

BATTERY STORAGE

Ni-rich Cathode Materials for Lithium Ion and Sodium Ion Batteries

Explore our range of Ni-rich cathode materials for lithium and sodium ion batteries, featuring high energy density, cost efficiency, and advanced material properties tailored for different applications.

Ni-Rich Cathode Materials for Lithium Ion Batteries

Explore our state-of-the-art pack production line solutions for battery modules with advanced quality assurance, control, and comprehensive testing capabilities.

Product Features

The whole series of products have high energy density characteristics. Based on different application requirements, we provide a variety of products, each tailored to either high power or extended life. These materials are manufactured using state-of-the-art processes, ensuring quality and consistency.

Parameters

| Material Type               | M811 Cathode Material          | NCMA Cathode Material           | Ultra-high Nickel Content Cathode Material |
|-----------------------------|--------------------------------|---------------------------------|--------------------------------------------|
| Parameters                  | Test results                   |                                 |                                            |
| Appearance                  |                                |                                 |                                            |
| D <sub>50</sub> (μm)        | 4.93                           | 10.28                           | 4.20                                       |
| Specific Discharge Capacity | 202.3 mAh/g 0.2C/0.2CD, 3-4.3V | 214.18 mAh/g 0.2C/0.2CD, 3-4.3V | 230.5 mAh/g 0.2C/0.2CD, 3-4.3V             |
| Rate 5C/0.2C                | 81.2%                          | /                               | /                                          |
| Structure                   | Hollow                         | Divergent                       | Small particle agglomerate                 |

Cathode Materials for Sodium Ion Batteries

Product Features

The whole series of products have the advantages of low cost, high energy density, and long life. We provide agglomerate and mono-crystal cathode materials that are ideal for sodium ion battery applications.

Parameters

| Material Type        | Agglomerate NaNi <sub>1/3</sub> Fe <sub>1/3</sub> Mn <sub>1/3</sub> O <sub>2</sub> Cathode Material |       | Mono-crystal NaNi <sub>1/3</sub> Fe <sub>1/3</sub> Mn <sub>1/3</sub> O <sub>2</sub> Cathode Material |       |
|----------------------|-----------------------------------------------------------------------------------------------------|-------|------------------------------------------------------------------------------------------------------|-------|
| Coin cell (2.0-4.0V) | 0.2C Specific Discharge Capacity (mAh/g)                                                            | 141.3 | 0.2C Specific Discharge Capacity (mAh/g)                                                             | 138.7 |
|                      | 1C Specific Discharge Capacity (mAh/g)                                                              | 136.5 | 1C Specific Discharge Capacity (mAh/g)                                                               | 132.5 |
|                      | 1C Cycle 50 Cycles Hold Rate (%)                                                                    | 96.21 | 1C Cycle 50 Cycles Hold Rate (%)                                                                     | 97.40 |

Raw Materials

Product Features

The materials used in the production of Ni-rich and sodium ion batteries are crucial to ensuring the efficiency and longevity of the final product. Below are the key raw materials used.

| Name                    | LiH <sub>2</sub> PO <sub>4</sub>                                  | NiSO <sub>4</sub> ·6H <sub>2</sub> O               | MnSO <sub>4</sub> ·H <sub>2</sub> O                            |
|-------------------------|-------------------------------------------------------------------|----------------------------------------------------|----------------------------------------------------------------|
| Appearance              | Particle without clumping white crystal                           | Particle without clumping green crystal            | Light pink powder without clumping                             |
| Appearance              |                                                                   |                                                    |                                                                |
| Magnetic Impurity (ppb) | 30                                                                | 31                                                 | 30                                                             |
| Oil Content (%)         | 0.0003                                                            | 0.0004                                             | 0.0004                                                         |
| Insoluble Matter (%)    | 0.0001                                                            | 0.0001                                             | 0.0054                                                         |
| pH                      | 4.01                                                              | 4.63                                               | 5.63                                                           |
| Applications            | Used in preparation of high pellet density lithium iron phosphate | Used in production of precursor and nickel plating | Used in production of precursor Mn <sub>2</sub> O <sub>4</sub> |

## Applications

- **Ni-rich Cathode Materials for Lithium Ion Batteries:** Mainly used in civilian fields such as EVs, premium EVs, and premium electric tools, among other special equipment fields.
- **Cathode Materials for Sodium Ion Batteries:** Used primarily in low-speed electric vehicles, two-wheeled vehicles, and energy storage fields.