SUPPORTING INFORMATION

Lithium Ephedrate-Mediated Addition of a Lithium Acetylide to a Ketone: Solution Structures and Relative Reactivities of Mixed Aggregates Underlying the High Enantioselectivities

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Supporting Information

General Experimental Procedures (at the end)

I. ^{6}Li NMR spectra of [^{6}Li]lithium cyclopropylacetylide
II. ^{6}Li and ^{13}C NMR spectra of [^{6}Li,^{13}C]lithium cyclopropylacetylide
III. ^{6}Li and ^{15}N NMR spectra of *R,S*-LiOCH(Ph)CH(Me)N$(CH_2)_4$
IV. ^{6}Li NMR spectra of 1:1 mixtures of [$(CH_2)_2$CHCCLi]:[*R,S*-LiOCH(Ph)CH(Me)N$(CH_2)_4$] showing aging effects.
V. ^{6}Li, ^{13}C, and ^{15}N NMR spectra of 1:1 mixtures of [$(CH_2)_2$CHCCLi]:[*R,S*-LiOCH(Ph)CH(Me)N$(CH_2)_4$].
VI. NMR spectra of 3:1 mixtures of [$(CH_2)_2$CHCCLi]:[*R,S*-LiOCH(Ph)CH(Me)N$(CH_2)_4$].
VII. ^{6}Li,^{13}C-HMQC spectrum of a 3:1 mixture of [$(CH_2)_2$CHCCLi]:[*R,S*-LiOCH(Ph)CH(Me)N$(CH_2)_4$].
VIII. NMR spectra of samples containing the 1:3 [$(CH_2)_2$CHCCLi]:[*R,S*-LiOCH(Ph)CH(Me)N$(CH_2)_4$]mixed tetramer
IX. Calculated 2:2 RLi:ROLi mixed tetramers
X. Calculated 1:3 RLi:ROLi mixed tetramers
XI. Calculated 3:1 RLi:ROLi mixed tetramers
XII. Calculated 1:1 RLi:ROLi mixed dimers
XIII. Calculated $(ROLi)_n$ aggregates
XIV. Calculated 2:2 RLi:ROLi mixed tetramer-based transition structures
XV. Calculated 1:1 RLi:ROLi mixed dimer-based transition structures
XVI. Calculated ligands and ketone heats of formation.

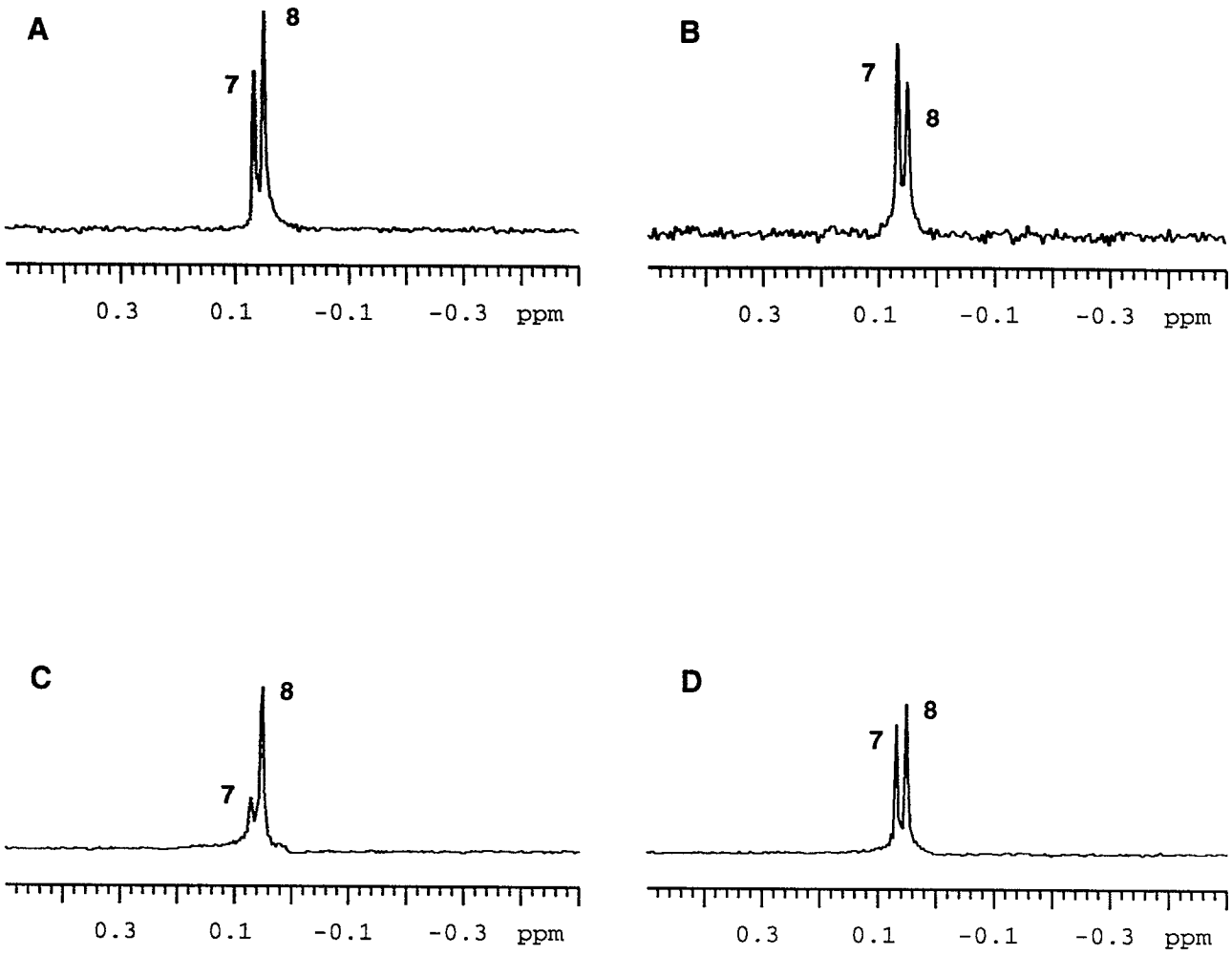

Figure I. ^{6}Li NMR spectra of [^{6}Li]lithium cyclopropylacetylide (**6**) in THF/pentane at -125 °C showing dimer (**7**) and tetramer (**8**). The samples contain: **A**. 0.05 M [^{6}Li]**6** in 1:1 THF:pentane; **B**. 0.02 M [^{6}Li]**6** in 1:1 THF:pentane; **C**. 0.1 M [^{6}Li]**6** in 1:2 THF:pentane; **D**. 0.1 M [^{6}Li]**6** in 3:1 THF:pentane.

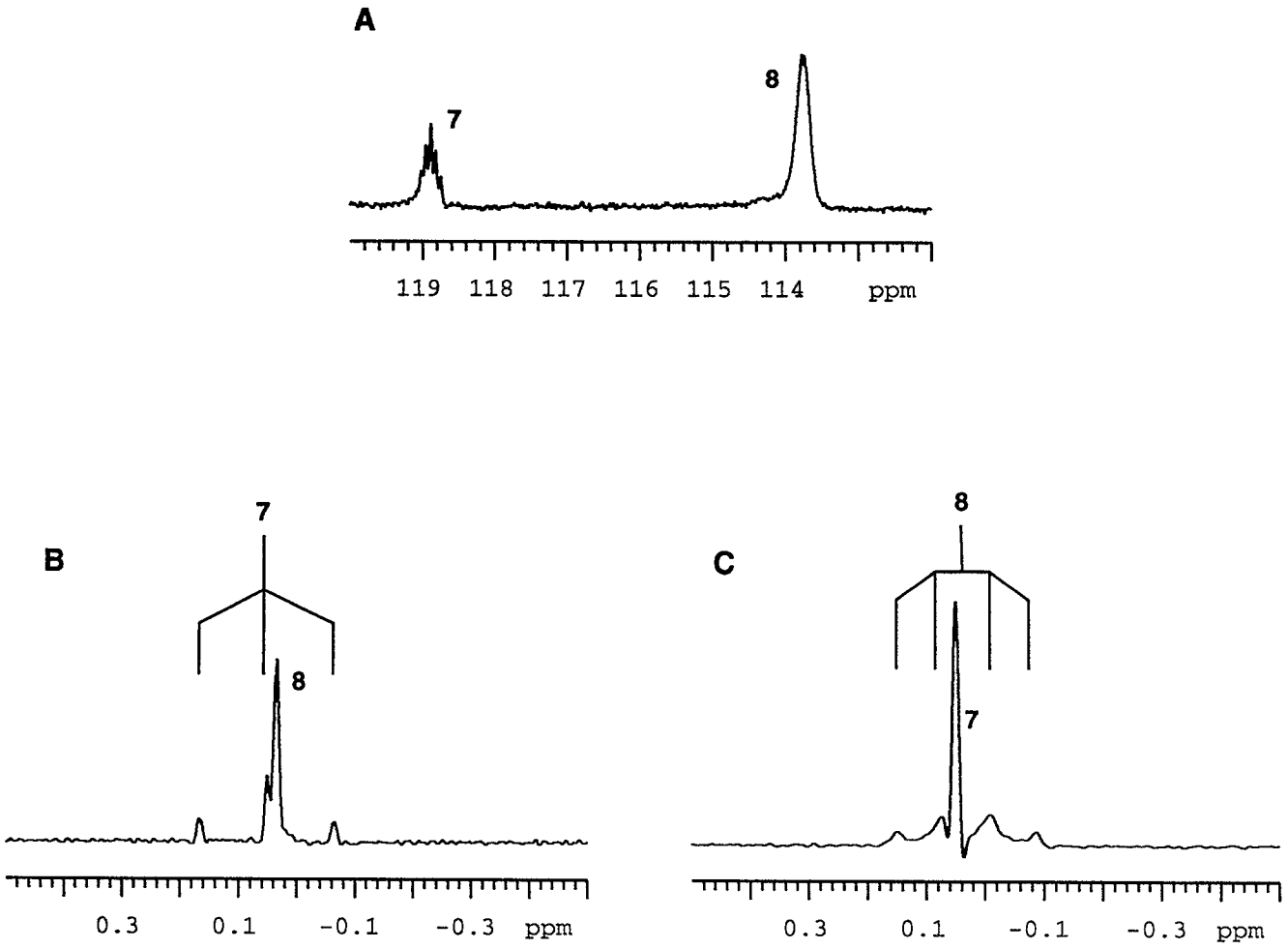

Figure II. ^{6}Li and ^{13}C NMR spectra of 0.10 M [^{6}Li,^{13}C]lithium cyclopropylacetylide (**6**) in 1:1 THF:pentane at -125 °C showing dimer (**7**) and tetramer (**8**): **A.** ^{13}C NMR spectrum; **B.** ^{6}Li NMR spectrum with single-frequency ^{13}C decoupling at 113.7 ppm; **C.** ^{6}Li NMR spectrum with single-frequency ^{13}C decoupling at 118.9 ppm.

