

DRIVING THE FUTURE NEW ENERGY

LEADING THE FUTURE OF RENEWABLE ENERGY.



KOREA METAL SILICON

KOREA METAL SILICON CO.,Ltd

About Us

 **KMS** KOREA METAL SILICON Co.,Ltd

Korea Metal Silicon Co., Ltd. ("KMS") is a company that produces and supplies metal silicon powder used as anode material for secondary battery, special alloys, silane gas, organosilicon additive, and polysilicon raw material.

We are in business of manufacturing and exporting high-quality silicon powder and conducting research and development of silicon for anode materials of secondary batteries.

KMS has been certified as a Venture, ISO9001, INNO-BIZ, Gangwon-do's Promising Small and Medium Enterprise, the Best Company (TI-2) in the NICE's TCB Technology Evaluation, and Global IP Star Company and also achieved One Million Dollar Export Tower through unremitting R&D efforts.

KMS aims to become a partner that grows with customers by meeting their needs and expectations based on responsibility and trust in service and quality.



History



- 2024** • Awarded the K-Tech Award in the "Secondary Battery Anode Materials" category at the Korea Industry Awards.
 Joined the Defense SMEs and Startups Association.
 Launched sales on eBay.
 Collaborating with domestic and international battery companies to develop secondary battery anode materials.
- 2023** • Relocated to a new headquarters and factory in Jecheon Third Industrial Complex.
 Won the Grand Prize in the Technology Guarantee Fund's Recovery Support Story Contest.
- 2022** • Signed an investment agreement with the Hyundai/IBK New Industry Investment Fund.
 Certified as a specialized company in materials, parts, and equipment.
- 2021** • Nominated as a Global IP Start Company in Gangwon by Gangwon Economic Promotion Agency.
- 2020** • Opened the 'Center for Next-Generation Materials for Secondary Battery' within the Company's research center.
 Registered as a vendor and supplied products to Panasonic, Hitachi, and many others in Japan.
 Registered as a vendor and supplied products to Samsung SDI and LG Energy Solution.
 Achieved TI-2 (the highest mark) in NICE's technology evaluation.
 Participated in the MSS's two-year 'Purchase-Linked New Product Development Project.'
- 2019** • Received the Commendation for Exemplary SME (from the Minister of SMEs and Startups).
- 2018** • Received the Gold Prize in the technology segment at the Korea Environment and Energy Awards (from the President of Korea Gas Safety Corporation).
 Received the Commendation for Excellent Technician (from the Director of Gangwon Regional Office of MSS).
 Received the Venture Activation Merit Award (from the Minister of SMEs and Startups).
 Achieved the One Million Dollar Export Tower Prize.
- 2017** • Nominated as a Promising SME by Gangwon-do Government (2017-2022).
 R&D of silicon composites for secondary battery anode materials (RIST, Korea Metal Silicon Co., Ltd.).
 Acquired ISO9001 (from the Korean Standards Association);
 Certified as an INNO BIZ (by MSS).
- 2013** • Supplies metal silicon powder under supply contracts.
 Domestic: OCI, HK Silicon, SK Materials, and Samgi Ceramic.
 Overseas: Kinseimatec (Japan), Toyo Chemical (Japan).
- 2012** • Participated in and conducted the three-year "Regional Industry Upbringing Project" of the Ministry of SMEs and Startups (MSS).
 Certified as a Venture.
- 2011** • Built the production line for mass production of metal silicon powder.
- 2008** • Company incorporated and Choi, Jong-oh inaugurated as CEO

Products

Korea Metal Silicon Co., Ltd. provides comprehensive silicon solutions. With proprietary technology, state-of-the-art facilities, and production capabilities, we can supply everything from research samples to mass production quantities. We also offer customized products tailored to each customer's desired specifications. Korea Metal Silicon Co., Ltd. takes responsibility for quality through continuous technological improvement and is committed to delivering products that ensure customer satisfaction based on trust and reliability.

METAL SILICON LUMP

Metal silicon with 98% or higher purity is obtained through melting and reduction processes in an electric arc furnace added with carbon such as silica, coal, and coke. The resulting silicon is pulverized to a certain size and used in steel aluminum alloys, semiconductors, and solar panels as a key material and refractories with high melting point.



| Grade | #2202 | #3303 | #421 | #441 | #553 |
|-------|-------|-------|------|------|------|
|-------|-------|-------|------|------|------|

SILICON POWDER FOR POLYSILICON

Metal silicon powder at the level of several hundred micrometers is used in semiconductor, polysilicon for solar panels, organic silicone, and special silicon gases. Recently, some special gases have also been used as raw materials for lithium-ion battery anode materials.

