

GAIA Akkumulatorenwerke GmbH

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1 Identification of the substance / preparation and of the company

**Product:** RECHARGEABLE LITHIUM IONS CELLS, Type LFP  
**Registration number:** not applicable  
**Use:** Battery  
**Identified use:** none  
**Method of operation:** See product information.  
**Company:** GAIA Akkumulatorenwerke GmbH  
Montaniastraße 17  
99734 Nordhausen / GERMANY  
**Phone:** +49 (0) 3631-6167-0  
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**Homepage:** www.gaia-akku.com  
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**Emergency phone:** +49 (0) 89-19240 (24h)  
**Responsible:** Haensler@chemiebuero.de

2 Hazards identification

**Physico-chemical hazards:** At temperatures over 70 °C risk of bursting and withdrawal of electrolyte liquid exists.  
When cell is exposed to an external short-circuit, it will cause heat generation and ignition.  
Reactions of the electrolyte and the electrodes with water and humidity possible.

**Human health dangers:** See chapter 15.  
The contained dangerous materials are not freely available with foreseeable use.

**Environmental hazards:** See R-phrases.

**Other hazards:** none

**Hazard symbols:**



Irritant

**R-phrases:** R 10: Flammable.  
R 36: Irritating to eyes.

3 Composition / Information on ingredients

1 - < 5%	Lithium hexafluorophosphate
T, R22-24-34 CAS: 21324-40-3, EINECS/ELINCS: 244-334-7, EU-INDEX: , ECBnr:	
1 - < 20%	Ethyl methyl carbonate
Xi, R10-36/38 CAS: 623-53-0, EINECS/ELINCS: , EU-INDEX: , ECBnr:	
1 - < 5%	Ethylene carbonate
Xi, R41 CAS: 96-49-1, EINECS/ELINCS: 202-510-0, EU-INDEX: , ECBnr:	
1 - < 20%	Carbon Black
CAS: 1333-86-4, EINECS/ELINCS: 215-609-9, EU-INDEX: , ECBnr:	

**Comment on component parts:** For the wording of the listed risk phrases refer to section 16.  
The structural design of the cells prevents release of the hazardous media contained therein when the unit is used for its intended purpose.

4 First aid measures

**General information:** Measures are only valid for damaged cells.

**Inhalation:** Consult a doctor immediately.  
Remove the victim into fresh air and keep him calm.

**Skin contact:** In case of contact with skin wash off immediately with soap and water.  
Consult a doctor if skin irritation persists.

**Eye contact:** In case of contact with eyes rinse thoroughly and immediately with plenty of water and seek medical advice.  
Shield unaffected eye.

**Ingestion:** Consult a doctor immediately.  
Do not induce vomiting.

**Advice to doctor:** Treat symptomatically.

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**5 Fire-fighting measures**

- Suitable extinguishing media:** Dry powder.  
Carbon dioxide.  
Metal fire-ex powder.
- Extinguishing media that must not be used:**  
Water spray jet.
- Special exposure hazards arising from the substance or preparation itself or combustion products:**  
Hydrogen fluoride (HF).  
Unknown risk of formation of toxic pyrolysis products.  
Bursting batteries can be forcibly projected from a fire.
- Special protective equipment for firefighters:**  
Use self-contained breathing apparatus.  
Wear full protective suit.
- Additional information:** Cool containers at risk with water spray jet.  
Fire residues and contaminated firefighting water must be disposed of in accordance within the local regulations.

**6 Accidental release measures**

- Personal precautions:** Lock off contaminated area.  
Use personal protective equipment.  
Keep people away and stay on the upwind side.  
Use breathing apparatus if exposed to vapours/dust/aerosol.
- Environmental precautions:** Do not discharge leakages into the drains/surface waters/groundwater.
- Methods for cleaning up:** Take up mechanically.  
Take up residues with absorbent material (e.g. sand, sawdust, generalpurpose binder, diatomaceous earth).  
Dispose of absorbed material in accordance within the regulations.

**7 Handling and storage**

- Advice on safe handling:** The data of the manufacturer concerning the loading and unloading parameters and the recommended temperature ranges are to be considered.  
No special measures necessary if used correctly.
- Advice on protection against fire and explosion:**  
No special measures necessary.
- Requirements for storage rooms and vessels:**  
No special measures necessary.
- Advice on storage compatibility:** Do not store with combustible materials.
- Further information on storage conditions:**  
Protect from heat/overheating.  
Protect from sun.  
Store in a dry place.  
Recommended storage temperature: 0 °C - 40 °C.  
Ensure battery terminals are protected during storage.

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**8 Exposure controls / personal protection**

**Additional advice on system design:**

not applicable

**Ingredients with occupational exposure limits to be monitored:**

1 - < 20%	Carbon Black, 3,5mg/m <sup>3</sup> *
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**\* WEL: Workplace exposure limit**

**Respiratory protection:** not applicable  
**Hand protection:** Butyl rubber, >120 min (EN 374).  
**Eye protection:** Safety glasses.  
**Skin protection:** Solvent-resistant protective clothing.  
**General protective measures:** Measures are only valid for damaged cells.  
**Hygiene measures:** Wash hands before breaks and after work.