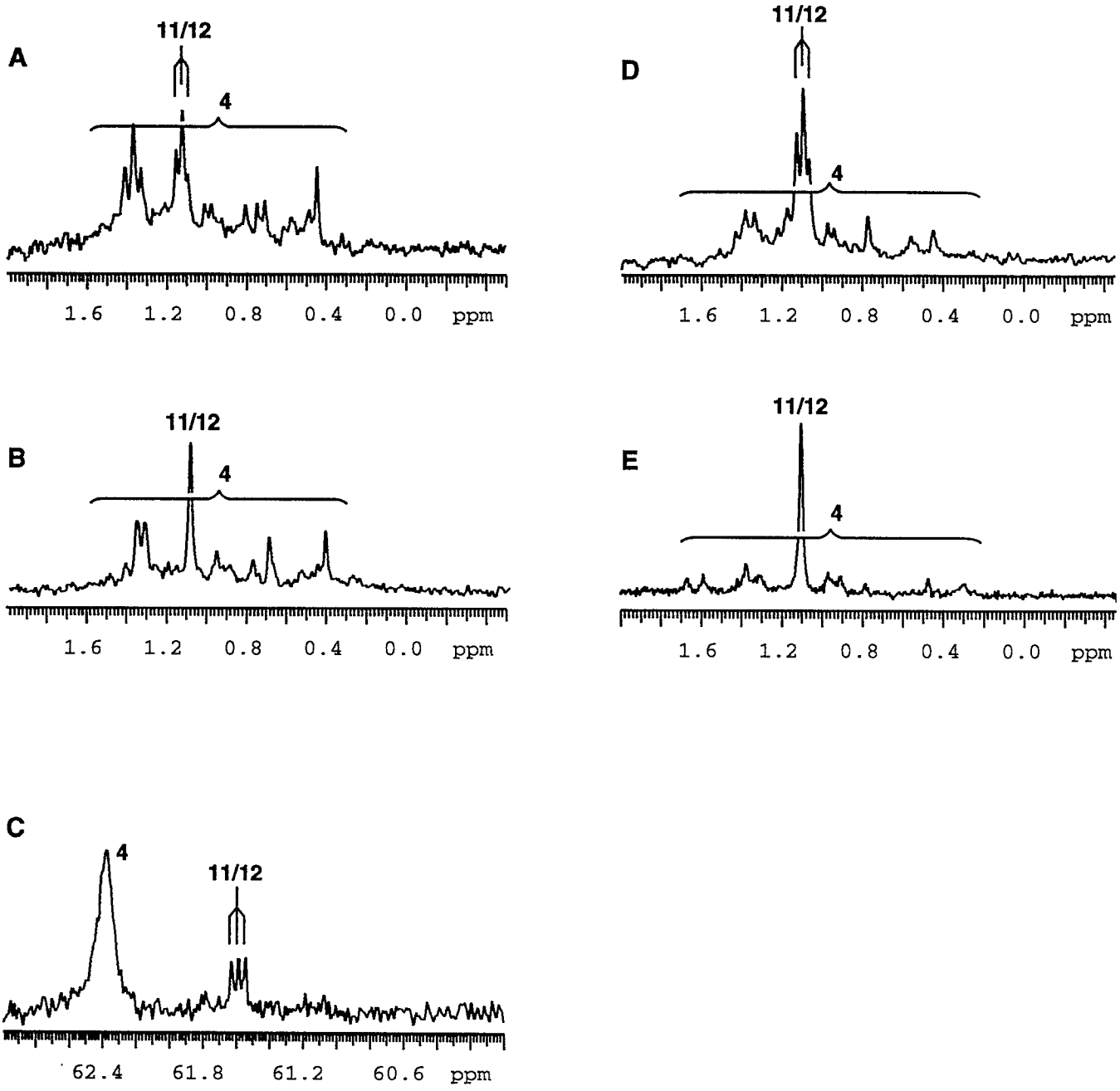

Figure III. NMR spectra of 0.10 M [*R,S*-LiOCH(Ph)CH(Me)N$(CH_2)_4$] ([^{6}Li]**4**) in 1:1 THF:pentane at-125 °C showing a mixture of oligomers (**4**) and a 1:1 ROLi-ROH complex (**11/12**). **A**. ^{6}Li NMR spectrum of [^{6}Li,^{15}N]**4**; **B**. ^{6}Li{^{15}N}NMR spectrum of [^{6}Li,^{15}N]**4**; C. ^{15}N NMR spectrum of [^{6}Li,^{15}N]**4**; **D.** ^{6}Li NMR spectrum of a 1:1 mixture of [^{6}Li,^{15}N]**4** and [^{15}N][*R,S*-HOCH(Ph)CH(Me)N$(CH_2)_4$] (**5**); **E**. ^{6}Li NMR spectrum of 1:1 [^{6}Li]**4**:[^{6}Li]**5**.

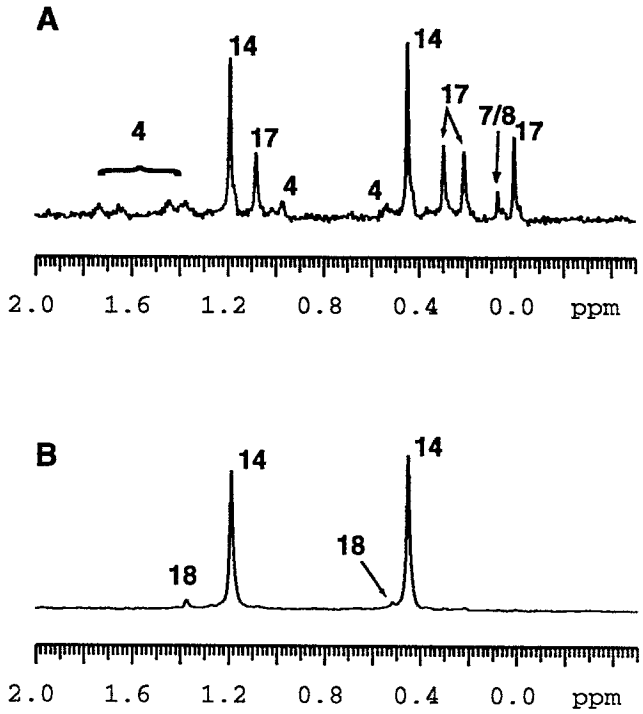

Figure IV. ^{6}Li NMR spectra of solutions containing a 1:1 mixture of [^{6}Li]lithium cyclopropylacetylide (**6**) and [^{6}Li][*R,S*-LiOCH(Ph)CH(Me)N$(CH_2)_4$] (**4**) (0.10 M total lithium titer) in 1:1 THF:pentane at -125 °C showing $(ROLi)_n$ oligomers of **4**, lithium cyclopropylacetylide dimer and tetramer (**7** and **8**), 2:2 RLi/ROLi mixed tetramer (**14**), 3:1 RLi/ROLi mixed tetramer (**17**), and 1:3 RLi/ROLi mixed tetramer (**18**). **A**. NMR spectrum taken without sample warming; **B**. NMR spectrum of the same sample after warming at 25 °C for 30 minutes and cooling back to -125 °C.

