Safety Data Sheet

11335-000001 Lithium-ion Rechargeable Battery for LP35

	Australian Sponsor	**New Zealand Sponsor**
Name:	Stryker Australia	Stryker New Zealand
Address:	8 Herbert Street St Leonards, NSW Australia 2065	511 Mt Wellington Highway, Auckland, New Zealand, 1060
Phone No:	+61 02 9467 1000	+64 09 573 1890
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Emergency:	Poisons Information Centre: Ph: 131 126	Poisons and hazardous chemicals emergency: Ph: 0800 764 766

Product Information Sheet

Panasonic Batteries

Panasonic Industrial Devices Sales Company of America
A Division Panasonic Corporation of North America
1701 Golf Road Suite 3-1100
Rolling Meadows, IL 60008
Toll Free: 877-726-2228
Fax: 847-468-5750
Internet: na.industrial.panasonic.com/products/batteries
e-mail: oembatteries@us.panasonic.com

Product: Lithium-ion Batteries (Li-ion)

Applicable models/sizes: All Cylindrical and Prismatic Lithium-ion batteries

Revision: – January 1, 2017

The batteries referenced herein are exempt articles and are not subject to the OSHA Hazard Communication Standard requirement. This sheet is provided as a service to our customers.

SDS

Safety Data Sheets (SDS) are a sub-requirement of the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard, 29 CFR Subpart 1910.1200. This Hazard Communication Standard does not apply to various subcategories including anything defined by OSHA as an "article". OSHA has defined "article" as a manufactured item other than a fluid or particle; (i) which is formed to a specific shape or design during manufacture; (ii) which has end use function(s) dependent in whole or in part upon its shape or design during end use; and (iii) which under normal conditions of use does not release more than very small quantities, e.g. minute or trace amounts of a hazardous chemical, and does not pose a physical hazard or health risk to employees.

Because all of our batteries are defined as "articles", they are exempt from the requirements of the Hazard Communication Standard, hence a SDS is not required.

The following components are found in a Panasonic Lithium Ion battery:

Nickel Manganese Cobalt Type

Component	Material	Formula / CAS
Positive Electrode	Lithium Nickel Manganese Cobalt Oxide	$LiNMnCoO_2$ 346417-97-8
Negative Electrode	Graphite	C 7440-44-0
Electrolyte	Ethylene Carbonate – Solvent	$C_3H_4O_3$ 96-49-1
	Diethyl Carbonate – Solvent	$C_5H_{10}O_3$ 105-58-8
	Lithium Hexaflurophosphate – Salt	$LiPF_6$ 21324-40-3

Cobalt Type

Component	Material	Formula / CAS
Positive Electrode	Lithium Cobalt Oxide	$LiCoO_2$ 12190-79-3
Negative Electrode	Graphite	C 7440-44-0
Electrolyte	Ethylene Carbonate – Solvent	$C_3H_4O_3$ 96-49-1
	Diethyl Carbonate – Solvent	$C_5H_{10}O_3$ 105-58-8
	Lithium Hexaflurophosphate – Salt	$LiPF_6$ 21324-40-3

Nickel Cobalt Aluminum Type

Component	Material	Formula / CAS
Positive Electrode	Lithium Cobalt Nickel Aluminum Oxide	$LiCoNiAlO_2$ 193214-24-3
Negative Electrode	Graphite	C 7440-44-0
Electrolyte	Ethylene Carbonate – Solvent	$C_3H_4O_3$ 96-49-1
	Diethyl Carbonate – Solvent	$C_5H_{10}O_3$ 105-58-8
	Lithium Hexaflurophosphate – Salt	$LiPF_6$ 21324-40-3

DISPOSAL

All Panasonic Lithium ion batteries are classified by the federal government as non-hazardous waste and are safe for disposal in the normal municipal waste stream. These batteries, however, do contain recyclable materials. Panasonic is a Licensee of the Call2Recycle Battery Recycling Program. If you build our cells into a battery pack, please call 1-800-8-BATTERY or go to the Call2Recycle website at www.call2recycle.org for additional information on how your branded product can also participate in the program.

TRANSPORTATION

All Panasonic lithium ion batteries are not subject to the other requirements of the US Department of Transportation (DOT) Subchapter C, Hazardous Materials Regulations if shipped in compliance with 49 CFR 173.185.

Effective January 1, 2017 all Panasonic lithium ion batteries can be shipped by air in accordance with International Civil Aviation Organization (ICAO) 2017-2018 edition, Section II or Section 1B or International Air Transport Association (IATA), 58th edition, Section II or 1B, Packing Instructions (PI) 965 (Batteries), PI 966 (Batteries, packed with equipment) and PI 967 (Batteries, contained in equipment) as appropriate.

All Panasonic lithium ion batteries are regulated by the International Maritime Organization (IMO), 2014 edition, 37th amendment, under Special Provisions 188 and 230.

All Panasonic lithium ion cells are tested and comply with the UN Model Regulations, Manual of Test and Criteria, Part III, subsection 38.3.

If you build any of our lithium ion cells into a battery pack, you must also assure that they are tested in accordance with the UN Model Regulations, Manual of Test and Criteria. Part III, subsection 38.3, 6th revised edition.

If you plan on transporting any untested prototype battery packs contact your Panasonic Sales Representative for regulatory information. Check with your air carrier before shipping. Many air carriers have additional requirements.

FIRST AID

If you get electrolyte in your eyes, flush with water for 15 minutes without rubbing and immediately contact a physician. If you get electrolyte on your skin wash the area immediately with soap and water. If irritation continues, contact a physician. If the battery is ingested, call the National Capital Poison Center (NCPC) at 202-625-3333 (Collect) or your local poison center immediately.

GENERAL RECOMMENDATIONS

CAUTION: Risk of fire, explosion and burns. Do not short-circuit, crush, incinerate or disassemble battery.

FIRE SAFETY

In case of fire, you can use dry chemical, alcohol resistant foam or carbon dioxide fire extinguishers. Cooling the exterior of the batteries will help prevent rupturing. Fire fighters should use self-contained breathing apparatus. Detailed information on fighting a lithium ion battery fire can be found in Guide 147 (Lithium Ion Batteries) of the US DOT Emergency Response Guide.