Product Safety Data Sheet Information

HYBRID BATTERY ASSY, HV		Prismatic Nickel Metal-hydride Battery Module	
Parts Name	Parts No.	Model name	PSDS
BATTERY ASSY, HV	EV-PNR22A (G9280-47080)	EV-MP6R5R02 (GEN Ⅱ)	Attached
BATTERY ASSY, HV	EV-PNR34A (G9280-75010)	EV-MP6R5R02 (GEN Ⅱ)	Attached

Product Safety Data Sheet

This product (a battery) is an "Article" pursuant to 29CFR1910.1200 and, as such, is not subject to the OSHA Hazard Communication Standard requirements for preparation of a Material Safety Data Sheets, (MSDS).
This Product Safety Data Sheet is prepared only to provide information to our customers.

1. PRODUCT IDENTIFICATION

1.1	Product name	Prismatic Nickel Metal Hydride Battery (Module)
1.2	Applicable models	Plastic Case Prismatic Module EV-MP6R5R01 (GEN Ⅰ) EV-MP6R5R02 (GEN Ⅱ)
1.3	Product use	Hybrid Vehicle Battery
1.4	Name of manufacturer	Panasonic EV Energy Co., Ltd.
1.5	Address of manufacturer	20,Okasaki,Kosai-City,Shizuoka, 431-0422 Japan
1.6	Phone number of manufacturer	+81-53-577-3592 (Japan)
1.7	Name of person in charge	Osamu Takahashi
1.8	Issue number	P0157

2. COMPOSITION & INGREDIENT INFORMATION

Chemical name	Chemical symbol	CAS. No.	Exposure limits in air	
			ACGIH	OSHA
Positive electrode, composed of:				
・Nickel hydroxide	Ni(OH)2	12054-48-7	0.2mg/m3	1mg/m3
・Nickel	Ni	7440-02-0	0.2mg/m3	1mg/m3
・Cobalt	Co	7440-48-4	0.02mg/m3	0.1mg/m3
Negative electrode, composed of:				
・Hydrogen absorbing alloy	*1			
・Iron	Fe	7439-89-6	NA	NA
Alkaline electrolyte	*2			

*1: Main contents contained in hydrogen abosorbing alloy
Nickel(Ni)-CAS#7440-02-0, Cobalt(Co)-CAS#7440-48-4,
Manganese (Mn)-CAS#7439-96-5, Aluminum (Al)-CAS#7429-90-5,
Rare earths: Lanthanum (La)-CAS#7439-91-0, Cerium (Ce)-CAS#7440-45-1,
Neodymium (Nd)-CSA#7440-00-8, Proseodymium (Pr)-CAS#7440-10-0

*2: Main contents contained in alkaline electrolyte
Pottassium hydroxide (KOH)-CAS#1310-58-3,
Sodium hydroxide (NaOH)-CAS#1310-73-2,
Lithium hydroxide (LiOH)-CAS#1310-65-2

3. HAZARD IDENTIFICATION

This product is not dangerous as long as it is used for prescribed purposes and in accordance with its designated usage. As the product is a storage device for electricity, it may give the user an electric shock. It has no adverse effect on human health or the environment unless the pack and cell casings are breached.

3.1	Physical and chemical hazard	This product does not constitute a physical and chemical hazard as long as it is used for prescribed purposes and in accordance with its designated usage. The alkaline electrolyte or materials in the battery may be dangerous if they leak out of the casing due to dismantle or breach of the battery. This product may cause electric shock, fire, or injury if it is used for purposes other than those prescribed or without following the designated usage.

3.2	Hazard to human health	This product is not hazardous to human health in normal use. However, if the product dismantle or is breached, the alkaline electrolyte or materials that may leak out of the outer casing may adversely affect human health. This product contains both nickel compounds and cobalt, which are classified as carcinogens by IARC and NTP.
3.3	Hazard to environment	This product is not hazardous to the environment as long as it is used for prescribed purposes and in accordance with its designated usage. However, the contents of the product may have an adverse effect on the environment in the event of their leakage from the casing due to dismantle or breach of the battery.
4. FIRST AID MEASURES		
In the event of the leakage of the alkaline electrolyte or alkaline mixed gas from the battery, the user may come into contact with the liquid or inhale the gas. In such an event, take the appropriate first aid measures from the following.		
4.1	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.
4.2	Skin contact	Wash the contact area with plenty of water. 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.
4.3	Inhalation	Move the exposed person to fresh air area immediately. Cover up the affected person with a blanket. Seek medical treatment immediately.
4.4	Ingestion	Do not induce vomiting . Seek medical treatment immediately.
5. FIREFIGHTING MEASURES		
In the event of a battery fire, take the following measures.		
5.1	Extinguishing media and method	(1) Use a dry powder acrylonitrile butadiene styrene (ABS) fire extinguisher for fire-fighting. (2)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.
5.2	Exposure controls and personal protection for fire-fighting	Use air-breathing apparatus when a greater risk is predicted, as noxious fumes may be produced.
5.3	Fire spread prevention	(1) In the case of fire, remove surrounding inflammables immediately. (2) In the case of fire in peripheral devices, move the battery to a safe place immediately.
6. ACCIDENTAL RELEASE MEASURES		
Take the following measures if the alkaline electrolyte has leaked out of the battery.		
6.1		Wipe out the alkaline electrolyte with a cloth. Dispose of the cloth used to wipe out the electrolyte in accordance with applicable laws and regulations.

