Koura Silatronix®

OS3® Product Data Sheet

OS3® is a fluorinated organosilicon nitrile solvent with exceptional thermal and electrochemical stability designed to enhance performance of Lithium-ion cells at only 0.5% to 3% of the electrolyte formulation

- Reduces cell gassing, extends calendar life, minimizes impedance growth
- Prevents Li salt and carbonate co-solvent decomposition, scavenges HF
- Forms cathode CEI surface layer to stabilize highly reactive and high voltage materials
- Excellent synergy combined with Si anodes and FEC

Applications

OS3® solvent is intended for low concentration ≤ 3% usage in Li-ion battery electrolytes. Benefits have been observed in several different electrode chemistries and cell formats. Refer to *"OS3® Application Notes"* document for additional details. Use is directly scalable within current electrolyte blending and Li-ion battery manufacturing equipment, and processes. No impact to bulk viscosity or conductivity at low percentages.

Benefits

OS3® solvent prevents $LiPF_6$ salt decomposition and enables peak performance of Li-ion batteries. Comprehensive cell performance benefits have been observed most often at 0.5% - 3% OS3 concentration. Use of OS3® solvent electrolyte reduces gassing, enables Si anodes, enables high voltage cathodes, extends cycle life, improves wide temperature range operation, and improves cell safety. Electrochemically stable to 7V (Pt).

Material Properties

Form	*liquid*
Water content	*< 20 ppm*
Purity by GC	*≥ 99.9%*
Color	*Clear, colorless*
Density	*0.94 g/cc (20°C)*
Dielectric constant	*16.8*
Viscosity	*2.16 cP (20°C)*
Flash point	*83°C*
Boiling point	*202°C*
Freezing point	*-57°C*
Vapor pressure	*7.9 hPa (20°C)* *23.8 hPa (50°C)*

Shelf Life

R&D samples are intended for immediate use upon receipt. Commercial product has a shelf life of up to 1 year in original, unopened container.

Packaging and Storage Requirements

OS3® solvent must be stored in sealed, air-free, and moisture resistant containers. Aluminum, or HDPE lined steel containers are recommended.

Processing Recommendations

Minimize exposure of OS3® solvent to ambient atmosphere. Dispense in a controlled and moisture-free environment. OS3® solvent readily absorbs moisture from the ambient atmosphere. Do not inhale any electrolyte component vapors.

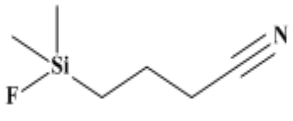
Health and Safety Information

Review the OS3® solvent Safety Data Sheet (SDS) before use. Follow recommended handling protocol.

Availability

R&D OS3® samples are available starting at 20g. A 20g sample will fill ~150 x 2Ah cells with 2% OS3 composition electrolyte. Larger quantities are available upon request.

Commercial OS3® deliveries are available for mass production. Commercial chemical registration of this patented new material has been completed in China, S. Korea, the EU, and the USA.



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