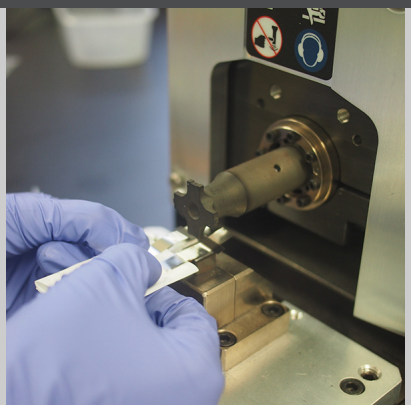
Imperia
Batteries

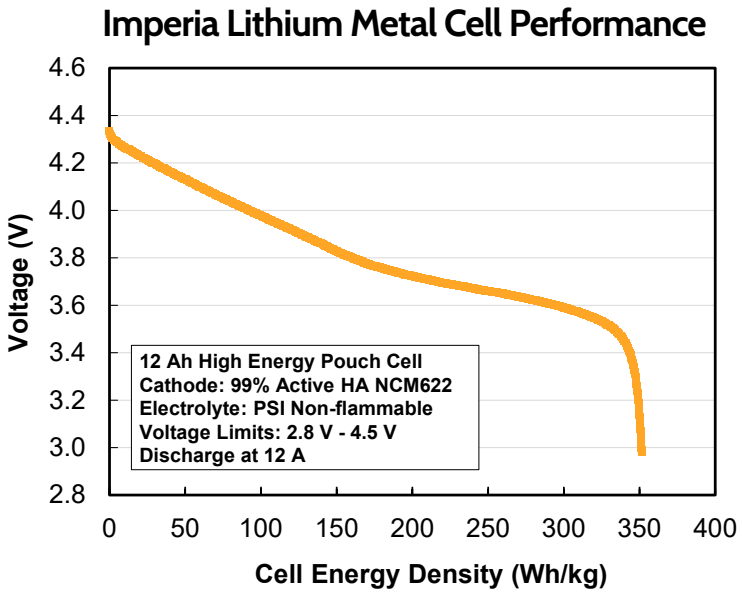
WWW.IMPERIABATTERIES.COM



Trusted Talented Focused

Imperia Batteries', a division of Physical Sciences Inc., mission is to develop and deliver safe, high energy and power storage solutions for specialty applications. Imperia has produced and delivered UN-tested cells for OCONUS mililary operations.

Imperia's rechargeable lithium metal cell design simultaneously offers higher energy and power densities than is achievable using standard primary or rechargeable batteries.



Christopher Lang
lang@psicorp.com

Imperia Batteries, A Division of Physical Sciences Inc.
200 Research Drive
Wilmington, MA 01887
P (978) 689-0003
F (978) 689-3232
www.imperiabatteries.com

Core Technologies

Patented High Active (HA) Coating

» HA coatings of commercial cathodes to create electrodes with >98% active material with increased specific energy (Ah/kg) and rate performance (kW/kg)

» Rapid, solvent-free coating process of cathode powders

» Longer shelf life due to removal of high surface area carbons

» Enables electrode loadings >35 mg/cm^2 and electrode densities >3.5 g/cc

» Up to 90% reduction in binder and 50% reduction in NMP needed to cast materials

Non-Flammable Electrolytes

» Superior performance non-flammable electrolytes for lithium ion batteries that maintains non-flammability even when vented from an over-charged cell

» Capable of supporting pulse power applications

» Nonflammable as a liquid and aerosol

» Rapidly wets cell components, including the separator and electrodes

» Enables efficient cycling of graphite anodes

» Freezing point is less than -40°C

Manufacturing and Production Capabilities

» An 1152 ft^2 dry room enables production of cells at scale

» Application of coatings to materials in up to 100 Kg amounts supplied directly and in larger amounts through selected partners

» Prototype and pilot production of cells up to the 20Ah size with various technologies

» >100 channels for battery cycling

For over 45 years, Physical Sciences Inc. has provided integrated research and development services to deliver products and solutions to commercial and government customers. Areas of expertise include advanced materials, batteries, chemistry, electronics, lasers, optics and imaging, sensors and instrumentation, and the interdisciplinary fields of combustion systems, electrochemistry, electro-mechanics, optoelectronics and photonics.