

SECTION 1: Identification of the substance/mixture and of the company/undertaking
1.1 Product identifier

7304500 - LED-Stabarbeitsleuchte BEX 700

7304502 - LED-Stabarbeitsleuchte BEX 3in1

7304510 - Multifunktionsarbeitsleuchte BE 400

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

Battery

1.2.2 Uses advised against

None known.

1.3 Details of the supplier of the material data sheet

Company	Wilhelm Fricke SE Zum Kreuzkamp 7 27404 Heeslingen / GERMANY Phone +49-4281-712-0 Fax +49-4281-712-49 Homepage www.fricke.de E-mail info@fricke.de
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Address enquiries to

Technical information	info@fricke.de
Safety Data Sheet	sdb@chemiebuero.de

1.4 Emergency telephone number

Company	+49-4281-712-0 Mo-Fr 7:30-16:30
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SECTION 2: Hazards identification
2.1 Classification of the substance or mixture [REGULATION (GB) CLP]

Acute Tox. 4: H302 Harmful if swallowed.
Skin Corr. 1A: H314 Causes severe skin burns and eye damage.
Eye Dam. 1: H318 Causes serious eye damage.
STOT RE 2: H373 May cause damage to organs through prolonged or repeated exposure.
Repr. 1B: H360FD May damage fertility. May damage the unborn child.

2.2 Label elements

This product is an article and therefore it does not require labelling according to directives REACH/CLP.

2.3 Other hazards

Physico-chemical hazards	When cell is exposed to an external short-circuit, it will cause heat generation and ignition. The chemicals are contained within a sealed housing. There is only a risk of exposure if the battery is subject to mechanical or electrical misuse.
Human health dangers	Contains no ingredients with endocrine-disrupting properties.
Environmental hazards	Does not contain any PBT or vPvB substances.
Other hazards	Further hazards were not determined with the current level of knowledge.

SECTION 3: Composition / Information on ingredients
3.1 Substances

not applicable

3.2 Mixtures

The product is an article.

Range [%]	Substance
20 - 50	Cobaltlithiumdioxide
	CAS: 12190-79-3
	GHS/CLP: Repr. 1B: H360FD
5 - 20	2-Amino-2-methylpropanol
	CAS: 124-68-5
	GHS/CLP: Skin Irrit. 2: H315 - Eye Dam. 1: H318 - Aquatic Chronic 3: H412
<= 5	Lithium hexafluorophosphate
	CAS: 21324-40-3
	GHS/CLP: Acute Tox. 3: H301 - Skin Corr. 1A: H314 - Eye Dam. 1: H318 - STOT RE 1: H372
1 - 5	Ethylene carbonate
	CAS: 96-49-1
	GHS/CLP: Eye Irrit. 2: H319 - Acute Tox. 4: H302 - STOT RE 2: H373
1 - 5	Diethyl carbonate
	CAS: 105-58-8
	GHS/CLP: Flam. Liq. 3: H226
1 - 5	Propylene carbonate
	CAS: 108-32-7
	GHS/CLP: Eye Irrit. 2: H319

Comment on component parts

The structural design of the cells prevents release of the hazardous media contained therein when the unit is used for its intended purpose.
 Substances of Very High Concern - SVHC: substances are not contained or are below 0.1%.
 For full text of H-statements: see SECTION 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General information	Measures are only needed for damaged cells.
Inhalation	Remove the victim into fresh air and keep him calm. In the event of symptoms seek medical treatment.
Skin contact	In case of contact with skin wash off immediately with soap and water. Immediate medical treatment necessary, as untreated burns can result in slow-healing wounds.
Eye contact	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Consult a doctor immediately.
Ingestion	Consult a doctor immediately. Do not induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

Product is caustic.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media	All extinguishing media are suitable but method must take into account the surrounding area to minimize dispersion.
Extinguishing media that must not be used	Full water jet

5.2 Special hazards arising from the substance or mixture

Risk of formation of toxic pyrolysis products.
Bursting batteries can be forcibly projected from a fire.

5.3 Advice for firefighters

Use self-contained breathing apparatus.
Fire residues and contaminated firefighting water must be disposed of in accordance within the local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Not required under normal conditions.

6.2 Environmental precautions

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

6.3 Methods and material for containment and cleaning up

Take up mechanically.
Dispose of absorbed material in accordance within the regulations.

6.4 Reference to other sections

See SECTION 8+13

SECTION 7: Handling and storage

7.1 Precautions for safe handling

The data of the manufacturer concerning the loading and unloading parameters and the recommended temperature ranges are to be considered.

