



## **Shipment of Power-Sonic Rechargeable Sealed Lead Acid Batteries NORTH AMERICA – SURFACE AND AIR SHIPMENTS Non-Restricted Status**

Our non-spillable lead acid batteries are listed in the U.S. Department of Transportation (DOT) hazardous materials regulations, but are excepted from these regulations since they met all of the following requirements found under 49 CFR 173.159 and 49 CFR 173.159(a)

### **49 CFR 173.159:**

(f) Batteries can be considered as non-spillable provided they are capable of withstanding the following two tests, without leakage of battery fluid from the battery:

**(1) Vibration test.** The battery must be rigidly clamped to the platform of a vibration machine, and a simple harmonic motion having an amplitude of 0.8 mm (0.03 inches) with a 1.6 mm (0.063 inches) maximum total excursion must be applied. The frequency must be varied at the rate of 1 Hz/min between the limits of 10 Hz to 55 Hz. The entire range of frequencies and return must be traversed in  $95 \pm 5$  minutes for each mounting position (direction of vibrator) of the battery. The battery must be tested in three mutually perpendicular positions (to include testing with fill openings and vents, if any, in an inverted position) for equal time periods.

**(2) Pressure differential test.** Following the vibration test, the battery must be stored for six hours at  $24 \text{ }^\circ\text{C} \pm 4 \text{ }^\circ\text{C}$  ( $75 \text{ }^\circ\text{F} \pm 7 \text{ }^\circ\text{F}$ ) while subjected to a pressure differential of at least 88 kPa (13 psig). The battery must be tested in three mutually perpendicular positions (to include testing with fill openings and vents, if any, in an inverted position) for at least six hours in each position.

### **49 CFR 173.159 (a)**

Non-spillable batteries are excepted from the packaging requirements of §173.159 under the following conditions:

**(1)** Non-spillable batteries must be securely packed in strong outer packaging and meet the requirements of §173.159(a). A non-spillable battery which is an integral part of and necessary for the operation of mechanical or electronic equipment must be securely fastened in the battery holder on the equipment;

**(2)** The battery and outer packaging must be plainly and durably marked "NON-SPILLABLE" or "NON-SPILLABLE BATTERY." The requirement to mark the outer package does not apply when the battery is installed in a piece of equipment that is transported unpackaged.

**(d)** Non-spillable batteries are excepted from all other requirements of this subchapter when offered for transportation and transported in accordance with paragraph (c) of this section and the following:

**(1)** At a temperature of 55 °C (131 °F), the battery must not contain any unabsorbed free-flowing liquid, and must be designed so that electrolyte will not flow from a ruptured or cracked case; and

**(2)** For transport by aircraft, when contained in a battery-powered device, equipment or vehicle must be prepared and packaged for transport in a manner to prevent unintentional activation in conformance with §173.159(b)(2) of this Subpart.

**January 25, 2010**