lithium-Ion-Batteries packed with equipment**

Class: 9

UN - no.: 3480 / 3481

Danger label:



Classify code: M 4

Danger - no.: n.i.

Transp.-category: 2

Limited quantity: LQ 0

**14.2 Waterway transport: Classification after ADN / GGVBinSch**

Class:

Number / Letter:

Category:

**14.2.1 Description of the goods: 14.2.2 Remark:****14.3 Sea transport: Classification after IMDG / GGVSee****Remark: No subject to the regulations of IMDG/of GGVSee when applying to special provision S 230**

Class: 9

UN - no.: 3480 / 3481

**14.3.1 EmS - No.: F-A, S-I****14.3.2 Marine pollutant: no****14.3.3 Remark for the responsible explanation and labeling:****Correct techn. name:****Lithium-Ion Batteries****Lithium-Ion Batteries contained in equipment****Lithium-Ion Batteries packed with equipment****Hazard label: Miscellaneous****14.3.4 Remarks: none****14.4 Air transport: Classification after IATA - DGR / ICAO - TI**

Class: 9

UN - no.: 3480 / 3481

**14.5 Transportation of samples / prototypes as dangerous goods**

If in the early stage of developing new lithium products not all tests of the Manual of Tests and Criteria, Part III, subsection 38.3 are completed yet, RKB will ship those products as dangerous goods (class 9) applying to special provision 310 (road, rail and sea transport) or special provision A88 (air transport)

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### 15 OTHER REGULATORY INFORMATION

- 15.1 Marking according to GefStoffV / EG - regulations:**  
 Subject to labeling acc. to GefStoffV: No  
 Are exceptions applicable:  
 Hazard designation(s): n.i.  
 Hazard symbol(s) :n.i.  
 Components:  
**R - phrases:**  
**S - phrases:**  
 S 2 - Keep out of the reach of children.  
 S 56: Dispose of this material and its container to hazardous or special waste collection.  
 Special labeling:  
 Although this product is not subject to identification regulations, we recommend that the safety suggestions are observed.
- 15.1.1** The above mentioned labelling is valid for distribution to the public.
- 15.2 National Regulations**
- 15.2.1 Consider employment restrictions after MuSchG / JArbSchG:** No
- 15.2.2 Consider obligation to retain data after § 8 (6) GefStoffV:** No
- 15.2.3 Consider Incident ordinance:** No
- 15.2.4 Technical Instructions on Air:** class number mass fraction%  
 n.i.
- 15.2.5 Water hazard class:** n.i.
- 15.2.6 Storage category:** n.a. (VCI - concept)
- 15.2.7 Consider regulatory area of TRGS 514:** No
- 15.2.8 Consider regulatory area of TRGS 515:** No
- 15.2.9 Consider regulatory area of TRG 300:** No
- 15.2.10 Consider regulatory area of WRMG:** No
- 15.2.11 Other regulations to consider:** BattG