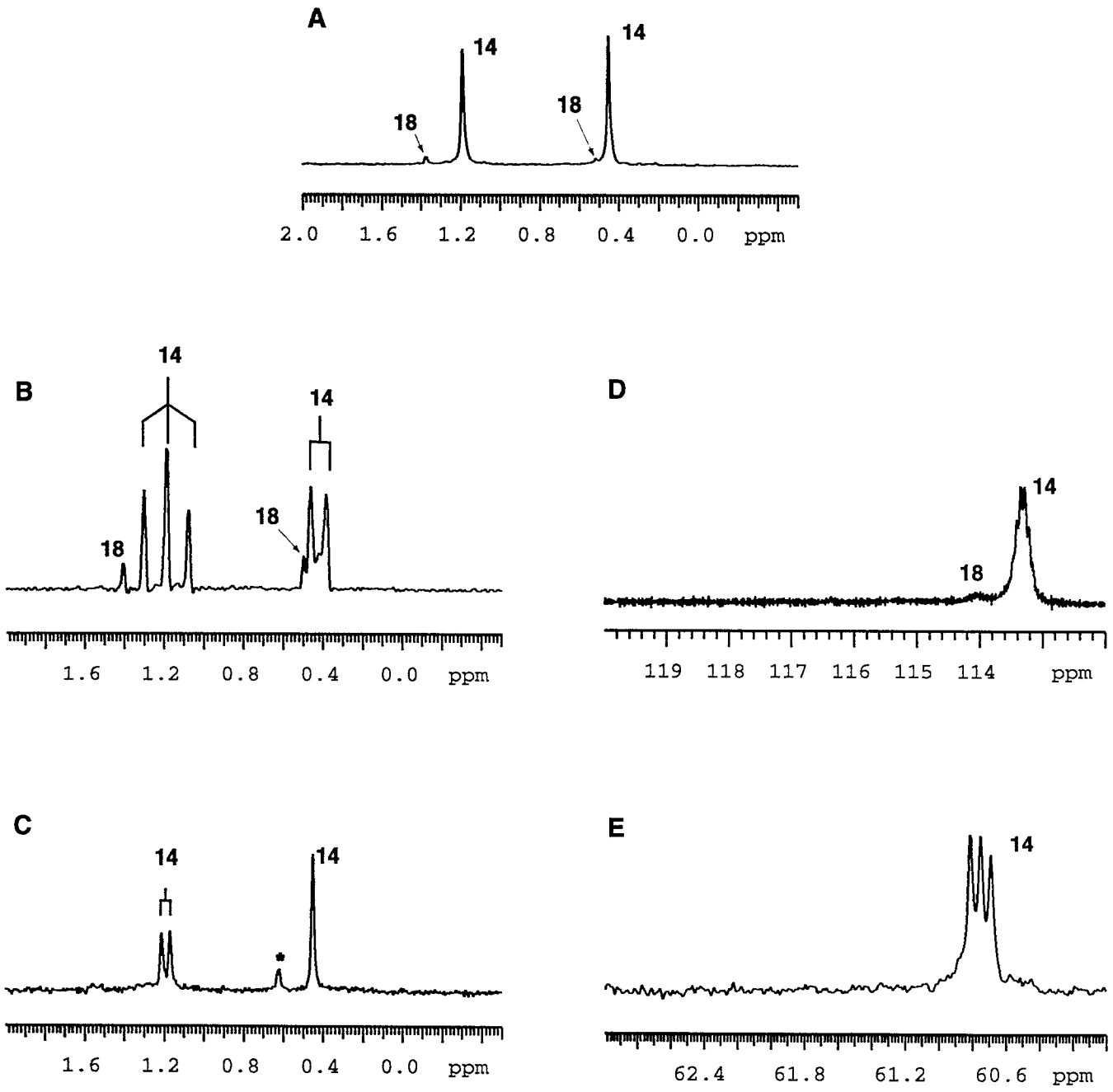

Figure V. ^{6}Li NMR spectra of lithium cyclopropylacetylide (**6**) and [*R,S*-$LiOCH(Ph)CH(Me)N(CH_2)_4$] (**4**) in 1:1 THF:pentane (0.10 M total lithium titer) at -125 °C showing 2:2 RLi/ROLi mixed tetramer (**14**) and 1:3 RLi/ROLi mixed tetramer (**18**). **A**. ^{6}Li NMR spectrum of 1:1 [^{6}Li]**6**:[^{6}Li]**4**; **B**. ^{6}Li NMR spectrum of 1:1 [^{6}Li,^{13}C]**6**:[^{6}Li]**4**; **C**. ^{6}Li NMR spectrum of 1:1 [^{6}Li]**6**:[^{6}Li,^{15}N]**4**, the "*" denotes an unknown species present in the ^{15}N labeled alkoxide; **D**. ^{13}C NMR spectrum of 3:1 [^{6}Li,^{13}C]**6**:[^{6}Li]**4**; **E**. ^{15}N NMR spectrum of 1:1 [^{6}Li]**6**:[^{6}Li,^{15}N]**4**.

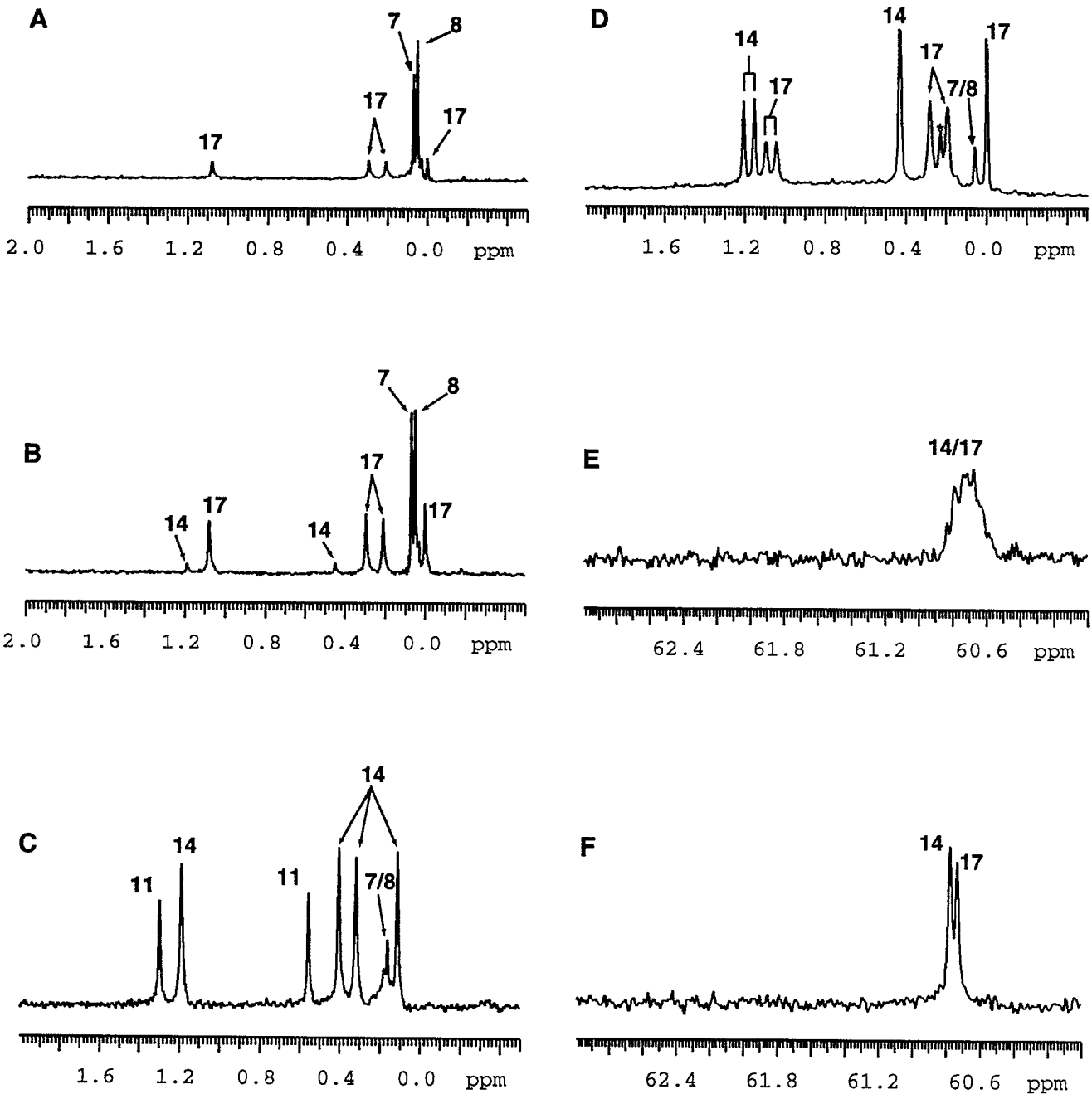

Figure VI. NMR spectra of solutions containing lithium cyclopropylacetylide (**6**) and [*R,S*-LiOCH(Ph)CH(Me)N$(CH_2)_4$] (**4**) in 1:1 THF:pentane (0.10 M total lithium titer) at -125 °C showing lithium cyclopropylacetylide dimer and tetramer (**7** and **8**), 2:2 RLi/ROLi mixed tetramer (**14**), and 3:1 RLi/ROLi mixed tetramer (**17**). **A**. ^{6}Li NMR spectrum of 10:1 [^{6}Li]**6**:[^{6}Li]**4**; **B**. ^{6}Li NMR spectrum of 5:1 [^{6}Li]**6**:[^{6}Li]**4**; **C**. ^{6}Li NMR spectrum of 3:1 [^{6}Li]**6**:[^{6}Li]**4**; **D**. ^{6}Li NMR spectrum of 1:1 [^{6}Li]**6**:[^{6}Li,^{15}N]**4**. The "*" denotes an unknown species present only in the ^{15}N-labelled alkoxide. **E**. ^{15}N NMR spectrum; **F**. ^{15}N NMR spectrum with single-frequency ^{6}Li decoupling at 1.19 ppm. The "*" denotes an unknown impurity present only in the ^{15}N-labelled **4**.

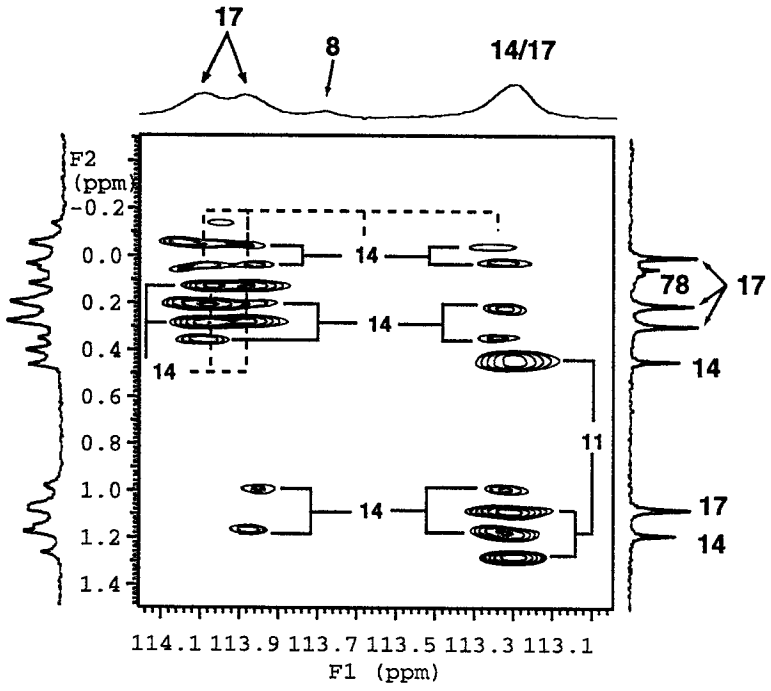

Figure VII. $^{6}Li,^{13}C$-HMQC spectrum recorded on a solution containing [$^{6}Li,^{13}C$]**6** and [^{6}Li]**4** (3:1) in 1:1 THF:pentane (0.10 M total lithium titer) at -125 °C showing lithium cyclopropylacetylide dimer and tetramer (**7** and **8**), 2:2 RLi/ROLi mixed tetramer (**14**), and 3:1 RLi/ROLi mixed tetramer (**17**). The ^{6}Li NMR spectrum is on the left axis, the $^{6}Li\{^{13}C\}$NMR spectrum is on the right axis, and the $^{13}C\{^{6}Li\}$NMR spectrum is displayed on top.

