

LI-ION POWER TECHNOLOGY CO.,LTD.

3.2V 150AH

——LPT150AF 

TECHNICAL DATA SHEET

6000 life cycles

2C Continuous

2.6C Peak

MSDS
UN38.3



SPECIFICATION SUMMARY

1. Model

LPT150AF

2. Rated capacity

150Ah (Discharge current:1C)

3. Minimum capacity

150Ah

1C(Discharge current:1C)

4. Nominal voltage

3.2V

5. Operating voltage

2.5V-3.65V $T > 0^{\circ}\text{C}$

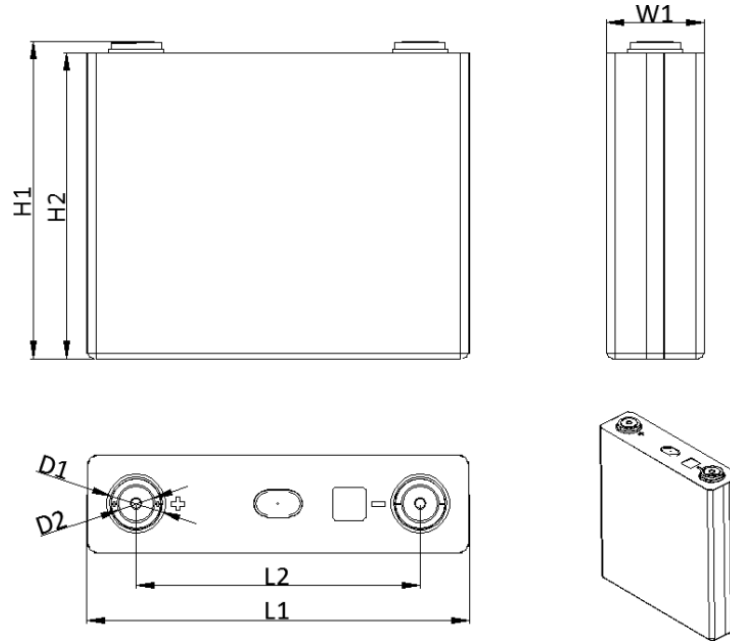
2.0V-3.65V $T \leq 0^{\circ}\text{C}$

6. Average AC IMP (1KHz)

≤ 0.35 (m Ω) (Fresh cell)

7. Self-discharge (rate/month)

$\leq 4\%$ ($25^{\circ}\text{C} \pm 5^{\circ}\text{C}$)



No.	Code	Dimension (mm)
1	L1	174.2 \pm 0.5
2	L2	129.3 \pm 0.5
3	H1	189.6 \pm 0.5
4	H2	184.6 \pm 0.5
5	W1	44.7 \pm 0.5

SPECIFICATION SUMMARY

8. Delivery SOC

30%SOC

9. Charge temperature

0°C-55°C

10. Discharge temperature

-20°C-55°C

11. Storage temperature

-10°C ~ 45°C

12. Cell weight

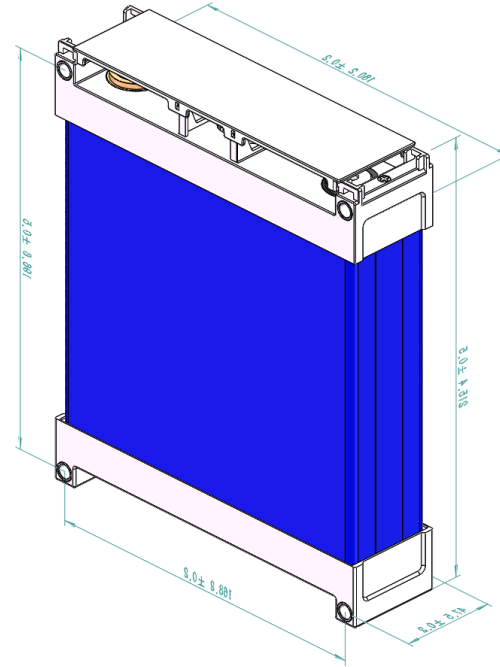
3.12 kg±0.05kg

13. Dimension

W*L*H=(44.7±0.5)*(174.2 ±0.5)*(184.6±0.5)mm³

14. Cycle life

After 4000cycles , the discharge capacity≥80%)



