



- Environment Influence :  
Since a battery cell remains in the environment, do not throw out it into the environment.
- Physics/Chemical damage : -----
- Special damage : -----
- Cardinal Condition :  
Disgusting 、 vomit 、 the stupor 、 the skin fever scalds 、 the position feeling barrier.

Article damage classification : -----

## Section 4-First Aid Measures

Under normal conditions of use, the battery is hermetically sealed.

1. Ingestion : Swallowing a battery can be harmful Contents of an open battery can cause serious chemical burns of mouth, esophagus, and gastrointestinal tract. If battery or open battery is ingested, do not induce vomiting or give food or drink. Seek medical attention immediately.
2. Inhalation : Contents of an open battery can cause respiratory irritation. Inhalation of vapors may cause irritation of the upper respiratory tract and lungs. Provide fresh air and seek medical attention.
3. Skin Contact : Contents of an open battery can cause skin irritation and/or chemical burns. Remove contaminated clothing and wash skin with soap and water. If a chemical burn occurs or if irritation persists, seek medical attention.
4. Eye Contact : Contents of an open battery can cause severe irritation and chemical burns. Immediately flush eyes thoroughly with water for at least 15 minutes, lifting upper and lower lids, until no evidence of the chemical remains. Seek medical attention.

## Section 5-Fire Fighting Measures

- If fire or explosion occurs when battery are on charge, should shut off power to charger. In case of fire where lithium ion battery is present, flood the area with water. If any battery is burning, water may not extinguish them, but will cool the adjacent battery and control the spread of fire. CO<sub>2</sub>, dry chemical, and foam extinguishers are preferred for small fires.
- extinguishers :  
water/CO<sub>2</sub>/dry chemical/foam

## Section 6-Accidental Release Measures

- personal protection :
  1. Respiratory Protection : Not necessary under normal conditions.
  2. Eye Protection : Not necessary under normal conditions. Wear safety glasses with side shields if handling an open or leaking battery.
  3. Gloves : Not necessary under normal conditions. Use neoprene or natural rubber gloves if handling an open or leaking battery
- **Ventilation Requirements** : Not necessary under normal conditions

- Should depend on environmental protection stipulation recycle mode processing.

## Section 7-Handling and Storage

- Handling :  
Do not expose the battery to excessive physical shock or vibration. Short-circuiting should be avoided; however, accidental short-circuiting for a few seconds will not seriously affect the battery.  
Prolonged short circuits will cause the battery to rapidly lose energy, could generate enough heat to burn skin. Sources of short circuits include jumbled battery in bulk containers, coins, metal jewelry, metal covered tables, or metal belts used for assembly of battery in devices. To minimize risk of short-circuiting, the protective case supplied with the battery should be used to cover the terminals when transporting or storing the battery. Do not disassemble or deform the battery.
- Storage :  
Storage conditions (suitable, to be avoided) : Avoid direct sunlight, high temperature, high humidity.  
Store in cool place (temperature: -20 ~ 35 degree C, humidity: 45 ~ 85%).  
Incompatible products: Conductive materials, water, seawater, strong oxidizers and strong acids  
Packing material (recommended, not suitable): Insulation and tear proof materials are recommended.

## Section 8-Exposure controls / Personal Protection

- ENGINEERING CONTROLS : -----

Control parameter		
Common chemical name/ General name	TLV-TWA	BEI
Lithium Nickel Manganese Cobalt Oxide (LiNiMnCoO <sub>2</sub> )	-----	-----
Graphite	-----	-----
Ethylene Carbonate – Solvent	-----	-----
Diethyl Carbonate – Solvent	-----	-----
Lithium Hexafluorophosphate – Salt	-----	-----

## Section 9-Physical and Chemical Properties

Physical state	(Solid)	(Solubility in water)	/
Cell Color	(Black)	(Explosion limit)	/
Odor	(Odorless)	(Auto flammability)	/
Flashpoint	/	(Melting Point)	LiCoO <sub>2</sub> about 1130 C
Boiling Point	/	(Freezing Point)	/

## Section 10-Stability and Reactivity

- Stability :

- Stable under normal use
- Reactivity :  
Avoid contact with water and acids.

