Lithium Battery

TIPS ON SAFE USE

The proper and safe handling of lithium-ion "secondary" or rechargeable batteries

For consumers

Lithium-ion batteries are the most powerful and high energy density batteries ever made. Today, they are indispensable for supplying power to digital equipment such as personal computers, mobile phones and other such devices. Recently, however, there have been attempts to disassemble and modify lithium-ion battery packs found in personal computers and mobile phones.

Lithium-ion batteries have several safety mechanisms built into them or their packs to enable safe use of high power. Disassembling or otherwise tampering with lithium-ion batteries is very dangerous because it may damage or disable such safety mechanisms and can result in fire or explosion.

Lithium-ion batteries are labeled warnings against disassembling, heating, short-circuiting and soldering them. Be sure to read these warnings.

Lithium-ion batteries are manufactured and available as battery packs encased in plastic.

Beware of batteries that:

- Have no battery packs or no manufacturer or distributor names displayed
- Have no warning labels displayed
- Battery packs that may have been disassembled or modified.

Be sure to observe the following when using lithium-ion batteries.

Precautions for handling lithium-ion batteries

- Do not leave lithium-ion batteries in any place exposed to direct sunlight, such as a vehicle dashboard or a window sill, or exposed to high temperatures such as a vehicle parked in the sun. Doing so may cause the lithium-ion battery to leak.

- Do not leave lithium-ion batteries near a heat source, such as a stove. Doing so may result in overheating, explosion or fire.

Notes on using lithium-ion batteries

- Always read the instruction manual and any warnings on the device before using a lithium-ion battery.

- Do not spill water, salt water, juice or other fluids on a lithium-ion battery. Doing so may break the protective circuit built into the battery, resulting in the battery being charged with an abnormal current or voltage, and causing overheating, explosion or fire.

- Use the battery charger and AC adapter specified for use with the lithium-ion battery. Other battery chargers or AC adapters may have different charging specifications that can result in overheating and other problems.

- A lithium ion battery comes with a specified orientation of positive and negative terminals. Do not force the battery into a battery charger or device if it does not fit. Connecting the battery with the positive and negative terminals reversed will cause it to charge incorrectly, and may result in abnormal chemical reactions internally that lead to leakage, overheating, explosion or fire.

- Do not directly connect a lithium-ion battery to an electric power outlet or cigarette lighter socket of an automobile without the use of a battery charger. Doing so may result in electric shock or applying high voltage that produces an excessively large electric current, causing the lithium-ion battery to generate heat, explode or catch fire.

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- Do not charge lithium-ion batteries in any place exposed to direct sunlight, such as a vehicle dashboard or a window sill, or exposed to high temperatures such as a vehicle parked in the sun. High temperatures may activate the built-in protection mechanism designed to avoid accidents, preventing the battery from being charged, or the protection circuit may break, resulting in applying abnormal current or voltage when charging, and leading to overheating, explosion or fire.

- Do not throw lithium-ion batteries into a fire or heat them on a hot plate or by other means. Doing so will not only melt the insulator, damaging the gas release vent and the protection mechanism, but also lead to overheating, explosion or fire.

- Do not connect the positive and negative terminals of the lithium-ion battery with a metal object. Do not carry or store a lithium-ion battery with metal objects such as necklaces, hair pins, coins and keys. Metal objects may short-circuit the positive and negative terminals of a lithium-ion battery, resulting in allowing a large electrical current, which may result in overheating, explosion or fire of the battery, or overheating of the metal object.

- Do not throw lithium-ion batteries, drop them from high places, or otherwise subject them to strong impacts. Doing so may deform the battery and break the in-built protection circuit. This may result in the battery being charged with an abnormal electric current or voltage, and causing overheating, explosion or fire.

- Do not drive a nail into a lithium-ion battery, hit it with a hammer, or crush it underfoot. This may deform the lithium-ion battery and break the built-in protection mechanism, resulting in overheating, explosion or fire.

- Do not apply solder directly to the terminals of a lithium-ion battery. The heat will melt the insulator, damage the gas release vent and the protection mechanism, and lead to overheating, explosion or fire.

- Do not put a lithium-ion battery in a microwave oven, pressure container, or other such devices. Sudden heating may break the seal, resulting in overheating, explosion or fire.

- Do not place combustible materials on top of or over a lithium-ion battery when charging or discharging. Doing so may result in overheating, explosion or fire.

- Do not disassemble or modify a lithium-ion battery. Lithium-ion batteries have a gas release vent and a built-in protection mechanism to prevent accidents. Damaging them may cause the battery to overheat, explode or fire.

- When the electric device is not being used for an extended period, remove the lithium-ion batteries from the device and store them in a dry place.

- Keep devices that contain batteries and batteries themselves out of reach of children. Mishandling of lithium-ion batteries is dangerous.

- Keep batteries away from children and pets to prevent them from being licked, swallowed, chewed, etc.

- Lithium-ion batteries have finite life spans. If the batteries require constant recharging, replace them with new ones.

- If the lithium-ion battery gives off an odour, overheats, is discoloured, deforms, or reacts in anyway unusual during use, recharging or storage, remove it from the device or battery charger and do not use it again. Continuing to use such batteries may result in overheating, explosion or fire.

- If a battery leaks or gives off an unusual odour, immediately remove it and place it away from any naked flame. The leaking electrolyte is flammable and can cause the battery to explode or catch fire.