新普科技股份有限公司
新世電子(常熟)有限公司
新普科技(重慶)有限公司
華普電子(常熟)有限公司
Simplo Technology Co., Ltd.
Simplo Technology(Changshu)Inc.
Simplo Technology(Chongqing)Inc.
Huapu Technology(Changshu)Inc.

Issued/Revised date :January 01 2021
Document No. : SDS_Simplo-2107

# Explanatory sheet about safety of product for transportation (Safety Data Sheet for transportation)

## *1. Basic item*

| | |
|---|---|
| Product name : | Lithium-Ion Rechargeable Battery Pack |
| UN number: | 3480 |
| Product code: | Refer to Table 1. |
| model name : | Refer to Table 1. |
| Manufacturer Name: | Simplo Technology Co., Ltd. |
| Address: | No. 471, Sec. 2, Bade Rd., Hu Kou Township, Hsinchu County, 30348, Taiwan (R.O.C) |
| Phone number: | +886-3-5695920 |
| Fax number: | +886-3-5695931 |

## *2. Product information*

Basic composition of the product This product is a battery which consists of such main component as core battery pack assembled with some Lithium ion cells. And it consists of any combination of plastic casing, tube casing, protection circuit boards, safety devices and interface terminals

## *3. Safety Information*

SMP certifies the battery has passed and satisfied the UN Manual of Tests and Criteria Part III, sub-section 38.3 testing in SMP shipping. - SMP manufactured the battery under the quality management program required in UN Model regulations 2.9.4(e).

### *3-1: Battery pack*

1. The Watt-hour rating of the battery is not more than 100Wh.
   The Watt-hour rating of the component Lithium ion cells is not more than 20Wh.
   Refer to Appendix “SDS_Simplo-2107”.
2. Packages of the battery satisfy the following conditions when SMP ships.
   (1) The package has passed the drop test from the height of 1.2m.
   (2) The package net weight is not more than 10kg.
   (3) The package is marked and labeled according to requirement of Packing Instruction 965 Section IB stated in ICAO’s and IATA’s dangerous goods regulations.
3. The battery is not defective for safety reasons, not damaged. It is not collected battery for recycling or disposal.
4. The battery is not subject to the fully regulated requirements for Dangerous Goods in ocean and ground transportation.
5. The battery should be transported by Cargo aircraft as UN3480, Class 9 Dangerous Goods, and state of charge not exceeding 30%, according to Packing Instruction 965 Section IB stated in ICAO’s and IATA’s dangerous goods regulations.

