Celxpert Safety Data Sheet [29 CFR 1910.1200]

Safety Data Sheet
May be used to comply with OSHA's Hazard communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.

US Department of Labor
Occupational Safety and Health Administration
(Non-Mandatory Form) Form Approved
OMB No.1218-0072

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : Lithium Ion Rechargeable Battery Pack
CUSTOMER : ASUS
CUSTOMER P/N : 0B200-04010000
CPT P/N : 920100381
MODEL NAME : C31N2020
DESCRIPTION : 3S1P, COSMX 4210mAh,11.55V/50Wh

MANUFACTURER : Celxpert(KunShan)Energy Co., Ltd
ADDRESS : NO.1111, Hanpu Road, Yushan Town, Kunshan City, Jiangsu Province, P.R. China
TELEPHONE : +86-512-57775999#2532
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SECTION 2: HAZARDS IDENTIFICATION

PROTENTIAL HEALTH EFFECTS

PRIMARY ROUTES OF ENTRY
Skin contact, Skin absorption, Eye contact, Inhalation, and Ingestion : NO

SYMPTOMS OF EXPOSURE
Skin contact

No effect under routine handling and use.

Skin absorption

No effect under routine handling and use.

Eye contact

No effect under routine handling and use.

Inhalation

No effect under routine handling and use.

SECTION 3: INGREDIENT

Battery Cell

HAZARDOUS INGREDIENTS	%	CAS NUMBER
Cobalt compound	4-50	1307-96-6
Styrene-Butadiene-Rubber	<1	27288-99-9
Aluminum Foil	2-10	7429-90-5
Polyvinylidene Fluoride (PVDF)	<5	24937-79-9
Copper Foil	2-10	7440-50-8
Carbon	10-30	7440-44-0
Electrolyte (Ethylene carbonate)	10-20	96-49-1
Lithium hexafluorophosphate	<5	21324-40-3
Stainless steel, Nickel and inert materials	Remainder	N/A

Circuit Module

HAZARDOUS INGREDIENTS	%	CAS NUMBER
Lead	0.001	7439-92-1
Mercury	0	7439-97-6
Chromium	0	7440-47-3
Cadmium	0	7440-43-9
Plastic case and Si2O	0	N/A

Plastic Parts and Paints

HAZARDOUS INGREDIENTS	%	CAS NUMBER
Lead	<0.1	7439-92-1
Nickle	<0.01	7440-02-0
CFCs	0	75-69-4
Polyclorinated Biphenyls	0	1336-36-3

SECTION 4: FIRST AID MEASURES

INHALATION, EYE CONTACT, and SKIN CONTACT : Not a health hazard.

INGESTION

If swallowed, obtain medical attention immediately.

If exposure to internal materials within cell(pack) due to damaged outer casing, the Following actions are recommended.

INHALATION
Leave area immediately and seek medical attention.

EYE CONTACT
Rinse eyes with water for 15 minutes and seek medical attention.

SKIN CONTACT
Wash area thoroughly with soap and water and seek medical attention.

INGESTION
Drink milk/water and induce vomiting; seek medical attention.

SECTION 5: FIRE FIGHTING MEASURES

5.1 GENERAL HAZARD

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.

5.2 EXTINGUSHING MEDIA

Use extinguishing media suitable for the materials that are burning.

5.3 SPECIAL FIREFIGHTING INSTRUCTIONS

If possible, remove cell(s) from fire fighting area. If heated above 125°C, cell(s) can explode/vent.

5.4 FIREFIGHTING EQUIPMENT

Use NIOSH/MSHA approved full-face self-contained breathing apparatus (SCBA) with full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 ON LAND

Place material into suitable containers and call local fire/police department.

6.2 IN WATER

If possible, remove from water and call local fire/police department.

SECTION 7: HANDLING AND STORAGE

7.1 HANDLING

No special protective clothing required for handling individual cells.