## **Section 11-Toxicological Information**

Under normal conditions of use, the battery is toxicological sealed. So void to open and damage battery directly.

## **Section 12-Ecological Information**

If the battery is scrapped, it should be selected and disposed by professional company.

## **Section 13-Disposal Considerations**

Do not dispose of battery into environment or sewerage. It should be recycled and disposed basing on your local legislation and regulations.

## **Section 14-Transport Information**

The rechargeable lithium Ion battery pack meet all requirements under UN Manual of Tests and Criteria Part III, subsection 38.3. The lithium battery pack comply with IATA DGR 65th edition lithium ion battery pack UN3480 and comply with Section IB of Packing Instruction of 965 and regulated for Transport under of the International Maritime Dangerous Goods Code (IMDG). Lithium battery label must be placed on the package when the statement is required.

## **Section 15-Regulatory Information**

(ACGIH)

(OSHA)

European Union (UN)

(ISO)

## **Section 16-Other Information**

- Reference : PANASONIC LI-ION CELL BATTERY SDS
- Made by : Joules Miles Co., Ltd.  
10F, No. 1-26, Kuo-Chien Rd., Chien-Chen Dist.,Kaohsiung, Taiwan  
TEL : 886-7-8157868 FAX : 886-7-8154982      [www.jms.com.tw](http://www.jms.com.tw)

Note: The reference data provide from supplier.

# SAFETY DATA SHEET

## Section 1-Product Information and Company Identification

Manufacturer Information :

Joules Miles Co., Ltd.

10F, No. 1-26, Kuo-Chien Rd., Chien-Chen Dist.,Kaohsiung, Taiwan

TEL : 886-7-8157868 FAX : 886-7-8154982 [www.jms.com.tw](http://www.jms.com.tw)

Date: 2024/01/03 Version: B UN3481 PI966

## Product Information

Product Name : Rechargeable Lithium Ion Battery Pack

Model NO : BRWB3B

Rating : 10.8V, 5980mAh, 64.584Wh

Typical Capacity : 10.8V, 6700mAh, 72.360Wh

UN38.3 Test Report : TW2305040-001

## Section 2-Composition / Information on Ingredients

English Name : Rechargeable Lithium Ion Battery Pack

Synonymous Name :

Hazardous Ingredients :

Portion	Chemical Name	CAS NO.	Concentration/ Concentration range
Positive electrode	Lithium transition metal oxidate (Li[M]m[O]n *2)	12190-79-3 12031-65-1 12057-17-9 182442-95-1 207803-51-8	20-60%
Positive electrode's base	Aluminum	7429-90-5	1-10%
Negative electrode	Carbon	7782-42-5 7440-44-0	10-30%
Negative electrode's base	Copper	7440-50-8	1-15%
Electrolyte	Ethyl methyl carbonate Diethyl carbonate Ethylene carbonate Lithium hexafluorophosphate	623-53-0 105-58-8 96-49-1 21324-40-3	5-25%
Outer case	Aluminum, Iron, aluminum laminated plastic	7429-90-5 7439-89-6	1-30%

Lithium equivalent content	5.382[g] for battery pack
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## Section 3-Hazards Identification

- Health Hazard Effect :

The battery pack interior airtight chemical substance,if the artificial/machinery/electron improper use destroys,causes the chemical substance outside or the gas leaks causes the skin/eye damage and explodes .

- Environment Influence :  
Since a battery cell remains in the environment, do not throw out it into the environment.
- Physics/Chemical damage : -----
- Special damage : -----
- Cardinal Condition :  
Disgusting · vomit · the stupor · the skin fever scalds · the position feeling barrier.