47.5*180.2*198mm with endcaps

CHARGING MODE & PARAMETERS

1. Nominal charge current

0.5C (25°C±5°C)

2. Maximum continuous charge current

1C (25°C±5°C)

3. Charge cut-off voltage

3.65V (25°C±5°C)

4. Standard charging method

0.5C (CC-CV 0.5C to limited charge voltage at 0.05C)

5. Nominal charge temp

25±5°C (Cell temp)

6. Temp range of charging

0°C~55°C





CHARGING MODE & PARAMETERS

7. Other Charging Modes

Cell temp	Nominal charge	Fast charge	10S Pulse charge
$<0^{\circ}\text{C}$	No charging	No charging	No charging
$0^{\circ}\text{C} \sim 10^{\circ}\text{C}$	1/3C	0.5C	1C
$10^{\circ}\text{C} \sim 20^{\circ}\text{C}$	0.5C	1C	2C
$20^{\circ}\text{C} \sim 30^{\circ}\text{C}$	0.5C	1C	400A
$30^{\circ}\text{C} \sim 40^{\circ}\text{C}$	0.5C	1C	2C
$40^{\circ}\text{C} \sim 55^{\circ}\text{C}$	1/3C	0.5C	1C
$>55^{\circ}\text{C}$	No charging	No charging	No charging



DISCHARGING MODE & PARAMETERS

Section No.	Parameter	Specification	Condition
1	Nominal discharge current	1C	25°C ±5°C
2	Maximum continuous discharge current	2C	25°C ±5°C
3	Maximum pulse discharge current	400A	Temp.<50 degree (SOC>40%: 60s; SOC<40%: 10s)
4	Cut-off voltage	2.5V (Unit Cell)	25°C ±5°C
5	Nominal discharge temp	25±5°C	Cell temp
6	Temp range of discharge temp	-20°C-55°C	The discharging must be stopped immediately when the cell temperature is beyond -20 °C to 55 °C



DISCHARGING MODE & PARAMETERS

7 Other discharge modes

Cell temp	Nominal continuous discharge	Continuous discharge with varied C-Rate	Pulse discharge(10s)
<-40°C	No discharging	No discharging	No discharging
-40°C~-20°C	0.1C	0.5C	0.5C
-20°C~0°C	1C	1C	2C
0°C~55°C	1C	2C	400A
>55°C	No discharging	No discharging	No discharging



LOW TEMPERATURE DISCHARGE CAPACITY

Section No.	Parameter	Specification	Condition
1	Discharge capacity at 25°C	$\geq 100\%$	Standard charging\discharging at 25°C (The temperature of the both sides of the cell)
2	Discharge capacity at 0°C	$\geq 90\%$	Standard charging\discharging at 25°C\0°C(The temperature of the both sides of the cell)
3	Discharge capacity at -10°C	$\geq 85\%$	Standard charging\discharging at 25 °C\ -10 °C(The temperature of the both sides of the cell)
4	Discharge capacity at -20°C	$\geq 70\%$	Standard charging\discharging at 25 °C\ -20 °C(The temperature of the both sides of the cell)



TEMP RISE OF CELLS

The temperature rise of each cell is measured in the middle of the wide surface of the cell, and the cell should be cooled by natural convection in a room where the ambient temperature is relatively stable and the space is large enough. Temperature sensors for each cell should

be calibrated and can record time. Under such conditions, the temperature rise refers to the difference between the temperature after discharge and the temperature before discharge.