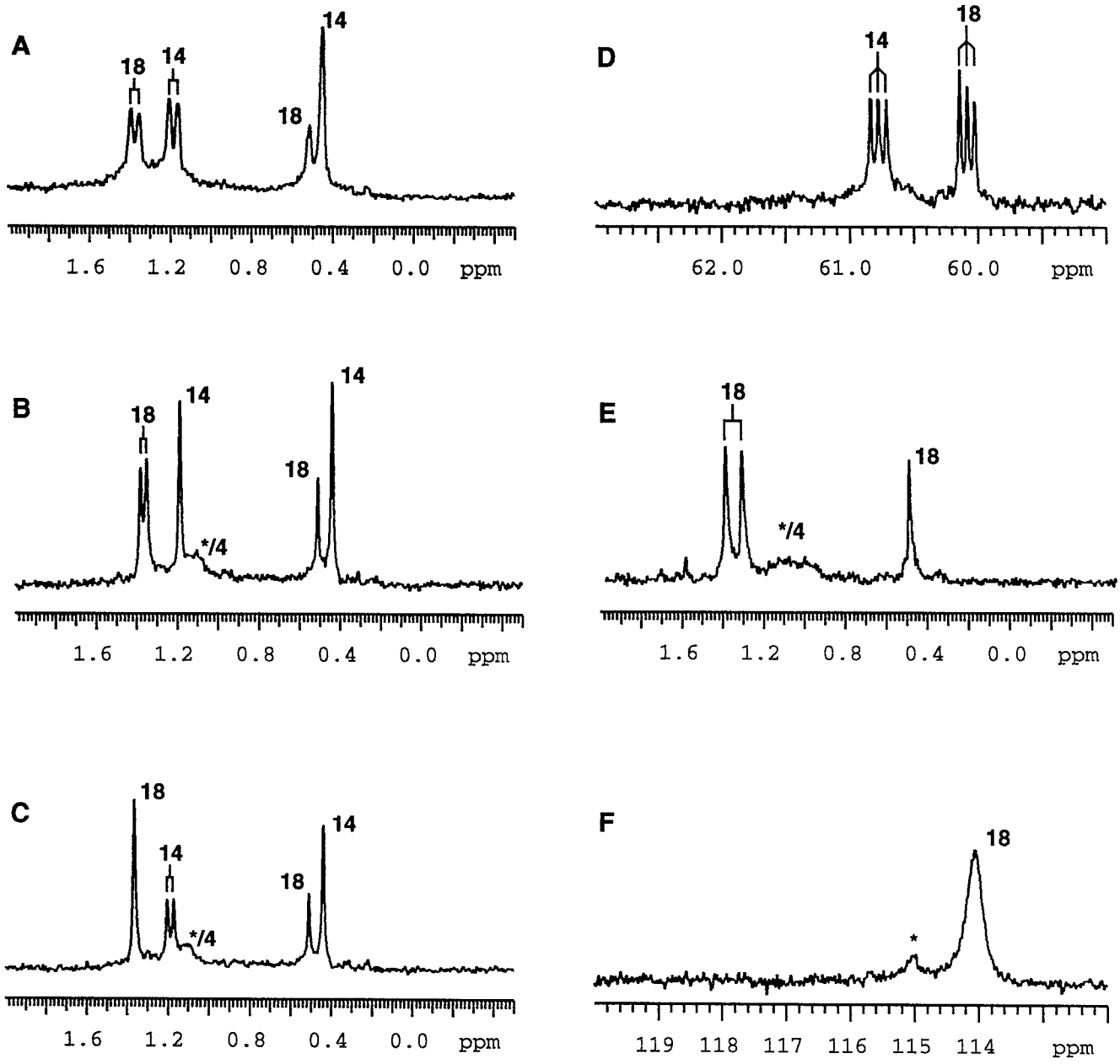

Figure VIII. ^{6}Li, ^{13}C, and ^{15}N NMR spectra of solutions containing the 1:3 mixed tetramer {lithium cyclopropylacetylide}{ [*R,S*-LiOCH(Ph)CH(Me)N$(CH_2)_4$]}$_3$ (0.10 M total lithium titer) in 1:1 THF:pentane at -125 °C. Spectra **A-D** were recorded on a sample containing 0.1 M [^{15}N][*R,S*-HOCH(Ph)CH(Me)N$(CH_2)_4$] and 0.75 equiv. of [^{6}Li]**6** in 1:1 THF:pentane at -125 °C. Spectra **E** and **F** were recorded on a sample containing [^{6}Li,^{13}C]**6** and [^{6}Li]**4** in a 1:3 ratio (0.10 M total lithium titer) in 1:1 THF:pentane at -125 °C. The "*" represents an unassigned species. **A**. ^{6}Li NMR spectrum; **B**. ^{6}Li NMR spectrum with ^{15}N single-frequency decoupling at 60.8 ppm; **C**. ^{6}Li NMR spectrum with single-frequency ^{15}N decoupling at 60.1 ppm; **D**. ^{15}N NMR spectrum; **E**. ^{6}Li NMR spectrum; **F**. ^{13}C NMR spectrum.

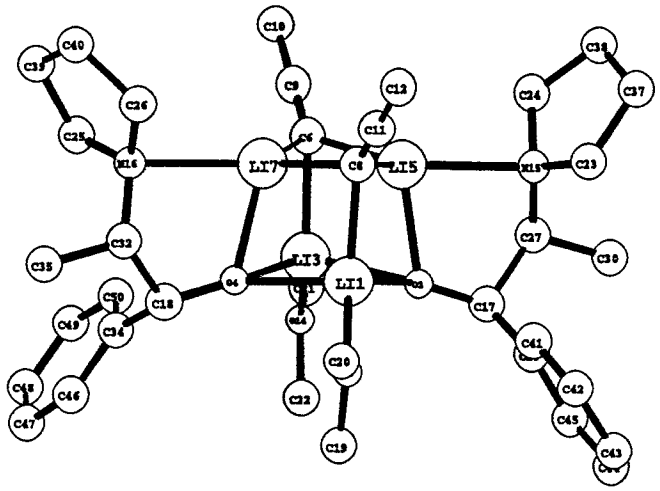

Figure IXA

$(LiCCCH_3)_2 \bullet [R,S\text{-}LiOCH(Ph)CH(Me)N(CH_2)_4]_2 \bullet (Me_2O)_2$

ΔH_f^o = -271.1 kcal/mol

Li	.0000	.0000	.0000
O	2.2238	.0000	.0000
Li	1.8392	2.2493	.0000
O	-.3344	2.2080	.4616
Li	1.7060	.4631	-2.0571
C	1.7738	2.6126	-2.1359
Li	-.2610	2.1095	-1.7073
C	-.3826	.0048	-2.1350
C	2.2523	3.4461	-2.9047
C	2.8243	4.4265	-3.8028
C	-1.0231	-.6981	-2.9164
C	-1.7842	-1.5223	-3.8310
O	-1.2987	-1.1852	1.4514
O	3.4331	3.1950	1.3308
N	3.5562	-1.0819	-2.3721
N	-2.1113	3.6511	-1.3641
C	3.3099	-.7762	.2119
C	-1.3394	2.9165	1.0229
C	-.9414	-1.0554	2.8056
C	-2.4967	-1.8358	1.1147
C	4.5353	3.9356	.8741
C	3.3650	2.8241	2.6858
C	3.1938	-2.4731	-2.7563
C	4.1075	-.3920	-3.5793
C	-1.8081	5.0927	-1.5744
C	-2.9149	3.1669	-2.5288
C	4.2811	-.8323	-1.0876
H	3.9898	-.2715	.9795
C	2.9516	-2.1498	.8445
C	5.5558	-1.6866	-.8809
H	4.6649	.2290	-1.1535
C	-2.5579	3.1754	-.0180
H	-1.8539	2.2769	1.8179
C	-.8339	4.1692	1.7917
C	-3.7456	3.9610	.5900
H	-2.9670	2.1343	-.1809
C	3.8065	-2.7782	-4.1442
C	4.3813	-1.4549	-4.6703
C	-2.6861	5.6183	-2.7354
C	-3.3831	4.3942	-3.3471
C	1.8193	-2.9114	.4642
C	1.5384	-4.1528	1.0700
C	2.3642	-4.6553	2.0870
C	3.4751	-3.9018	2.5007
C	3.7581	-2.6685	1.8910
C	-1.3973	4.4888	3.0547
C	-.9717	5.6053	3.7931
C	.0433	6.4372	3.2924
C	.6319	6.1292	2.0566
C	.2092	5.0040	1.3202