Table. 1 Model list of application

| Battery Part Numbers | | | Battery Information | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Lenovo ASM Lenovo PN Part Number | Lenovo FRU Part Number | Lenovo Model Name | MSDS Type # | UN DOT 38.3 Test Certificate | Cell Voltage (V) | Battery Voltage (V) | Watt hour Rating (Wh) | Weight (grams) | Equivalent Lithium Content (grams) |
| 5B10Q62140 | | L17M2PF1 | SDS_Simplo-2107 | 5B10Q62140_UN38.3 | 3.80 | 7.6 | 30 | 150 | 2.40 |
| 5B10Q71251 | | L17M3PB1 | SDS_Simplo-2107 | 5B10Q71251_UN38.3 | 3.78 | 11.34 | 45 | 150 | 3.60 |
| 5B10Q93417 | | L17M3PG3 | SDS_Simplo-2107 | 5B10Q93417_UN38.3 | 3.8 | 11.4 | 52.5 | 235 | 4.15 |
| 5B10S73499 | | L18M4PF0 | SDS_Simplo-2107 | 5B10S73499_UN38.3 | 4.4 | 17.6 | 45.52 | 180 | 3.56 |
| 5B10T09079 | | L18M4PF3 | SDS_Simplo-2107 | 5B10T09079_UN38.3 | 3.84 | 15.36 | 45 | 200 | 3.558 |
| 5B10T09096 | | L18M3PF6 | SDS_Simplo-2107 | 5B10T09096_UN38.3 | 3.75 | 11.25 | 36 | 175 | 2.9385 |
| 5B10T09097 | | L18M3PF7 | SDS_Simplo-2107 | 5B10T09097_UN38.3 | 3.8 | 11.4 | 52.5 | 220 | 4.149 |
| 5B10T09089 | | L18M3PF8 | SDS_Simplo-2107 | 5B10T09089_UN38.3 | 3.8 | 11.4 | 52.5 | 220 | 4.149 |
| 5B10T09090 | | L18M4PF5 | SDS_Simplo-2107 | 5B10T09090_UN38.3 | 3.8 | 15.2 | 70 | 290 | 5.532 |
| 5B10T03402 | | L18M3PF2 | SDS_Simplo-2107 | 5B10T03402_UN38.3 | 3.75 | 11.25 | 36 | 155 | 2.9385 |
| 5B10T04975 | | L18M3PF1 | SDS_Simplo-2107 | 5B10T04975_UN38.3 | 3.8 | 11.4 | 45 | 220 | 3.6 |
| 5B10T26393 | | L18M3PF2 | SDS_Simplo-2107 | 5B10T26393_UN38.3 | 3.75 | 11.25 | 36 | 155 | 2.952 |
| 5B10T30215 | | L17M3PG3 | SDS_Simplo-2107 | 5B10T30215_UN38.3 | 3.8 | 11.4 | 52.5 | 220 | 4.149 |
| 5B10U95573 | | L18M3PFB | SDS_Simplo-2107 | 5B10U95573_UN38.3 | 3.84 | 11.52 | 42 | 170 | 3.33 |
| SB10V25234 | 5B10V25246 | L19M3PF0 | SDS_Simplo-2107 | SB10V25234_UN38.3 | 3.75 | 11.25 | 36 | 170 | 2.952 |
| SB10V25248 | 5B10V25238 | L19M3PF1 | SDS_Simplo-2107 | SB10V25248_UN38.3 | 3.80 | 11.4 | 45 | 220 | 3.6 |
| SB10V25233 | 5B10V25240 | L19M3PF2 | SDS_Simplo-2107 | SB10V25233_UN38.3 | 3.84 | 11.52 | 57 | 220 | 4.455 |
| SB10V27764 | 5B10V27761 | L19M3PD3 | SDS_Simplo-2107 | SB10V27764_UN38.3 | 3.84 | 11.52 | 56.6 | 220 | 5.898 |
| SB10W86199 | 5B10W86188 | L19M4PC2 | SDS_Simplo-2107 | SB10W86199_UN38.3 | 3.84 | 15.36 | 80 | 220 | 6.42 |
| SB10W86198 | 5B10W86192 | L19M4PC1 | SDS_Simplo-2107 | SB10W86198_UN38.3 | 3.84 | 15.36 | 80 | 220 | 6.42 |
| SB10W89840 | 5B10W89843 | L19M3PF7 | SDS_Simplo-2107 | SB10W89840_UN38.3 | 3.80 | 11.40 | 45 | 222 | 3.564 |
| SB10X55573 | 5B10X55569 | L19M3PF9 | SDS_Simplo-2107 | SB10X55573_UN38.3 | 3.78 | 11.34 | 45 | 222 | 3.6 |
| 5B10Q71253 | - | L17M2PB7 | SDS_Simplo-2107 | 5B10Q71253_UN38.3 | 3.78 | 7.56 | 30 | 136.4 | 2.4 |
| 5B10T26390 | - | L18M3PF9 | SDS_Simplo-2107 | 5B10T26390_UN38.3 | 3.80 | 11.4 | 52.5 | 220 | 4.149 |
| SB10W67172 | 5B10W67209 | L18M4PF5 | SDS_Simplo-2107 | SB10W67172_UN38.3 | 3.80 | 15.2 | 70 | 290 | 5.532 |
| SB10W67186 | 5B10W67369 | L17M3PB0 | SDS_Simplo-2107 | SB10W67186_UN38.3 | 3.80 | 15.2 | 70 | 290 | 5.532 |
| SB10W67200 | 5B10W67217 | L18M4PF3 | SDS_Simplo-2107 | SB10W67200_UN38.3 | 3.8 | 11.4 | 52.5 | 220 | 4.15 |
| SB10W67210 | 5B10W67282 | L18M3PFB | SDS_Simplo-2107 | SB10W67210_UN38.3 | 3.84 | 11.52 | 42 | 170 | 3.33 |
| SB10W67259 | 5B10W67315 | L18M4PF0 | SDS_Simplo-2107 | SB10W67259_UN38.3 | 4.4 | 17.6 | 45.52 | 180 | 3.56 |
| SB10W67265 | 5B10W67313 | L17M3PB1 | SDS_Simplo-2107 | SB10W67265_UN38.3 | 3.78 | 11.34 | 45 | 150 | 3.60 |
| SB10W67268 | 5B10W67367 | L18M3PF2 | SDS_Simplo-2107 | SB10W67268_UN38.3 | 3.75 | 11.25 | 36 | 155 | 2.94 |