Section No.	Parameter	Specification	Condition
1	Continuous discharging temp rise	$\leq 10^{\circ}\text{C}$	The fully charged cell discharge with a constant current of 1C to 2.5V)
2	Pulse discharging temp rise	$\leq 5^{\circ}\text{C}$	(SOC $\geq 10\%$, 400A discharge 10s)

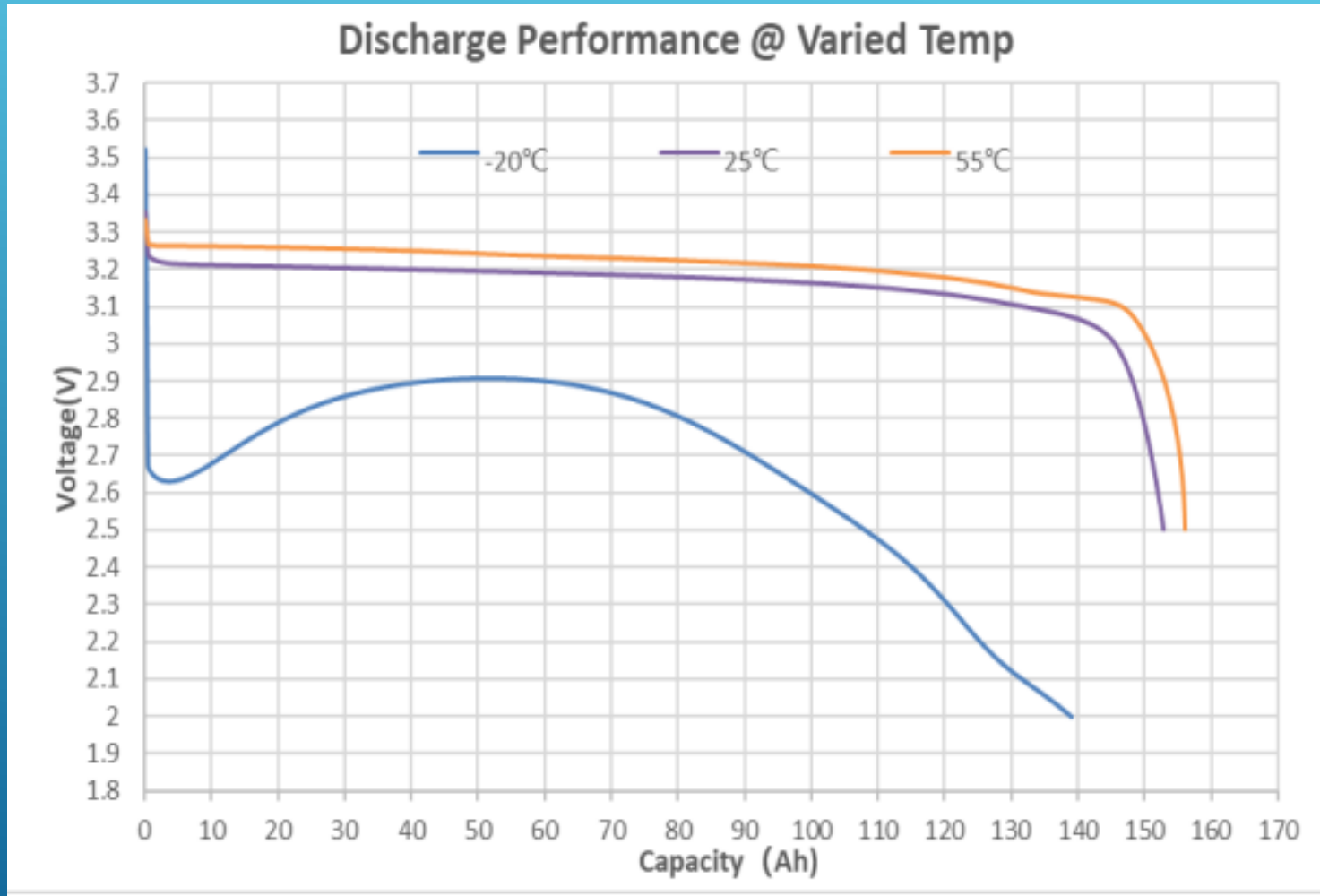


STORAGE AND SHIPMENT REQUIREMENT

