

- Sony Safety Data sheet -

Sony Safety Data sheet

For Lithium Ion Batteries

Yamaha 400 Wh

SONY

Sony Energy Devices Corporation

1-1 Shimosugishita, Takakura, Hiwada-machi, Koriyama-shi, Fukushima, 963-0531 Japan


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SAFETY DATA SHEET**1. Product and Company Identification****Product Information**

Company Name : YAMAHA MOTOR CO., LTD.
 Product Category : Lithium Ion Rechargeable Battery Pack
 Model Name : X94-8212A-20
 Rated Capacity : 11.0 Ah (400 Wh)
 Average Operating Voltage: 36 V

Company Identification

Supplier's Name : Sony Energy Devices Corporation
 Supplier's Address : 1-1 Shimosugishita, Takakura, Hiwada-machi, Koriyama-shi, Fukushima,
 963-0531 Japan
 Information Telephone: +81-50-3807-3065
 Date Prepared : Aug. 06, 2015
 Signature of Paper :


2. Hazard Identification

Class Name : Not applicable for regulated class
 Hazard : It may cause heat generation or electrolyte leakage if battery terminals contact with other metals. Electrolyte is flammable. In case of electrolyte leakage, move the battery from fire immediately.
 Toxicity : Vapor generated from burning batteries, may make eyes, skin and throat irritate

3. Composition / Information on Ingredients**IMPORTANT NOTE:**

The battery pack uses forty US18650NC1 lithium ion rechargeable cells and control circuit on the PWB.
 The cells are connected in 4 parallel strings of 10 cells in series.
 The battery pack should not be opened or burned since the following ingredients contained within the cells that could be harmful under some circumstance if exposed or misused.
 The cells contain neither metallic lithium nor lithium alloy.

Cathode : Lithium Nickel Cobalt Oxides (active material)
 Polyvinylidene Fluoride (binder)
 Graphite (conductive material)
 Anode : Graphite (active material)
 Styrene-butadiene rubber / Carboxymethyl cellulose sodium salt (binder)
 Electrolyte : Organic Solvent (non-aqueous liquid)
 Lithium Salt
 Component Proportion : Li:2.5%, Ni:16.8, Co:3.2%, C:21.7%, Cu:6.5%, Others: 49.3%
 Others : Heavy metals such as Mercury, Cadmium, Lead, and Chromium are not used in the cells.
 Enclosure : Plastic (PC)
 UN number (Class) : UN3480 (Class 9)
 UN Packing Group : II
 Watt-hour rating : 400 Wh for battery pack

Common chemical name / General name	CAS number	Concentration / Concentration range
Lithium Nickel Cobalt Oxides(active material)	N/A	25~45%
Polyvinylidene Fluoride (binder)	24937-79-9	0.3~1.5%
Carbon black(conductive material)	1333-86-4	0.1~1%
Graphite(active material)	7782-42-5	10~30%
Styrene-butadiene rubber / Carboxymethyl cellulose sodium salt (binder)	N/A	0.1~1%
Organic Solvent (non-aqueous liquid)	N/A	5~15%

4. First Aid Measures

The product contains organic electrolyte. In case of electrolyte leakage from the battery, actions described below are required.

- Eye contact : Flush the eyes with plenty of clean water for at least 15 minutes immediately, without rubbing, and call a doctor. If appropriate procedures are not taken, this may cause an eye irritation.
- Skin contact : Wash the contact areas off immediately with plenty of water and soap. If appropriate procedures are not taken, this may cause sores on the skin.
- Inhalation : Remove to fresh air immediately, and call a doctor.

5. Fire Fighting Measures

- Use specified extinguishers (gas, foam, powder) and extinguishing system under the Fire Defense Law.
- Since corrosive gas may be produced at the time of fire extinguishing, use an air inhalator when danger is predicted.
- Use a large amount of water as a supportive measure in order to get cooling effect if needed.
(Indoor/outdoor fire hydrant)
- Carry away flammable materials immediately in case of fire.
- Move batteries to a safer place immediately in case of fire.

