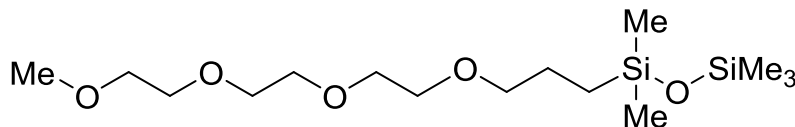


Catalog #14-1943 2,2,4,4-Tetramethyl-3,8,11,14,17-pentaoxa-2,4-disilaoctadecane, 99+%
Electrolyte solvent ANL-2SM3



Organosilicon Electrolytes for Lithium Ion Batteries

1. Silicon based electrolytes with polyethylene glycol oligomers improve thermal and electrochemical stability of lithium-ion batteries.
2. Increases battery long-term stability.
3. Are less flammable than conventional organic carbonate-based solvents and maintain the safe operation of batteries.
4. Improves conductivity and kinetics of the lithium salts.

Electrochemical and Physical Properties:

1. Disiloxane liquid electrolyte ANL-2SM3 exhibits electrochemical stability, high thermal stability, and low viscosity.- **Viscosity** 3.8 cP at 25°C; **The conductivity and viscosity** of ANL-2SM3-based electrolyte are $3.65 \times 10^{-4} \text{ S cm}^{-1}$ and 18 cP at 25 °C [1,2]
Charged cathode material is more thermally stable in the siloxane-based electrolyte than in the carbonate-based electrolyte [1].
Boiling point 269-271°C; Glass transition temperature -103.0°C
2. Soluble electrolytic lithium salts: LiBOB, LiPF₆, ANL-2SM3, and LiTFSI/ANL-2SM3 is compatible with nanostructured material based electrodes [3].
3. Disiloxane/LiBOB or Disiloxane /LiPF₆ electrolytes show conductivities up to $6.2 \times 10^{-4} \text{ Scm}^{-1}$ at room temperature. Disiloxane electrolytes doped with 0.8MLiBOB are stable to 4.7 V. The LiBOB/disiloxane combinations were found to be good electrolytes for lithium-ion cells [4]

References:

1. *J. Power Sources*, **2006**, 160, 645.
2. *J. Power Sources*, **2006**, 160, 1355.
3. *Chem. Mater.*, **2007**, 19, 5734.
4. *J. Power Sources*, **2010**, 195, 6062.