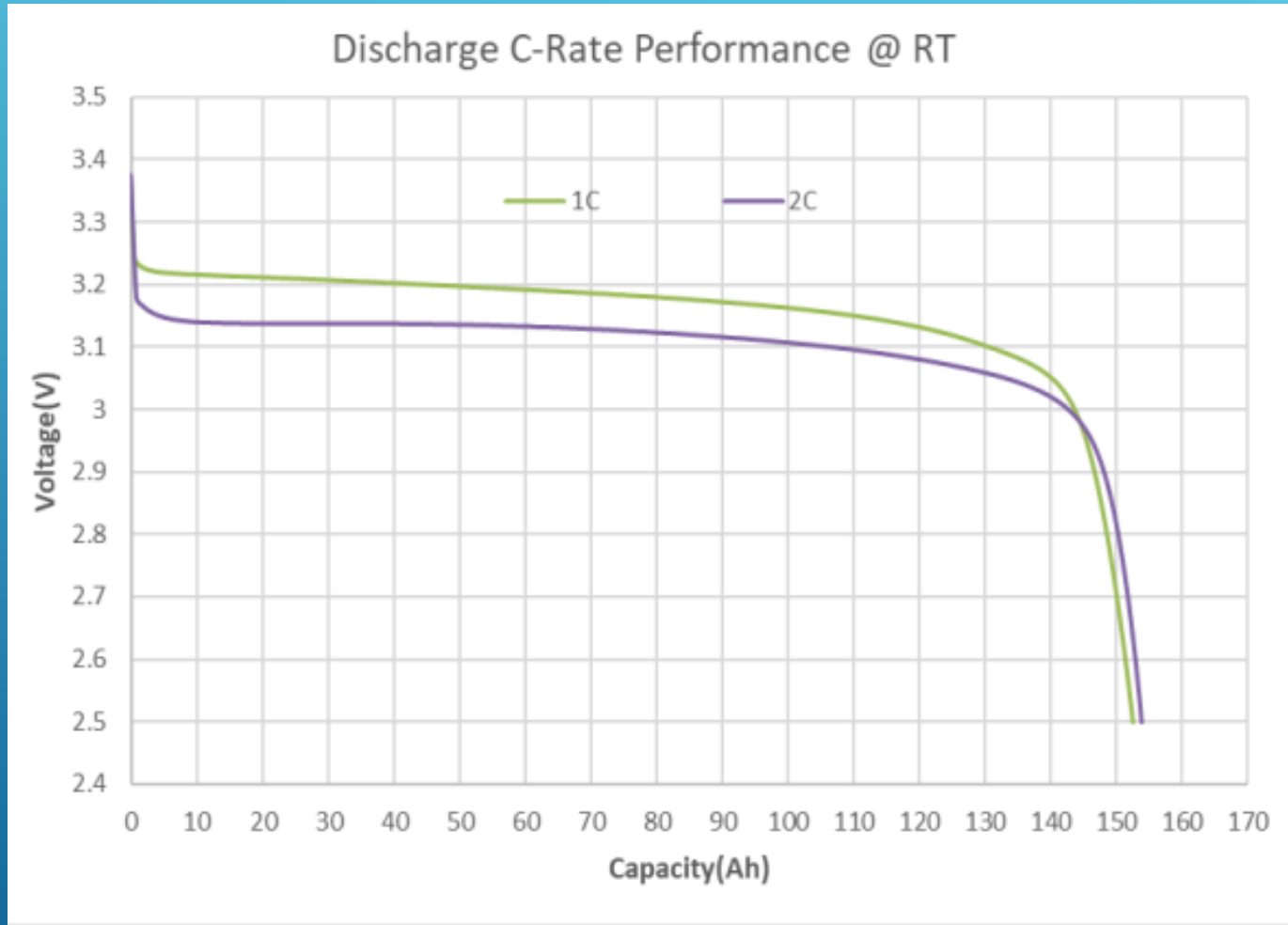
Item		Criteria
Storage temperature	Less than 1 month	-10°C–45°C
	Less than 3 months	-10°C–35°C
	More than 3 months	0°C–30°C
Relative humidity		≤75% RH
State of charge		30%(30% SOC)

When the cell is not used for a long time, the cell should be charged and discharged every three months, and adjust the SOC to 30%.

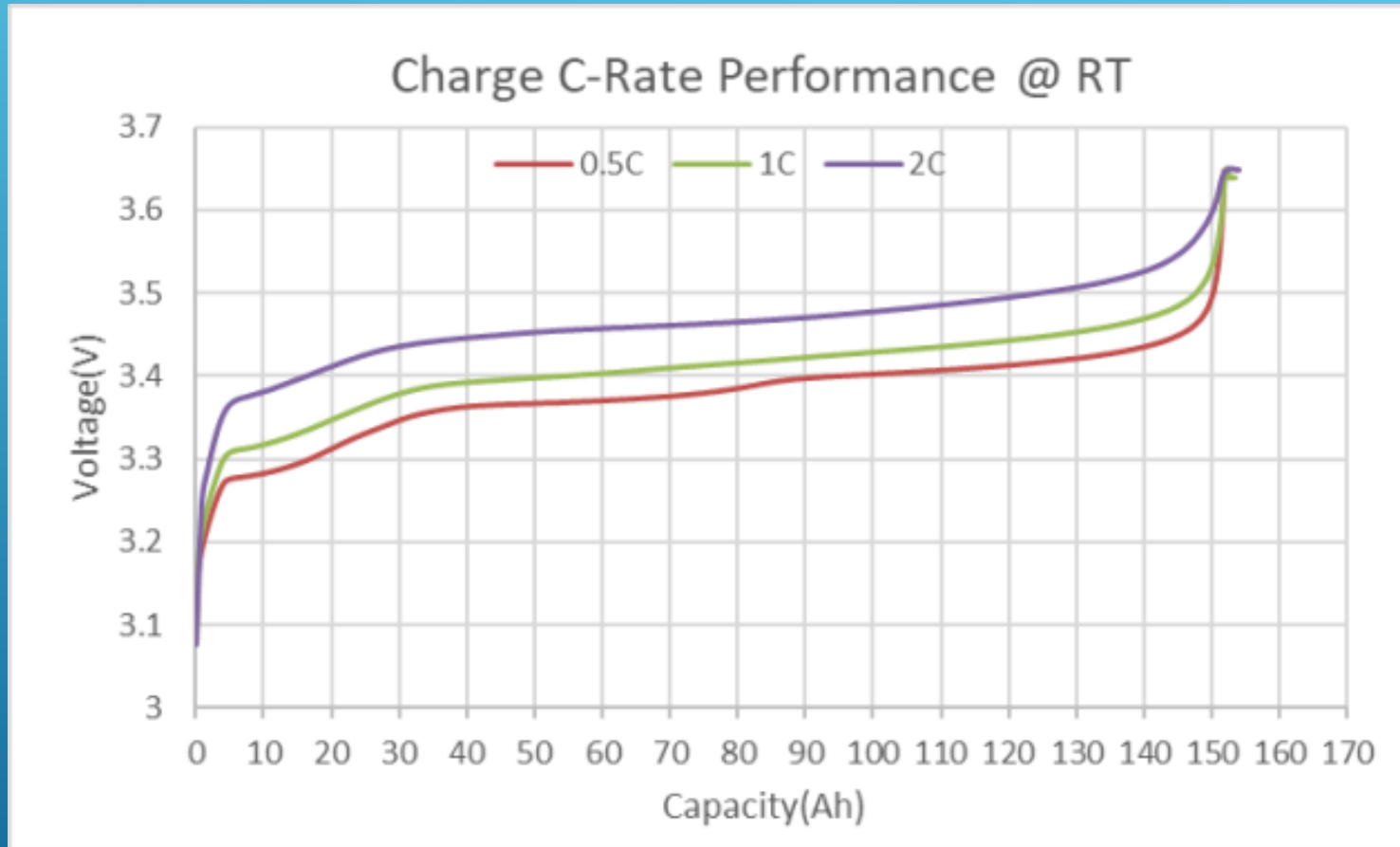
TECHNICAL CURVES



TECHNICAL CURVES



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▶ Shipment

- ▶ The Cell shall be shipped in voltage range of 3.2 ~ 3.4V or in accordance with customers' requirement. The remaining capacity before charging shall be changed depending on the storage time and conditions.

▶ Warranty

- ▶ The Warranty period of cell is made according to business contract, However, even though the problem occurs within this period, LPT won't replace a new cell for free as long as the problem is not due to the failure of LPT manufacturing process or is due to customer's abuse or misuse.
- ▶ LPT will not be responsible for trouble occurred by handling outside of the precautions in instructions. LPT will not be responsible for trouble occurred by matching electric circuit, cell pack and charger.
- ▶ LPT will be exempt from warrant any defect cells during assembling after acceptance.

▶ Precautions and Safety Instructions

- ▶ Lithium-ion rechargeable batteries subject to abusive conditions can cause damage to the cell and/or personal injury. Please read and observe the standard cell precautions below before using utilization. The customer is required to contact LPT in advance, if and when the customer needs other applications or operating conditions than those described in this document.
- ▶ LPT will take no responsibility for any accident when the cell is used under other conditions than those described in this Document.

▶ Standard cell Precautions

- ▶ a. Do not expose the cell to extreme heat or flame.
- ▶ b. Do not short circuit, over-charge or over-discharge the cell.
- ▶ c. Do not subject the cell to strong mechanical shocks.
- ▶ d. Do not immerse the cell in water or sea water, or get it wet..
- ▶ f. Do not disassemble or modify the cell.
- ▶ g. Do not handle or store with metallic like necklaces, coins or hairpins, etc.
- ▶ h. Do not use the cell with conspicuous damage or deformation.
- ▶ i. Do not connect cell to the plug socket or car-cigarette-plug.
- ▶ j. Do not make the direct soldering onto a cell.
- ▶ k. Do not touch a leaked cell directly.
- ▶ l. Do not use for other equipment.
- ▶ m. Do not use Lithium-ion cell in mixture.
- ▶ n. Do not use or leave the cell under the blazing sun (or in heated car by sunshine).
- ▶ o. Keep cell away from children.
- ▶ p. Do not drive a nail into the cell, strike it by hammer or tread it.
- ▶ q. Do not give cell impact or fling it.

▶ Cell Operation Instructions

▶ Charging

- ▶ a. Charge the cell in a temperature range of 0°C to + 50°C.
- ▶ b. Charge the cell at a constant current of 0.3C until 3.65V, and then at a constant voltage of 3.65V until 0.05C. Charge rates greater than 1C are NOT recommended. (C : Rated Capacity of cell)
- ▶ c. Use a constant current, constant voltage (CC/CV) lithium-ion (Li+) cell charge controller.
- ▶ d. Do not continue to charge cell over specified time.

▶ Discharging

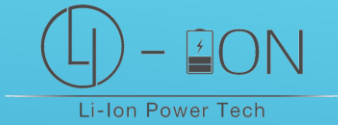
- ▶ a. Recommended cut-off voltage to 2.2V. Recommended max continuous discharge current is 3C.
- ▶ b. For maximum performance, discharge the cell in a temperature range of -20°C to +50°C.

▶ Storage Recommendations

- ▶ In case of long period storage (more than 3 months), storage the cell at temperature range of -10 ~ +45°C, low humidity, no corrosive gas atmosphere, No press on the cell; After more than 3 months, the batteries need to be charged according to the standard charge and discharge process.



BATTERY PACKS MADE OF 3.2V 150AH CELLS



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- ▶ USA Office: 7427 South Main Street, Midvale, Utah 84047
- ▶ China Factory: No.8, Dongtin Lake Road, Economic and Development Zone, Qinhuangdao, China.

▶ **Welcome to Contact:**

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