Clean skin thoroughly after work, apply skin cream.

7.2 Conditions for safe storage, including any incompatibilities

Prevent penetration into the ground.
Do not store together with food and animal food/diet.
Store in a dry place.
Protect from heat/overheating.

7.3 Specific end use(s)

See product use, SECTION 1.2

SECTION 8: Exposure controls / personal protection

8.1 Control parameters

Ingredients with occupational exposure limits to be monitored (GB)

Substance
Carbon
CAS: 7440-44-0
Long-term exposure: 10 mg/m ³ , inhalable dust; respirable: 4 mg/m ³
Lithium hexafluorophosphate
CAS: 21324-40-3
Long-term exposure: 2,5 mg/m ³ , Fluoride (inorganic as F)
Aluminium
CAS: 7429-90-5
Long-term exposure: 10 mg/m ³ , inhalable dust (respirable dust: 4 mg/m ³)
Copper
CAS: 7440-50-8
Long-term exposure: 1 mg/m ³ , dusts and mists (as Cu), 0,2mg/m ³ * (fume)
Short-term exposure (15-minute): 2 mg/m ³

DNEL

Substance
Lithium hexafluorophosphate, CAS: 21324-40-3
Industrial, dermal, Long-term - systemic effects, 0,133 mg/kg bw/day
Industrial, inhalative, Long-term - systemic effects, 0,931 mg/m ³

8.2 Exposure controls

Additional advice on system design Measures apply only to the damaged product.
Ensure adequate ventilation on workstation.
Measurement methods for taking workplace measurements must meet the performance requirements of DIN EN 482. For example, recommendations are given in the IFA's list of hazardous substances.

Eye protection safety glasses (EN 166:2001)

Hand protection 0,7 mm Butyl rubber, >480 min (EN 374-1/-2/-3).

Skin protection Protective clothing (EN 340)

Other Personal protective equipment should be selected specifically for the working place, depending on concentration and quantity handled. The resistance of this equipment to chemicals should be ascertained with the respective supplier.
Do not breathe vapour/spray.
Avoid contact during pregnancy/ while nursing.

Respiratory protection In the event of occupational exposure limits being exceeded or of inadequate ventilation: wear appropriate respiratory protection.
Short term: combination filter A-P3. (DIN EN 14387)

Thermal hazards none

Delimitation and monitoring of the environmental exposition Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Battery
Color	silver-grey
Odor	odourless
Odour threshold	not applicable
pH-value	not applicable
pH-value [1%]	not applicable
Boiling point [°C]	not applicable
Flash point [°C]	not applicable
Flammability (solid, gas) [°C]	not applicable
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Oxidising properties	no
Vapour pressure/gas pressure [kPa]	not applicable
Density [g/cm ³]	not determined
Relative density	not determined
Bulk density [kg/m ³]	not applicable
Solubility in water	not applicable
Solubility other solvents	not applicable
Partition coefficient [n-octanol/water]	not applicable
Kinematic viscosity	not applicable
Relative vapour density	not applicable
Evaporation speed	not applicable
Melting point [°C]	not determined
Auto-ignition temperature	not determined
Decomposition temperature [°C]	not determined
Particle characteristics	not applicable

9.2 Other information

none

SECTION 10: Stability and reactivity

10.1 Reactivity

No dangerous reactions known if used as directed.

10.2 Chemical stability

The product is stable under standard conditions.

10.3 Possibility of hazardous reactions

When cell is exposed to an external short-circuit, it will cause heat generation and ignition. Heating leads to a risk of bursting and of electrolyte fluid escaping. Avoid mechanical and electrical misuse.

10.4 Conditions to avoid

Heating

10.5 Incompatible materials

No information available.

10.6 Hazardous decomposition products

No hazardous decomposition products known.