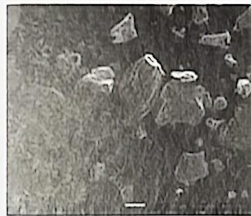


| | Trade name | #3303 | #3305 | #4105 | #421 | #521 | #5305 | #531 |
|---------------|-----------------------------------|--------|--------|--------|--------|--------|--------|--------|
| Purity | Si [%] | ≥ 99.3 | ≥ 99.3 | ≥ 99.3 | ≥ 99.2 | ≥ 99.2 | ≥ 99.1 | ≥ 99.0 |
| | Fe [ppm] | ≤ 3000 | ≤ 3000 | ≤ 4000 | ≤ 4000 | ≤ 5000 | ≤ 5000 | ≤ 5000 |
| | Al [ppm] | ≤ 3000 | ≤ 3000 | ≤ 1000 | ≤ 2000 | ≤ 2000 | ≤ 3000 | ≤ 3000 |
| | Ca [ppm] | ≤ 300 | ≤ 500 | ≤ 500 | ≤ 1000 | ≤ 1000 | ≤ 500 | ≤ 1000 |
| | Tl [ppm] | ≤ 500 | ≤ 500 | ≤ 500 | ≤ 500 | ≤ 500 | ≤ 500 | ≤ 500 |
| Particle size | +710(425) _{μm} [%] | ≤ 2 | | | | | | |
| | 710(425)~53(45) _{μm} [%] | ≥ 96 | | | | | | |
| | -53(45) _{μm} [%] | ≤ 2 | | | | | | |



Micro Silicon Powder (mesh size)

Metal silicon powder at the tens of micrometers level has a wide range of applications. The mesh units used in industries fall within this range. It is used in chemical products, additives for refractory materials, and specialized semiconductor applications. Recently, its use has expanded to include raw materials for lithium-ion battery anodes.



| Purity | Particle Size |
|-------------|-------------------|
| Si>96~99.5% | -75 μ m 80% |
| | -45 μ m 80% |
| | D50=10~20 μ m |

Micro Silicon Powder

Micron silicon powder is used in lithium-ion batteries, ceramics, chemicals, and defense products. Customers who require micron silicon powder have diverse needs, and precise particle size control and impurity management are essential.

Micro-Si



| Purity | d50 |
|--------|------------|
| Si>99% | 1 μ m |
| | 3 μ m |
| | 5 μ m |
| | 10 μ m |



Nano silicon powder

Nano silicon powder obtained through grinding and classification, used in industry, typically measures several hundred micrometers. Submicron-level silicon powder exhibits different behaviors, and there are products that utilize these characteristics. It is used in applications such as lithium-ion batteries, coatings, and specialty chemicals.

Nano-Si

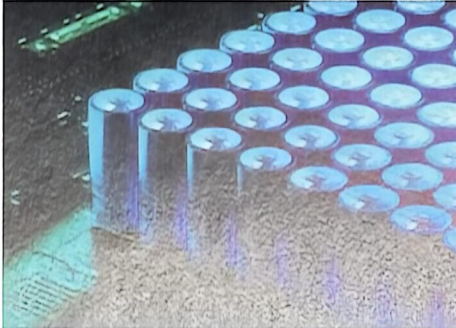


| Purity | d50 |
|--------|-------|
| Si>99% | 300nm |
| | 500nm |



Certified Technologies and Innovations

Lithium-ion Battery



Silicon is applied in various forms as an anode active material for lithium-ion batteries. Compared to conventional graphite anodes, silicon offers a higher capacity, enables faster charging and facilitates high power output. The application of silicon in anodes is key to advancing lithium-ion battery technology. Korea Metal Silicon Co., Ltd. has secured technological capabilities through continuous research and development, allowing us to accommodate any form of silicon-based anode.

