



Material Safety Data Sheet

1. Product & Company Identification

Product:	LiPo Rechargeable Battery (1.06.165)
Manufacturer:	Conrad Electronic SE
Nominal voltage:	3,7 V
Nominal capacity:	35 mAh
Address:	Klaus-Conrad-Str. 1, D-92240 Hirschau
Telephone:	+49 (0) 9604 / 40 - 8988
Date of issue:	20.11.2014

2. Composition/Information on Ingredients

Chemical characterization

Description: Mixture of the substances listed below with nonhazardous additions.

Dangerous components:

CAS-No.	Chemical name	% weight
12190-79-3	LITHIUM COBALT (III) OXIDE	50%
7782-42-5	Graphite	10%
9003-07-0	Polypropylene	5%
24937-79-9	Poly(tetrafluoroethylene)	2%
9002-88-4	Poly(ethylene)	5%
9004-32-4	Carboxymethyl cellulose	0.5%
21324-40-3	Chloro-phosphate lithium-6	5%
96-49-1	Ethylene carbonate	5%
616-38-6	Dimethyl carbonate	5%
7440-02-0	Nickel	2.5%
7440-20-8	Copper	5%
7429-90-5	Aluminium	2%
12597-68-1	Steel	3%

Remark:

Lithium Cobalt (III) Oxide (CAS No. 12190-79-3)

Synonym: Lithiated metal oxide (LiCoO₂)

Carbon (CAS No. 7440-44-0)

Synonym: Graphitic Carbon (C)

Lithium hexafluorophosphate

Synonym: Lithium Salt (LiPF₆)

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3. Hazards Identification



Harmful

Information pertaining to particular dangers for man and environment:

The product has to be labelled due to the calculation procedure of international guidelines.

Irritating to skin.

Risk of serious damage to eyes.

May cause sensitisation by inhalation and skin contact.

Classification system:

The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

NFPA ratings (scale 0 - 4):



Health = 2

Fire = 2

Reactivity = 0

HMIS-ratings (scale 0 - 4):

HEALTH	*2
FIRE	2
REACTIVITY	0

Health = 2

Fire = 2

Reactivity = 0



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4. First Aid Measures

After inhalation:

Supply fresh air and to be sure call for a doctor.

In case of unconsciousness place patient stably in side position for transportation.

After skin contact:

Immediately wash with water and soap and rinse thoroughly.

After eye contact:

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing:

If symptoms persist consult doctor

5. Fire Fighting Measures

Suitable extinguishing agents:

CO₂, extinguishing powder or water spray.

Fight larger fires with water spray or alcohol resistant foam. Use fire fighting measures that suit the environment.

Special hazards caused by the material, its products of combustion or resulting gases:

Emits toxic fumes under fire conditions

Protective equipment:

Wear self-contained respiratory protective device.

6. Accidental Release Measures

Person-related safety precautions:

Wear protective equipment.

Keep unprotected persons away.

Measures for environmental protection:

Do not allow to enter sewers/ surface or ground water.

Measures for cleaning/collecting:

Dispose contaminated material as waste according to item 13.

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7. Handling and Storage

Handling:

Information for safe handling:

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of dust.

Information about protection against explosions and fires:

Keep ignition sources away - Do not smoke.

Storage:

Requirements to be met by storerooms and receptacles:

Store in a cool location.

Information about storage in one common storage facility:

Store away from flammable substances.

Do not store together with oxidizing and acidic materials.

Further information about storage conditions:

Keep receptacle tightly sealed. Store in cool, dry conditions in well sealed receptacles. Protect from heat and direct sunlight.

8. Exposure Controls/Personal Protection

Additional information about design of technical systems: No further data; see item 7.

Components with limit values that require monitoring at the workplace:

7440-44-0 carbon

Great Britain (WEL) Long Term Value = $10 \cdot 4^{**}$ mg/m³ * = inhalable dust ** = respirable

Ireland (OELV) Long Term Value = $10 \cdot 4^{**}$ mg/m³ * = inhalable ** = respirable dust

Additional information:

The lists that were valid during the creation were used as basis.

Personal protective equipment:

General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Avoid contact with the skin. Avoid contact with the eyes and skin.

Breathing equipment:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/the chemical mixture. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

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Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection:



Tightly sealed goggles

9. Physical and Chemical Properties

General Information:

Form:	Particles
Color:	Black
Odor:	Odorless
Voltage:	2.75-4.2V
Weight:	1-1000g
Capacity:	30-10000mAh
Resistance:	1-100mΩ

10. Stability and Reactivity

Thermal decomposition / conditions to be avoided:

No decomposition if used according to specifications.

Dangerous reactions

No dangerous reactions known.

Dangerous products of decomposition:

No dangerous decomposition products known.