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Table. 1 Model list of application

| Battery Part Numbers | | | Battery Information | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Lenovo ASM Lenovo PN Part Number** | **Lenovo FRU Part Number** | **Lenovo Model Name** | **MSDS Type #** | **UN DOT 38.3 Test Certificate** | **Cell Voltage (V)** | **Battery Voltage (V)** | **Watt hour Rating (Wh)** | **Weight (grams)** | **Equivalent Lithium Content (grams)** |
| SB10W67280 | 5B10W67354 | L18M3PF8 | SDS_Simplo-2107 | SB10W67280_UN38.3 | 3.8 | 11.4 | 52.5 | 220 | 4.15 |
| SB10W67304 | 5B10W67327 | L19M3PF2 | SDS_Simplo-2107 | SB10W67304_UN38.3 | 3.8 | 11.52 | 57 | 220 | 4.46 |
| SB10W67311 | 5B10W67194 | L18M4PF3 | SDS_Simplo-2107 | SB10W67311_UN38.3 | 3.8 | 15.36 | 45 | 200 | 3.56 |
| SB10W67373 | 5B10W67420 | L17M3PG3 | SDS_Simplo-2107 | SB10W67373_UN38.3 | 3.8 | 11.4 | 53 | 235 | 4.15 |
| SB10W67377 | 5B10W67261 | L19M3PF0 | SDS_Simplo-2107 | SB10W67377_UN38.3 | 3.8 | 11.25 | 36 | 170 | 2.95 |
| SB10W67391 | 5B10W67341 | L17M2PB7 | SDS_Simplo-2107 | SB10W67391_UN38.3 | 3.8 | 7.56 | 30 | 136 | 2.40 |
| SB10W67398 | 5B10W67250 | L18M3PF9 | SDS_Simplo-2107 | SB10W67398_UN38.3 | 3.80 | 11.4 | 52.5 | 220 | 4.149 |
| SB10W67401 | 5B10W67393 | L19M3PD3 | SDS_Simplo-2107 | SB10W67401_UN38.3 | 3.84 | 11.52 | 56.6 | 220 | 5.898 |
| SB10W67406 | 5B10W67344 | L17M2PF1 | SDS_Simplo-2107 | SB10W67406_UN38.3 | 3.8 | 7.6 | 30 | 150 | 2.40 |
| SB10W67407 | 5B10W67350 | L18M3PF1 | SDS_Simplo-2107 | SB10W67407_UN38.3 | 3.8 | 11.4 | 45 | 220 | 3.60 |
| SB10W67411 | 5B10W67364 | L19M3PF1 | SDS_Simplo-2107 | SB10W67411_UN38.3 | 3.8 | 11.4 | 45 | 220 | 3.60 |
| SB10W69463 | 5B10W69464 | L17M3PG3 | SDS_Simplo-2107 | SB10W69463_UN38.3 | 3.8 | 11.4 | 52.5 | 220 | 4.15 |