SiOx

The SiOx composite is known as the first commercially successful silicon-based anode material in the world. It is used as an additive to existing carbon-based anode materials to enhance capacity and output. The primary raw material for SiOx composite is micro-sized silicon powder. We produce silicon powder for SiOx and supply it to domestic companies. The SiOx composite is known as the first commercially successful silicon-based anode material in the world. It is used as an additive to existing carbon-based anode materials to enhance capacity and output. The primary raw material for SiOx composite is micro-sized silicon powder. We produce silicon powder for SiOx and supply it to domestic companies.

Si/C

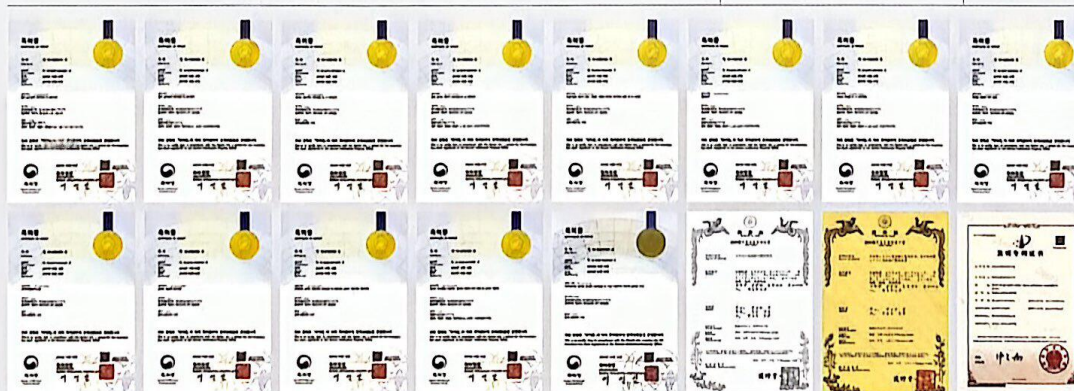
The primary raw material for the Si/C composite is nano-sized silicon powder. It is used as an additive to existing carbon-based anode materials to improve capacity and output. We possess the technology and patents for manufacturing Si/C composites. Recently, we have been developing materials to diversify methods for producing silicon at the nanoscale to reduce costs in collaboration with related companies.

PURE-Si

PURE-Si anode active material is applied in next-generation batteries. While conventional SiOx and Si/C composites enhance performance by adding a small amount to graphite, PURE-Si anode active material does not use graphite. Unlike SiOx and Si/C, there is no process for nanonizing silicon. We have developed products with PURE-Si anode active material in collaboration with battery manufacturers, expecting overwhelming performance at competitive prices.

Patent

| Patent name | Number | Registered Country |
|---|----------------|--------------------|
| Method for Manufacturing Polycrystalline Silicon and Manufacturing Device Thereof | 10-1028411 | Korea |
| Method for Manufacturing Polycrystalline Silicon and Manufacturing Device Thereof | 10-1101989 | |
| Method for Manufacturing Silicon Powder and Manufacturing Device Thereof | 10-1182163 | |
| Method for Manufacturing Metal Silicon Powder and Manufacturing Device Thereof | 10-1308948 | |
| Method for Energy Recovery from Waste Using Sequencing Techniques and System Thereof | 10-1383320 | |
| Delronization Device | 10-1498693 | |
| Soluble Silicate and Manufacturing Method Thereof | 10-1560370 | |
| Method for Manufacturing Tantalum Powder | 10-1800396 | |
| Waste Resource Recycling System | 10-1894992 | |
| Manufacturing Method for Silicon Composite | 10-2085938 | |
| Method for Manufacturing Amorphous Silicon Composite and Device for Manufacturing Amorphous Silicon Composite | 10-2136820 | |
| Method for Manufacturing Silicon Composite Using Silicon Byproducts and Silicon Composite Thereof | 10-2395188 | |
| Manufacturing Method for Silicon Powder for Secondary Batteries and Silicon Powder Manufactured Thereby | 10-2550755 | Japan |
| Manufacturing Method for Silicon Composite | 7345556 | |
| Method for Manufacturing Amorphous Silicon Composite and Device for Manufacturing Amorphous Silicon Composite | 7418607 | China |
| Manufacturing Method for Silicon Composite | CN 113508476 B | |



PROPRIETARY TECHNOLOGY - CERTIFICATES

The in-house research center, Venture, INNO-BIZ, ISO 9001, Promising SME in Gangwon Region, Excellent Technology, Global IP Star Company



Won the One Million Export Tower Prize in 2018 (from the Korea International Trade Association)



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