MATERION

Data Sheet

Battery Materials

Precursor Materials for Solid-State Batteries

50+ years of inorganic chemicals expertise

414.289.9800 | materion.com

As developing technologies continue to push the boundaries and expectations of energy storage, demand for specialized battery chemistries is growing rapidly. With a team of chemists and technical experts, we work closely with our customers to develop, customize, and produce solid-state electrolyte precursor materials to support a range of battery applications, including batteries for electric vehicles.

At Materion, we take pride in our ability to partner and collaborate closely with our customers while offering a wide range of technical capabilities to develop custom compositions to meet their specifications.

We are experts in:

- Customized manufacturing: synthesis, processing, and analysis
- Producing challenging, custom materials
- Particle size, purity, and packaging to meet stringent requirements
- Air- and moisture-sensitive material manufacturing and processing
- Scaling processes from R&D samples to full production quantities

Chemical and Physical Characterization

- X-ray diffraction
- ICP-OES/ICP-MS/AA/GDMS spectroscopies
- O, N, C, S combustion analysis
- BET surface area
- Ion-selective electrode
- Laser diffraction particle size analysis
- TGA/DTA
- Wet chemical analysis

ISO Certified

9001:2015
14001:2015
17025:2017

More than a supplier, we are your R&D partner.

- Customized materials and particle size
- Batch-to-batch consistency
- Highly reliable products
- Specialized packaging
- Manufactured to the most stringent material requirements

Material Offerings*

In addition to the following materials, Materion is in the process of producing additional chemistries. More compositions are available upon request.

High-Purity Metals

- Ag, Be, Cu, Co, Fe, Li, etc.

Oxides

- Silver Oxide, Ag_2O
- Aluminum Oxide gamma, Al_2O_3-g
- Lanthanum Oxide, La_2O_3
- Lanthanum Carbonate, $La_2 (CO_3)_3$
- Lithium Oxide, Li_2O
- Lithium Carbonate, Li_2CO_3
- Lithium Cobalt Oxide, $LiCoO_2$
- Lithium Lanthanum Zirconium Oxide, LLZO
- Lithium Manganese Oxide, $LiMn_2O_4$
- Lithium Phosphate, Li_3PO_4
- Manganese Oxide, MnO_2
- Vanadium Oxide, V_2O_5
- Zirconium Oxide, ZrO_2

Fluorides

- Aluminum Fluoride, AlF_3
- Copper Fluoride, CuF_2
- Iron Fluoride, FeF_2 and FeF_3
- Lithium Fluoride, LiF
- Nickel Fluoride, NiF_2

Sulfides

- Cobalt Sulfide, CoS_2
- Copper Sulfide, CuS and Cu_2S
- Iron Sulfide, FeS_2
- Lithium Sulfide, Li_2S
- Lithium Sulfide Boron Sulfide, LiS_2 B_2S_3
- Lithium Sulfide Phosphorus Sulfide, LiS_2 P_2S_5
- Nickel Sulfide, NiS_2
- Silicon Sulfide, SiS_2
- Titanium Sulfide, TiS_2

*Not limited to the listed compositions

Markets & Applications

- Solid-state precursor materials for electric vehicles
- Medical applications
- Thermal batteries for military and defense
- Large-capacity storage

For more information, connect with our team today.

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