Material safety data sheet COLIBRI ENERGY POWER TRACTION EN

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1. DESIGNATION OF MATERIAL, PREPARATION and COMPANY

Power Traction 62
COLIBRI ENERGY GmbH
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2. COMPOSITION / INFORMATION on INGREDIENTS

Material designation	Concentration in % by weight
Carbon(Graphite)	7%
MnO	3%
CoO (Cobalt)	2%
Li^2MnO^4	4%
Li^2O	1%
Cu	11%
PP	6%
NiO	4%
PVDF	< 1 %
PE	< 2%
CMC	< 2%
$LiPF^6$	< 2%
EC	< 2%
DMC	< 2%
AL	<2 %
Carbon Steel	49%

3. HAZARD IDENTIFICATION

Caution:

The cells described in this material safety data sheet are tightly sealed in a battery housing. They are non-toxic provided they are used and handled in accordance with the manufacturer's specifications. The batteries are then then enclosed in a sealed carbon steel housing.

4. FIRST AID MEASURES

Contact with contents of the cells :

- Skin: Immediately flush with plenty of water for at least 15 minutes. If symptoms persist, seek medical attention
- Eyes: Immediately flush with plenty of water for at least 15 minutes. Seek medical attention.
- Inhalation: Immediately leave the room. In case of large quantities and respiratory irritation, seek medical attention.
- Ingestion: Rinse mouth and surrounding area with water. Seek immediate medical attention.

5. FIRE-FIGHTING MEASURES

A. Fire-extinguishing agents:

- CO^2 is an effective fire-extinguishing agent.
- If the cells are not open, water can be used as a fire-extinguishing agent.
- Lith-X (Class D fire-extinguishing agent) is effective for fires provided that only a few cells are involved.
- Chemical dry fire-extinguishing agents only have limited effect.

B. Fire-extinguishing procedures:

Use positive-pressure breathing apparatus if cells are involved in a fire.

6. ACCIDENTAL RELEASE MEASURES

If the cell housing is damaged: enclose cells airtight in dry sand, chalk powder (CaCO3 – calcium carbonate), chalk powder (CaO – calcium oxide) or vermiculite.

7. HANDLING and STORAGE

- Effectively prevent short-circuiting of traction system poles by ensuring the pole covers remain in place when not in use.
- Store preferably in cool (below 30°C) and dry location without temperature fluctuations.
- Do not store close to heating elements and do not expose to direct sunlight. Higher temperatures can shorten the life of the cells.

8. EXPOSURE CONTROLS and PERSONAL PROTECTIVE EQUIPMENT (PPE)

- Breathing apparatus: not required if cells are used in normal manner.
- Hand protection: not required if cells are used in normal manner. For damaged cells, use coated gloves.
- Eye protection: not required if cells are used in normal manner. Wear goggles when handling damaged cells.

9. PHYSICAL and CHEMICAL PROPERTIES

- Appearance: Solid block shape
- Odor: NA
- pH: NA
- Flash point: NA
- Flammability: NA

10. STABILITY and REACTIVITY

- Stability: Product is stable under conditions in Section 7.
- Conditions to Avoid: temperatures above 100°C or below -20°C. Do not incinerate, deform, mutilate, crush, pierce, disassemble or short circuit.
- Hazardous Decomposition Products: Toxic gas when burning.

11. TOXICOLOGICAL INFORMATION

Not applicable.

12. ECOLOGICAL INFORMATION

Water hazard class: 1, acc. to VwVwS dated 17 Jul 2005 (2009 status)

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with applicable national regulations.

14. TRANSPORT INFORMATION

The COLIBRI ENERGY polymer cells inside the Power Traction System are declared hazardous material according to hazmat class UN 3480 (Lithium-ion batteries including lithium polymer batteries) or UN 3481 (Lithium-ion batteries including lithium polymer batteries in or with equipment) and thus transportation regulations apply. The COLIBRI ENERGY polymer cells and batteries are certified in accordance with UN38.3.
Transport of COLIBRI ENERGY polymer cells (water, road, air) is only allowed if packaging instruction P903 is applied. The following packaging is authorized provided that the general provisions of UN38.3, 4.1.1 and 4.1.3 are met:

Packaging according to UN 3840 (polymer cells)

Drums (1A2, 1B2, 1N2, 1H2, 1D, 1G); Boxes (4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G, 4H1, 4H2); Jerricans (3A2, 3B2, 3H2).
Cells or batteries shall be packed so that the cells or batteries are protected against damage that may be caused by the movement or placement of the cells or batteries within the packaging.
Packaging shall conform to the packing group II performance level.

Packaging according to UN 8481 (polymer cells packed with/ in equipment)

For cells or batteries packed with equipment:

> Packaging conforming to the requirements for polymer cells (see above), then placed with the equipment in an outer packaging; or packaging that completely enclose the cells or batteries, then placed with equipment in a packaging conforming to the requirements for polymer cells (see above). The equipment shall be secured against movement within the outer packaging. For the purpose of the packing instruction, "equipment" means apparatus requiring the lithium metal or lithium ion cells or batteries with which it is packed for its operation.

For cells or batteries contained in equipment:

> Strong outer packaging constructed of suitable material, and of adequate strength and design in relation to the packaging capacity and its intended use. They shall be constructed in such a manner as to prevent accidental operation during transport. Packaging need not meet the requirements of UN38.3, 4.1.1.3.

Large equipment can be offered for transport unpackaged or on pallets when the cells or batteries are afforded equivalent protection by the equipment in which they are contained.

Devices such as radio frequency identification (RFID) tags, watches and temperature loggers, which are not capable of generating a dangerous evolution of heat, may be transported when intentionally active in strong outer packaging. When active, these devices shall meet defined standards for electromagnetic radiation to ensure that the operation of the device does not interfere with aircraft systems.

Additional requirement for all transports:

Cells or batteries shall be protected against short circuit.

15. REGULATORY INFORMATION

Not applicable.

16. OTHER INFORMATION

Not applicable.

17. APPENDICES

None.

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