SECTION 11: Toxicological information**11.1 Information on toxicological effects****Acute oral toxicity**

Product
ATE-mix, oral, > 1000 - < 2000 mg/kg
Substance
Diethyl carbonate, CAS: 105-58-8
LD50, oral, Rat, > 4900 mg/kg bw
Propylene carbonate, CAS: 108-32-7
LD50, oral, Rat, 34920 mg/kg (RTECS)
Lithium hexafluorophosphate, CAS: 21324-40-3
LD50, oral, Rat, > 50 - 300 mg/kg (Lit.)
ATE, oral, 100 mg/kg (category 3)
Ethylene carbonate, CAS: 96-49-1
LD50, oral, Rat, 10000 mg/kg (Lit.)
2-Amino-2-methylpropanol, CAS: 124-68-5
LD50, oral, mouse, 2150 mg/kg

Acute dermal toxicity

Product
ATE-mix, dermal, > 2000 mg/kg
Substance
Propylene carbonate, CAS: 108-32-7
LD50, dermal, Rabbit, >20000 mg/kg (IUCLID)
Ethylene carbonate, CAS: 96-49-1
LD50, dermal, Rabbit, > 3000 mg/kg (Lit.)
2-Amino-2-methylpropanol, CAS: 124-68-5
LD50, dermal, Rabbit, > 2000 mg/kg

Acute inhalational toxicity

Product
ATE-mix, inhalation (vapour), > 20 mg/L 4h

Serious eye damage/irritation

Strongly corrosive.
Based on the available information, the classification criteria are fulfilled.
Toxicological data of complete product are not available.
Calculation method

Substance
Lithium hexafluorophosphate, CAS: 21324-40-3
IVIS, Eggs, 16 (20 sek.)

Skin corrosion/irritation

Strongly corrosive.
Based on the available information, the classification criteria are fulfilled.
Toxicological data of complete product are not available.
Calculation method

Substance
Lithium hexafluorophosphate, CAS: 21324-40-3

Mean Tissue Viability, dermal, Human, 6 %

Respiratory or skin sensitisation	Does not contain a relevant substance that meets the classification criteria. Based on the available information, the classification criteria are not fulfilled. Toxicological data of complete product are not available.
Specific target organ toxicity — single exposure	Does not contain a relevant substance that meets the classification criteria. Based on the available information, the classification criteria are not fulfilled. Toxicological data of complete product are not available.
Specific target organ toxicity — repeated exposure	Causes damage to organs through prolonged or repeated exposure. Based on the available information, the classification criteria are fulfilled. Toxicological data of complete product are not available. Calculation method

Substance
Lithium hexafluorophosphate, CAS: 21324-40-3
NOAEL, oral, Human, 0,133 mg/kg bw/day
NOAEC, inhalative, Human, 2 mg/m ³

Mutagenicity	Does not contain a relevant substance that meets the classification criteria. Based on the available information, the classification criteria are not fulfilled. Toxicological data of complete product are not available.
Reproduction toxicity	May damage the unborn child. May damage fertility. Based on the available information, the classification criteria are fulfilled. Toxicological data of complete product are not available.
Carcinogenicity	Does not contain a relevant substance that meets the classification criteria. Based on the available information, the classification criteria are not fulfilled. Toxicological data of complete product are not available.
Aspiration hazard	Does not contain a relevant substance that meets the classification criteria.
General remarks	none

SECTION 12: Ecological information

12.1 Toxicity

Substance
Diethyl carbonate, CAS: 105-58-8
LC50, (48h), Leuciscus idus, > 500 mg/l
Propylene carbonate, CAS: 108-32-7
EC50, (48h), Daphnia magna, >1000 mg/l (IUCLID)
IC50, (72h), Desmodesmus subspicatus, >900 mg/l (IUCLID)
NOEC, (96h), Leuciscus idus, 2200 mg/l (DIN 38412 IUCLID)
Lithium hexafluorophosphate, CAS: 21324-40-3
EC50, (3h), Activated sludge, > 1000 mg/l (Lit.)
EC50, (72h), Pseudokirchneriella subcapitata, > 100 mg/l (Lit.)
EC50, (48h), Daphnia magna, > 100 mg/l (Lit.)
2-Amino-2-methylpropanol, CAS: 124-68-5
LC50, (48h), Daphnia magna, 193 mg/l
LC50, (96h), fish, 184 mg/l
EC50, Activated sludge, 342,9 mg/l (OECD 209)

12.2 Persistence and degradability

Behaviour in environment compartments	No information available.
Behaviour in sewage plant	No information available.
Biological degradability	not determined

12.3 Bioaccumulative potential

Accumulation in organisms is not expected.

12.4 Mobility in soil

Spillages may penetrate the soil causing ground water contamination.

12.5 Results of PBT and vPvB assessment

Based on all available information not to be classified as PBT or vPvB respectively.

12.6 Endocrine disrupting properties

Contains no ingredients with endocrine-disrupting properties.

12.7 Other adverse effects

None known.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste material must be disposed of in accordance with national regulations.