7.2 STORAGE

Store in a cool, dry place.

SECTION 8: EXPOSURE CONTROLS//PERSONAL PROTENTION

8.1 ENGINEERING CONTROLS

Keep away from heat and open flame. Store in a cool dry place.

8.2 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.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State： Solid	Boiling point：N/A
Odor：N/A	Solubility in water：Insoluble
PH：N/A	Specific gravity：N/A
Vapor pressure：N/A	Density：N/A
Vapor density：N/A	Flash Point：N/A

SECTION 10: STABILITY AND REACTIVITY

10.1 REACTIVITY

None

10.2 INCOMPATIBILITIES

None during normal operation. Avoid exposure to heat, open flame, and corrosives.

10.3 HAZARDOUS DECOMPOSITION PRODUCTS

None during normal operating conditions. If cells are opened, hydrogen fluoride and carbon monoxide may be released.

10.4 CONDITIONS TO AVOID

Avoid exposure to heat and open flame. Do not puncture, crush or incinerate.

SECTION 11: TOXICOLOGICAL INFORMATION

This product does not elicit toxicological properties during routine handling and use.

Sensitization: NO Teratogenicity: NO Reproductive toxicity:NO Acute toxicity: NO

This product does not contain any kinds of the following substances and halogen-type flame retardants including Chlorine and Bromide type harmful flame retardants which are listed in Appendix of TCO documents and relevant international ECO requirements:

Polybromated Biphenyls (PBB)
Polybromated Diphenylethers (PBDE)
Polychlorinated Biphenyls (PCBs)
Polychlorinated Terphenyls(PCTs)
Polychlorinated Paphthalene(PCN)
Chlorinated Paraffins(C10-C13)
Chlorofluorocarbons(CFCs)
Polyvinyl Chloride(PVC)
Carbon Tetrachloride

None of the following substances will be exposed, leaked, or emitted during transportation, storage or any operation and any temperature condition:

Chlorinated Fluorohydrocarbon (FCKW)

Acrylonitride
Styrol
Phenol
Benzol
Mercury of greater than 0.0001 wt% for alkaline battery
Mercury of greater than 0.0005 wt% for other battery
Lithium content of greater than 0.5g/battery cell
Cadmium, lead, and other harmful heavy metal

And will comply with the regulation of 49 CFR (DOT regulation), International Air Transport Association (IATA), and Deuche Forschungsgemeinschaft (DFG) regarding concentrations of emitted substances.

This product does not contain mercury and cadmium.

Mercury content: N/A

Cadmium content: N/A
If the cells are opened through misuse or damage, discard immediately. Internal components of cell are irritants and sensitizers.

SECTION 12: ECOLOGICAL INFORMATION

Some materials within the cell are bio-accumulative. Under normal conditions, these materials are contained and pose no risk to persons or the surrounding environment.

SECTION 13: DISPOSAL CONSIDERATIONS

Disposal should be in accordance with local, state or national legislation.

SECTION 14: TRANSPORT INFORMATION

- The International Air Transport Association (IATA) Dangerous Goods Regulations (61st Edition, 2020). Packing instruction 965 IA/IB/ Section II for Lithium Ion battery.
- The International Maritime Dangerous Goods (IMDG) Code ，2018 Edition (Incorporating Amendment 39-18) with special provision 188 & 230.
- US Hazardous Materials Regulations 49 CFR(Code of Federal Regulations)Sections 173-

185 Lithium batteries and cells.

- The UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria 38.3 Lithium batteries, ST-SG-AC10-11-Rev6-Amend1 (UN3480) .

SECTION 15: REGULATORY INFORMATION

OSHA hazard communication standard (29 CFR 1910.1200)

_____Hazardous __V__ Non-hazardous

SECTION 16: OTHER INFORMATION

Package if damaged: do not load or transport.