Table. 1 Model list of application

| Battery Part Numbers | | | Battery Information | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Lenovo ASM Lenovo PN Part Number** | **Lenovo FRU Part Number** | **Lenovo Model Name** | **MSDS Type #** | **UN DOT 38.3 Test Certificate** | **Cell Voltage (V)** | **Battery Voltage (V)** | **Watt hour Rating (Wh)** | **Weight (grams)** | **Equivalent Lithium Content (grams)** |
| SB10K97646 | 02DL008 | L18M3P73 | SDS_Simplo-2107 | SB10K97646_UN38.3 | 3.84 | 11.52 | 50.45 | 200 | 3.942 |
| SB10K97656 | 02DL018 | L18M6PD2 | SDS_Simplo-2107 | SB10K97656_UN38.3 | 3.80 | 11.4 | 48 | 225 | 3.798 |
| SB10V03234 | 02HM886 | L19M3P71 | SDS_Simplo-2107 | SB10V03234_UN38.3 | 3.84 | 11.52 | 50 | 200 | 3.942 |
| SB10T83119 | 02DL030 | L18M4P90 | SDS_Simplo-2107 | SB10T83119_UN38.3 | 3.84 | 15.36 | 46 | 180 | 3.60 |
| SB10T83124 | 5B10W13881 | L19M4PG1 | SDS_Simplo-2107 | SB10T83124_UN38.3 | 3.84 | 15.36 | 50 | 190 | 3.6 |
| SB10T83149 | 5B10W13906 | L18M3P73 | SDS_Simplo-2107 | SB10T83149_UN38.3 | 3.84 | 11.52 | 50.45 | 200 | 3.94 |
| SB10T83167 | 5B10W13924 | L18M6PD2 | SDS_Simplo-2107 | SB10T83167_UN38.3 | 3.8 | 11.4 | 48 | 225 | 3.80 |
| SB10T83172 | 5B10W13929 | L19M3P71 | SDS_Simplo-2107 | SB10T83172_UN38.3 | 3.84 | 11.52 | 50 | 200 | 3.94 |
| SB10T83176 | 5B10W13933 | L18M4P90 | SDS_Simplo-2107 | SB10T83176_UN38.3 | 3.84 | 15.36 | 46 | 180 | 3.60 |
| SB10W51915 | 5B10W51814 | L20M4P72 | SDS_Simplo-2107 | SB10W51915_UN38.3 | 3.84 | 15.36 | 57 | 230 | 4.3236 |
| SB10W51926 | 5B10W51827 | L18M3P73 | SDS_Simplo-2107 | SB10W51926_UN38.3 | 3.84 | 11.52 | 50.45 | 200 | 3.942 |
| SB10W51941 | 5B10W51842 | L18M6PD2 | SDS_Simplo-2107 | SB10W51941_UN38.3 | 3.8 | 11.4 | 48 | 225 | 3.798 |

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# MATERIAL SAFETY DATA SHEET

Issued/Revised date :January 01 2021
Document No. : SDS_Simplo-2107

## *1. Product and Company Identification*

Product Identification :
Product name: Lithium ion rechargeable battery cell
Product code: All Polymer models BYD manufactured
Cell manufacturers: BYD company limited

## *2. Hazards Identification*

Class Name : Not applicable for regulated class
Hazard : It may cause heat generation or electrolyte leakage if battery terminals contact with other metals. Electrolyte is flammable. In case of electrolyte leakage, move the battery from fire immediately.
Toxicity : Vapor generated from burning batteries, may make eyes, skin and throat irritate.

## *3. Composition / Identification on Ingredients*

***IMPORTANT NOTE:***

The battery should not be opened or burned since the following ingredients contained within the battery that could be harmful under some circumstance if exposed or misused.
The cell contains neither metallic lithium nor lithium alloy.

Composition :
CAS Number: Not specified (3-1 and 3-2)

3-1. Cases: Plastic Material Not dangerous
3-2. Printed Circuit Board Assembly: Not dangerous
3-3. Lithium Ion Cell :

| Hazardous Ingredients | % | CAS Number |
|---|---|---|
| Lithium Cobalt Oxide | 35-45 | 12190-79-3 |
| PVDF | 0.4-2.0 | 24937-79-9 |
| CNT | 0.1-3 | 7440-44-0 |
| Carbon | 15-25 | 7440-44-0 |
| PTFE | 0.4-2.0 | 9002-84-0 |
| Electrolyte (EC/DEC/EMC/$LiPF_6$) | 10-20 | 96-49-1<br>105-58-8<br>2485-62-3<br>21324-40-3 |
| Additive(VC) | 0.6-0.9 | 872-36-6 |
| PE | 1-5 | - |
| PP | 0.3-2.0 | - |
| Copper | 5-15 | 7440-50-8 |

| | | |
|---|---|---|
| Aluminum | 10-25 | 7429-90-5 |
| Nickel | 0.1-1.0 | 7440-02-0 |

## *4. First Aid Measures*

Batteries do not present a health hazard under normal use and handling. First-aid measures in the event of exposure to internal cell contents are:

Inhalation : Remove to fresh air immediately. If breathing is difficult, seek emergency medical attention.

Skin contact : May cause skin irritation , Remove contaminated clothes and shoes immediately. Wash extraneous matter or contact region with soap and plenty of water immediately.

Eye contact : May cause eye irritation , Do not rub one's eyes. Immediately flush eyes with water continuously for at least 15 minutes. Seek medical attention immediately.

Ingestion : Ingestion of battery chemicals can be harmful, Make the victim vomit. When it is impossible or the feeling is not well after vomiting, seek medical attention.

