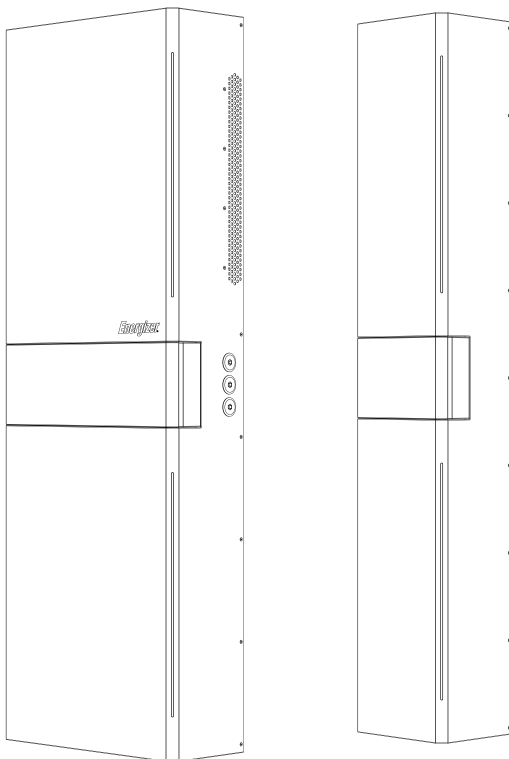


Energizer[®]

HOMEPOWER



Safety Data Sheet

HP-6M (Main Unit) ***HP-6S*** (Sub Unit)

KEEP THIS DOCUMENT WITHIN MAIN SWITCHBOARD CABINET

Safety Datasheet

1. Product Name & Identification

1.1. Product Identifier:

1.1.1. Product Name: *Energizer* Homepower HP-6 Series.

1.1.2. Models: HP-6M, HP-6S, HP-6M/1S, HP-6M/2S and HP-6M/3S.

1.1.3. Other Means of Identification:

- *Energizer* Lithium Iron Phosphate (LiFePO₄) BESS.
- Rechargeable Li-ion Battery Energy Storage System.
- Rechargeable Li-ion Battery.
- UN 3480 - Lithium Ion Batteries.

1.1.4. Product Description: The *Energizer* Homepower HP-6 Series consists of the Main Unit (HP-6M) & the Sub Unit (HP-6S), each containing 16 Lithium Iron Phosphate cells, a Battery Management System (BMS) and other associated Electronics.

1.2. Product Use:

1.2.1. Identified Uses: intended to be used as an AC coupled Battery Energy Storage System.

1.2.2. Use Restrictions: operate the battery under the following conditions:

- Temperature Range: -20°C to 50°C (Operating Temperature).
- Store batteries preferably in a cool, dry, and ventilated area that is subject to minimal variations in ambient temperature. Storage at high temperatures should be avoided. Storage of batteries for periods exceeding 6 months without charging, can lead to battery decay and fall in the life cycle. Do not place batteries near heat sources such as furnaces.

1.3. Details of the Importer of the Safety Data Sheet

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1.4. Emergency Telephone Number (24hrs):

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2. Hazard Identification

The battery cell is contained in a hermetically sealed metal case, designed to withstand temperatures and pressures encountered under routine use for the unit's specific applications. As a result, under normal operation there is no physical danger of ignition or explosion and/or chemical danger of exposure to hazardous materials. The risk of exposure only occurs if the product is electrically, thermally (exposed to fire) or mechanically (severe shocks) abused. As a result, if the sealed metal case is breached, exposure to hazardous chemicals may occur by eye contact, skin contact and ingestion.

2.1. Hazard Classification

EXEMPT FROM CLASSIFICATION ACCORDING TO AUSTRALIAN WHS REGULATIONS.

Further, this product meets the definition of an 'Article'. Under the Globally Harmonized System of Classification and Labelling of Chemicals (GHS), 'Articles' as defined in the Hazard Communication Standard (29 CFR 1910.1200) of the Occupational Safety & Health Administration (USA), or by similar definition, are outside the scope of the system. [Rev 7 (2017) Part 1.3.2.1.1]

2.2. GHS Label Elements: no labelling applicable.

2.3. Hazard Statement: no additional information available.

2.4. Precautionary Statement: no additional information available.

2.5. Hazards not covered by GHS: no data available.

3. Composition/Information on Ingredients

3.1. Substances/Mixtures:

Chemical Name	CAS #	EC No.	Weight (%)
Phosphoric Acid, Iron (2+), Lithium Salt (1:1:1)	15365-14-7	476-700-9	N/A
Aluminium	7429-90-5	231-072-3	N/A
Graphite	7782-42-5	231-955-3	N/A
Copper	7440-50-8	231-159-6	N/A
Polyethylene	9002-88-4	200-815-3	N/A
phosphate (1-), hexafluoro-, Lithium	21324-40-3	244-334-7	N/A

4. First Aid Measures

The *Energizer* Homepower HP-6 Series has a lithium ion battery that contains several chemicals and organic electrolytes, which are contained within a sealed metal enclosure. There is no risk of chemical exposure under routine use of the unit's specific application. Any accidental exposure to the electrolytes or chemicals must be treated immediately with First Aid. If the battery is physically damaged & results in battery leakage, the following measures must be taken to reduce the impact of the exposure.