Article damage classification : -----

## Section 4-First Aid Measures

Under normal conditions of use, the battery is hermetically sealed.

1. Ingestion : Swallowing a battery can be harmful Contents of an open battery can cause serious chemical burns of mouth, esophagus, and gastrointestinal tract. If battery or open battery is ingested, do not induce vomiting or give food or drink. Seek medical attention immediately.
2. Inhalation : Contents of an open battery can cause respiratory irritation. Inhalation of vapors may cause irritation of the upper respiratory tract and lungs. Provide fresh air and seek medical attention.
3. Skin Contact : Contents of an open battery can cause skin irritation and/or chemical burns. Remove contaminated clothing and wash skin with soap and water. If a chemical burn occurs or if irritation persists, seek medical attention.
4. Eye Contact : Contents of an open battery can cause severe irritation and chemical burns. Immediately flush eyes thoroughly with water for at least 15 minutes, lifting upper and lower lids, until no evidence of the chemical remains. Seek medical attention.

## Section 5-Fire Fighting Measures

- If fire or explosion occurs when battery are on charge, should shut off power to charger. In case of fire where lithium ion battery is present, flood the area with water. If any battery is burning, water may not extinguish them, but will cool the adjacent battery and control the spread of fire. CO<sub>2</sub>, dry chemical, and foam extinguishers are preferred for small fires.
- extinguishers :  
water/CO<sub>2</sub>/dry chemical/foam

## Section 6-Accidental Release Measures

- personal protection :
  1. Respiratory Protection : Not necessary under normal conditions.
  2. Eye Protection : Not necessary under normal conditions. Wear safety glasses with side shields if handling an open or leaking battery.
  3. Gloves : Not necessary under normal conditions. Use neoprene or natural rubber gloves if handling an open or leaking battery
- **Ventilation Requirements** : Not necessary under normal conditions

- Should depend on environmental protection stipulation recycle mode processing.

## Section 7-Handling and Storage

- Handling :  
Do not expose the battery to excessive physical shock or vibration. Short-circuiting should be avoided; however, accidental short-circuiting for a few seconds will not seriously affect the battery.  
Prolonged short circuits will cause the battery to rapidly lose energy, could generate enough heat to burn skin. Sources of short circuits include jumbled battery in bulk containers, coins, metal jewelry, metal covered tables, or metal belts used for assembly of battery in devices. To minimize risk of short-circuiting, the protective case supplied with the battery should be used to cover the terminals when transporting or storing the battery. Do not disassemble or deform the battery.
- Storage :  
Storage conditions (suitable, to be avoided) : Avoid direct sunlight, high temperature, high humidity.  
Store in cool place (temperature: -20 ~ 35 degree C, humidity: 45 ~ 85%).  
Incompatible products: Conductive materials, water, seawater, strong oxidizers and strong acids  
Packing material (recommended, not suitable): Insulation and tear proof materials are recommended.

## Section 8-Exposure controls / Personal Protection

- ENGINEERING CONTROLS : -----

Control parameter		
Common chemical name/ General name	TLV-TWA	BEI
Lithium Nickel Manganese Cobalt Oxide (LiNiMnCoO <sub>2</sub> )	-----	-----
Graphite	-----	-----
Ethylene Carbonate – Solvent	-----	-----
Diethyl Carbonate – Solvent	-----	-----
Lithium Hexafluorophosphate – Salt	-----	-----

## Section 9-Physical and Chemical Properties

Physical state	(Solid)	(Solubility in water)	/
Cell Color	(Black)	(Explosion limit)	/
Odor	(Odorless)	(Auto flammability)	/
Flashpoint	/	(Melting Point)	LiCoO <sub>2</sub> about 1130 C
Boiling Point	/	(Freezing Point)	/

## Section 10-Stability and Reactivity

- Stability :

- Stable under normal use
- Reactivity :  
Avoid contact with water and acids.

## **Section 11-Toxicological Information**

Under normal conditions of use, the battery is toxicological sealed. So void to open and damage battery directly.

