MSDS for lithium-ion batteries Acekare Yomper 7S2P SAMSUNG 35E

1 Chemical product and company identification

Product identification	Lithium-Ion Battery
Model	YOMPER-7S2P 35E (160Wh)
Manufacturer	ACEKARE
Address	7 rue de Mireport, 33310 Lormont, FRANCE
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2 Composition & Information on Ingredients

The battery is composed of 14 Samsung cells. Each Samsung 35E cell consists of an hermetically sealed metallic container containing a number of chemicals and materials of construction of which the following could potentially be hazardous upon release.

Hazardous ingredients	% CAS	CAS number
Electrolyte - Contains Electrolyte salt and solvents.	5-20%	
Electrolyte salt - Lithium hexafluorophosphate	0,05-5%	21324-40-3
Electrolyte solvent - Includes one or more of the following; Ethelyne Carbonate Propylene Carbonate Diethyl Carbonate Ethyl propionate	5-20%	 96-49-1 108-32-7 105-58-8 105-37-3
PVDF - Polyvinylidenfluoride	<1%	24937-79-9
Copper - Cu	3-15%	7440-50-8
Aluminium - Al	2-10%	7429-90-5
Cathode – Lithium Cobalt oxide	20-50%	12190-79-3
Anode - Graphite	10-30%	7782-42-5
Stainless steel, Nickel and inert materials	Remainder	N/A

3 Hazards Identification

Do not short circuit, puncture, incinerate, crush, immerse, force discharge or expose to temperatures above the declared operating temperature range of the product.

May explode in a fire, which could release hydrogen fluoride gas. Use extinguishing media suitable for materials burning in fire.
The rechargeable lithium-ion batteries described in this Product SafetyData Sheet are sealed units which are not hazardous when used according to the recommendations of the manufacturer.

Under normal conditions of use, the electrode materials and liquid electrolyte theycontain are not exposed to the outside, provided the battery integrity is maintained and seals remain intact. Risk of exposure only in case of abuse (mechanical, thermal, electrical) which leads to the activation of safety valves and/or the rupture of the battery container. Electrolyte leakage, electrode materials reaction with moisture/water or battery vent/explosion/fire may follow, depending upon the circumstances.

4 First Aid Measures

The battery is not hazard with eye and skin contact under normal circumstances. In case of the enclosure is damaged, the battery can not be used and touched.
If exposure to internal materials within cell due to damage douter casing, the following actions are recommended :

Inhalation	Leave area immediately and seek medical attention.
Skin contact	Wash area thoroughly with soap and water and seek medical attention.
Eye contact	Rinse eyes with water for 15 minutes and seek medical attention.
Ingestion	Drink milk/water and induce vomiting; seek medical attention.

5 Fire Fighting Measures

Cell is not flammable but internal organic material will burn if the cell is incinerated. Combustion products include, but are not limited to hydrogen fluoride, carbon monoxide and carbon dioxide.

Extinguishing Media	Use extinguishing media suitable for the materials that are burning.
Special Firefighting Instructions	If possible, remove the battery from fire fighting area. If heated above 125°C, the battery may explode/vent.
Firefighting Equipment	Use NIOSH/MSHA approved full-face self-contained breathing apparatus (SCBA) with full protective gear.

6 Accidental Release Measures

On Land	Place material into suitable containers and call local fire/police department.
In Water	If possible, remove from water and call local fire/police department.

7 Handling and Storage	
Handling	Do not crush, pierce, short (+) and (-) battery terminals with conductive (i.e. metal) goods. Do not directly heat or solder. Do not throw into fire. Do not mix batteries of different types and brands. Do not mix new and used batteries. Keep batteries in non conductive (i.e. plastic)trays.
Storage	Store in a cool, dry and ventilated area, away from moisture, sources of heat, open flames, food and drink. Keep adequate clearance between walls and batteries. Temperature above 70°C may result in battery leakage and rupture. Since short circuit can cause burn, leakage and rupture hazard, keep batteries in original packaging until use and do not jumble them.
Other	Follow Manufacturers recommendations regarding maximum recommended currents and operating temperature range. Applying pressure on deforming the battery may lead to disassembly followed by eye, skin and throat irritation.