## *5. Fire Fighting Measures*

Use specified extinguishers (gas, foam, powder) and extinguishing system under the Fire Defense Law.
Since corrosive gas may be produced at the time of fire extinguishing, use an air inhalator when danger is predicted.
Use a large amount of water as a supportive measure in order to get cooling effect if needed. (Indoor/outdoor fire hydrant)
Carry away flammable materials immediately in case of fire.
Move batteries to a safer place immediately in case of fire.

## *6. Accidental Release Measures*

Wipe off with dry cloth
Keep away from fire
Wear safety goggles, safety gloves as needed

## *7. Precautions for Safe Handling and Use*

Storage: Store within the recommended limit of -20℃ to 45℃ (-4℉ to 113℉), well-ventilated area. Do not expose to high temperature (60℃/140℉). Since short circuit can cause burn hazard or gas release, do not store with metal jewelry, metal covered tables, or metal belt. The lithium ion battery should be between 25% and 75% of full charge when stored for a long period of time. Store in a cool, dry, well-ventilated area. And temperature above 100 Celsius degree can result in loss of battery performance, leakage, or rust. Do not expose the battery to open flames..

Handling : Do not disassemble, remodel, or solder. Do not short + and - terminals with a metal. Do not open the battery.

Charging: Charge within the limits of 0℃ to 45℃ (32℉ to 113℉) temperature. Charge with specified charger designed for this battery.

Discharging : Discharge within the limits of -20℃ to 60℃ (-4 ℉ to 140℉) temperature. Disposal : Dispose in accordance with applicable federal, state and local regulations. Caution : Fire, Explosion, and Severe Burn Hazard. Do not Crush, Disassemble, Heat Above 100℃/212℉, or Incinerate.

## *8. Exposure Controls / Personal Protection (In case electrolyte is leaked from battery)*

Acceptable concentration : Not specified in ACGIH. Facilities : Provide appropriate ventilation such as local ventilation system in the storage. Protective clothing : Gas mask for organic gases, safety goggle, safety glove.

## *9. Physical and Chemical Properties*

| | |
|---|---|
| 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*

External short-circuit, deformation by crush, high temperature (over 100℃) exposure of a battery cause generation of heat and ignition.

## *11.Toxicological Information*

Acute toxicity : No information as a battery.
Local effects : No information as a battery.

## *12.Ecological Information*

When exhausted battery is buried in the ground, corrosion may be caused on the outer case of battery and electrolyte may be oozed. There is no information on environmental influence.

## *13.Disposal Consideration*

When battery is disposed, isolate positive (+) and negative (-) terminals of the battery to avoid those terminals from touching each other. Batteries may be short-circuited when piled up or mixed with the other batteries in disorder. Dispose in accordance with applicable federal, state and local regulations

## *14.Transport Information*

In the case of transportation, avoid exposure to high temperature and prevent the formation of any condensation. Take in a cargo of them without falling, dropping and breakage. Prevent collapse of cargo piles and wet by rain. The container must be handled carefully. Do not give shocks that result in a mark of hitting on a cell. Please refer to Section 7-HANDLING AND STORAGE also.

***UN regulation***

UN number: 3480 (3481 when the battery is contained in equipment or packed with equipment) Proper shipping name: Lithium ion batteries (“lithium ion batteries contained in equipment” or “lithium ion batteries packed with equipment”) Class: 9 * * Although this product meets the criteria of “dangerous goods” and are classified as “lithium ion batteries”, depending on the battery’s total capacity in the packaging, etc., they may not be subject to the fully regulated provisions.

***Regulation depends on region and transportation mode***

Worldwide - Air transportation:
ICAO/IATA-DGR [packing instruction 965 section IB or II] (When shipping batteries "packed with" or "contained in" equipment, use packing instruction 966 or 967 as appropriate.)

Worldwide - Ocean transportation:
IMO-IMDG Code [special provision 188 and 230]
Europe - Ground transportation: ADR [special provision 188 and 230]

** Instructions or provisions in the box brackets are conditions to make the battery cell exempted from full regulation.*

## *15.Regulatory Information*

IMDG Code: International Maritime Dangerous Goods (IMDG) Code 2020 Edition (Amendment 40-20)
ICAO TI: International Civil Aviation Organization (ICAO) Technical Instructions for the Safe Transport of Dangerous Goods by Air 2021-2022 Edition
IATA DGR: International Air Transport Association (IATA) Dangerous Goods Regulations (62nd Edition, 2021)

## *16.Other Information*

The information contained herein is furnished without warranty of any kind, Users should consider this data only as a supplement to other information gathered by them and must make independent determinations of the suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers.