



**SD Power Group Limited.**

**LiFePO<sub>4</sub>**

**File Number:**  
**SDA/1**

**SD Power Group Limited.**

**24V 100Ah LiFePO<sub>4</sub>  
Battery Specification  
Sheet**

Model: SDL 24-100

Customer Name: \_\_\_\_\_

Customer Confirmation: \_\_\_\_\_

Date: 2019.08.18

Formulate

Proof

Verify

Authorize



**SD Power Group Limited.**

**LiFePO<sub>4</sub>**

**File Number:**  
**SDA/1**

**Contents**

1. Scope ..... 1

2. Product ..... 1

3. Product Parameters..... 1

4. Battery Picture ..... 2

5. Test Conditions ..... 2

6. Battery Cell Performance..... 4

7. Safety ..... 5

8. Cautions in Use ..... 7

9. The end ..... 8



# SD Power Group Limited.

LiFePO4

File Number:  
SDA/1

## 1. Scope

This specification describes the property indexes and technical requirements of the 24V100Ah rechargeable Lifepo4 lithium ion battery manufactured by SD Power Group Limited.(hereinafter to be referred as SD Power Group ).

## 2. Product

2.1 Product Name: LiFePO4 Battery Pack

2.2 Model: SDL 24-100

## 3. Product Parameters

No.	Item		Parameters	Remark
3.1	Rated Capacity		100Ah	Standard discharge after standard charge
3.2	Nominal Voltage		25.6V	Operating voltage
3.3	Charge Method		CC/CV	Constant current, constant voltage
3.4	Charge Voltage		29.2V	
3.5	Discharge Cut-off Voltage		20.0V	Voltage at end of discharge
3.6	Standard Charge Current		Max 50A (0.2C-0.5C)	
3.7	Max Continuous Discharge Current		100A	
3.8	Weight (approx.)		21.2kg	
3.9	Battery Dimension (L×W×H)		520*245*220mm Or Customized	
3.10	Operation Temperature Range	Charge	0~45℃	
		Discharge	-20~60℃	
		One Month	-20~60℃	

3.11	Storage Temperature Range	3 Months	-20～45℃	
		6 Months	-20～25℃	
	Atmospheric Pressure		86～106kPa	
	Relative Humidity		25%～85%RH	



**SD Power Group Limited.**

**LiFePO<sub>4</sub>**

**File Number:  
SDA/1**

## 4. Battery Picture



## 5. Test Conditions

### 5.1 Standard Test Conditions

All the tests mentioned in this specification should be conducted under standard temperature of  $23\pm 3^{\circ}\text{C}$  and relative humidity of 45~85% and atmospheric pressure 86~106kpa.

### 5.2 Measuring Instrument or Apparatus



All of the measuring instruments and facilities (include the equipment which monitor the test parameters) should be verified and calibrated qualified by relevant Chinese Calibration Regulation or certain standards within the valid date. All the test instruments and equipment should have the properties of adequate precision and stability, and the precision should be an order higher than the tested indicators or the tolerance should be less than one third of the tested parameters.

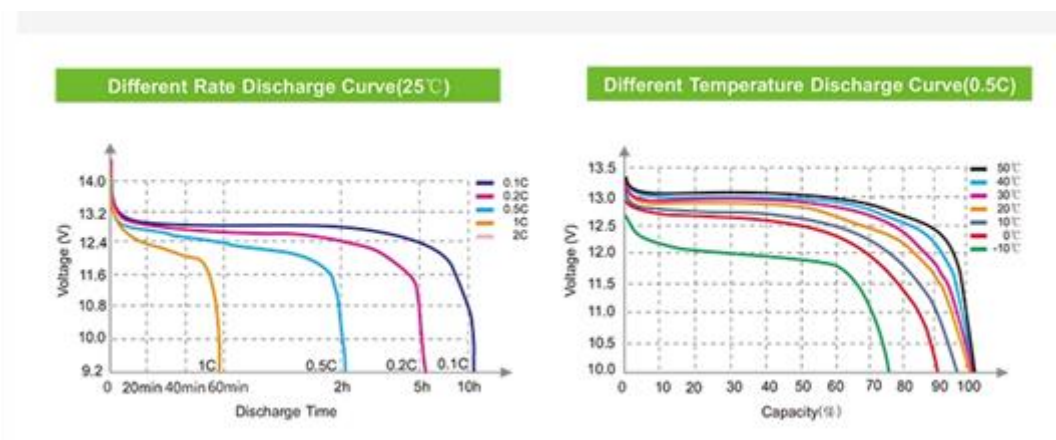
Item	Description	Dimension
L	Length	525mm ±1mm
W	Width	240mm±1mm

### 5.3 Standard Charging

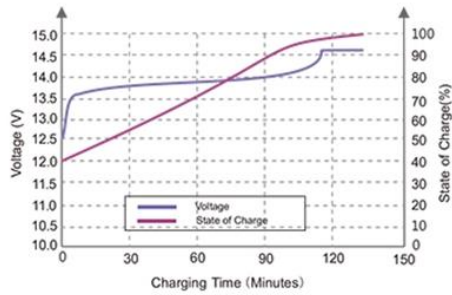
Charging shall consist of charging at a  $0.2C_5A$  constant current rate until the battery reaches 14.6V. The battery shall then be charged at constant voltage of 14.6 volts while tapering the charge current. Charging shall be terminated when the charging current has tapered to 0.01 C. Charge time: Approx 5.5h, The battery shall demonstrate no permanent degradation when charged between 0 °C and 45 °C.

### 5.4 Standard Discharging

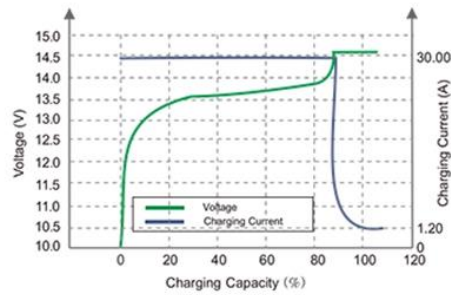
The battery should be discharged at a constant current of  $0.2C_5A$  to 10.0 volts @ 23° ± 3C



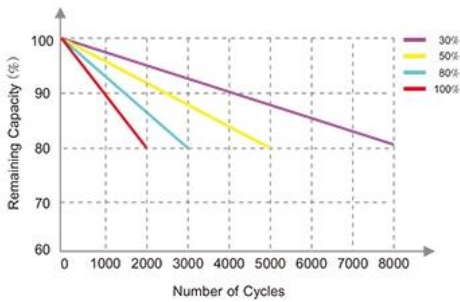
State of Charge Curve(0.5C, 25℃)



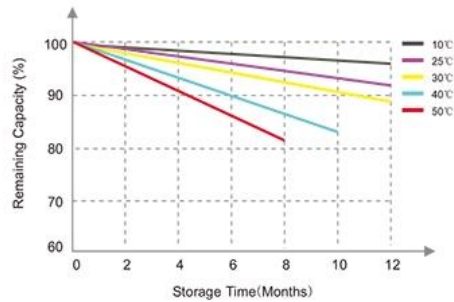
Charging Characteristics(0.5C, 25℃)



Different DOD Discharge Cycle Life Curve(1C)



Different Temperature Self Discharge Curve



**SD Power Group Limited.**

**LiFePO4**

**File Number:  
SDA/1**

## 5.5 Others

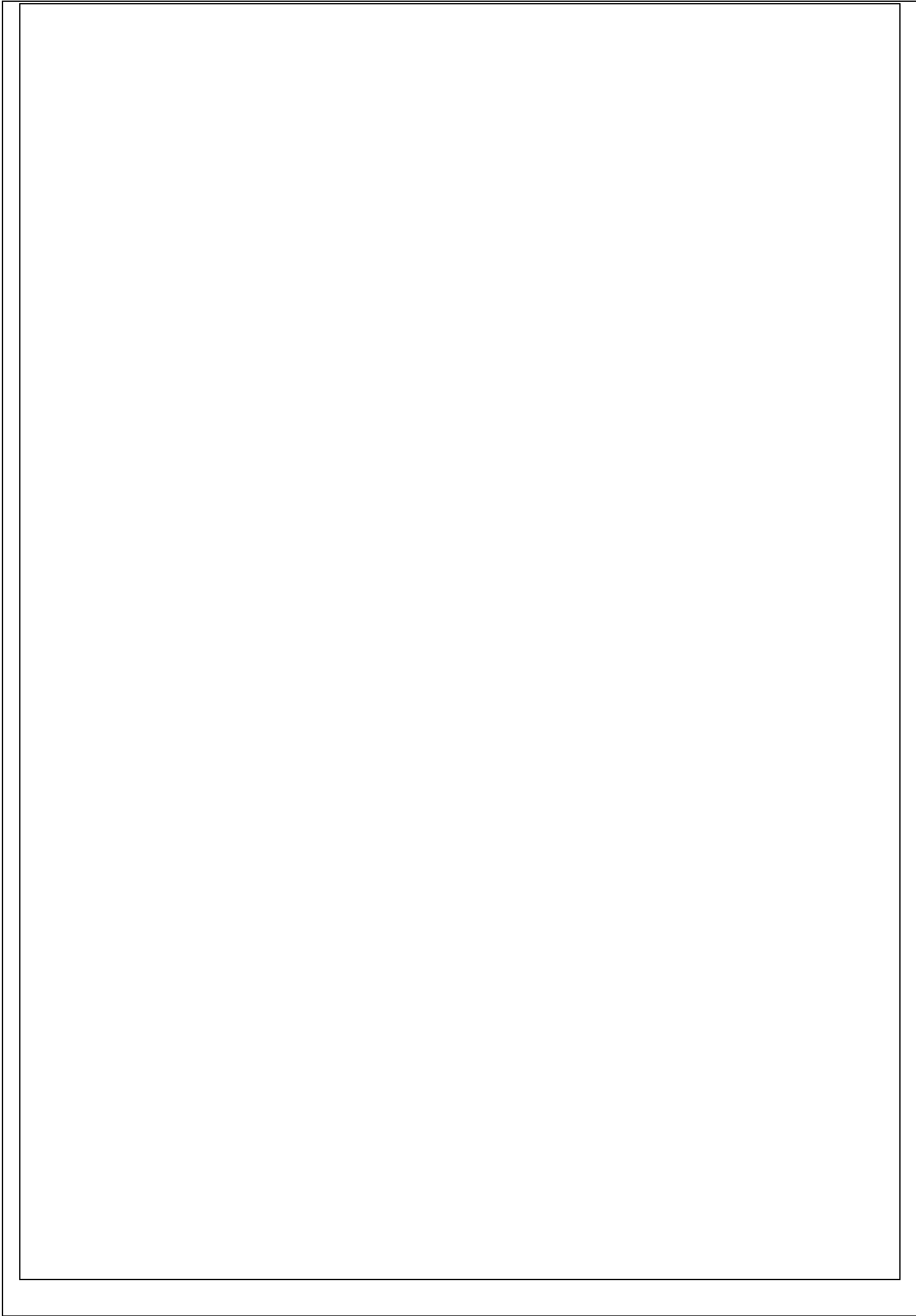
If no otherwise specified, the rest time between Charge and Discharge amount to 30min.

## 6. Battery Cell Performance

### 6.1 Electrical Characteristics

NO	Item	Technical Requirements	Test Method
1	Appearance	The battery should be no damage, leakage, oil contamination and should be legibly marked.	Visual Inspection
			After the process of standard charging, the battery
2	Discharging Characteristics Under Nominal temperature	Discharging Capacity/Nominal Capacity×100% A) 0.3CA ≥100% B) 0.5CA ≥98% C) 1CA ≥95%	should be set aside for 1 hour, afterwards, discharging it at the current of 0.3C(A)、0.5C(A)、1C(A) separately until it reaches to minimum voltage of 2.5V, the test is allowed to be repeat 3 times if the discharging capacity can't reach to the nominal one.







**SD Power Group Limited.**

**LiFePO<sub>4</sub>**

**File Number:  
SDA/1**

## 7. Safety

NO Item Technical Requirements Test Method

### 7.1 Over-charge

Test No explosion, No fire

After the process of standard charging, shelving the battery for 1 hour at the ambient temperature of  $20^{\circ}\text{C} \pm 5^{\circ}\text{C}$ . Afterwards, charging the battery at the current of 1C(A) until it reaches to 5V which should be conducted under the same temperature.

### 7.2 Over-discharge

Test No Explosion, No Fire After the process of standard charging, shelving the battery for 1 hour at the ambient temperature of  $20^{\circ}\text{C} \pm 5^{\circ}\text{C}$ . Afterwards, charging the battery at the current of 0.3C(A) until it reaches to 0V at the same temperature.

### 7.3 Short-Circuit

Test No Explosion, No Fire After the process of standard charging, shelving the battery for 1 hour at the ambient temperature of  $20^{\circ}\text{C} \pm 5^{\circ}\text{C}$ . Afterwards, shorting circuit it for 10mins, and make sure the resistance of outside line should be less than 10m $\Omega$ .

### 7.4 Nail Penetration

Test No Explosion, No Fire After the process of standard charging, shelving the battery for 1 hour at the ambient temperature of  $20^{\circ}\text{C} \pm 5^{\circ}\text{C}$ . Afterwards, penetrating the battery rapidly with a steel spike of  $\phi 3\text{mm} \sim \phi 8\text{mm}$  which should be perpendicular to the accumulator electroplating(the steel spike should stay inside of the accumulator).

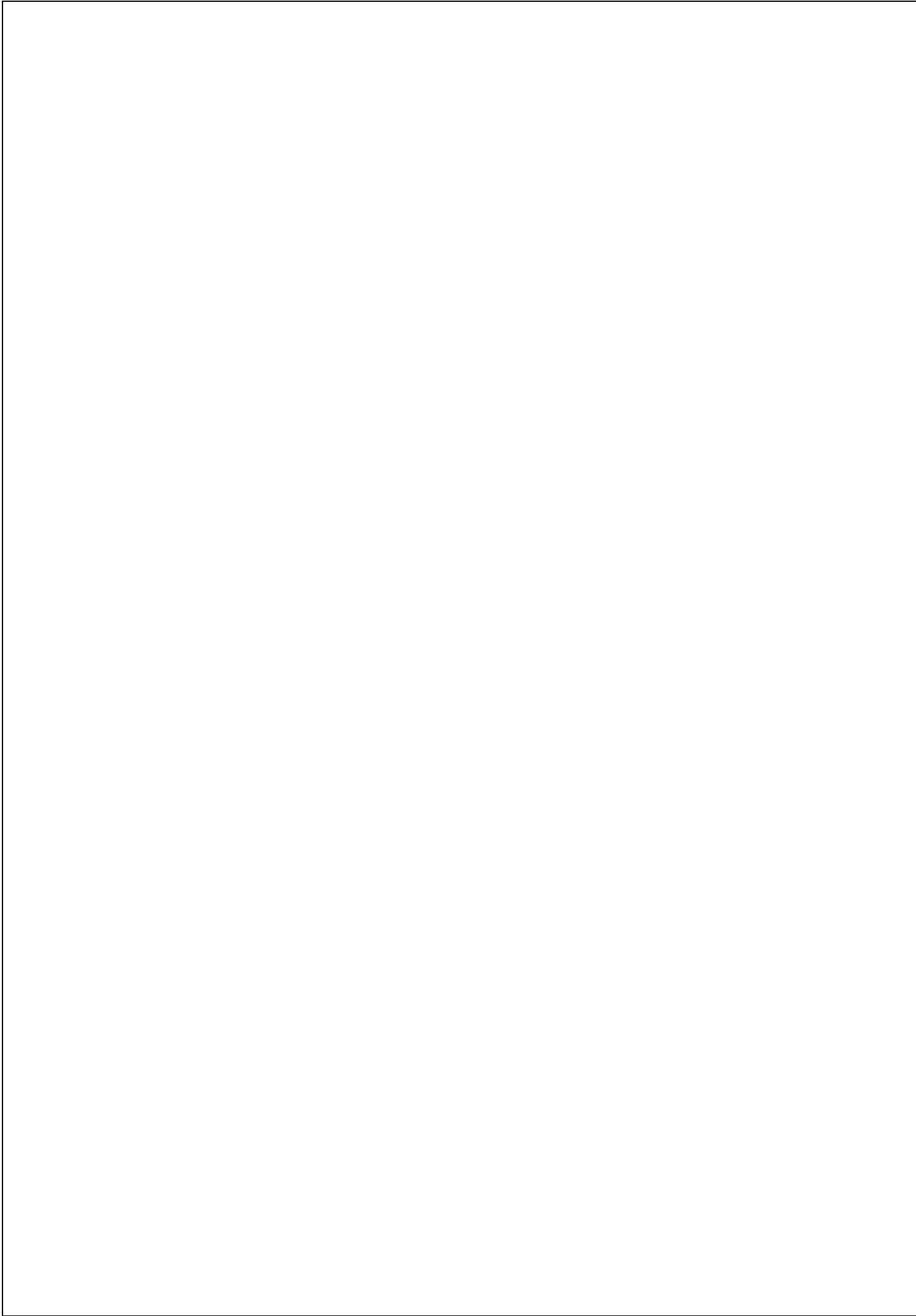
### 7.5 Extrusion Test No explosion, No Fire

