

How to Prepare EC/DMC LiTFSI Liquid Electrolyte (EQ-Lib-LiTFSI)

Preparation Procedures

1. Transfer the materials and equipments into the glove box. Set up an Argon filled glove box environment with < 1 ppm H₂O level for the electrolyte preparation. Ethylene carbonate (EC) and dimethyl carbonate (DMC) with >99% purity are recommended, and can be purchased from Sigma-Aldrich.



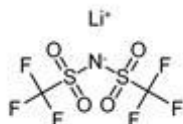
Attention:

Read and follow the instructions on the LiTFSI and organic solvent safety data sheet (SDS). Some organic solvent, such as DMC, is flammable. Store and handle the materials away from heat, sparks, and flame.

2. To prepare 10 mL 1M LiTFSI liquid electrolyte, use digital balance to weigh 2.871 g (0.01 mol) LiTFSI powder. Prior to use, the LiTFSI salt is carefully dried under vacuum at 120 °C for 48 h.
3. Mix the EC and DMC organic solvents with 1:1 volume ratio (5 mL EC, 5 mL DMC). Test the water content of the mixed solvents to make sure it is < 20 ppm.
4. Dissolve the vacuum dried 2.871 g LiTFSI salt in the 10 mL organic solvent to prepare the 1 M LiTFSI liquid electrolyte. Stir or shake the solution to mix the liquid electrolyte.
5. Store the prepared liquid electrolytes in glove box to avoid contamination by air and moisture. Prior to use, test the water content of the liquid electrolyte to make sure it is < 20 ppm.

Experimental Materials and Equipments

LiTFSI



LiTFSI (lithium bis-trifluoromethanesulfonimide) Powder, 10 g/bottle - EQ-Lib-LiTFSI

Sale Price: USD\$45.00

Glove Box



Glove Box with H₂O & O₂ Purification System and Openable Front Window - EQ-VGB-6OP-LD

Sale Price: RFQ

Balance



Professional Grade (0.1mg Readability) Digital Balance with Wind Screen, 220g x 0.0001g - EQ-Bal-CX220-LD

Sale Price: USD\$1,899.00

Liquid Distribution



Automatic Liquid Distributing Station with 18-Ports Stream Selection Valves for Electrolyte Research - MSK-18PE

Sale Price: RFQ

Liquid Fill



Desk-top Precision Electrolyte Filler- MSK-150

Sale Price: RFQ

Mixer



Compact Digital Vortex Mixer with YSZ Balls for High Throughput Ball Milling - MSK-SFM-VTM-LD

Sale Price: USD\$786.00

Mixer



Programmable Stirring Hot Plate with External Temperature Probe, 7" x 7" Glass Ceramic Plate Max. 550°C - EQ-SP-H550

Sale Price: USD\$998.00