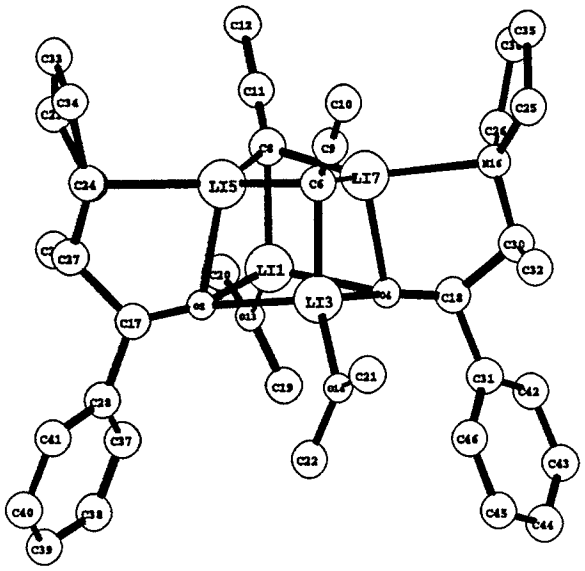

Figure IXB

$(LiCCCH_3)_2 \bullet [R,S\text{-}LiOCH(Ph)CH(Me)N(CH_2)_4]_2 \bullet (Me_2O)_2$

ΔH_f^o = -267.7 kcal/mol

Li	.0000	.0000	.0000	C	3.5691	-1.3678	-4.9881
O	2.2711	.0000	.0000	C	4.6753	-.4261	-4.4900
Li	1.8332	2.2233	.0000	C	-2.8717	4.3710	-3.6235
O	-.3573	2.1791	.5508	C	-3.8576	3.3468	-3.0410
Li	1.6451	.4397	-2.0724	C	2.8928	-1.7124	2.3338
C	1.7458	2.5839	-2.1379	C	3.3144	-2.2785	3.5529
Li	-.2934	2.1647	-1.6485	C	4.6767	-2.5013	3.8007
C	-.4595	.0736	-2.1205	C	5.6179	-2.1507	2.8176
C	2.2576	3.3205	-2.9802	C	5.1946	-1.5840	1.6047
C	2.8671	4.1869	-3.9669	C	-2.8137	3.2336	3.0847
C	-1.1859	-.4813	-2.9452	C	-2.9321	3.5278	4.4528
C	-2.0397	-1.1340	-3.9152	C	-1.7844	3.7738	5.2247
O	-1.2485	-1.4331	1.2795	C	-.5236	3.7209	4.6111
O	3.3628	3.4318	1.1739	C	-.4089	3.4282	3.2384
N	3.3530	-1.1741	-2.5562				
N	-2.0765	3.7450	-1.3933				
C	3.4184	-.7155	-.0331				
C	-1.4849	2.8249	.9247				
C	-1.4331	-1.0856	2.6298				
C	-2.0294	-2.4630	.7282				
C	4.0449	4.5689	.7106				
C	3.7638	2.8383	2.3845				
C	2.9440	-2.0044	-3.7261				
C	4.5759	-.4079	-2.9468				
C	-1.9379	4.7781	-2.4606				
C	-3.3800	3.0444	-1.6019				
C	3.4153	-1.8378	-1.2062				
C	3.8205	-1.3564	1.3280				
C	2.3242	-2.9202	-1.0085				
C	-1.7899	4.1446	.0295				
C	-1.5499	3.1805	2.4407				
C	-.6895	5.2297	.1521				

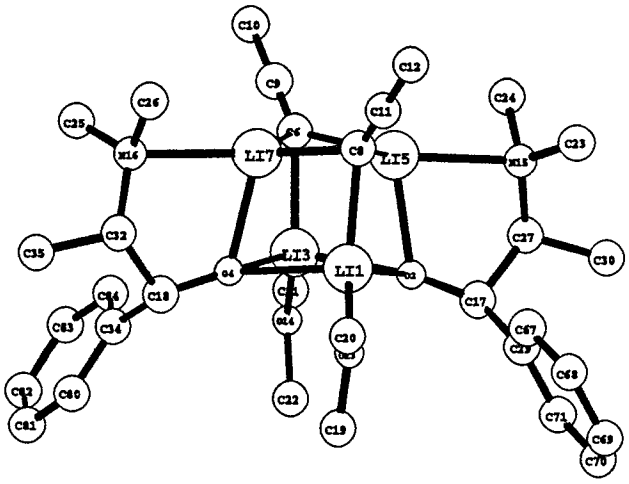

Figure IXC

$(LiCCCH_3)_2 \bullet [R,S\text{-}LiOCH(Ph)CH(Me)N(CH_2)_4]_2 \bullet (Me_2O)_2$

ΔH_f^o = -255.1 kcal/mol

Li	.0000	.0000	.0000	H	-3.0851	2.3260	.0520	C	3.5561	-2.6913	1.9963
O	2.2261	.0000	.0000	H	2.4327	5.5145	-3.4850	H	1.0403	-2.5320	-.3330
Li	1.8445	2.2561	.0000	H	3.8205	4.4457	-3.8648	H	.4411	-4.6518	.7522
O	-.3318	2.2138	.4673	H	2.3230	4.3522	-4.8455	H	1.7974	-5.5576	2.6427
Li	1.7229	.4827	-2.0573	H	-1.4539	-2.6434	-3.7008	H	3.7894	-4.2782	3.4504
C	1.7527	2.6292	-2.1365	H	-2.7773	-1.4369	-3.7717	H	4.4291	-2.1603	2.3818
Li	-.2766	2.1013	-1.7031	H	-1.4086	-1.3339	-4.9245	H	5.0008	-3.0722	-.7614
C	-.3619	.0007	-2.1410	H	2.7765	-3.0138	-2.0675	H	6.0995	-2.0104	-1.6847
C	2.1839	3.4831	-2.9109	H	3.9912	-2.8812	-3.3785	H	5.9675	-1.8257	.0773
C	2.7096	4.4874	-3.8112	H	2.3396	-2.2086	-3.6134	C	-1.1668	4.4979	3.1282
C	-.9577	-.7216	-2.9399	H	4.3903	.8577	-2.9994	C	-.6627	5.5863	3.8589
C	-1.6764	-1.5664	-3.8701	H	3.4150	-.0412	-4.2314	C	.3532	6.3905	3.3162
O	-1.3639	-1.1416	1.4397	H	5.0852	-.5776	-3.8260	C	.8647	6.0823	2.0465
O	3.4991	3.1570	1.2991	H	-1.2470	5.5275	-.8925	C	.3649	4.9836	1.3178
N	3.5613	-1.0235	-2.3311	H	-2.7083	5.5980	-1.9276	H	-1.9501	3.8929	3.5900
N	-2.1043	3.5972	-1.3240	H	-1.1528	5.0057	-2.6094	H	-1.0620	5.8065	4.8496
C	3.2657	-.8247	.2541	H	-3.0862	1.8428	-2.1179	H	.7405	7.2419	3.8759
C	-1.2805	2.9639	1.0695	H	-2.3765	2.9597	-3.3531	H	1.6555	6.6992	1.6172
C	-1.0486	-.9957	2.8026	H	-3.9152	3.3847	-2.5203	H	.8040	4.7869	.3329
C	-2.5682	-1.7648	1.0750	H	-.0643	-.4712	2.8755	H	-3.1469	5.3213	.8376
C	4.6145	3.8504	.8021	H	-.9642	-1.9870	3.3155	H	-4.4337	4.4136	-.0033
C	3.4720	2.7750	2.6524	H	-1.8187	-.3943	3.3478	H	-3.9400	3.9327	1.6342
C	3.1572	-2.3413	-2.8645	H	-2.6098	-1.8065	-.0398				
C	4.1441	-.1592	-3.3894	H	-3.4599	-1.1997	1.4455				
C	-1.7957	4.9938	-1.6965	H	-2.6339	-2.8091	1.4716				
C	-2.9105	2.9164	-2.3695	H	4.4222	4.0860	-.2720				
C	4.2699	-.9688	-1.0126	H	5.5505	3.2415	.8732				
H	3.9521	-.3412	1.0292	H	4.7866	4.8106	1.3504				
C	2.8180	-2.1645	.9043	H	2.5133	2.2317	2.8392				
C	5.3785	-2.0341	-.8401	H	3.5185	3.6623	3.3331				
H	4.8294	.0117	-.9927	H	4.3255	2.1002	2.9135				
C	-2.5237	3.3051	.0838	C	1.6717	-2.8867	.4897				
H	-1.7995	2.3424	1.8758	C	1.3152	-4.1033	1.1067				
C	-.6827	4.1802	1.8322	C	2.0748	-4.6158	2.1693				
C	-3.5519	4.3054	.6634	C	3.1961	-3.8983	2.6179				

