

DISPERSION of FUMED SILICA

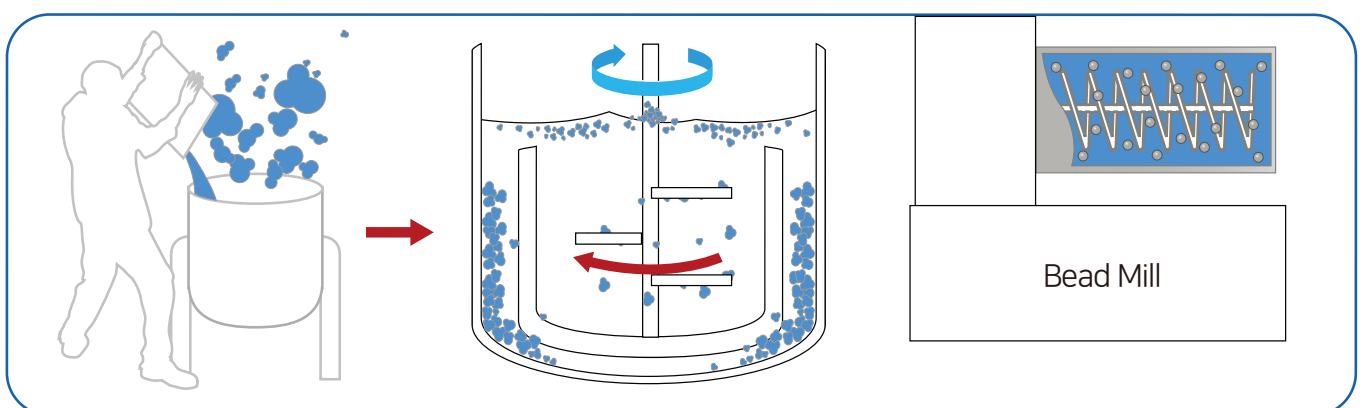


01 ▶ Role of fumed silica in secondary batteries

- 1) Fumed silica is a nano-sized powder obtained by thermal decomposition of high-purity silicon chloride compound, which is very light and flies easily.
- 2) Fumed silica is a functional basic product for construction, automobiles, and semiconductors, and is used in various fields such as electronic devices, semiconductors, and secondary batteries.
- 3) In particular, in the field of secondary batteries, it is being used as an anode material as an alternative to natural graphite or artificial graphite, and has more than 10 times higher energy capacity than existing graphite materials and high output performance. Fumed silica is attracting attention as a next-generation material because it can innovatively improve the performance of secondary batteries.
- 4) In addition, as research continues to compensate for disadvantages such as volume expansion while charging and discharging, it is a material whose importance is emerging more and more.

02 Problems With The Tixting Process

- 1) Fumed silica is a synonym for a substance with a very light specific gravity. When directly poured into a liquid, a lot of dust is blown away, so safety protective equipment such as a dust mask is essential for workers' respiratory safety. In addition, the contamination of the workplace is very severe due to this scattering dust, making it difficult to input.
- 2) Low-speed mixers like the one shown below may take hours or even days to obtain satisfactory dispersion results, resulting in poor production efficiency. If dispersion is not sufficient, the filter or strainer may be clogged with agglomerates during the production process. it happens And as a result, the performance of the finished product may deteriorate.
- 3) In the case of a grinder such as a bead mill, there are dispersion and grinding effects, but similarly, scattering dust generated during input and cumbersome cleaning after use remain as difficulties.



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