

## Product Safety Data Sheet

1. Product and Company Identification	
Name of Product	Prismatic Nickel Metal-hydride Battery (module)
Model name	EV-MP6R5R02 (GEN II)
Company name	Panasonic EV Energy Co., Ltd.
Address	555, Sakaijyuku, Kosai-City, Shizuoka, 431-0452 Japan
Division	Engineering Department
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Issue date/Revised date	Issue date Oct. 31th, 2003
Issue number	p0054
2. Substance Identification (Main substances of Prismatic Nickel Metal-hydride Battery [module] )	
(1) Positive	Substance      Nickel Hydroxide
	CAS No.          12054-48-7
(2) Negative	Substance      Hydrogen storage alloy
	CAS No.          Not specified
(3) Electrolyte	Substance      Alkaline solution
	Potassium hydroxide (Substance in alkaline solution)
	CAS No.          1310-58-3
3. Hazardous and Toxicity Class	
(1) Class Name	Not applicable
(2) Hazard	No hazard in-normal situations. However, heat generation and/or alkaline electrolyte leakage may occur in the event of positive/negative terminal short circuiting by metallic or highly conductive objects.
(3) Toxicity	No Toxicity in normal situation. In the event of a burning battery pack, there is a possibility that an alkaline mixed gas may be emitted, which may in turn irritate eyes, nose, and/or throat.  If the battery is stored for very long time periods, electrolyte and/or metal materials may leak and result in surface soil pollution.
4. First Aid Measures	
In the event of alkaline electrolyte and/or alkaline mixed gas leakage.	
(1) Eye contact	Contact may cause corneal injury and blindness. Wash eyes with large amounts of running water for at least 15 minutes. Seek medical treatment immediately. If appropriate actions are not taken, eye disorders may result.
(2) Skin contact	Wash the contact area with plenty of water and seek medical treatment immediately. Clothing, shoes, and socks, etc. which have come into contact with alkaline electrolyte should be taken off immediately. If appropriate actions are not taken, skin inflammation may occur.
(3) Inhalation	Move the exposed person to fresh air area immediately. Cover up the affected person with a blanket. Seek medical treatment immediately.
(4) Swallowing	Do not induce vomiting. Seek medical treatment immediately.

5.Fire Fighting Measures	
(1)Fire fighting measures and extinguisher	<p>(1)Use powder-type ABC extinguisher</p> <p>(2)When corrosive gas could be generated in the event of fire fighting, use appropriate breathing apparatus.</p> <p>(3)Extinguishing a fire with a large amount of water may be an effective method . However, this should be considered as a supplementary means If there are no readily available large amounts of water, use dry sand instead; as the application of only a small amount of water may temporarily act as an accelerant and affect the fire adversely while the hydrogen storage alloy is burning.</p> <p>(4)Remove the flammable materials from the fire.</p> <p>(5)If fire occurs nearby to batteries, move them to a safe place.</p>
(2)Possibility of fire and explosion.	<p>(1)Fire may occur when: Short circuit-induced arcing occurs. A large current is applied to a module or a cell.</p> <p>(2)Explosion may occur when: the battery is contained in a hermetic container, since oxygen and/or hydrogen may be generated by the battery. The battery itself will not explode in normal conditions.</p> <p>(3)Fire and explosion may occur when: The battery is over-charged or over-discharged. The battery is over 100 deg.C. The battery is in a hermetic container with an ignition source nearby and overcharge or overdischarge occurs.</p>
6.Measures for electrolyte leakage	
	When the alkaline electrolyte leaks from battery.
	<p>1)Wip off with a towel.</p> <p>2)Keep away from flames.</p> <p>3)Protective glasses and rubber gloves should be worn</p>
7.Handling and Storage	
(1)No short circuit	Short circuit should be prevented since heat generation and/or fire may result.
(2) No disassembly and reconstruction	<p>The battery should not be disassembled and/or reconstructed for the following reasons</p> <p>If a cell is disassembled, alkaline electrolyte may leak.</p> <p>If a module is disassembled, short circuiting may occur.</p> <p>If a module is disassembled, cells will be damaged and alkaline electrolyte may leak.</p>
(3)No over-charge or over-discharge	Battery should not be over-charged or over-discharged to prevent possible oxygen and/or hydrogen generation.
(4)No usage in hermetic container	Battery should not be used in a hermetic container since the container may explode due to gas generated from the battery.
8.Exposure control	
	When alkaline electrolyte leakage from the battery occurs, necessary action should be taken as follows:
(1)Acceptable concentration	Not specified in Japanese Industrial Hygienic association and ACGIH.
(2)Facilities	<p>(1)Ventilation should be considered. Limited exhaust device or other ventilation device should be used.</p> <p>(2)Exhaust system or exhaust hole is required when the battery is used in a container.</p>
(3)Prevention measures	Safety glasses, mask, and gloves should be worn.

9. Physical and chemical properties	
(1) Appearance	The nickel hydrogen battery (cell and module) is contained within a plastic resin case. The module geometry is basically a thin rectangular trapezoid. A fixed voltage value cannot be specified.
10. hazardous information	As indicated in sections 3 and 5
11. Toxicological information	In the event of alkaline electrolyte leakage.
(1) Acute toxicity	LD50 2g/kg oral rat (based on material safety data sheet of liquid potassium hydroxide)
(2) Stimulation	Inflammation of the cornea can be caused from scratching/rubbing one's eyes. Exposure for extended time periods can irritate bronchial tubes and eyes.
12. Transportation Information	
	(1) Battery terminal should be packaged to prevent external short circuits. Batteries should not be allowed to contact each other as prevention against short circuiting when packaged. (2) There should be a marking on the package that indicates that Nickel Hydrogen Storage batteries are contained . There should be a "Non-spillable " marking for international shipment. (Refer to Section 14 ) (3) Packaging should be stable and durable enough to protect batteries from vibration, shock, dropping and stacking. Batteries should not fall down and/or be allowed to be inverted/tilted during shipping. (4) Packaging should not become wet (rain and/or dew etc..) during storage and shipping. (5) Keep away from fire/flame during storage and shipping, and do not store batteries in a hot environment. NOTE: One example of storage in a hot environment is that of exposing a vehicle with a battery installed in a very hot weather for a long time.
13. Disposal	
	(1) Battery should be disposed in accordance with provisions of vehicle manufacturer or dealer. (2) Domestic waste disposal is not allowed.
14. Regulatory information	
(1) Hazardous Materials Transportation (Hazardous shipping transportation and storage regulation)	(1) DOT (Department of Transportation) <ul style="list-style-type: none"> <li>• UN Number 2800</li> <li>• Classes 8</li> <li>• Special Provision 49 CFR 173.159(d)</li> </ul> (2) IATA (International Air Transport Association) <ul style="list-style-type: none"> <li>• UN Number 2800</li> <li>• Classes 8</li> <li>• Special Provision A67</li> </ul>
15. Others	Not specified.