

Materials List for:

# Synthesis of Ionic Liquid Based Electrolytes, Assembly of Li-ion Batteries, and Measurements of Performance at High Temperature

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## Materials

Name	Company	Catalog Number	Comments
Silicone oil	Sigma-Aldrich	85409	
Potassium hydroxide	Sigma-Aldrich	221473	Corrosive
Rotary evaporator	Buchi	R-124	
High-vacuum pump	Welch	8907	
Nitrogen, ultra high purity	Airgas	NI UHP300	Compressed gas
Tetrahydrofuran, stabilized with BHT	Pharmco-Aaper	346000	Flammable. Dried before use.
Dichloromethane	Pharmco-Aaper	313000	Flammable, toxic.
Separatory funnel (1 L)	Fisher Scientific	13-678-606	
Sodium sulfate	Sigma-Aldrich	239313	
Ethanol, absolute	Pharmco-Aaper	111USP200	Flammable, toxic.
Buchner funnel	Fisher Scientific	FB-966-F	
Methanol	Pharmco-Aaper	339000ACS	Flammable, toxic.
Triethylamine (anhydrous)	Sigma-Aldrich	471283	Toxic, flammable, harmful to environment
Glass syringe	Hamilton Company	1700-series	
Deuterated chloroform	Cambridge Isotopes Laboratories, Inc.	DLM-29-10	Toxic
Nuclear magnetic resonance instrument	Varian	V400	
Hydrogen	Airgas	HY HP300	Highly flammable.
Hexanes	Pharmco-Aaper	359000ACS	Toxic, flammable.
Differential scanning calorimeter	TA Instruments	Q100	
<i>N,N</i> -dimethylformamide	Sigma-Aldrich	227056	Toxic, flammable.
Trihexylphosphone	TCI America		Toxic, flammable.
1-Chlorodecane	Sigma-Aldrich		Toxic, flammable.
Bis(trifluoromethane)sulfonimide lithium salt	Sigma-Aldrich		Hydrophilic
1,10-dichlorodecane	Sigma-Aldrich		Toxic, flammable.
Thermal Gravimetric Analysis (TGA)	TA Q50	TA instruments	
Differential scanning calorimeter (DSC)	TA Q100	TA instruments	
Controlled Strain Rheometer	AR 1000		
Conductivity Meter	Consort	K912	4-electrode cell

Potentiostat/Galvanostat	Princeton Applied Research	VersaStat MC4	Electrochemical testing
Separators	Celgard	C480	polypropylene/polyethylene
CR2032 coin cells	MTI Corp.	EQ-CR2032-CASE	
LiCoO <sub>2</sub> electrode	MTI Corp.	EQ-CR2032	Cathode material
lithium metal	Alfa Aesar	10769	Anode Material
Stainless Steel Spacer	MTI Corp.	EQ-CR20-Spacer304-02	15.5 mm Dia x 0.2 mm
Wave Spring	MTI Corp.	EQ-CR20WS-Spring304	
Electric Coin Cell Crimping Machine	MTI Corp.	MSK-160D	
Glove box	Mbraun		Water free, oxygen free operation