8 Exposure Controls & Personal Protection		
Engineering controls		Keep away from heat and fire. Keep in a cool and dry place.
Personal Protection	Respirator	Not required during normal operations. SCBA required in the event of a fire.
	Eye/face protection	Not required beyond safety practices of employer.
	Gloves	Not required for handling of cells.
	Foot protection	Steel toed shoes recommended for large container handling.

9 Physical and Chemical Properties	
Appearance	Prismatic shape
State	Solid
Odor	N/A
PH	N/A
Vapor pressure	N/A
Vapor density	N/A
Boiling point	N/A
Solubility in water	Insoluble
Specific gravity	N/A
Density	N/A

10 Stability and Reactivity	
Product is stable under conditions described in Section 7.	
Reactivity	None
Incompatibilities	There are nothings during a normal operation. Avoid exposure to heat, open flame, and corrosives.
Hazardous decomposition Products	There are nothings during normal operating conditions. If cells are opened, hydrogen fluoride and carbon monoxide may be released.
Conditions to Avoid	Avoid exposure from heat and fire. Do not puncture, crush, and incinerate.

11 Toxicological Information	
This product does not contain elicit toxicological properties during routine handling and using.	
Sensitization	NO
Teratogenicity	NO
Reproductive toxicity	NO
Acute toxicity	NO
Medical conditionsgenerally aggravatedby exposure	If cells are opened through misuse or damage, do discard immediately. Internal components of cell are irritants and sensitizers.

12 Ecological Information	
Mammalian effects	None known if used/disposed of correctly.
Eco-toxicity	None known if used/disposed of correctly.
Bioaccumulation potential	Some materials within the cell are bioaccumulative. Under normal conditions, these materials are sealed into cell, and then there is no risk to persons or the surrounding environment.
Environmental fate	None known if used/disposed of correctly.

13 Disposal Considerations
Do not incinerate, or subject cells to temperatures in excess of 70°C. Such abuse can result in loss of seal, leakage, and/or cell explosion. Dispose of in accordance with appropriate local regulations.

14 Transport Information

Lithium Ion batteries are acceptable to dangerous goods locations where UN3480 is not prohibited. Cells greater than 20Wh; and Batteries greater than 100Wh :

- Shipper's Declaration required in net weight KG.
- UN specification packaging required (PGII standards)
- Lithium Battery Class 9 Hazard label or Class 9 Miscellaneous Dangerous Goods label (See Figure 1 or 2)

Lithium Battery Class 9 Hazard Label

Figure 1

Class 9 Miscellaneous Dangerous Goods Hazard Label

Figure 2

- Cargo Aircraft Only (CAO) label required (See Figure 5)

Figure 5

- Dangerous goods surcharge
- State of charge (SoC) not exceeding 30% of their rated design capacity for cells and batteries without competent authority approval of both the state of origin and state of the operator

Limit per package: CAO = 35kg

Each cell is of the type proven to meet the requirements of each test in the UN Manual of Tests and Criteria Part 3 subsection 38.3.

The cells have been evaluated according to the UN Manual of Tests and Criteria.

No.	Test Item	Criteria	Result
Test1	Altitude simulation	- No leakage, venting, disassembly, rupture and no fire.	Pass
Test 2	Thermal test	- Measuring mass before/after each test. (If M>5g, less than 0.1%)	Pass
Test 3	Vibration		Pass
Test 4	Shock	- Measuring voltage before/after each test. (more than 90%)	Pass
Test 5	External short circuit	-No disassembly, rupture and fire within six hours of this test.	Pass
Test 6	Impact	-Max. temperature should not exceed 170°C	Pass
Test 7	Overcharge	-No disassembly and fire within seven days of the test.	Pass

15 Regulatory Information

OSHA hazard communication standard (29 CFR 1910.1200)	Non-hazardous

16 Other information

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