

# Material Safety Data Sheet (MSDS)/Safety Data Sheet (SDS) TS-PR30X6 Lithium-ion Battery Pack

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<b>Date</b>	01-01-2019
<b>Approved by</b>	R&D Department
<b>Reference #</b>	886734850605726
<b>Type</b>	3S3P

## Section 1 – Chemical Product and Company Identification

### Product Identification

Product Name: Battery Pack Assy, 10.8V 56WH  
Manufacturer: Battery Technology, Inc. (HK) Limited

### Company Identification

Battery Technology Inc., (HK) Limited  
Workshop No.H 11/F Everest Industrial Centre, 396 Kwun Tong Road Kowloon  
Tel: (852) 35638371

[www.batterytech.com](http://www.batterytech.com)

## Section 2 – Hazards Identification

### 2.1 Classification of Products:

Battery packs designed to withstand temperatures and pressures encountered during normal use. The hazardous component in battery packs is the lithium-ion cell. Under normal use the battery cells present no physical danger of ignition or explosion and chemical danger of hazardous materials leakage. Battery cells are designed to vent gas to prevent explosion, if exposed to a fire, added mechanical shocks, electrically abused or physically damaged. This leaked gas could contain material classified as hazardous.

### 2.2 Label and Markings:



### 2.3 Effect(s) of Hazard Exposure:

#### Human Health Effects if Exposed to Cell Venting:

**Skin Contact:** The steam or liquid of the cell electrolyte can have adverse reactions to the skin. If cell electrolyte contacts skin it can cause severe irritation or chemical burns.

**Eye Contact:** The steam or liquid of the cell electrolyte can have adverse reactions to the eyes. If cell electrolyte contacts the eyes it can cause severe irritation or chemical burns.

**Inhalation:** The steam or liquid of the cell electrolyte can have adverse reactions if inhaled. If cell electrolyte is inhaled it may cause severe respiratory irritation.

**Ingested:** Swallowing or ingesting the contents of an open cell can cause serious chemical burns to the mouth, esophagus and gastrointestinal tract.

**Medical Conditions Aggravated by Exposure:** Not Available

**Interactions with Other Chemicals:** Immersion in high conductivity liquids may cause corrosion and breaching of the cell or battery enclosure. If vented cell electrolyte contacts water it will generate detrimental hydrogen fluoride.

**Environmental Effects:** Not Available

## Section 3 – Composition/Information on Ingredients

CAS-No.	Chemical Name	Quantity
1307-96-6	Cobalt Oxide	<30%
1313-13-9	Manganese dioxide	<30%
1313-99-1	Nickel oxide	<30%
7440-44-0	Carbon	<30%
	Electrolyte	<20%
249737-79-9	Polyvinylidene fluoride (PVdF)	<10%
7429-90-5	Aluminium foil	2-10%
7440-50-8	Copper foil	2-10%
	Aluminium and inert materials	5-10%

## Section 4 – First Aid Measures

*If exposure to internal materials within cell due to damaged outer casing, the following actions are recommended.*

**Skin contact –** Wash area thoroughly with soap and water and seek medical attention.

**Eye contact –** Rinse eyes with water for 15 minutes and seek medical attention.

**Inhalation –** Leave area immediately and seek medical attention.

**Ingestion –** Drink milk/water and induce vomiting; seek medical attention.

## Section 5 – Fire Fighting Measures

### 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.

### Extinguishing Media

Use extinguishing media suitable for the materials that are burning.

### Special Firefighting Instructions

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

### Firefighting Equipment

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

## Section 6 – Accidental Release Measures

### On Land

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

### In Water

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

## Section 7 – Handling and Storage

### Handling

No special protective clothing required for handling battery packs.

### Storage

Store in a cool, dry place

## Section 8 – Exposure Controls / Personal Protection

### Engineering controls

Keep away from heat and open flame; store in a cool, dry place.

### 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 battery packs.

#### Foot protection

Steel toed shoes recommended for large container handling.

## Section 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

## Section 10 – Stability and Reactivity

Reactivity	None
Stability	Stable under routine use
Incompatibilities	None during normal operation
Hazardous Decomposition Products	None during normal operating conditions If cells are opened, hydrogen fluoride and carbon monoxide may be released.
Conditions to Avoid	Avoid exposure to heat and open flame. Do not puncture, crush, or incinerate.

## Section 11 – Toxicological Information

This product does not emit toxins during routine handling and use.

<b>Sensitization</b>	No
<b>Teratogenicity</b>	No
<b>Reproductive Toxicity</b>	No
<b>Acute Toxicity</b>	No

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

Recommended methods for safe and environmentally preferred disposal:

### Product

Recycle through a recycling company. Do not throw a used battery or battery pack into the environment.

### Contaminated Package

The battery pack is not contaminated under normal use. If internal materials leak, dispose as industrial wastes subject to special control.

California regulated debris RCRA Waste Code: Non-regulated dispose of according to all federal, state, and local regulations.

## Section 14 – Transport Information

Lithium Ion Batteries are considered to be “Rechargeable batteries” and meet the requirements of transportation by the U.S. Department of Transportation (DOT), International Civil Aviation Administration (ICAO) and IMO-IMDG Code (Special Provision 188 and 230).

For the lithium ion battery pack, the Watt-hours is not more than 100Wh.

Even classified as lithium ion batteries (UN3480), 2019 IATA Dangerous Good Regulation 60th Edition Packing Instruction 965 Section 1B is applied.

The battery Pack meets the requirement of the test outlined in the United Nations (UN) Manual of Tests and Criteria, Part III, Sub-Section 38.3

No	ITEMS	RESULT	REMARKS
1	Altitude simulation	Pass	Test 1 to 5 must be conducted in sequence on the same cell or battery
2	Thermal test	Pass	
3	Vibration	Pass	
4	Shock	Pass	
5	External short circuit	Pass	
6	Impact	Pass	
7	Overcharge	Pass	
8	Forced Discharge	N/A	For cell only

## Section 15 – Regulatory Information

This regulatory information included here should not necessarily be considered all inclusive. None of the ingredients in this product are subjected to the reporting requirements of the CERCLA, the Clean Air Act and the Clean Water Act (US). This product is not formulated with, nor do the manufacturing and formulation process utilize any Class I or II Ozone depleting substance.

## Section 16 – Other Information

The information contained in the Material Safety Data Sheet is based on the present knowledge and current legislation.

The Material Safety Data Sheet provides guidance on health, safety, and environmental aspects for the product and should not be understood as any guarantee of technical performance or suitability for particular applications.