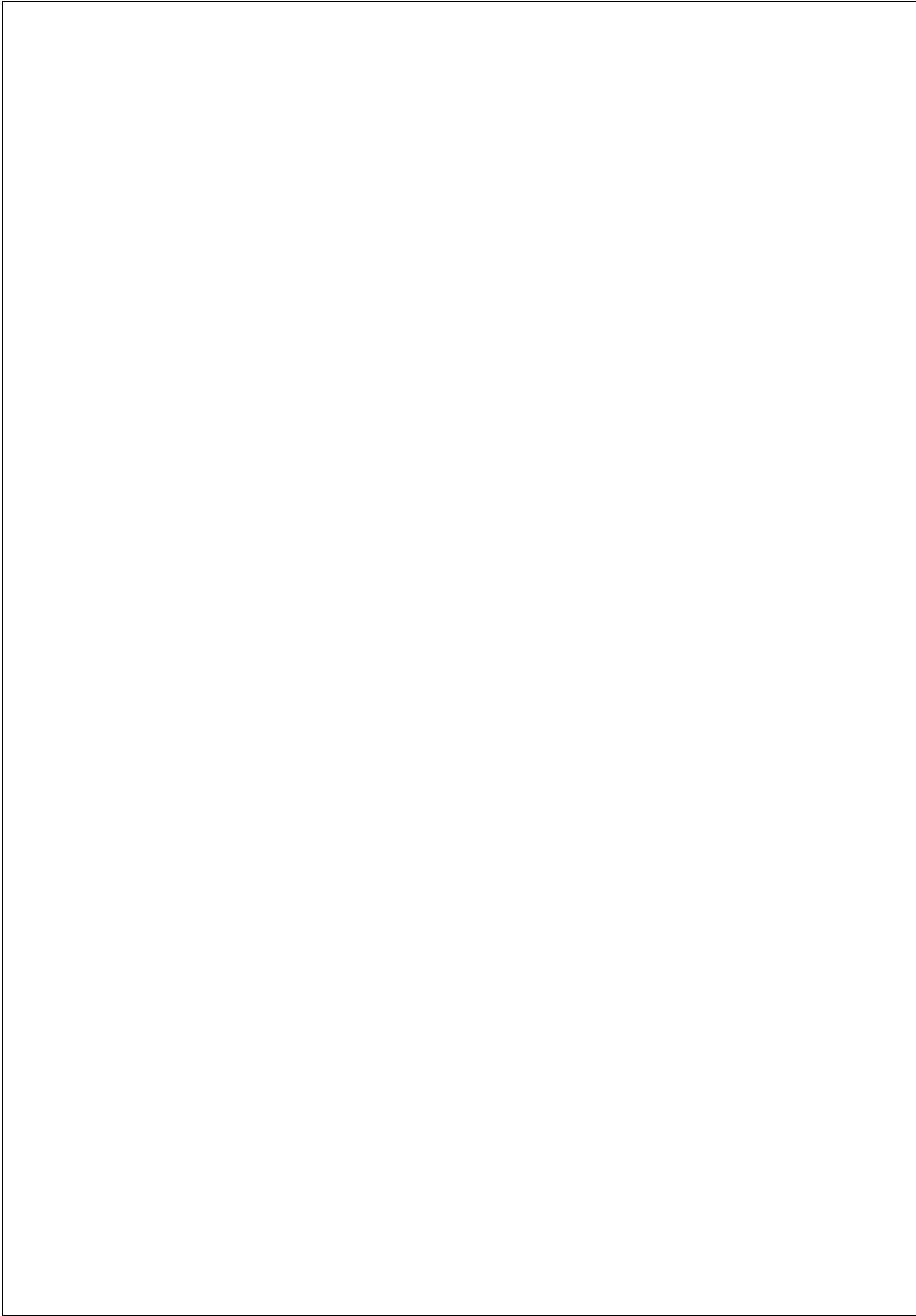
After the process of standard charging, shelving the battery for 1 hour at the ambient temperature of  $20^{\circ}\text{C} \pm 5^{\circ}\text{C}$ . Afterwards, conducting the experiment in line with the conditions as listed below:

- Extrusion Direction: Pressing the battery perpendicularly to the accumulator electroplating.
- Extrusion Extent: Stop until the shell cracks or short circuit inside(the voltage of battery turns to be 0(V))

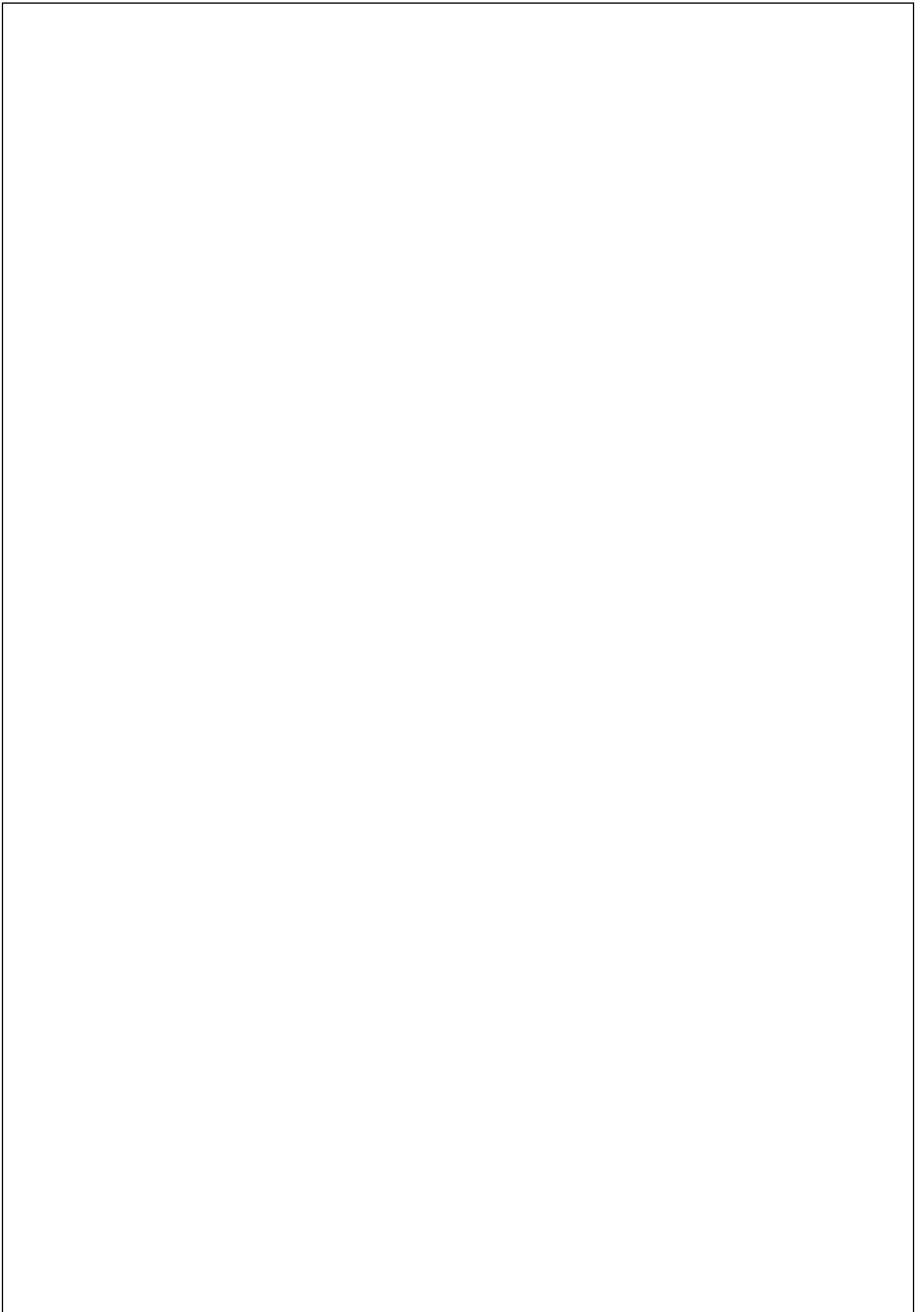
### 7.6 Drop Test No explosion, no fire

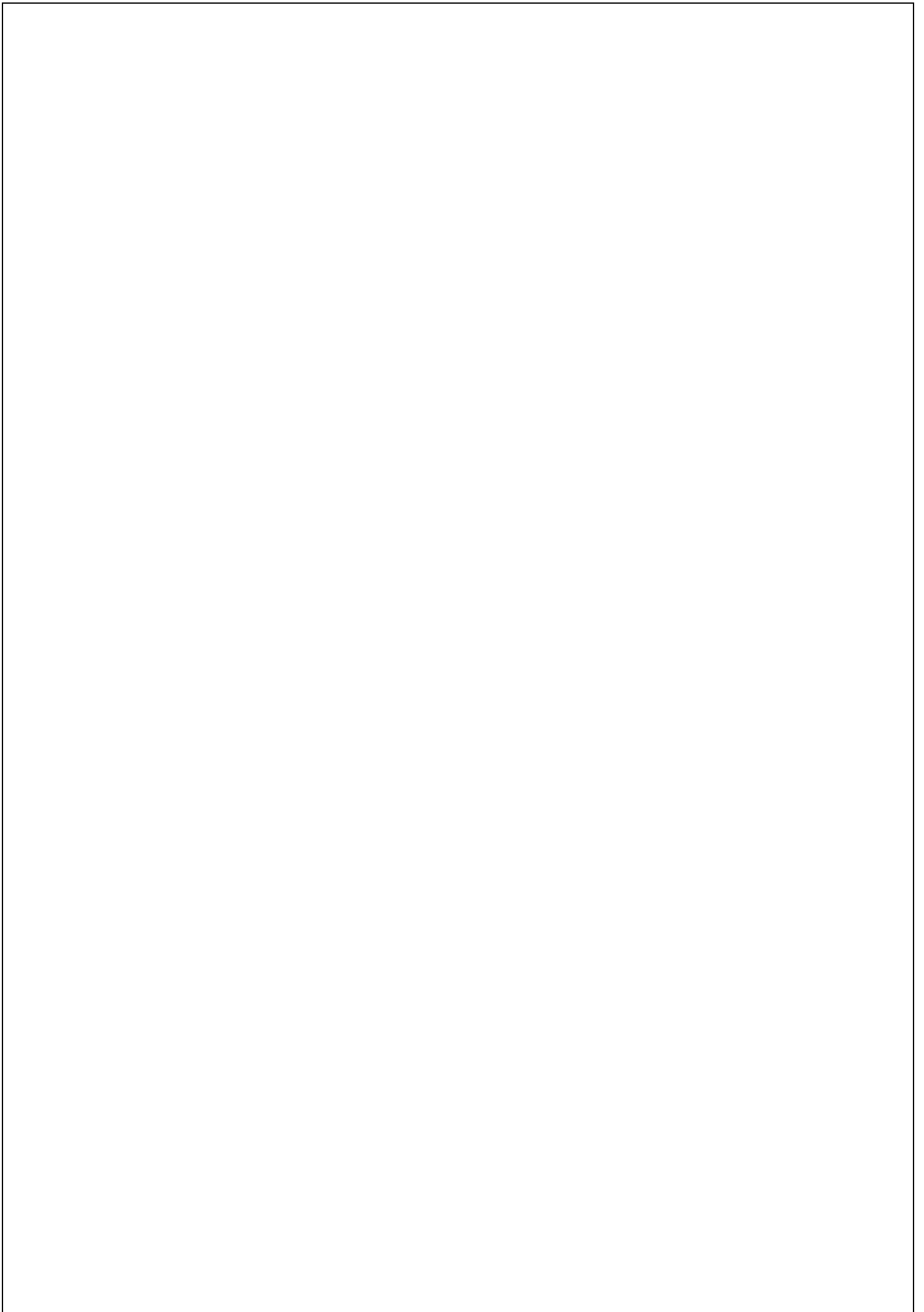
After the process of standard charging, shelving the battery for 1 hour under the ambient temperature of  $20^{\circ}\text{C} \pm 5^{\circ}\text{C}$ . Afterwards, dropping the battery to the ground from a height of 1.5M. and it is required that the drop should be repeat

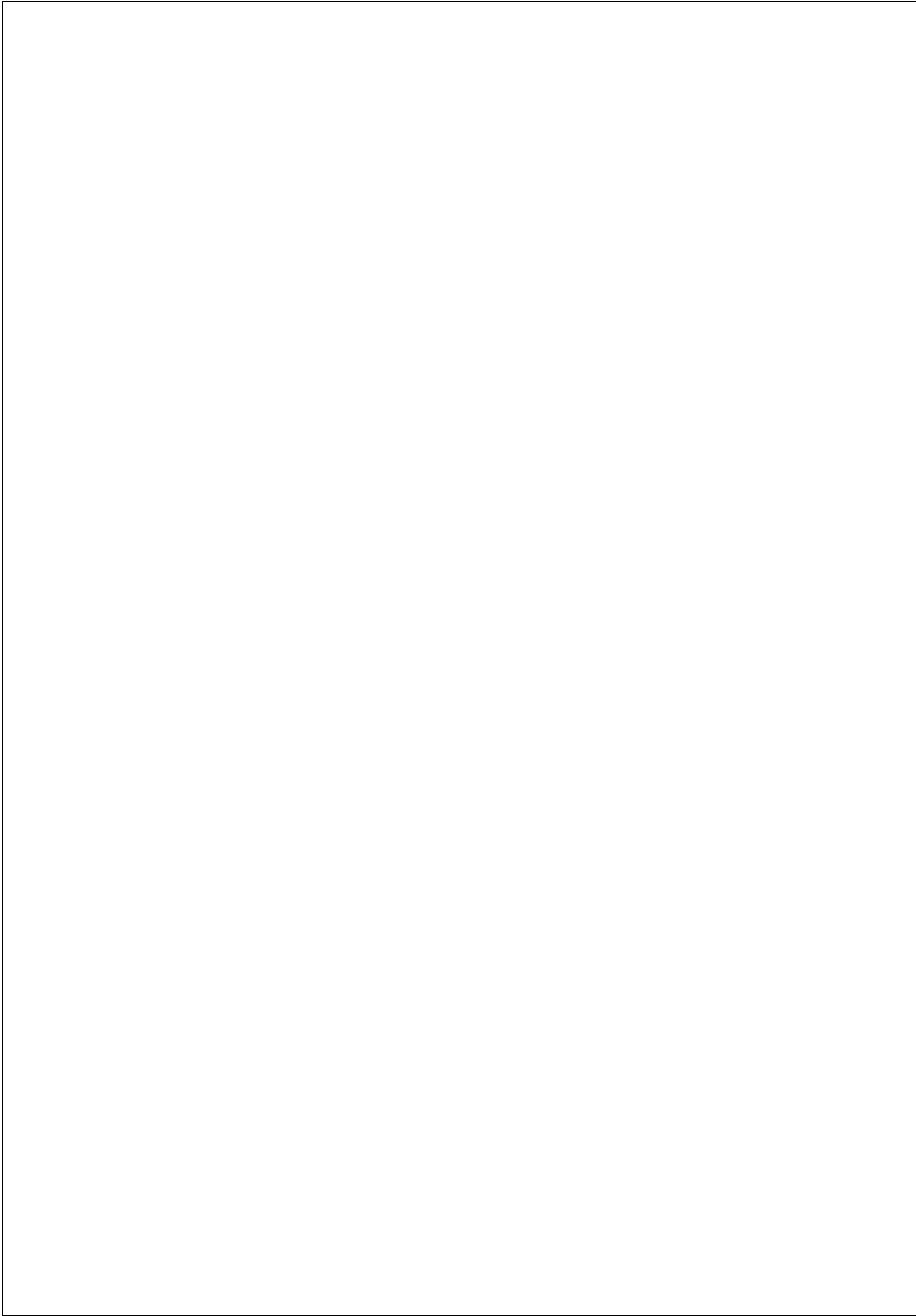


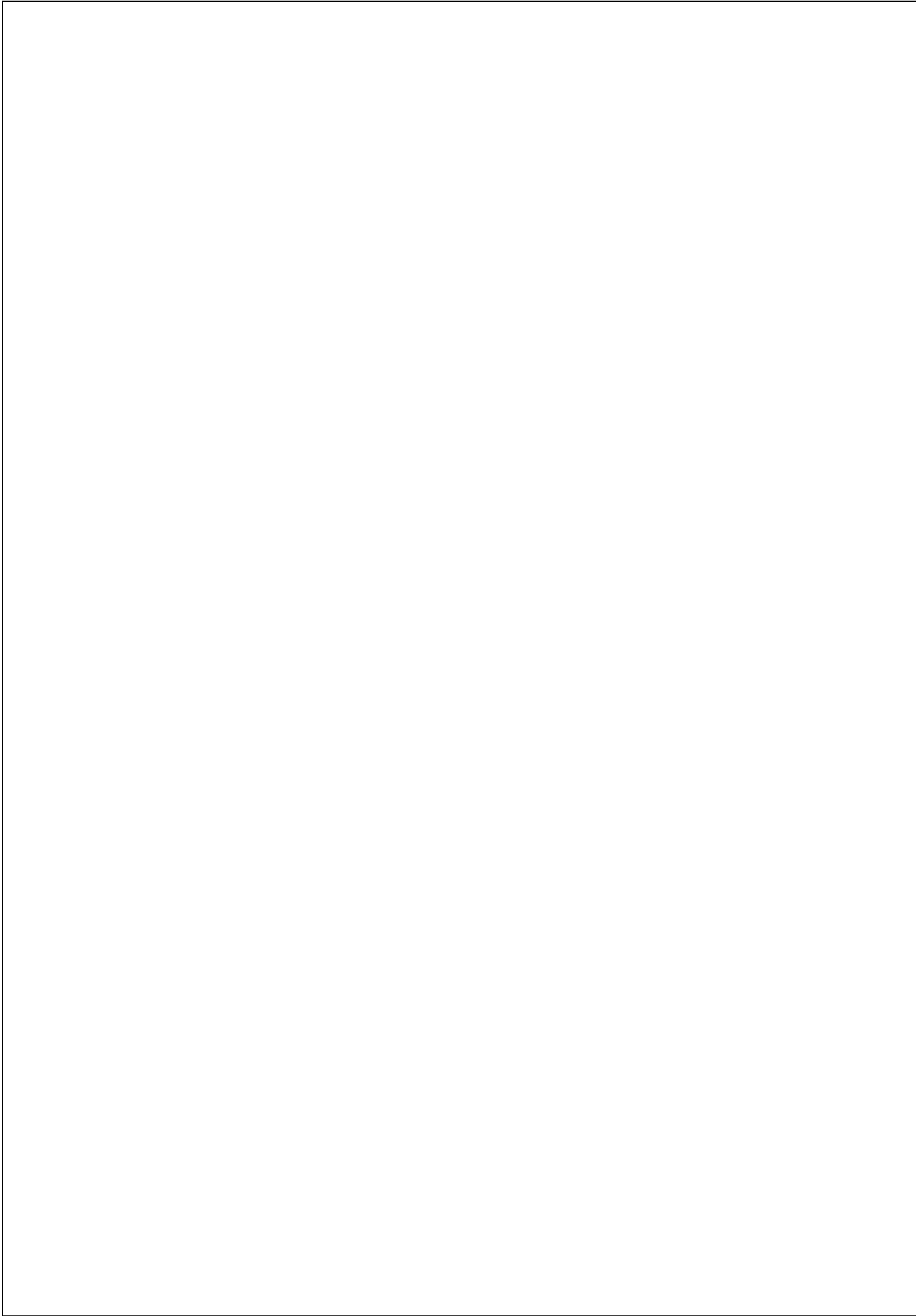


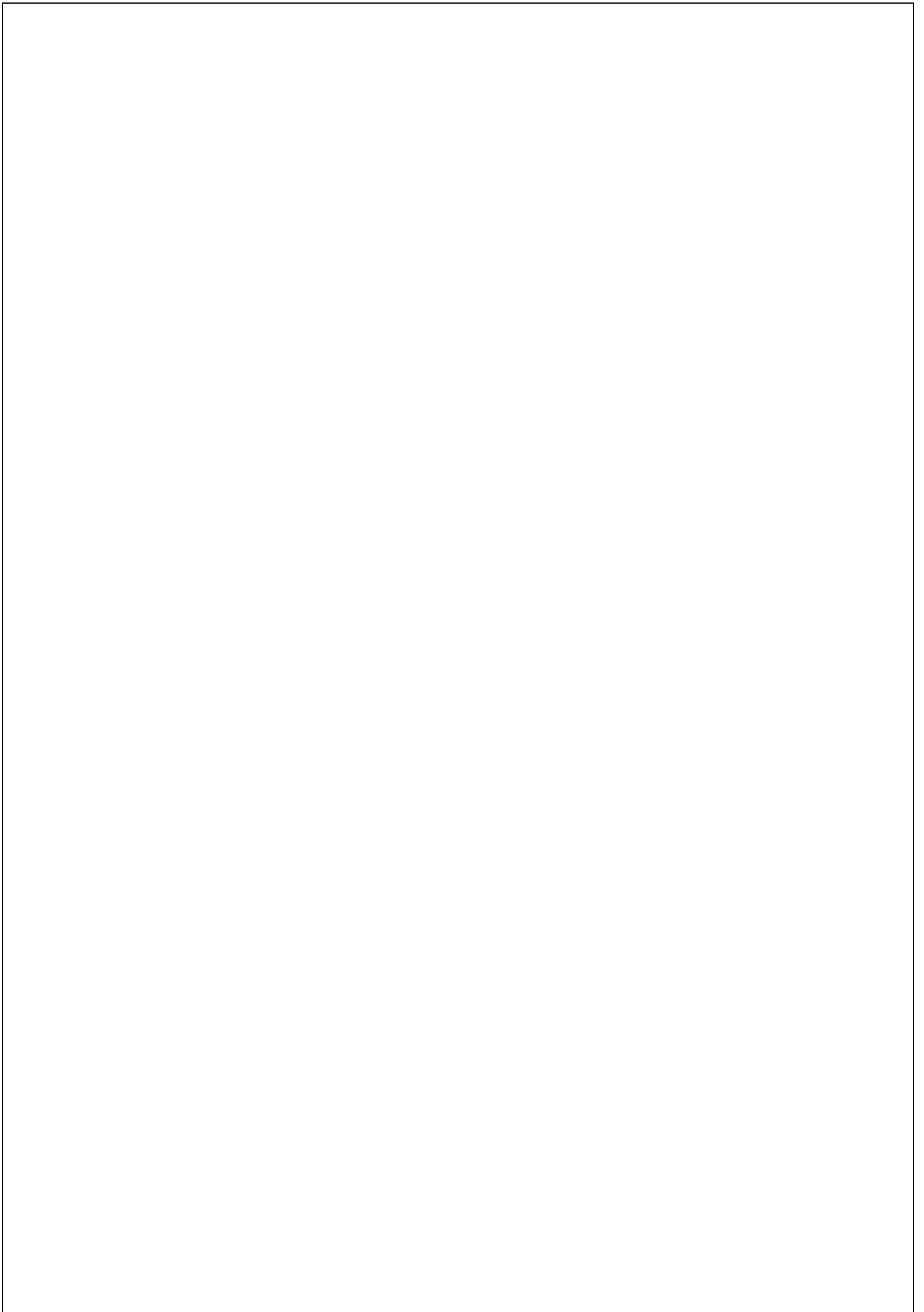














**SD Power Group Limited.**

**LiFePO<sub>4</sub>**

**File Number:  
SDA/1**

## **8. CAUTIONS IN USE**

To ensure proper use of the battery please read the manual carefully before using it.

### **8.1 Handling**

- \* Do not expose to, dispose of the battery in fire.
- \* Do not put the battery in a charger or equipment with wrong terminals connected.
- \* Avoid shorting

### **8.2 the battery**

- \* Avoid excessive physical shock or vibration.
- \* Do not disassemble or deform the battery.
- \* Do not immerse in water.
- \* Do not use the battery mixed with other different make, type, or model batteries. § Keep out of the reach of children.

### **8.3 Charge and discharge**

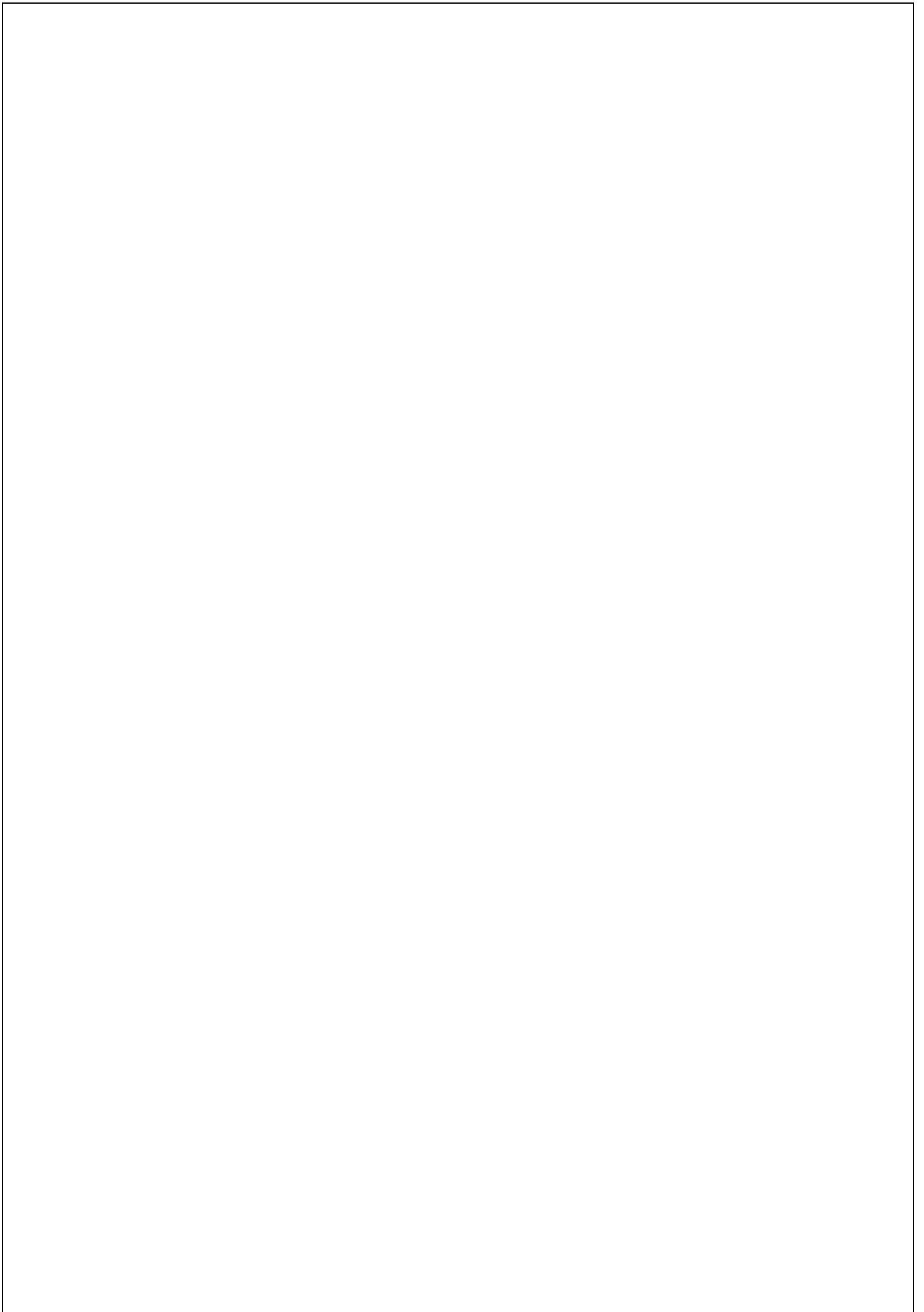
- \* Battery must be charged in appropriate charger only.
- \* Never use a modified or damaged charger.
- \* Do not leave battery in charger over 12 hours.

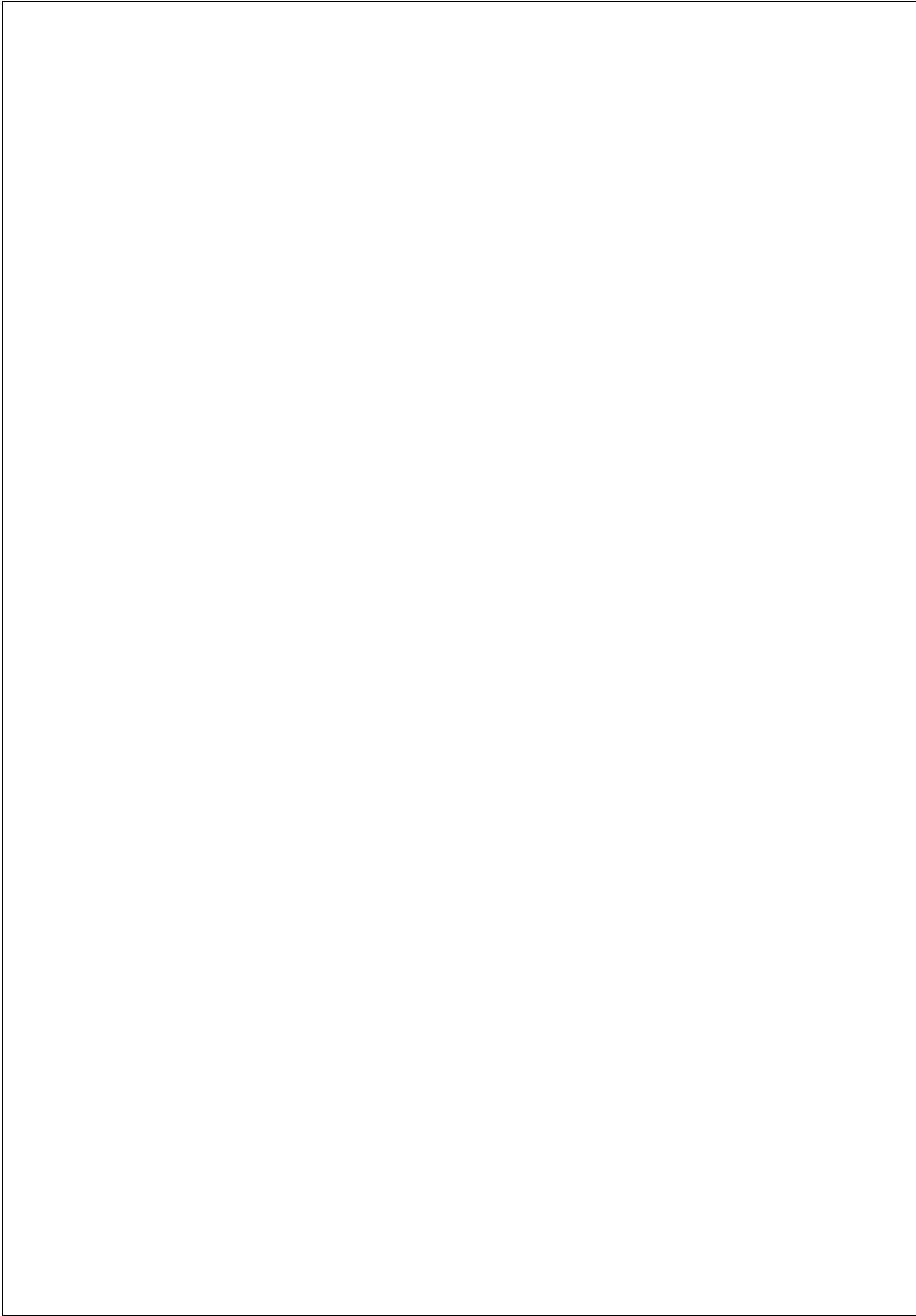
### **8.4 Storage**

- \* Store the battery in a cool, dry and well-ventilated area.

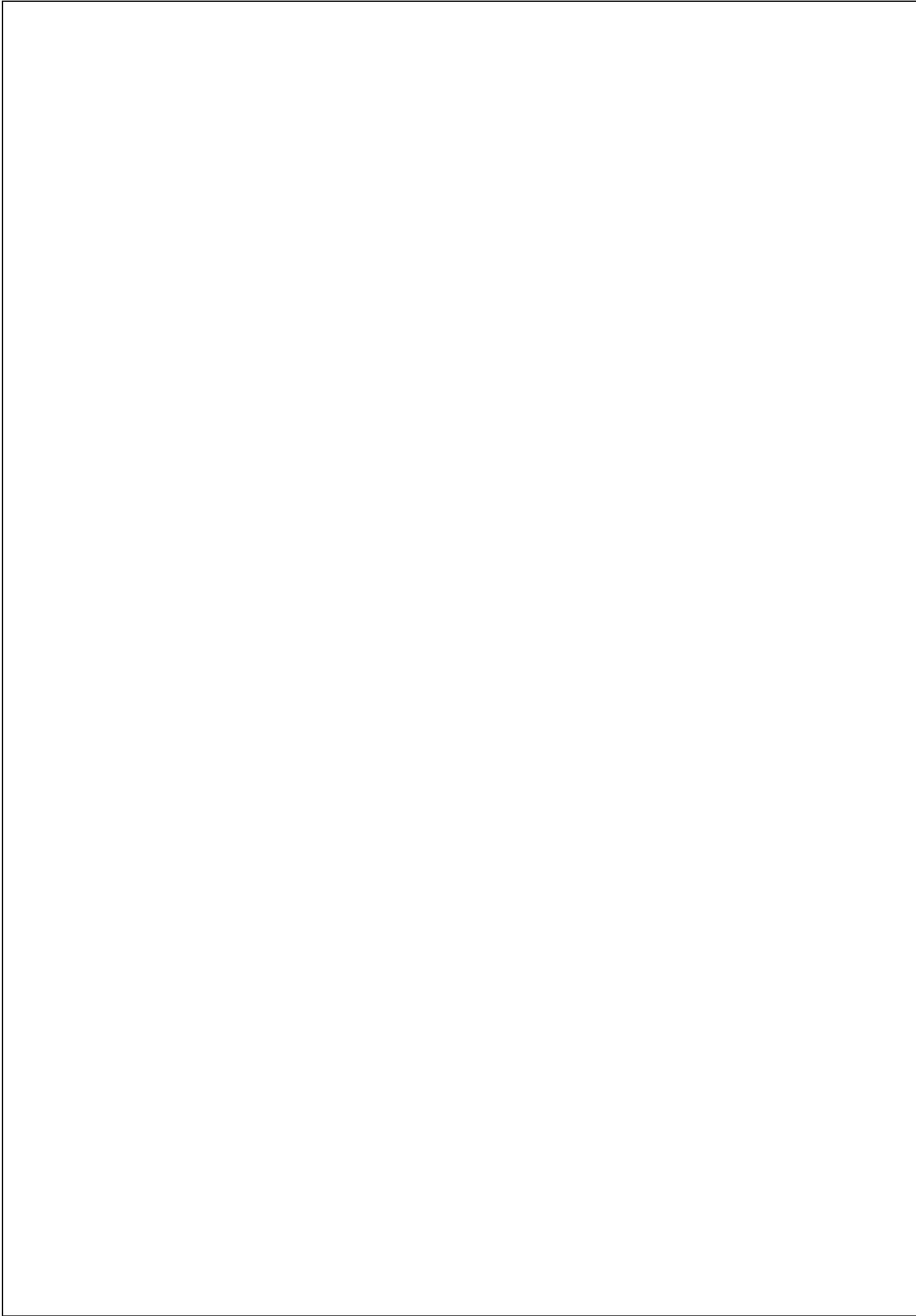
### **8.5 Disposal**

- \* Regulations vary for different countries. Dispose of in accordance with local regulations.
- \* Charging current: Cannot surpass the biggest charging current which in this specification book stipulated.
- \* Charging voltage: Does not have to surpass the highest amount which in this specification book stipulated to decide the voltage.
- \* Temperature: The battery must carry on the charge in the ambient temperature scope which this specification book stipulated. Uses the constant electric current, and the constant voltage way charge, the prohibition reverse charges. If the battery positive electrode and the cathode meet instead, can damage the battery.