6. Accidental Release Measures

- Wipe off with dry cloth
- Keep away from fire
- Wear safety goggles, safety gloves as needed

7. Precautions for Safe Handling and Use

- Storage : Store within the recommended limit of -20°C to 40°C (-4°F to 104°F), 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 jewelry, metal covered tables, or metal belt.
- Handling : Do not disassemble, remodel, or solder. Do not short + and - terminals with a metal. Do not open the battery pack.
- Charging : Charge within the limits of 0°C to 40°C (32°F to 104°F) temperature. Charge with specified charger designed for this battery pack.
- Discharging : Discharge within the limits of -20°C to 60°C (-4°F to 140°F) temperature.

- Disposal : Dispose in accordance with applicable federal, state and local regulations.
 Caution : RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.
 DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.
 DO NOT INCINERATE. DO NOT DISASSEMBLE. DO NOT SHORT TERMINALS.
 DO NOT EXPOSE TO HIGH TEMP (60°C/140°F).

8. Exposure Controls/Personal protection (In case electrolyte is leaked from battery)

- Acceptable concentration : Not specified in ACGIH.
 Facilities : Provide appropriate ventilation such as local ventilation system in the storage.
 Protective clothing : Gas mask for organic gases, safety goggle, safety glove.

9. Physical and chemical Properties

- Appearance : Lithium ion rechargeable cells are set in a resin case.
 Average Operating Voltage : 36 V

10. Stability and Reactivity

External short-circuit, deformation by crush, high temperature (over 100°C) exposure of a battery cause generation of heat and ignition.

11. Toxicological Information

- Acute toxicity : No information as a battery
 Local effects : No information as a battery

12. Ecological Information

When exhausted battery is buried in the ground, corrosion may be caused on the outer plastic case of battery and electrolyte may be oozed. There is no information on environmental influence.

13. Disposal considerations

When battery is disposed, isolate positive (+) and negative (-) terminals of the battery to avoid those terminals from touching each other. Batteries may be short-circuited when piled up or mixed with the other batteries in disorder. Dispose in accordance with applicable federal, state and local regulations.

14. Transport information

- When a number of batteries are transported by ship, vehicle and railroad, avoid high temperature and dew condensation.
- Avoid transportation which may cause damage of package.
- Lithium ion batteries, the Watt-hour rating is more than 100Wh, are subject to dangerous goods regulation for the purpose of transportation by the U.S. Department of Transportation (DOT), the International Civil Aviation Organization (ICAO), the International Air Transport Association (IATA) or the International Maritime Dangerous Goods regulations (IMDG). With regard to air transport, the International Civil Aviation Organization (ICAO) Packing Instruction 965 Section I complies with the Recommendation as is; further, the International Air Transport Association (IATA) adopts ICAO Packing Instruction 965 Section I. In addition, the regulations of the US Department of Transportation for land, sea and air transportation are based on the UN Recommendations.
- The shipment complies with the Packing Instruction 965 Section IA under IATA.
 - Each cell and battery is of the type proven to meet the requirements of each test in the UN Manual of Tests and Criteria, Part III, subsection 38.3.
 - The completed package for the cells or batteries meet the Packing Group II performance standards.

15. Regulatory information

- IMDG Code: International Maritime Dangerous Goods (IMDG) Code 2014 Edition
- ICAO TI: International Civil Aviation Organization (ICAO) Technical Instructions for the Safe Transport of Dangerous Goods by Air 2015-2016 Edition
- IATA DGR: International Air Transport Association (IATA) Dangerous Goods Regulations 56th Edition

16. Other Information

The information contained within is provided for your information only. The information and recommendations set forth herein are made in good faith and are believed to be accurate as of the date of preparation. However, Sony Energy Devices Corporation MAKES NO WARRANTY, EITHER EXPRESSED OR IMPLIED, WITH RESPECT TO THIS INFORMATION AND DISCLAIMS ALL LIABILITY FROM RELIANCE ON IT.