7. HANDLING & STORAGE INFORMATION		
Observe the following cautions and prohibited items. Handle the battery carefully.		
7.1	Prohibited items	(1) Short-circuiting Short-circuiting may cause burn injury due to ignition or heating effect. (2) Dismantle or modification Alkaline electrolyte leaks when the battery (cell) disintegrates. (3) Overcharging or over-discharging Oxygen or hydrogen may be produced when the battery is overcharged or over-discharged. (4) Use in an airtight container The container may explode due to the gas produced from the battery.
7.2	Cautions	(1) Do not stack a battery on another battery. (2) Do not store batteries on electrically conductive surfaces such as metals. (3) Wear protective glasses and rubber gloves while handling batteries.
8. EXPOSURE CONTROLS & PERSONAL PROTECTION		
Take the following measures in the event of leakage of the alkaline electrolyte or alkaline mixed gas from the battery.		
8.1	Facilities	(1) Store the product in a depository with local exhaust systems for ventilation. (2) Install an exhaust system or exhaust port when the product is used in a container.
8.2	Protective equipment	Wear protective glasses, protective gloves, and disaster masks.
9. PHYSICAL & CHEMICAL PROPERTIES		
9.1	Physical state	Solid
9.2	Order	No order
9.3	pH	Not applicable (ELECTROLYTE : >12)
9.4	Freezing point	Not applicable
9.5	Boiling point	Not applicable (ELECTROLYTE : 100℃; Water)
9.6	Evaporation rate	Not applicable
9.7	Vapor pressure	Not applicable
9.8	Vapor density	Not applicable
9.9	Solubility (Water)	Not applicable (Electrolyte is soluble.)
10. STABILITY & REACTIVITY		
This product is stable as long as it is used for prescribed purposes and in accordance with its designated usage. However, short-circuiting, overcharging/over-discharging, and long-term storage in a high-temperature environment may lead to the ignition or explosion of the battery.		
10.1	Possible causes of fire	Sparks due to short-circuit. A large current is applied to a module or a cell.
10.2	Possible causes of explosion	The battery will not explode by itself unless the safety valve is frequently activated and the battery is kept in an airtight container, in which case the oxygen and hydrogen produced from the battery may trigger an explosion.
10.3	Possible causes of fire and explosion	(1) Overcharging or over-discharging (2) The temperature of the battery at 100℃ or higher (3) Overcharging or over-discharging of the battery in an airtight container located close to a heat source
11. TOXICOLOGICAL INFORMATION		
This product is not hazardous as long as it is used for prescribed purposes and in accordance with its designated usage. If the battery disintegrates or is breached, the alkaline electrolyte or contents that have leaked out of the casing may adversely affect human health.		
	Carcinogenisity	The nickel-plated iron of this product is not harmful as long as it is used for prescribed purposes and in accordance with its designated usage. This product contains both nickel compounds and cobalt, which are classified as carcinogens by the International Agency for Research on Cancer (IARC) and the National Toxicology Program (NTP).

12. DISPOSAL		
		Batteries should be disposed in accordance with designated provisions by vehicle manufacturers or dealers.
13. TRANSPORTATION INFORMATION		
Refer to "14. REGULATORY INFORMATION" for applicable laws and regulations.		
13.1	Label of contents	The surface of the casing should clearly show that the product is a nickel metal hydride battery. The notice “Non-spillable” should also be added when the product is transported. Refer to "14. REGULATORY INFORMATION" for applicable laws and regulations.
13.2	No short-circuit	The battery terminals should be designed so that external short-circuiting can be avoided. Make sure that batteries do not cause short circuiting during the packaging process.
13.3	No damage and overturn	Use sufficiently strong materials for packaging boxes so that the product is not damaged due to vibration, shocks, falls, stacking, and so on. Pack the product so that the battery does not fall sideways, and is not inverted during transportation.
13.4	Protection from rain water	Avoid contact with rain water during storage and transportation.
13.5	Protection from fire and high temperatures	Do not place the product close to fire during storage and transportation. Avoid storage in a high-temperature environment. Example: Avoid leaving batteries for disposal in a parked vehicle under the scorching sun.
14. REGULATORY INFORMATION		
14.1	Hazardous materials transportation （Hazardous shipping transportation and storage regulations)	(1) United Nations (Transport of Dangerous Goods) ・UN Number 2800 ・Classes 8 ・Special Provision 238
		(2) International Air Transport Association (IATA) ・UN Number 2800 ・Classes 8 ・Special Provision A67
		(3) International Maritime Dangerous Goods (IMDG) ・UN Number 2800 ・Classes 8 ・Special Provision 29,238
		(4) Department of Transportation (DOT) ・UN Number 2800 ・Classes 8 ・Special Provision 49 CFR 173.159(d)
15. OTHER INFORMATION		
15.1	Cautions	(1)Cautions and prohibited items in this Data Sheet relate to only normal use. Take appropriate safety measures suited for the environment when the product is used for special purposes. (2)This Data Sheet provides only the information of the product, and is not to be taken as a warranty. (3)It is intended for use by persons with technical skills and at their own discretion and risk. (4)The user is responsible for determining that any usage of the data or information in this Data Sheet is in accordance with associated federal, state, and local laws and regulations.
15.2	Date of creation/revision	November 10, 2008