Product

For recycling, consult manufacturer.

Contaminated packaging

Uncontaminated packaging may be taken for recycling.

SECTION 14: Transport information

14.1 UN number or ID number


Transport by land according to ADR/RID 3481

Inland navigation (ADN) 3481

Marine transport in accordance with IMDG 3481

Air transport in accordance with IATA 3481

14.2 UN proper shipping name

Transport by land according to ADR/RID	Lithium Ion Batteries contained in equipment (Not subject of ADR in accordance to special provisions 188)
- Classification Code	M4
- ADR LQ	0 kg
- ADR 1.1.3.6 (8.6)	Transport category (tunnel restriction code) 2 (E)
Inland navigation (ADN)	Lithium Ion Batteries contained in equipment (Not subject of ADR in accordance to special provisions 188)
- Classification Code	M4
Marine transport in accordance with IMDG	Lithium ion batteries contained in equipment (No dangerous goods, according IMDG Special regulations 188)
- EMS	F-A, S-I
- IMDG LQ	0 I
Air transport in accordance with IATA	Lithium Ion Batteries contained in equipment (PI 967 Part 1)
- Label	

14.3 Transport hazard class(es)

Transport by land according to ADR/RID	9
Inland navigation (ADN)	9
Marine transport in accordance with IMDG	9
Air transport in accordance with IATA	9

14.4 Packing group

Transport by land according to ADR/RID	not applicable
Inland navigation (ADN)	not applicable
Marine transport in accordance with IMDG	not applicable
Air transport in accordance with IATA	II

14.5 Environmental hazards

Transport by land according to ADR/RID no

Inland navigation (ADN) no

Marine transport in accordance with IMDG no

Air transport in accordance with IATA no

14.6 Special precautions for user

Relevant information under SECTION 6 to 8.

14.7 Maritime transport in bulk according to IMO instruments

not applicable

SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

TRANSPORT-REGULATIONS ADR (2021); IMDG-Code (2021, 40. Amdt.); IATA-DGR (2021)

NATIONAL REGULATIONS (GB): EH40/2005 Workplace exposure limits (Second edition, published December 2011); UK REACH; GB CLP.

- Observe employment restrictions for people none

- VOC (2010/75/CE) not applicable

15.2 Chemical safety assessment

not applicable

SECTION 16: Other information**16.1 Abbreviations and acronyms:**

ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route
 RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses
 ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure
 ATE = acute toxicity estimate
 CAS = Chemical Abstracts Service
 CLP = Classification, Labelling and Packaging
 DMEL = Derived Minimum Effect Level
 DNEL = Derived No Effect Level
 EC50 = Median effective concentration
 ECB = European Chemicals Bureau
 EEC = European Economic Community
 EINECS = European Inventory of Existing Commercial Chemical Substances
 EL50 = Median effective loading
 ELINCS = European List of Notified Chemical Substances
 EmS = Emergency Schedules
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals
 IATA = International Air Transport Association
 IBC-Code = International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
 IC50 = Inhibition concentration, 50%
 IMDG = International Maritime Code for Dangerous Goods
 IUCLID = International Uniform Chemical Information Database
 IVIS = In vitro irritation score
 LC50 = Lethal concentration, 50%
 LD50 = Median lethal dose
 LC0 = lethal concentration, 0%
 LOAEL = lowest-observed-adverse-effect level
 LL50 = Median lethal loading
 LQ = Limited Quantities
 MARPOL = International Convention for the Prevention of Marine Pollution from Ships
 NOAEL = No Observed Adverse Effect Level
 NOEC = No Observed Effect Concentration
 PBT = Persistent, Bioaccumulative and Toxic substance
 PNEC = Predicted No-Effect Concentration
 REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals
 STP = Sewage Treatment Plant
 TLV@/TWA = Threshold limit value – time-weighted average
 TLV@STEL = Threshold limit value – short-time exposure limit
 VOC = Volatile Organic Compounds
 vPvB = very Persistent and very Bioaccumulative

16.2 Other information**Classification procedure**

Acute Tox. 4: H302 Harmful if swallowed. (Calculation method)
 Skin Corr. 1A: H314 Causes severe skin burns and eye damage. (Calculation method)
 Eye Dam. 1: H318 Causes serious eye damage. (Calculation method)
 STOT RE 2: H373 May cause damage to organs through prolonged or repeated exposure. (Calculation method)
 Repr. 1B: H360FD May damage fertility. May damage the unborn child. (Calculation method)

Modified position

none



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