## **Section 12-Ecological Information**

If the battery is scrapped, it should be selected and disposed by professional company.

## **Section 13-Disposal Considerations**

Do not dispose of battery into environment or sewerage. It should be recycled and disposed basing on your local legislation and regulations.

## **Section 14-Transport Information**

The rechargeable lithium Ion battery pack meet all requirements under UN Manual of Tests and Criteria Part III, subsection 38.3. The lithium battery pack comply with IATA DGR 65th edition lithium ion battery pack UN3481 and comply with Section II of Packing Instruction of 966 and regulated for Transport under of the International Maritime Dangerous Goods Code (IMDG). Lithium battery label must be placed on the package when the statement is required.

## **Section 15-Regulatory Information**

(ACGIH)

(OSHA)

European Union (UN)

(ISO)

## **Section 16-Other Information**

- Reference : PANASONIC LI-ION CELL BATTERY SDS
- Made by : Joules Miles Co., Ltd.  
10F, No. 1-26, Kuo-Chien Rd., Chien-Chen Dist.,Kaohsiung, Taiwan  
TEL : 886-7-8157868 FAX : 886-7-8154982      [www.jms.com.tw](http://www.jms.com.tw)

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# SAFETY DATA SHEET

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Joules Miles Co., Ltd.

10F, No. 1-26, Kuo-Chien Rd., Chien-Chen Dist.,Kaohsiung, Taiwan

TEL : 886-7-8157868 FAX : 886-7-8154982 www.jms.com.tw

Date: 2024/01/03 Version: B UN3481 PI967

## Product Information

Product Name : Rechargeable Lithium Ion Battery Pack

Model NO : BRWB3B

Rating : 10.8V, 5980mAh, 64.584Wh

Typical Capacity : 10.8V, 6700mAh, 72.360Wh

UN38.3 Test Report : TW2305040-001

## Section 2-Composition / Information on Ingredients

English Name : Rechargeable Lithium Ion Battery Pack

Synonymous Name :

Hazardous Ingredients :

Portion	Chemical Name	CAS NO.	Concentration/ Concentration range
Positive electrode	Lithium transition metal oxidate (Li[M]m[O]n *2)	12190-79-3 12031-65-1 12057-17-9 182442-95-1 207803-51-8	20-60%
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Negative electrode's base	Copper	7440-50-8	1-15%
Electrolyte	Ethyl methyl carbonate Diethyl carbonate Ethylene carbonate Lithium hexafluorophosphate	623-53-0 105-58-8 96-49-1 21324-40-3	5-25%
Outer case	Aluminum, Iron, aluminum laminated plastic	7429-90-5 7439-89-6	1-30%

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- Health Hazard Effect :  
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- Physics/Chemical damage : -----
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Disgusting · vomit · the stupor · the skin fever scalds · the position feeling barrier.

Article damage classification : -----

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- **Ventilation Requirements** : Not necessary under normal conditions

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Control parameter		
Common chemical name/ General name	TLV-TWA	BEI
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Graphite	-----	-----
Ethylene Carbonate – Solvent	-----	-----
Diethyl Carbonate – Solvent	-----	-----
Lithium Hexafluorophosphate – Salt	-----	-----

## Section 9-Physical and Chemical Properties

Physical state	(Solid)	(Solubility in water)	/
Cell Color	(Black)	(Explosion limit)	/
Odor	(Odorless)	(Auto flammability)	/
Flashpoint	/	(Melting Point)	LiCoO <sub>2</sub> about 1130 C
Boiling Point	/	(Freezing Point)	/

## Section 10-Stability and Reactivity

- Stability :

- Stable under normal use
- Reactivity :  
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## **Section 15-Regulatory Information**

(ACGIH)

(OSHA)

European Union (UN)

(ISO)

## **Section 16-Other Information**

- Reference : PANASONIC LI-ION CELL BATTERY SDS
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