4.1. Description of First Aid Measures

4.1.1. General Advice:

- Present this Safety Data Sheet to the Medical Professional in attendance.
- Eyes: flush eyes with water for at least 15 minutes, occasionally lifting the upper & lower eyelids. Seek medical attention if eye irritation persists.
- Skin: remove contaminated clothes and rinse skin with plenty of water or shower for 15 minutes. Seek medical attention if skin irritation persists.
- Ingestion: do not induce vomiting or place anything into the mouth of an unconscious person. For advice, contact a Poison Information Centre on 13 11 26 (Australia wide) or a doctor at once.
- Inhalation: evacuate the affected from the hazardous area and allow them to rest in a position comfortable for breathing with access to fresh air.

4.1.2. Most Important Symptoms Caused by Exposure:

- Adverse effects not expected to occur from this product. Long term exposure may cause substance accumulation and/or irritation.

4.1.3. Medical Attention - treat symptomatically. If symptoms persist, get medical aid by calling a physician for appropriate medical advice.

5. Fire-Fighting Measures

5.1. Hazard Classification:

- Suitable: dry chemical, carbon dioxide, or alcohol-resistant foam extinguishers.
- Unsuitable: do not use water jets/streams, as it may scatter or spread chemicals.

5.2. Specific Hazards:

- Lithium Iron Phosphate batteries contain flammable liquid electrolyte that may vent, ignite & generate vapours when subjected to excessive heat.
- There are unusual fire and explosion hazards associated with the batteries.
- There are several hazardous products that could be emitted as result of combustion such as carbon monoxide, carbon dioxide & lithium oxide fumes.

5.3. Special Protective Actions for Fire Fighters:

- Wear full personal protective equipment including self-contained breathing apparatus (SCBA) when combating fire.
- Remain upwind and notify those downwind of hazard to evacuate area, as toxic gases may be evolved in a fire.

6. Accidental Release Measures

6.1. Personal Precautions, Protective Equipment and Emergency Procedures:

- Evacuate personnel to a safe area until fumes dissipate.
- Eliminate all ignition sources (no smoking, sparks, flames, hot equipment) in the immediate area around the spill.
- Provide maximum ventilation to clear out hazardous gases.
- Do not touch or walk through spilled material.
- Avoid any skin and eye contact or inhalation of vapours.

6.2. Environmental Precautions:

- Absorb spilled material with non-combustible, non-reactive absorbent.
- Prevent from leaking of the spilled material into the sewers, earth & natural waterways.

6.3. Environmental Precautions:

- Clean any residual electrolyte and liquid using non-combustible, non-reactive absorbent or sand. Ensure that clean-up procedure does not expose the spilled material to the moisture.
- Containerize and place all leaking batteries in individual containers that are leak-proof, non-conductive, non-combustible & have absorbent.
- Refer to your local and federal regulations to identify the appropriate method of clean-up and disposal.

6.4. Waste Disposal Method:

- It is recommended to discharge the batteries entirely and handing over the abandoned batteries to the appropriate hazardous chemical disposal authority.
- Dispose of the batteries in accordance with the approved Local, State & Federal requirements.
- Consult State Environmental Protection agency and/or Federal EPA when necessary.

7. Handling & Storage

7.1. Precautions for Safe Handling:

- The batteries should not be opened, destroyed, or incinerated, as they are susceptible to leak or rupture, and subsequently could release harmful chemicals into the environment.
- Do not short circuit terminals, or overcharge the battery, force over-discharge, or throw batteries into the fire.
- Do not crush or puncture the battery or immerse in liquids.
- Avoid mechanical or electrical abuse of batteries.
- Ensure that batteries are stored in a cool, dry, and ventilated area, that is subject to minimal temperature variation.
- Storage at high temperatures should be avoided to increase the longevity of the battery cells.
- Batteries must not be placed near heating equipment, nor be exposed to direct sunlight for long periods.

7.2. Other Precautions:

- Batteries may explode or cause burns if disassembled, crushed, or exposed to fire or high temperatures.
- Do not short or install with incorrect polarity.