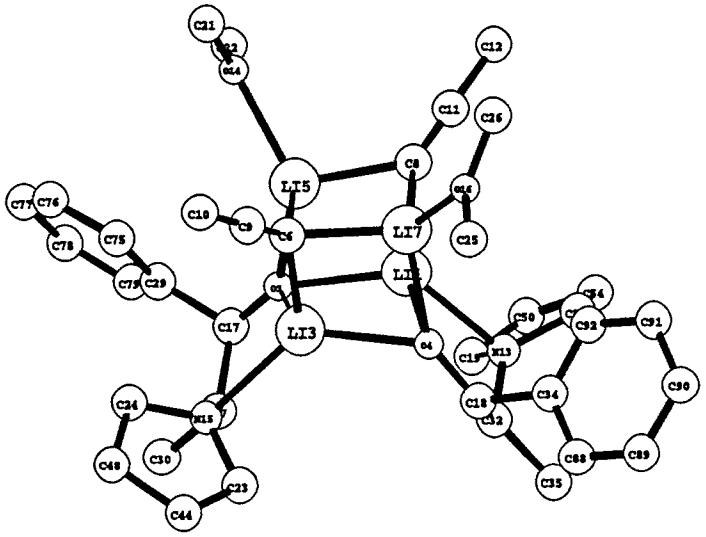

Figure IXD

$(LiCCCH_3)_2 \bullet [R,S\text{-}LiOCH(Ph)CH(Me)N(CH_2)_4]_2 \bullet (Me_2O)_2$

ΔH_f^o = -270.2 kcal/mol

Li	.0000	.0000	.0000	H	-.1921	.8157	3.0450	H	-1.2135	5.6116	-3.2954
O	2.2759	.0000	.0000	H	3.6311	5.1653	-2.7888	H	-2.0034	2.1384	-4.3545
Li	1.8280	2.1155	.0000	H	3.7715	4.0299	-4.1679	H	-1.9187	3.8250	-5.0152
O	-.3773	2.0271	.5800	H	2.3481	5.1111	-4.0394	H	-3.3530	3.3115	-4.0395
Li	1.6769	.4220	-2.1249	H	-2.5224	-2.4167	-2.8297	C	5.0217	-.4505	-1.0978
C	1.7445	2.6127	-2.0471	H	-2.8222	-1.1016	-4.0092	C	6.1374	-1.0229	-1.7414
Li	-.3113	2.1053	-1.6865	H	-1.4518	-2.2294	-4.2547	C	6.7106	-2.2085	-1.2572
C	-.4248	-.0419	-2.0742	H	2.1687	3.3823	2.1455	C	6.1534	-2.8248	-.1244
C	2.3511	3.4712	-2.6878	C	4.1582	4.3323	2.3180	C	5.0479	-2.2474	.5215
C	3.0523	4.4828	-3.4496	H	3.1816	2.7619	3.4848	H	4.6034	.4643	-1.5286
C	-1.1611	-.7878	-2.7200	H	4.8193	2.5783	-.2598	H	6.5575	-.5389	-2.6242
C	-2.0219	-1.6672	-3.4820	H	5.8398	1.8318	1.0030	H	7.5747	-2.6482	-1.7551
N	-1.4757	-.3502	1.8605	C	5.3230	3.9207	1.4061	H	6.5796	-3.7539	.2558
O	2.5208	-.7032	-3.9652	H	.1615	-1.7357	1.8472	H	4.6400	-2.7641	1.3928
N	3.7216	2.0533	1.4876	C	-1.7516	-2.7695	2.2471	H	5.7357	.0562	2.4130
O	-1.5783	3.5731	-2.9595	H	-.5120	-1.4576	3.4822	H	4.9278	.9277	3.7410
C	3.2492	-.4384	.8281	H	-2.9533	-.5134	.3364	H	4.4999	-.7641	3.4064
C	-1.1155	2.2407	1.6913	H	-3.6459	-.1046	1.9320	C	-2.8670	4.0415	2.2252
C	-.7962	-1.5643	2.4063	C	-3.0843	-2.2109	1.7277	C	-4.0755	4.7240	2.0090
C	-2.8546	-.7104	1.4327	H	3.6190	5.2135	1.9087	C	-4.9143	4.3540	.9446
C	2.8212	-.0655	-5.1796	H	4.5217	4.6369	3.3228	C	-4.5195	3.3099	.0949
C	2.6803	-2.0964	-3.8630	H	6.2802	3.8940	1.9707	C	-3.3017	2.6334	.3080
C	3.2211	3.1067	2.4219	H	5.4736	4.6527	.5848	H	-2.2408	4.3660	3.0590
C	4.9789	2.5221	.8455	H	-1.3309	-3.5213	1.5452	H	-4.3620	5.5429	2.6698
C	-1.6282	4.9104	-2.5281	H	-1.8861	-3.2978	3.2152	H	-5.8577	4.8743	.7796
C	-2.2435	3.2073	-4.1406	H	-3.8937	-2.3466	2.4773	H	-5.1597	3.0177	-.7387
C	3.6139	.6451	1.9809	H	-3.4198	-2.7491	.8160	H	-3.0334	1.8396	-.3954
H	2.8498	-1.3055	1.4560	H	2.5494	1.0127	-5.0795	H	-3.1939	1.3311	3.6343
C	4.4662	-1.0342	.0663	H	2.2452	-.4976	-6.0360	H	-2.1318	.2057	4.5184
C	4.7618	.1987	2.9198	H	3.9103	-.1385	-5.4262	H	-1.7495	1.9407	4.4881
H	2.6942	.6268	2.6370	H	2.3256	-2.4107	-2.8512				
C	-1.2349	.9156	2.6216	H	3.7510	-2.3994	-3.9798				
H	-.5500	2.9507	2.3859	H	2.0846	-2.6441	-4.6358				
C	-2.4596	2.9633	1.3960	H	-1.0145	4.9959	-1.5982				
C	-2.1353	1.1052	3.8671	H	-2.6743	5.2347	-2.2998				

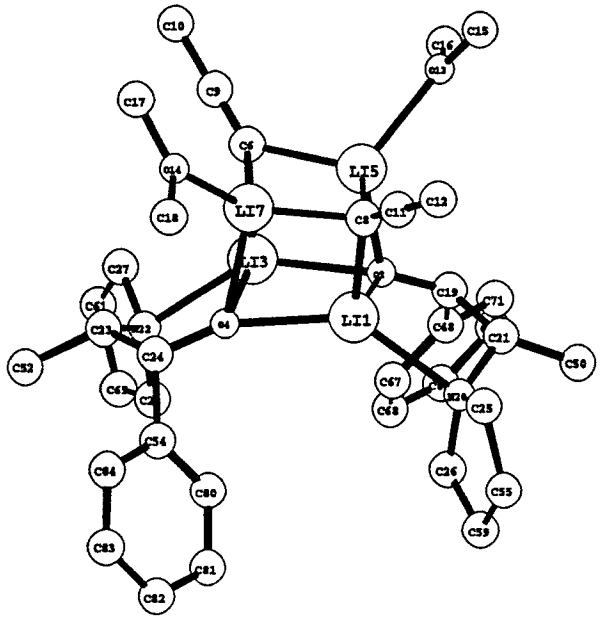

Figure IXE

$(LiCCCH_3)_2 \bullet [R,S\text{-}LiOCH(Ph)CH(Me)N(CH_2)_4]_2 \bullet (Me_2O)_2$

ΔH_f^o = -266.5 kcal/mol

Li	.0000	.0000	.0000	H	-3.3031	-1.4658	-2.8727	C	3.8096	4.7195	1.9513
O	2.1753	.0000	.0000	H	-2.4529	-1.1702	-4.4227	H	2.9801	2.7325	2.4858
Li	1.7127	2.2359	.0000	H	1.2927	-1.4395	-4.6344	C	4.9492	.1312	.9382
O	-.4160	2.2041	.4294	H	2.8053	-2.4412	-4.6843	C	6.3444	.1624	1.1284
Li	1.6342	.4533	-2.1454	H	2.6334	-1.0101	-5.7785	C	7.1052	-1.0111	1.0143
C	1.7806	2.5730	-2.1298	H	4.5136	.3317	-2.8285	C	6.4585	-2.2189	.7032
Li	-.3077	2.0835	-1.8291	H	4.6776	.1573	-4.6290	C	5.0672	-2.2465	.5133
C	-.4799	-.0184	-2.1059	H	4.8801	-1.2896	-3.5621	H	4.4028	1.0725	1.0356
C	2.4964	3.3717	-2.7341	H	-.4397	4.3237	-4.0357	H	6.8358	1.1066	1.3666
C	3.3186	4.3131	-3.4644	H	-1.9196	5.2978	-3.6420	H	8.1845	-.9862	1.1637
C	-1.3296	-.6978	-2.6821	H	-1.9845	4.0430	-4.9444	H	7.0375	-3.1381	.6077
C	-2.3099	-1.5088	-3.3724	H	-3.2664	2.2585	-1.9100	H	4.6047	-3.2040	.2646
O	2.9192	-.5689	-3.7489	H	-3.7787	2.6905	-3.5984	H	1.7919	-.1060	3.0514
O	-1.8719	3.3086	-2.9838	H	-3.7480	3.9632	-2.3131	H	1.8916	-1.7027	3.8641
C	2.4014	-1.4002	-4.7556	H	2.6508	-1.9425	-.4420	H	3.3408	-.9883	3.1606
C	4.3056	-.3389	-3.6973	C	4.2750	-1.0750	.6329	C	-2.9536	1.8749	1.8492
C	-1.5511	4.2846	-3.9414	H	2.4587	-2.8559	1.7889	C	-4.2838	1.7860	2.3036
C	-3.2241	3.0514	-2.6957	C	2.2505	-1.1118	2.9942	C	-5.0350	2.9473	2.5393
C	2.7388	-1.1646	.3905	H	-.2996	4.7575	2.6409	C	-4.4457	4.2022	2.3118
N	.5381	-2.0341	1.3201	C	.1086	2.8596	3.5175	C	-3.1195	4.2876	1.8574
C	1.9897	-1.8399	1.6565	H	-.9505	4.1802	.3902	H	-2.4125	.9408	1.6786
N	1.4768	4.0347	1.6903	C	-2.3359	3.1277	1.6223	H	-4.7321	.8060	2.4725
C	.1166	3.7766	2.2741	C	-1.1981	-3.6861	.7818	H	-6.0635	2.8776	2.8931
C	-.8780	3.2848	1.0964	H	.9523	-4.0788	.6749	H	-5.0190	5.1132	2.4871
C	.2480	-3.2320	.4778	H	.3676	-2.9696	-.6012	H	-2.7024	5.2818	1.6838
C	-.4848	-1.9680	2.4002	H	-.1255	-2.3852	3.3739	H	.5503	1.8608	3.3378
C	1.6188	5.3510	.9999	C	-1.7024	-2.8003	1.9321	H	.6424	3.3217	4.3756
C	2.6925	3.8123	2.5204	H	-.7621	-.9021	2.5913	H	-.9301	2.7026	3.8752
H	3.0071	5.3640	-3.2725	C	3.1061	5.7669	1.0738	H	-1.8476	-3.5955	-.1142
H	4.3908	4.2281	-3.1801	H	.9869	6.1503	1.4627	H	-1.2201	-4.7604	1.0668
H	3.2530	4.1445	-4.5625	H	1.2799	5.2586	-.0601	H	-2.5395	-2.1480	1.6023
H	-2.0036	-2.5780	-3.4090	H	2.5435	4.0693	3.5989	H	-2.1043	-3.4120	2.7681

