

Hitachi, Ltd.,Automotive Systems  
 2520 Oaza-takaba, Hitachinaka-shi Ibaraki-ken, 312-8503 Japan  
 Phone : (029)276-9942 Fax : (029)276-9969

## MATERIAL SAFETY DATA SHEET

IDENTIFY Lithium ion Rechargeable Battery

Model Name : HPB06-48B

Nominal Capacity : 5.5Ah

Average Operating Voltage : 172.8V

Chemical system : Lithium Manganese Oxide

(Partially substituted by nickel and cobalt)/Carbon viz. Li-Mn-Ni-Co-O / C

Designed for Recharge : Yes

UN / ID No. : 3480 / 3481

UN Class : 9

※We declare that above model passes all items of UN test.

(Manual of Tests and Criteria, Part III, sub-section 38.3)

---

### SECTION I MANUFACTURE'S INFORMATION

---

Manufacture's Name	: Hitachi, Ltd.,Automotive Systems
Supplier's Name	: Hitachi, Ltd.,Automotive Systems
Supplier's Address	: 2520 Oaza-takaba, Hitachinaka-shi Ibaraki-ken, 312-8503 Japan
Supplier's Telephone	: +81-29-276-4758
Emergency Telephone	: +1-800-424-9300 (North America) +1-703-527-3887 (International)
Date Prepared	: Jan ,1, 2009
Signature of Paper	: Hiroshi Kimura

---

### SECTION II HAZARDOUS INGREDIENTS

---

IMPORTANT NOTE : The battery pack uses max forty eight A2-2 Lithium ion rechargeable batteries and control circuit. Each battery is connected in series.

The battery should not be opened or burned since the following ingredients contained within the product that could be harmful under some circumstance if exposed or misused.

Cathode	: Lithium Manganese Oxide (Li-Mn-Ni-Co-O) (active material) Polyvinylidene Fluoride (binder) Graphite (conductive material) Carbon Black (conductive material)
Anode	: Carbon (active material) Polyvinylidene Fluoride (binder)
Electrolyte	: Organic Solvent (non-aqueous liquid) Lithium Salt
Others	: Heavy metals such as Mercury, Cadmium, Lead, and Chromium are not used in the cells.

---

**SECTION III FIRE HAZARD DATA**


---

In case of fire, use CO<sub>2</sub> or dry chemical extinguishers.

---

**SECTION IV HEALTH HAZARD DATA**


---

Under normal condition of use, these chemicals are contained in sealed can. Risk of exposure occurs only if the cells are mechanically abused.

Inhalation : Contents of an opened cell can cause respiratory irritation. Provide fresh air and call a doctor.

Skin contact : Contents of an opened cell can cause skin irritation. Wash skin with soap and water.

Eye contact : Contents of an opened cell can cause eye irritation. Immediately flush eyes thoroughly with water for at least 15 minutes. Seek medical attention.

---

**SECTION V PRECAUTIONS FOR HANDLING AND USE**


---

Storage : Store in cool, well-ventilated area. Do not expose to high temperature (60°C, 140° F).

Since short circuit can cause burn hazard or safety vent to open, do not store with metal plate, metal bar, metal covered materials.

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

Charging : Charge within the limits of 0°C~45°C temperature.  
Charge with specified charger designed for this battery.  
Charge by the charge voltage below 196.8V.

Discharging : Discharge within the limits of -20°C~60°C temperature.

Disposal : Do not dispose in fire or incinerate.

Spill response : The preferred response is to leave the area and allow the battery to cool and the vapor to dissipate. Avoid skin contact, eye contact and inhalation of vapor. Wear safety glasses, protective mask and rubber gloves as needed. Dry cloth and paper towel should be used to absorb any exuded material. Seal contaminated absorbent in plastic bag and dispose of as special waste in accordance with local regulation. Damaged battery should be stored in ventilated area, away from flammable material, heat and open flames. Contact the manufacturer to confirm the appropriate measures as soon as possible.

Other Precautions : Since fire, explosion, and burn hazard can occur, do not crush, disassemble, heat above 100°C (212° F), incinerate, or short circuit.

---

**SECTION VI SPECIAL PROTECTION INFORMATION**

---

Respiratory Protection : Not necessary under normal use.  
Ventilation : Not necessary under normal use.  
Eye Protection : Not necessary under normal use.  
Protective Gloves : Not necessary under normal use.

---

**SECTION VII TRANSPORTATION INFORMATION**

---

This battery is classified and regulated as Class 9 dangerous goods by the International Civil Aviation Organization (ICAO), International Air Transport Association (IATA), International Maritime Organization (IMO) and many government agencies such as the U.S. Department of Transportation (DOT). These organizations and agencies publish regulations that contain detailed packaging, marking, labeling, documentation and training requirements that must be followed when shipping this battery for transportation.

Product is shipped as:

Ground (DOT)

Class: 9

Packing group: II

Proper shipping name: Lithium ion batteries, UN 3480

Air (IATA/ICAO)

Class: 9

Packing group: II

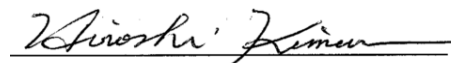
Proper shipping name: Lithium ion batteries, UN 3480

Water (IMO)

Class: 9

Packing group: II

Proper shipping name: Lithium ion batteries, UN 3480

  
Hiroshi Kimura