7.3. Conditions for Safe Storage:

- Store indoors and on suitable pallets to enable easy inspection of damage.
- Ensure the items do not encounter water splashes or direct salt breeze.
- Store away from all heat sources such as furnaces, open flames, etc.
- Store in controlled environments where the temperature is maintained within the following range: -20 °C to 45 °C.
- Do not store unboxed items in areas with a source of spark generation (within 30 cm), in direct sunlight, in direct exposure to exhaust gases, such as those from automobiles or in places with continuous or intermittent vibration.

8. Exposure Controls & Personal Protection

8.1. Control Parameters

8.1.1. Occupational Exposure Limit Values:

Component	Country/Region	Limit Value			
		Eight Hours		Short Term	
		ppm	mg/m ³	ppm	mg/m ³
Aluminium 7429-90-5	USA (OSHA)	-	15	-	-
	South Korea	-	10	-	-
	Ireland	-	1	-	-
	Germany (DFG)	-	4	-	-
	Denmark	-	5	-	10
	Australia (SWA)	-	10	-	-
Graphite 7782-42-5	USA (OSHA)	-	15	-	-
	South Korea	-	2	-	-
	Ireland	-	10	-	-
	Germany (DFG)	-	4	-	-
	Denmark	-	2.5	-	5
	Australia (SWA)	-	3 (4)	-	-
Copper 7440-50-8	Netherlands	-	0.1	-	-
	Poland	-	0.2	-	-
	Latvia	-	0.5	-	1
	Germany (DFG)	-	0.01	-	0.02

8.1.2. Biological Limit Values: No information available

Component	Source	Biological Monitoring Index	Biological Limits value	Sampling Time	Remark
Phosphate (1-), hexafluoro-, Lithium	SCOEL (EU)	Fluoride in Urine	8mg/L	End of shift	-

8.1.3. Monitoring Methods

- EN 1402 Workplace Atmospheres – guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
- GBZ/T 160.1 ~ GBZ/T 160.81-2004 Determination of toxic substances in workplace air (Series standard).

8.2. Exposure Controls

8.2.1. Engineering Controls

- Ensure adequate ventilation, especially in confined areas.
- Ensure that eyewash stations and safety showers are close to the workstation.
- Use explosion-proof electrical/ventilating/lighting/equipment.
- Setup emergency exit and necessary risk-elimination area.

8.3. Personal Protective Equipment

8.3.1. Eye Protection: well fitted Safety Glasses (worn under shield), as approved by EN 166 (EU) or NIOSH (US).

8.3.2. Hand Protection: leather and voltage rated gloves in accordance with EN 374 (EU), US F739 or AS/NZS 2161.1.

8.3.3. Respiratory Protection: airborne exposure to hazardous substances in the electrolyte is not expected when the cells of batteries are used for their intended purposes. In case of battery venting or if exposure limits are exceeded, use a full-face respirator type AXBEK (EN 14387).

8.3.4. Skin and Body Protection: arc-rated long sleeve shirt, arc-rated pants or overalls, arc-rated face shield with hard-hat, hearing protection and leather work shoes, in accordance with AS/NZS 5139.

9. Physical and Chemical Properties

- 9.1. Appearance: lithium ion batteries enclosed within protective metal case.
- 9.2. Nominal Voltage: 51.2V.
- 9.3. Rated Capacity: 120Ah.
- 9.4. Odour: no information available.
- 9.5. Melting Point or Freezing Point (°C): no information available.
- 9.6. Flammability: no information available.
- 9.7. pH: no information available.
- 9.8. Evaporation rate: no information available.

10. Stability & Reactivity

- 10.1. Chemical Stability: stable under proper operation & storage conditions.
- 10.2. Reactivity: contact with incompatible substances can cause decomposition or other chemical reactions.
- 10.3. Possibility of Hazardous Reactions: exposed ultra-fine powder may self-ignite in room-temperature. Mixtures with metallic acetylene, when heated, cause a fire or incandescence. Reacts severely with halogens, interhalogen or other strong oxidants.
- 10.4. Conditions to Avoid: avoid exposure to heat and open flame, heating, mechanical (mutilation, crushing and disassembly) and electrical (short circuit) abuse.
- 10.5. Materials to Avoid: oxidants, halogen, interhalogen and mercury, metal acetylide, halogen oxides, nitric acid, nitrous oxide, nitrates, nitrites, halogen oxyacid salts, chromates, permanganates, inorganic peroxides, metal oxides, peroxyboric acid, water, corrosives, acids and alkalis.
- 10.6. Hazardous Decomposition Products: under normal conditions of operation and storage, no hazardous decomposition products are produced.

11. Toxicological Information

Under normal conditions, any contact with a fully sealed, protected battery is non-toxic. If the battery is opened, the exposure to internal contents such as corrosive fumes can cause irritation to skin, eyes, and mucous membranes. Inhalation, skin contact, and eye contact must be avoided when possible.