Celxpert contact window: J.D. Chen

For more information,call: +886-3-4899054

SECTION 17: UN MANUAL OF TEST CRITERIA

All battery pack model pass UN383 test and drop test.

Item	Test Item	Test specification
T1	Altitude Simulation (UN38.3-1)	1-1. 4 batteries are standard charged. 4 batteries are 1C cycled 25 times, ending in fully charged state. All batteries weight is measured. The charged batteries voltage are measured and recorded. 1-2. Batteries shall be stored at a pressure of 11.6Kpa or less for at least six hours at ambient temperature 20+/-5 ℃. 1-3. Vacuum is released. All cells weight is measured. The charged cell voltage are measured and recorded.
T2	Thermal test (UN38.3-2)	2-1. Packs are stored for 6 hours at 72℃±2℃, followed by storage for 6 hours at -40℃±2℃. The maximum time interval between test temperature extremes is 30 minutes. 2-2. Repeat 2-1 for 10 times. Then store the packs at ambient for 24 hours. All packs weight are measured. The charged battery voltage are measured and recorded.

Item	Test Item	Test specification
T3	Vibration test (UN38.3-3)	3-1. Packs are firmly secured to the platform of the vibration machine without distorting the packs in such a manner as to faithfully transmit the vibration. The vibration shall be a sinusoidal waveform with a logarithmic sweep between 7 and 200 Hz and back to 7 Hz traversed in 15 minutes. This cycle shall be repeated 12 times for a total of 3 hours for each of 3 mutually perpendicular to the terminal face. 3-2. The logarithmic frequency sweep is as follows: 7-18 Hz ➔ 1gn 18-50 Hz ➔ 0.8mm amplitude 50-200 Hz ➔ 8gn 3-3. All packs weight are measured. The charged packs voltage are measured and recorded.
T4	Shock test (UN38.3-4)	4-1. Packs shall be secured to the testing machine by means of a rigid mount, which will support all mounting surfaces. 4-2. Packs shall be subjected to a half-sine shock of peak acceleration 150gn and pulse duration of 6 milliseconds. Each pack shall be subjected to 3 shocks in the positive direction followed by three shocks in the negative direction of three mutually perpendicularly mounting positions of the pack for a total of 18 shocks. 4-3. All batteries weight are measured. The charged cell voltage are measured and recorded.
T5	Short Circuit Test (UN38.3-5,	5-1. Packs are placed in to a 57℃±4℃ oven, and exterior packs temperature are monitored 5-2. When packs exterior reach 57℃±4℃, they are shorted by connecting terminals with a copper wire of resistance less than 100 mOhm. 5-3. The short was continued for more than 1hour or the cell temperature return to 57℃. The packs are observed for a further 6 hours.
T6	Impact test (UN38.3-6)	6-1. Cell's diameter ≧ 18mm, Execution impact test. (A 9.1 Kg mass is to be dropped from a height of 61±2.5cm onto the sample.) 6-2. Cell's diameter ＜ 18mm, Execution crush test (The cells are crushed with a 13 KN with the crush tester. Once the force is obtained it is to be released.)
T7	Overcharge test (UN38.3-7)	7-1. The charge current shall be twice the SPEC's recommended maximum continuous charge current. 7-2. The minimum voltage of the test shall be as follows: (a) When the SPEC's recommended charge voltage is not more than 18V, the minimum voltage of the test shall be the lesser of two times the maximum charge voltage of the battery or 22V. (b) When the SPEC's recommended charge voltage is more than 18V, the minimum voltage of the test shall be 1.2 times the maximum charge voltage. 7-3. Tests are to be conducted at ambient temperature. The duration of the test shall be 24 hours.
T8	Forced discharge test-cell only (UN38.3-8)	8-1. Cell shall be forced discharged at ambient temperature by connecting it in series with a 12 V D.C. power supply at an initial current equal to the maximum discharge current Specified by the manufacturer.

Package Drop Test: Test specification: Height :120cm.