H	3.5623	5.8206	.0629
H	3.2075	6.7849	1.5084
H	4.5502	4.1343	1.3645
H	4.3828	5.1984	2.7738

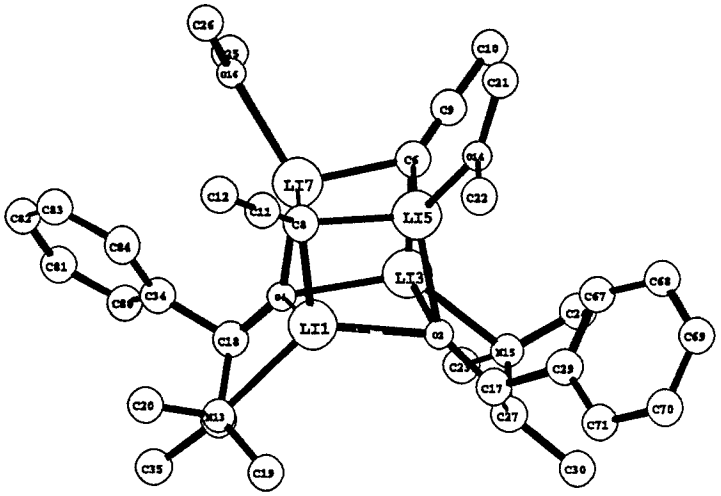

Figure IXF

$(LiCCCH_3)_2 \bullet [R,S\text{-}LiOCH(Ph)CH(Me)NMe_2]_2 \bullet (Me_2O)_2$

ΔH_f^o = -254.5 kcal/mol

Li	.0000	.0000	.0000
O	2.2709	.0000	.0000
Li	1.8304	2.1130	.0000
O	-.3586	2.0467	.5872
Li	1.6492	.4250	-2.1355
C	1.7335	2.6124	-2.0498
Li	-.3277	2.1230	-1.6791
C	-.4530	-.0305	-2.0607
C	2.3640	3.4736	-2.6633
C	3.0935	4.4884	-3.3935
C	-1.2388	-.7545	-2.6721
C	-2.1550	-1.6101	-3.3959
N	-1.5158	-.2866	1.8131
O	2.4702	-.6728	-4.0177
N	3.7659	2.0299	1.3789
O	-1.5619	3.5907	-2.9908
C	3.2928	-.4579	.7559
C	-1.1421	2.2903	1.6608
C	-.6788	-1.4283	2.2636
C	-2.8825	-.7182	1.4549
C	2.7909	-.0225	-5.2201
C	2.4095	-2.0776	-3.9938
C	3.1087	3.0147	2.2762
C	5.0023	2.5742	.7811
C	-1.4626	4.9545	-2.6622
C	-2.1860	3.2205	-4.1930
C	3.7673	.6170	1.8763
H	2.9233	-1.3173	1.4118
C	4.4391	-1.0734	-.0948
C	5.0415	.2170	2.6573
H	2.9460	.5484	2.6477
C	-1.3415	.9782	2.5960
H	-.5953	2.9945	2.3752
C	-2.4514	3.0406	1.2880
C	-2.3532	1.1579	3.7525
H	-.3451	.8955	3.1203
H	3.0653	5.4691	-2.8687
H	4.1636	4.2120	-3.5217
H	2.6685	4.6449	-4.4101
H	-2.1074	-2.6603	-3.0315
H	-3.2082	-1.2688	-3.2851
H	-1.9258	-1.6264	-4.4848
H	2.1530	2.6174	2.6966
H	2.8767	3.9542	1.7097
H	3.7491	3.3060	3.1462
H	5.5224	1.8251	.1481
H	5.7389	2.9285	1.5447
H	4.7535	3.4483	.1326
H	.3664	-1.1082	2.4945
H	-.6350	-2.2108	1.4617
H	-1.0769	-1.9240	3.1842
H	-3.5237	.1378	1.1576
H	-3.4074	-1.2491	2.2878
H	-2.8397	-1.4229	.5901
H	2.8056	1.0762	-5.0239
H	2.0397	-.2320	-6.0223
H	3.7970	-.3273	-5.6034
H	2.1612	-2.3949	-2.9517
H	3.3862	-2.5403	-4.2838
H	1.6253	-2.4730	-4.6871
H	-.9564	5.0344	-1.6693
H	-2.4693	5.4377	-2.5889
H	-.8650	5.5233	-3.4180
H	-2.1765	2.1062	-4.2570
H	-1.6538	3.6342	-5.0859
H	-3.2487	3.5687	-4.2344
C	4.9201	-.4878	-1.2914
C	5.9734	-1.0777	-2.0191
C	6.5538	-2.2802	-1.5876
C	6.0680	-2.8961	-.4223
C	5.0254	-2.3017	.3076
H	4.4973	.4463	-1.6765
H	6.3410	-.5936	-2.9249
H	7.3693	-2.7334	-2.1512
H	6.5013	-3.8373	-.0821
H	4.6715	-2.8173	1.2029
H	5.9554	.1573	2.0348
H	5.2518	.9306	3.4822
H	4.8999	-.7759	3.1328
C	-2.8836	4.1299	2.0888
C	-4.0621	4.8373	1.7994
C	-4.8445	4.4802	.6887
C	-4.4248	3.4224	-.1321
C	-3.2370	2.7194	.1542
H	-2.3000	4.4450	2.9565
H	-4.3681	5.6662	2.4387
H	-5.7647	5.0203	.4660

H	-5.0233	3.1396	-.9993
H	-2.9521	1.9074	-.5235
H	-3.3966	1.3250	3.4211
H	-2.3599	.2745	4.4260
H	-2.0630	2.0260	4.3803

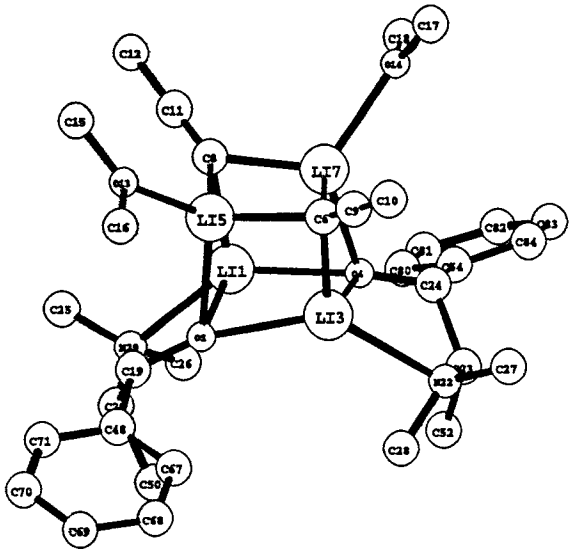

Figure IXG

$(LiCCCH_3)_2 \bullet [R,S\text{-}LiOCH(Ph)CH(Me)NMe_2]_2 \bullet (Me_2O)_2$

ΔH_f^o = -251.6 kcal/mol

Li	.0000	.0000	.0000
O	2.1811	.0000	.0000
Li	1.6910	2.2442	.0000
O	-.4306	2.2005	.5071
Li	1.5965	.5090	-2.1512
C	1.7046	2.6291	-2.1015
Li	-.3744	2.0813	-1.7780
C	-.5117	-.0169	-2.0734
C	2.3825	3.4895	-2.6635
C	3.1591	4.5036	-3.3450
C	-1.3204	-.7697	-2.6165
C	-2.2573	-1.6628	-3.2649
O	2.8729	-.4268	-3.8104
O	-1.9838	3.2615	-2.9071
C	2.3518	-1.2229	-4.8435
C	4.2547	-.1673	-3.7764
C	-1.7017	4.2274	-3.8869
C	-3.3246	2.9769	-2.5920
C	2.7181	-1.2095	.2739
N	.5101	-2.0276	1.2146
C	1.9865	-1.9899	1.4909
N	1.5184	4.0193	1.6334
C	.1460	3.9045	2.2345
C	-.8646	3.3330	1.1028
C	.0463	-3.3049	.6298
C	-.4440	-1.4875	2.2096
C	1.8607	5.3883	1.1893
C	2.6653	3.3331	2.2704
H	2.8058	5.5281	-3.0927
H	4.2361	4.4477	-3.0716
H	3.0920	4.3933	-4.4503
H	-1.8728	-2.7065	-3.2961
H	-3.2353	-1.6855	-2.7349
H	-2.4569	-1.3522	-4.3147
H	1.2449	-1.2778	-4.7125
H	2.7666	-2.2618	-4.8162
H	2.5690	-.7917	-5.8530
H	4.4670	.4618	-2.8779
H	4.5947	.3853	-4.6884
H	4.8531	-1.1099	-3.7033
H	-.5939	4.2786	-4.0125
H	-2.0748	5.2400	-3.5910
H	-2.1593	3.9666	-4.8743
H	-3.3343	2.2009	-1.7885
H	-3.8832	2.5818	-3.4777
H	-3.8658	3.8834	-2.2214
H	2.5764	-1.9096	-.6196
C	4.2617	-1.1899	.4822
H	2.3696	-3.0479	1.4293
C	2.3859	-1.5355	2.9120
H	-.2184	4.9492	2.4484
C	.0779	3.2021	3.6084
H	-.9196	4.1800	.3358
C	-2.3179	3.2463	1.6568
H	-1.0022	-3.2084	.2624
H	.0673	-4.1500	1.3618
H	.6762	-3.5971	-.2403
H	-.5602	-2.1405	3.1107
H	-1.4636	-1.4015	1.7471
H	-.1379	-.4732	2.5678
H	2.7954	5.3797	.5811
H	2.0237	6.0929	2.0421
H	1.0541	5.8134	.5504
H	3.0020	3.8222	3.2188
H	3.5475	3.3481	1.5757
H	2.4286	2.2664	2.5090
C	4.9775	-.0621	.9469
C	6.3772	-.0925	1.1007
C	7.1012	-1.2535	.7910
C	6.4124	-2.3846	.3218
C	5.0168	-2.3486	.1685
H	4.4597	.8639	1.2027
H	6.8995	.7938	1.4633
H	8.1842	-1.2780	.9115
H	6.9621	-3.2936	.0748
H	4.5210	-3.2468	-.2059
H	2.2115	-.4596	3.1077
H	1.8542	-2.1159	3.6962
H	3.4662	-1.7277	3.0807
C	-2.9297	2.0405	2.0717
C	-4.2545	2.0152	2.5491

C	-5.0067	3.1971	2.6228	H	-4.6966	1.0689	2.8634	H	.2687	2.1119	3.5681
C	-4.4229	4.4069	2.2105	H	-6.0313	3.1780	2.9940	H	.7903	3.6468	4.3358
C	-3.1022	4.4276	1.7335	H	-4.9964	5.3333	2.2599	H	-.9289	3.3417	4.0548
H	-2.3859	1.0950	2.0352	H	-2.6888	5.3874	1.4164				