- Acute Toxicity: no specific data exists for this product. Batteries are contained in a hermetically sealed metal case that contain several chemicals, which may be hazardous upon release. Exposure unlikely to occur with normal operation, however in such a case contents may be harmful.
- Carcinogenicity:

ID	CAS No.	Component	IARC	NTP
1	15365-14-7	Phosphoric Acid, Iron (2+), Lithium Salt	Not Listed	Not Listed
2	7429-90-5	Aluminium	Not Listed	Not Listed
3	7782-42-5	Graphite	Not Listed	Not Listed
4	7440-50-8	Copper	Not Listed	Not Listed
5	9002-88-4	Polyethylene	Category 3	Not Listed
6	21324-40-3	Phosphate (1-), Hexafluoro-, Lithium	Not Listed	Not Listed

12. Ecological information

When promptly and safely used or disposed, the battery does not present any environmental hazard. While disposing, please ensure that it is disposed in accordance with local and federal regulations.

- Acute Aquatic Toxicity

ID	CAS No.	Component	Fish	Crustaceans	Algae
1	7429-90-5	Aluminium	LC50: 1.55 mg/L (96h) (Fish)	No information available	No information available
2	7440-50-8	Copper	LC50: 0.665 mg/L (96h) (Fish)	EC50: 0.02 mg/L (48h)	ErC50: 7.9 mg/L (96h)

- Persistence and Degradability - no information available.
- Bio accumulative Potential - no information available.
- Mobility in Soil - no information available.
- Results of PBT and VPvB Assessment - phosphoric acid, iron (2+), lithium salt, aluminium, graphite, copper, polyethylene and phosphate (1-), hexafluoro-, do not meet the criteria for PBT and VPvB assessment as per regulation (EC) No. 1907/2006, annex XIII.

13. Disposal Considerations

Waste Chemicals - if batteries are still fully (or partially) charged or discharged, they can be considered a reactive hazardous waste. The batteries must be disposed in accordance with local and federal laws and regulations, through licensed waste carriers and/or suitable recycling facilities etc.

Product Enclosure – the enclosure or protective case may still present a chemical hazard when empty. The batteries must be disposed in accordance with local and federal laws and regulations, through licensed waste carriers and/or suitable recycling facilities etc.

14. Transport information

Classified as a Dangerous Good by the criteria of the ADG Code.

Transporting Label:



UN Number: UN3480

UN Proper Shipping Name: LITHIUM ION BATTERIES
(including Lithium Ion polymer batteries)

Transport Hazard Class: Class 9

Packing Group Number: packing group II (As per GHS Regulations)

Environmental Hazards (Transport): follow all applicable local, state, and federal requirements when identifying additional environmental hazards.

15. Regulatory Information

The battery complies with the following stipulated Regulations:

Component	EINECS	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AICS	ENCS
Phosphoric Acid, Iron (2+), Lithium Salt	-	✓	-	-	-	-	✓	-	-
Aluminium	✓	✓	✓	✓	✓	✓	✓	✓	-
Graphite	✓	✓	✓	✓	✓	✓	✓	✓	-
Copper	✓	✓	✓	✓	✓	✓	✓	✓	-
Polyethylene	-	✓	✓	✓	✓	✓	✓	✓	
Phosphate (1-), hexafluoro-, Lithium	✓	✓	-	✓	-	✓	✓	✓	-

Note:

" ✓ " indicates that the substance is included in the regulations.

" - " indicates that no data or not included in the regulations.

[EINECS] The European Inventory of Existing Commercial Substances

[TSCA] The Toxic Substances Control Act

[DSL] Canadian Domestic Substances List

[IECSC] China Inventory of Existing Chemical Substances

[NZIoC] New Zealand Inventory of Chemicals

[PICCS] Philippines Inventory of Chemicals & Chemical Substances

[KECI] Korea Existing Chemicals Inventory

[AICS] Australia Inventory of Chemical Substances

[ENCS] Existing & New Chemical Substances

16. Additional information

DISCLAIMER: The information and recommendations set forth in this Safety Data Sheet were prepared in accordance with the "Safe Work Australia's Code of Practice: Preparation of Safety Data Sheets for Hazardous Chemicals [May 2018]" and the UN GHS [7th Revised Edition].

The data included is derived from various sources and believed to be accurate as of the date of preparation. However, Entel Holdings ANZ Pty. Ltd. does not assume responsibility for any alterations, modifications, or usage of this product outside of the methods prescribed as per this document. This information is furnished upon condition that person receiving it shall make his own determination of the suitability of the material for their particular purpose.

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Date of Preparation: 04.10.2020

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