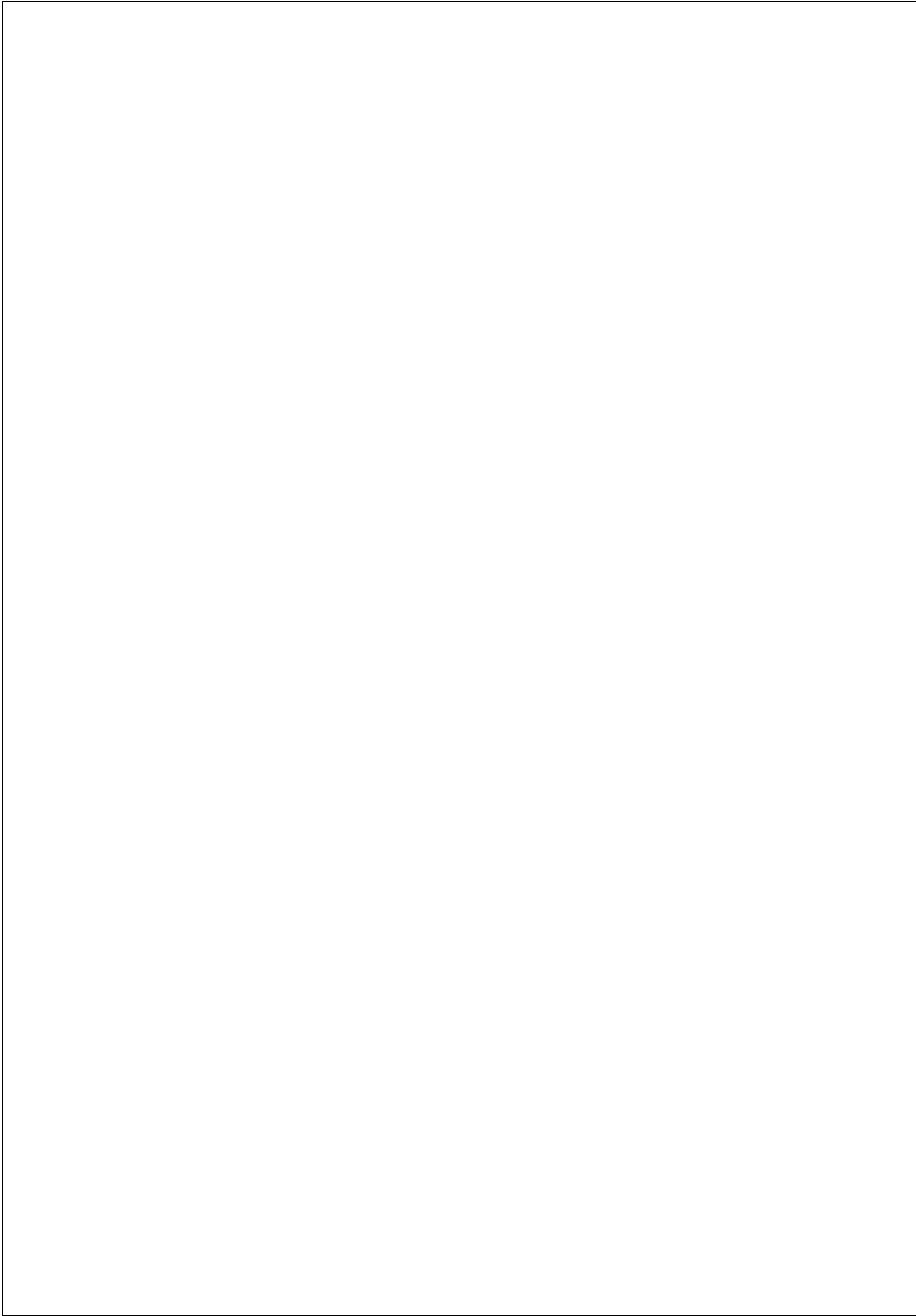


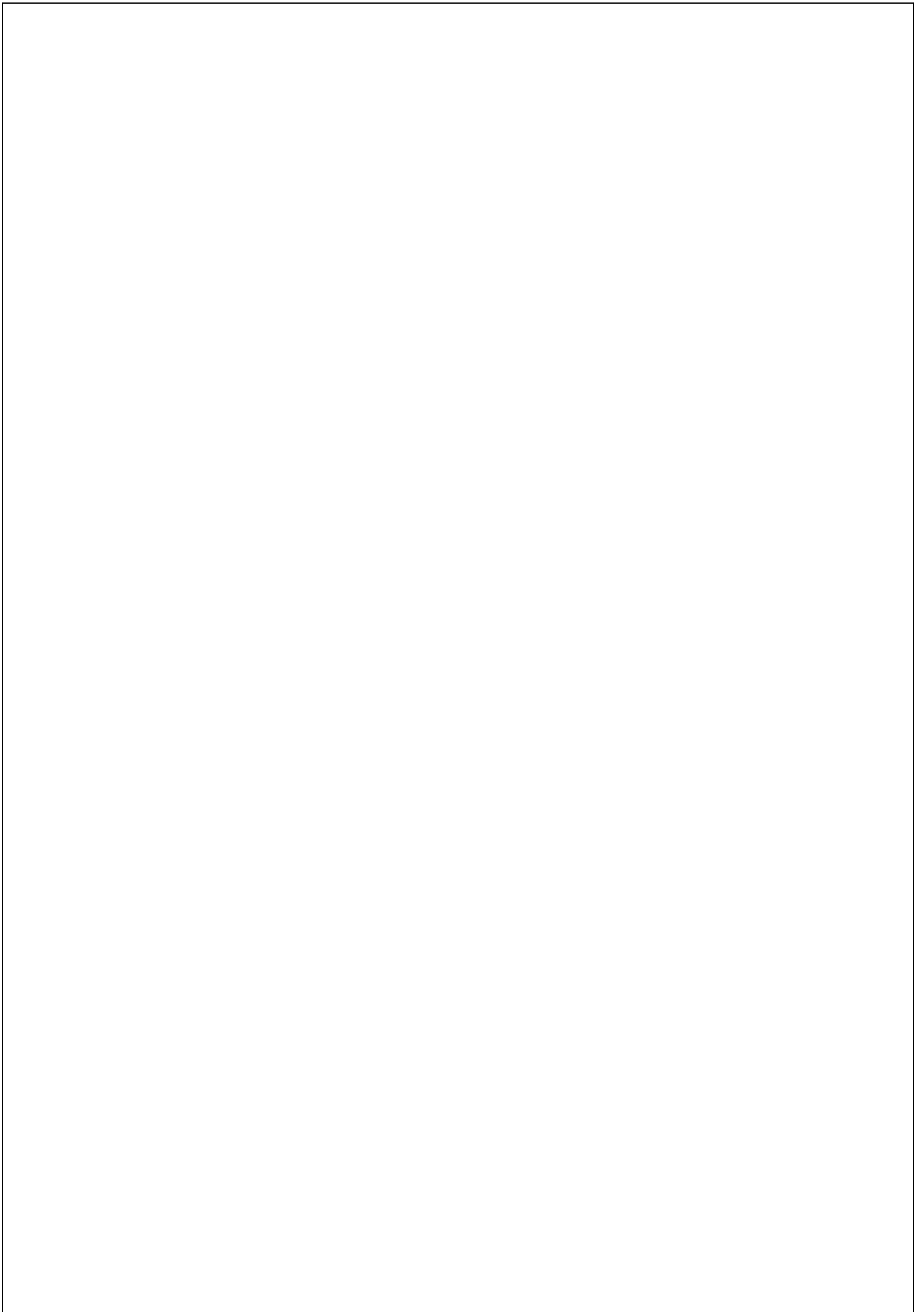














## ***SD Power Group Limited.***

Tel: +86 155 0123 6768    E-Mail: [info@sdupsfactory.com](mailto:info@sdupsfactory.com)

***File Number:  
SDA/1***

### **8.8 Over-discharges**

After the short time excessively discharges charges immediately cannot affect the use, but the long time excessively discharges can cause the battery the performance, battery function losing. The battery long-term has not used, has the possibility to be able to be at because of its automatic flash over characteristic certain excessively discharges the condition, for prevented excessively discharges the occurrence, the battery should maintain the certain electric quantity.

### **8.9 Storing the Batteries**

The battery should store in the product specification book stipulation temperature range. If has surpasses above  
fourth month the duration, the battery should be recharged, and then should be used, and should not be used



**SD Power Group Limited.**

**LiFePO4**

**File Number:  
SDA/1**

**Warranty: 5 years warranty**

Will change you new battery during 5 years warranty if any quality problem.

**Real Full Capacity:**

Professional testing & Engineer monitor



**Certifications:**

CE, ROHS, UL, MSDS, ISO, UN38.3,etc,



**CERTIFICATION:ISO, CE, ROHS, UL, MSDS**

**OEM/ODM :**