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For Lithium Ion Batteries

Yamaha 500 Wh

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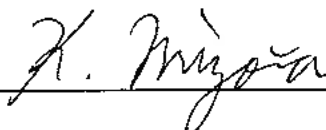
SAFETY DATA SHEET**1. Product and Company Identification****Product Information**

Company Name : YAMAHA MOTOR CO., LTD.
 Product Category : Lithium Ion Rechargeable Battery Pack
 Model Name : X0S-8212A-20 / LIPY027YDPC SY6
 Nominal Capacity : 13.6 Ah (500 Wh)
 Rated Capacity : 13.2 Ah (480 Wh)
 Average Operating Voltage : 36 V

Company Identification

Supplier's Name : Sony Energy Devices Corporation
 Supplier's Address : 1-1 Shimosugishita, Takakura, Hiwada-machi, Koriyama-shi, Fukushima,
 963-0531 Japan
 Information Telephone : +81-50-3807-3065
 Date Prepared : Feb. 15, 2016

Signature of Paper : _____

**2. Hazard Identification**

Class Name : Not applicable for regulated class
 Hazard : It may cause heat generation or electrolyte leakage if battery terminals contact with other metals. Electrolyte is flammable. In case of electrolyte leakage, move the battery from fire immediately.
 Toxicity : Vapor generated from burning batteries, may make eyes, skin and throat irritate.

3. Composition / Information on Ingredients**IMPORTANT NOTE:**

The battery pack uses forty US18650VC7 lithium ion rechargeable cell and control circuit on the PWB.

The cells are connected in 4 parallel strings of 10 cells in series.

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

The cells contain neither metallic lithium nor lithium alloy.

Cathode	: Lithium Nickel Cobalt Oxides	(active material)
	Polyvinylidene Fluoride	(binder)
Anode	: Graphite	(active material)
	Styrene-butadiene rubber / Carboxymethyl cellulose sodium salt	(binder)
Electrolyte	: Organic Solvent	(non-aqueous liquid)
	Lithium Salt	
Others	: Heavy metals such as Mercury, Cadmium, Lead, and Chromium are not used in the battery.	
Enclosure	: Plastic (PC)	
UN number (Class)	: UN3480 (Class 9)	
UN Packing Group	: II	
Watt-hour rating	: 500 Wh / 480 Wh for battery pack (Nominal / Rated)	

Common chemical name / General name	CAS number	Concentration / Concentration range
Lithium Nickel Cobalt Oxides(active material)	N/A	25~40%
Polyvinylidene Fluoride (binder)	24937-79-9	0.5~3.0%
Graphite(active material)	7782-42-5	5~25%
Styrene-butadiene rubber / Carboxymethyl cellulose sodium salt (binder)	N/A	0.2~3.0%
Organic Solvent (non-aqueous liquid)	N/A	5~15%

4. First Aid Measures

The product contains organic electrolyte. In case of electrolyte leakage from the battery, actions described below are required.

- Eye contact : Flush the eyes with plenty of clean water for at least 15 minutes immediately, without rubbing, and call a doctor. If appropriate procedures are not taken, this may cause an eye irritation.
- Skin contact : Wash the contact areas off immediately with plenty of water and soap. If appropriate procedures are not taken, this may cause sores on the skin.
- Inhalation : Remove to fresh air immediately, and call a doctor.

5. Fire Fighting Measures

- Use specified extinguishers (gas, foam, powder) and extinguishing system under the Fire Defense Law.
- Since corrosive gas may be produced at the time of fire extinguishing, use an air inhalator when danger is predicted.
- Use a large amount of water as a supportive measure in order to get cooling effect if needed. (Indoor/outdoor fire hydrant)
- Carry away flammable materials immediately in case of fire.
- Move batteries to a safer place immediately in case of fire.

6. Accidental Release Measures

- Wipe off with dry cloth
- Keep away from fire
- Wear safety goggles, safety gloves as needed

7. Precautions for Safe Handling and Use

- Storage : Store within the recommended limit of -20°C to 40°C (-4°F to 104°F), 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 jewelry, metal covered tables, or metal belt.
- Handling : Do not disassemble, remodel, or solder. Do not short + and - terminals with a metal. Do not open the battery pack.
- Charging : Charge within the limits of 0°C to 40°C (32°F to 104°F) temperature. Charge with specified charger designed for this battery pack.
- Discharging : Discharge within the limits of -20°C to 60°C (-4°F to 140°F) temperature.
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8. Exposure Controls/Personal protection (In case electrolyte is leaked from battery)

- Acceptable concentration : Not specified in ACGIH.
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