

# Data Sheet

## SubC Nickel-Zinc Batteries



ZincFive

## Introduction

Rechargeable nickel-zinc (NiZn) batteries offer many compelling benefits for stationary, motive and industrial applications and can operate in low/high rate combination battery solutions. NiZn provides a safer, higher reliability, greener and more powerful alternative to both lead acid and lithium-ion batteries.



SubC Cells  
10 Pack Configuration

## NiZn Technology Benefits

By significantly extending the cycling capability of a NiZn battery without compromising the high-performance properties inherent to the chemistry, ZincFive has introduced a rechargeable battery featuring a wide range of customer benefits over lead-acid and lithium-ion batteries.

**High Energy Density** - The ZincFive high-discharge battery offers dramatically higher energy density than lead-acid batteries and comparable energy density to high power lithium-ion batteries when measured by either weight (Watt hours per kilogram) or by volume (Watt hours per liter).

**Superior Power Density** - The ZincFive high discharge battery delivers a higher voltage in a smaller and lighter package than other rechargeable batteries. This reduces the size of the NiZn battery to less than half the size of a typical lead-acid battery.

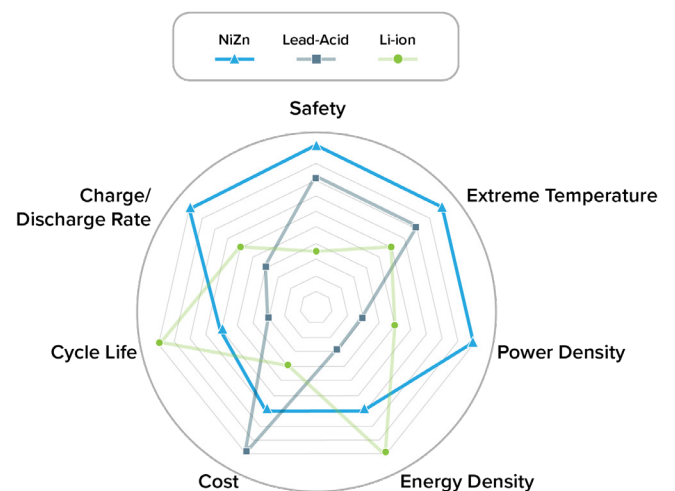
**Lower Cost** - Inherently less expensive, provides a significant total cost of ownership savings over other rechargeable batteries.

**Safety** - NiZn battery chemistry has environmental and physical safety advantages over lead-acid and lithium-ion batteries. Both nickel and zinc are recycled easily. The zinc electrode contains no lead, cadmium or mercury, and presents no threat to the environment. NiZn batteries are non-flammable and fail-safe and therefore are not subject to the travel restrictions placed on lithium ion products. NiZn batteries are recommended in applications where physical safety is essential.

**Charge/Discharge Rate** - The NiZn battery chemistry excels at high discharge rates while retaining thermal stability and is also capable of fast recharging, a key benefit for many applications including uninterruptible and motive power where high charge acceptance is necessary.

**Cycle Life** - ZincFive's NiZn battery offers more than twice the cycle life of typical lead-acid batteries and competes well with lithium-ion cycle life in many applications.

**Long Shelf Life** - Superior to lead-acid batteries which will sulfate over time, limiting their shelf life. The ZincFive NiZn high discharge battery has a significantly longer shelf life and requires no trickle charging to maintain capacity performance.



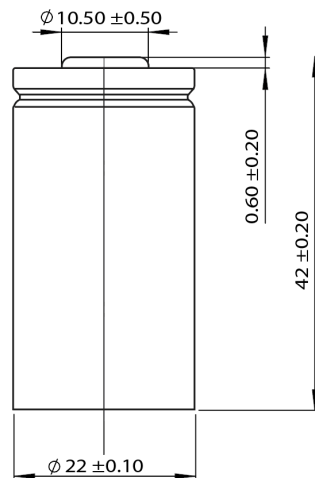
# Specifications

Model	Z5 1.7-2 M X SC	Z5 1.7-2 H X SC
<b>Electrical</b>		
Nominal Voltage	1.7VDC	1.7VDC
Operating Voltage Room Temperature Range	1.2V-1.9V	1.2V-1.9V
Nominal Capacity C/5-at 25°C	>1800mAh	>1800 mAh
Impedance AC (1kHz)	<11mOhm	1.7VDC
Charge Voltage at 25°C	1.9V CV until 0.1A Cutoff at 25°C	1.9V CV until 0.1A Cutoff at 25°C
Minimum and Maximum Charge Amps	500ma to 4Amps	500mA to 4Amps
Minimum and Maximum Discharge Amps	500ma to 4Amps	500mA to 4Amps
Temperature Compensated Charge Voltage	(TCV) = -0.0022*T+1.955 V/Cell V/Cell	(TCV)= -0.0022xT+1.955 v/Cell
Chemistry	Nickel-Zinc, Sealed	Nickel-Zinc, Sealed
Electrolyte	Starved, KOH, Aqueous(no acid)	Starved, KOH, Aqueous(no acid)
<b>Environmental</b>		
Operating Temperature Range*	Discharge (-20°C to 50°C) Charge(0°C to 50°C)	Discharge (-20°C to 50°C) Charge(0°C to 50°C)
Storage Temperature Range*	(-20°C to 60°C)	(-20°C to 60°C)
Transport	No Transportation Restrictions	No Transportation Restrictions
<b>Mechanical</b>		
Diameter (mm) SubC Cell only (Optional)	22.00 +/- 0.10	22.00 +/- 0.10
Diameter (mm) SubC Cell with cover (Standard)	22.50 +/- 0.50	22.50 +/- 0.50
Height (mm)	42 +/- 0.20	42 +/- 0.2
Weight (g) SubC Cell only (Optional)	51 +/- 1g	49 +/- 1g
Weight (g) SubC Cell with cover (Standard)	49.7 +/- 1.5g	51.6 +/- 1.5g
<b>Certifications</b>		
UL/CSA	Recognized UL-2054, CSA 22.2 No. 60950-1	Recognized UL-2054, CSA 22.2 No. 60950-1

\* consult with ZincFive for use outside this temperature range

\*All Specifications Valid at 25°C \*All Specifications Subject to Change

# Technical Drawings



Size: SubC, Cylindrical