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11. Toxicological Information

RTECS: CAS#12190-79-3:	None listed
CAS#7782-42-5:	MD9659600
CAS#9003-07-0:	UD1842000
CAS#24937-79-9:	None listed
CAS#9002-88-4:	KX3270000 TQ3325000
CAS#9004-32-4:	FJ5950000
CAS#21324-40-3:	FF9550000
CAS#616-38-6:	FG0450000
CAS#7440-02-0:	QR5950000 QR6126100 QR6555000 QR7120000
CAS#7429-90-5:	BD0330000 BD1020000
CAS#7440-50-8:	GL7440000 GL7590000

Polypropylene

LD50> 110.000mg/kg (rats via intraperitoneal)

LD50> 99.000mg/kg (rat intravenous injection)

PE LC50: 12gm/m³/30M (mouse inhalation)

Sodium carboxymethyl cellulose

LC50> 5800mg/m³/4H (rat inhalation)

LD50> 27gm/kg (mice by mouth)

LD50> 27gm/kg (rabbit by mouth)

LD50: 27000mg/kg (rat oral)

LD50> 2gm/kg (rabbit percutaneous)

Ethylene Carbonate

LD50: 10gm/kg (rat oral)

LD50> 3gm/kg (rabbit percutaneous)

Dimethyl carbonate

LD50: 6gm/kg (mice by mouth)

LD50: 13gm/kg (rat oral)

LD50> 5gm/kg (rabbit percutaneous)

Carcinogenicity:

Graphite - according to ACGIH, IARC, NTP has not been classified as carcinogens.

Polypropylene - IARC no formal containing 0.1% or more of the substance of the product, a possible human carcinogen.

PTFE - IARC no formal containing 0.1% or more of the substance of the product, a possible human carcinogen.

Polyethylene-IARC: 3 groups (not classification).

Sodium carboxymethyl cellulose - according to ACGIH, IARC, NTP has not been classified as carcinogens.

Chloro-phosphate lithium-6 - according to ACGIH, IARC, NTP has not been classified as carcinogens.

Ethylene carbonate - according to ACGIH, IARC, NTP has not been classified as carcinogens.

DimethylCarbonate - according to ACGIH, IARC, NTP has not been classified as carcinogens.

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Nickel - California: carcinogen. The initial date of 10/1/89 the NTP: a suspected human carcinogen IARC: Group 1 carcinogen (Nickel mixture).

Other: knowledge of specific information into RTESC query

12. Ecological information

General notes:

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

13. Disposal considerations

Product: Recommendation:

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Uncleaned packagings: Recommendation:

Disposal must be made according to official regulations.

14. Transport information

DOT regulations:



Hazard class: 9

Identification number: UN3481

Packing group: II

Proper shipping name (technical name): Battery(Lithium ion rechargeable)

Label: 9

Land transport ADR/RID (cross-border):



ADR/RID class: 9 Miscellaneous dangerous substances and articles

Danger code (Kemler): 9

UN-Number: 3481

Packaging group: II

Label: 9

Description of goods: 3481 Battery(Lithium ion rechargeable)

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Maritime transport IMDG:



IMDG Class: 9

UN Number: 3481

Label: 9

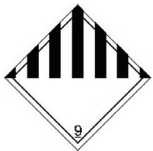
Packaging group: II

EMS Number: F-A,S-I

Marine pollutant: Yes

Propper shipping name: Battery(Lithium ion rechargeable)

Air transport ICAO-TI and IATA-DGR:



UN/ID Number: 3481

Label: 9

Packaging group: II

Propper shipping name: Battery(Lithium ion rechargeable)

Packing instructions: PI965-PI967

There are some regulations about the international transport of lithium batteries: the International Maritime Dangerous Goods(IMDG) Code by International Maritime Organization(IMO), Dangerous Goods Regulations (DGR) by International Air Transport Association(IATA) and Technical Instructions for the Safe Transport of Dangerous Goods by Air (TI) by International Civil Aviation Organization(ICAO). These regulations are based on the UN Recommendations on the requirements of UN38.3(UN Manual of Test and Criteria, Part III, subsection 38.3) could be transported by air and by sea as ordinary goods, otherwise should be transported according to Class 9, Packing Group II hazardous goods.



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15. Regulatory information

Regulatory information:

Sara

Section 355 (extremely hazardous substances): None of the ingredient is listed.

Section 313 (Specific toxic chemical listings): None of the ingredient is listed.

TSCA (Toxic Substances Control Act):	
7440-44-0	Carbon
21324-40-3	Lithium hexafluorophosphate
96-49-1	ethylene carbonate
105-58-8	diethyl carbonate

Proposition 65

Chemicals known to cause cancer: None of the ingredient is listed.

Chemicals known to cause reproductive toxicity for females: None of the ingredient is listed.

Chemicals known to cause reproductive toxicity for males: None of the ingredient is listed.

Chemicals known to cause developmental toxicity: None of the ingredient is listed.

Carcinogenicity categories

EPA (Environmental Protection Agency) None of the ingredient is listed.

IARC (International Agency for Research on Cancer) None of the ingredient is listed.

NTP (National Toxicology Program) None of the ingredient is listed.

TLV (Threshold Limit Value established by ACGIH) None of the ingredient is listed.

NIOSH-Ca (National Institute for Occupational Safety and Health) None of the ingredient is listed.

OSHA-Ca (Occupational Safety & Health Administration) None of the ingredient is listed.

Product related hazard informations:

The product has been classified and marked in accordance with directives on hazardous materials.

Hazard symbols: Harmful

Hazard-determining components of labelling: Lithium Cobalt (III) Oxide

Risk phrases:

Irritating to skin.

Risk of serious damage to eyes.

May cause sensitisation by inhalation and skin contact.

Safety phrases:

Keep locked up and out of the reach of children.

Do not breathe dust.

Avoid contact with skin and eyes. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Wear suitable gloves and eye/face protection.

In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Dispose of this material and its container to hazardous or special waste collection point. In case of accident by inhalation: remove casualty to fresh air and keep at rest.



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16. Other information

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