**Delimitation and monitoring of the environmental exposition:**

not determined

**9 Physical and chemical properties**

**Form:** capsule  
**Color:** not determined  
**Odor:** not determined  
**pH-value:** not applicable  
**pH-value [1%]:** not applicable  
**Boiling point [°C]:** not determined  
**Flash point [°C]:** not applicable  
**Flammability [°C]:** not determined  
**Lower explosion limit:** not applicable  
**Upper explosion limit:** not applicable  
**Oxidizing properties:** no  
**Vapour pressure [kPa]:** not determined  
**Density [g/ml]:** not determined  
**Density at [°C]:** not determined  
**Bulk density [kg/m<sup>3</sup>]:** not applicable  
**Solubility in water:** not applicable  
**Partition coefficient [n-octanol/water]:**  
not determined  
**Viscosity:** not applicable  
**Relative vapour density determined in air:**  
not determined  
**Evaporation speed:** not determined  
**Melting point [°C]:** not determined  
**Autoignition temperature [°C]:** not determined  
**Decomposition temperature:** not determined

**10 Stability and reactivity**

**Hazardous reactions:** At temperatures over 70 °C risk of bursting and withdrawal of electrolyte liquid exists.  
When cell is exposed to an external short-circuit, it will cause heat generation and ignition.  
Reactions of the electrolyte and the electrodes with water and humidity possible.

**Hazardous decomposition products:**  
No hazardous decomposition products known.

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11 Toxicological information

Acute oral toxicity:	not determinated
Acute dermal toxicity:	not determinated
Acute inhalational toxicity:	not determinated
Irritant effect on eye:	not determinated
Irritant effect on skin:	not determinated
Sensitization:	not determinated
Subacute toxicity:	not determinated
Chronic toxicity:	not determinated
Mutagenicity:	not determinated
Reproduction toxicity:	not determinated
Carcinogenicity:	not determinated
Experiences made in practice:	none
General remarks:	Toxicological data are not available.




12 Ecological information

Fish toxicity:	not applicable
Daphnia toxicity:	not applicable
Behaviour in environment compartments:	not applicable
Behaviour in sewage plant:	not applicable
Bacteria toxicity:	not applicable
Biological degradability:	not applicable
COD:	not applicable
BOD 5:	not applicable
AOX-advice:	not applicable
2006/11/EC:	yes
General information:	Ecological data are not available. Do not discharge product unmonitored into the environment or into the drainage.

13 Disposal considerations

Product:	Dispose of as hazardous waste. For recycling, consult manufacturer.
Contaminated packaging:	Uncontaminated packaging may be taken for recycling. Packaging that cannot be cleaned should be disposed of as for product.
Waste no. (recommended):	160605

14 Transport information


Classification according to ADR:	UN 3480 Lithium ion batteries 9, II
- Classification Code:	M4
- Label:	
- ADR LQ	
- ADR 1.1.3.6 (8.6):	Transport category (tunnel restriction code): 2 (E)
Classification according to IMDG:	UN 3480 Lithium ion batteries 9 II
- EMS:	F-A, S-I
- Label:	
- IMDG Limited Quantities:	LQ: 0 I
Classification according to IATA:	UN 3480 Lithium ion batteries 9 II
- Label:	

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15 Regulatory information

<b>Exposure scenario:</b>	not determinated
<b>Chemical safety report:</b>	not determinated
<b>Labelling:</b>	This preparation is a product and therefore it does not require labelling according to EC directives/GefStoffV.
<b>Hazard symbols:</b>	 Irritant
<b>R-phrases:</b>	R 10: Flammable. R 36: Irritating to eyes.
<b>S-phrases:</b>	S 26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S 36/37/39: Wear suitable protective clothing, gloves and eye/face protection. S 60: This material and its container must be disposed of as hazardous waste.
<b>Special labelling:</b>	not applicable
<b>Authorisation, TITEL VII:</b>	not applicable
<b>Restrictions, TITEL VIII:</b>	not applicable
<b>EEC-REGULATIONS:</b>	1967/548 (2008/58, 30. ATP/ 31. ATP); 1991/689 (2001/118); 1999/13; 2004/42; 648/2004; 1907/2006.
<b>TRANSPORT-REGULATIONS:</b>	DOT-Classification, ADR (2009); IMDG-Code (34. Amdt.); IATA-DGR (2009).
<b>NATIONAL REGULATIONS</b>	EH40/2005 Workplace exposure limits with amendments October 2007.

16 Other informations

<b>R-phrases (Chapter 03):</b>	R 34: Causes burns. R 36/37/38: Irritating to eyes, respiratory system and skin. R 36/38: Irritating to eyes and skin. R 24: Toxic in contact with skin. R 43: May cause sensitisation by skin contact. R 41: Risk of serious damage to eyes. R 22: Harmful if swallowed. R 10: Flammable. R 20/22: Harmful by inhalation and if swallowed.
<b>Modified position:</b>	Chapter: 05; Plus Bursting batteries can be forcibly projected from a fire. Chapter: 07; Plus Ensure battery terminals are protected during storage. Chapter: 14; Plus Chapter: 14; Plus Chapter: 14; Plus
<b>Observe employment restrictions for people:</b>	yes
<b>VOC (1999/13/CE):</b>	not applicable
<b>Customs Tariff:</b>	not determinated

Disclaimer: This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.