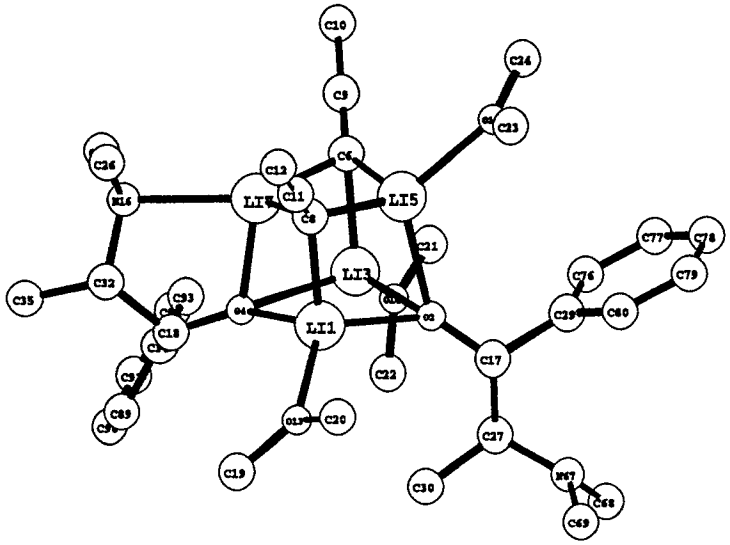

Figure IXH

$(LiCCCH_3)_2$•[*R,S*-LiOCH(Ph)CH(Me)NMe_2]$_2$•$(Me_2O)_3$

ΔH_f^o = -302.5 kcal/mol

Li	.0000	.0000	.0000	C	2.1123	-.7459	2.9503	H	-2.0566	-3.2636	-.0299
O	2.2199	.0000	.0000	H	3.8425	.2141	2.1262	H	-.8978	-3.7506	1.2708
Li	1.8428	2.2179	.0000	C	-2.6631	3.1291	.2125	H	4.2678	4.0853	-.6093
O	-.3908	2.1805	.5365	H	-1.8464	2.1630	1.9616	H	5.4423	3.8987	.7601
Li	1.6452	.5249	-2.1299	C	-.8754	4.0795	1.9676	H	4.3296	5.3238	.7158
C	1.6244	2.6717	-2.0990	C	-3.7423	4.0464	.8358	H	2.5381	2.8891	2.9046
Li	-.3891	2.1201	-1.6164	H	-3.1594	2.1158	.1659	H	3.4019	4.4818	3.0067
C	-.4539	.0248	-2.1034	H	1.9680	5.6637	-3.3298	H	4.3541	2.9482	2.9556
C	1.9042	3.5887	-2.8721	H	3.3515	4.7095	-3.9520	N	4.3699	-1.7922	2.4814
C	2.2559	4.6781	-3.7585	H	1.7489	4.5845	-4.7444	C	5.4877	-1.2843	3.2770
C	-1.1708	-.6353	-2.8555	H	-3.0721	-1.4199	-3.3915	C	3.9667	-3.1585	2.8084
C	-2.0161	-1.4062	-3.7421	H	-2.0150	-.9896	-4.7738	H	5.9345	-.3801	2.8049
O	-1.1902	-1.6851	1.0438	H	-1.6785	-2.4643	-3.8124	H	6.2961	-2.0487	3.3445
O	3.4226	3.4876	1.1575	H	3.3101	-2.3603	-4.5290	H	5.2044	-1.0095	4.3236
O	2.7525	-.4272	-3.9249	H	1.7935	-1.7125	-5.2712	H	3.1478	-3.5194	2.1488
N	-2.2967	3.4810	-1.1973	H	1.8135	-2.2015	-3.5196	H	3.6199	-3.2811	3.8652
C	3.0173	-.9945	.4755	H	4.6046	-.2208	-4.8921	H	4.8298	-3.8511	2.6653
C	-1.3813	2.8444	1.1705	H	3.8711	1.2701	-4.1697	C	5.2024	-.0865	-.6254
C	-2.1217	-1.4396	2.0661	H	3.2000	.5745	-5.7089	C	6.3971	-.2812	-1.3449
C	-1.1094	-2.9758	.4916	H	-1.5152	5.4369	-.7294	C	6.7322	-1.5525	-1.8364
C	4.4092	4.2311	.4879	H	-3.0016	5.4706	-1.7270	C	5.8570	-2.6275	-1.6094
C	3.4374	3.4557	2.5628	H	-1.4393	4.9661	-2.4620	C	4.6646	-2.4303	-.8918
C	2.4086	-1.7263	-4.3364	H	-3.2708	1.7293	-2.0070	H	4.9888	.9186	-.2553
C	3.6430	.3220	-4.7126	H	-2.6089	2.8844	-3.2318	H	7.0679	.5614	-1.5177
C	-2.0584	4.9008	-1.5349	H	-4.1339	3.2646	-2.3535	H	7.6607	-1.7042	-2.3867
C	-3.1184	2.8101	-2.2377	H	-1.9655	-.3970	2.4319	H	6.1051	-3.6197	-1.9881
C	3.3628	-.7982	2.0354	H	-1.9909	-2.1385	2.9300	H	4.0124	-3.2925	-.7381
H	2.4617	-1.9854	.4039	H	-3.1744	-1.5393	1.6998	H	1.4939	-1.6654	2.8988
C	4.3136	-1.1593	-.3695	H	-.2739	-2.9835	-.2496	H	2.4028	-.6089	4.0147

H	1.4576	.1141	2.6926
C	-1.3504	4.2975	3.2878
C	-.9460	5.4094	4.0447
C	-.0428	6.3400	3.5044
C	.4621	6.1313	2.2123
C	.0653	5.0072	1.4596
H	-2.0488	3.5951	3.7480
H	-1.3356	5.5499	5.0536
H	.2637	7.2110	4.0835
H	1.1677	6.8448	1.7844
H	.5031	4.8821	.4644
H	-3.4014	5.0829	1.0246
H	-4.6437	4.1107	.1899
H	-4.0844	3.6281	1.8053

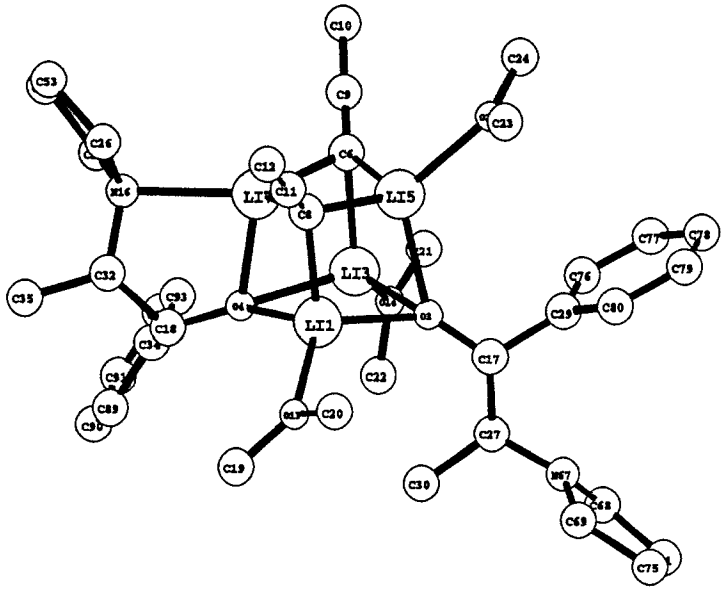

Figure IXi

$(LiCCCH_3)_2 \bullet [R,S\text{-}LiOCH(Ph)CH(Me)NMe_2]_2 \bullet (Me_2O)_3$

ΔH_f^o = -321.2 kcal/mol

Li	.0000	.0000	.0000
O	2.2118	.0000	.0000
Li	1.8382	2.2135	.0000
O	-.3931	2.1888	.5283
Li	1.6229	.5209	-2.1293
C	1.6353	2.6705	-2.1023
Li	-.3787	2.1453	-1.6241
C	-.4791	.0439	-2.0947
C	1.9421	3.5841	-2.8689
C	2.3270	4.6669	-3.7494
C	-1.2560	-.5893	-2.8095
C	-2.1719	-1.3365	-3.6445
O	-1.1753	-1.6965	1.0482
O	3.3588	3.5169	1.1835
O	2.7045	-.4454	-3.9349
N	-2.2926	3.5825	-1.2309
C	3.0332	-.9756	.4744
C	-1.4387	2.8078	1.1193
C	-2.0806	-1.4564	2.0950
C	-1.0926	-2.9885	.5001
C	4.3418	4.2814	.5325
C	3.3170	3.5218	2.5885
C	2.3192	-1.7289	-4.3580
C	3.5859	.2999	-4.7364
C	-2.1002	5.0502	-1.3820
C	-3.0779	3.0929	-2.4065
C	3.3832	-.7667	2.0314
H	2.4999	-1.9791	.4122
C	4.3254	-1.1104	-.3825
C	2.1303	-.6965	2.9421
H	3.8772	.2398	2.1158
C	-2.6854	3.0183	.0985
H	-1.9014	2.1059	1.8941
C	-1.0275	4.0677	1.9303
C	-3.9204	3.6864	.7514
H	-3.0187	1.9574	-.1066
H	2.0725	5.6585	-3.3134
H	3.4225	4.6641	-3.9458
H	1.8145	4.5962	-4.7344
H	-3.2110	-1.2991	-3.2480
H	-2.1989	-.9366	-4.6824
H	-1.8828	-2.4092	-3.7111
H	3.2010	-2.3861	-4.5642
H	1.6976	-1.6883	-5.2877
H	1.7172	-2.1958	-3.5414
H	4.5081	-.2766	-4.9986
H	3.8915	1.2070	-4.1623
H	3.0997	.6225	-5.6914
H	-1.0311	5.2387	-1.6522
H	-2.2926	5.6197	-.4452
C	-3.0284	5.5598	-2.5103
H	-2.3925	2.5141	-3.0835
C	-3.6543	4.3166	-3.1585
H	-3.9020	2.3958	-2.1227
H	-1.8911	-.4285	2.4860
H	-1.9531	-2.1815	2.9376
H	-3.1415	-1.5200	1.7447
H	-.3095	-2.9771	-.2962
H	-2.0630	-3.3111	.0460
H	-.8044	-3.7485	1.2695
H	4.2736	4.0745	-.5620
H	5.3737	4.0214	.8785
H	4.1902	5.3774	.6995
H	2.4207	2.9385	2.9093
H	3.2354	4.5573	3.0037
H	4.2309	3.0502	3.0300
N	4.3794	-1.7594	2.4849
C	5.5086	-1.2996	3.3045
C	4.0337	-3.1502	2.8011
H	6.2240	-.7200	2.6726
C	6.1774	-2.5646	3.8859
H	5.1991	-.6110	4.1314
H	3.8142	-3.7165	1.8653
H	3.1211	-3.2514	3.4404
C	5.2547	-3.7457	3.5386
C	5.2124	-.0280	-.6037
C	6.4033	-.1942	-1.3360
C	6.7361	-1.4460	-1.8770
C	5.8618	-2.5286	-1.6875
C	4.6729	-2.3598	-.9565
H	4.9985	.9621	-.1949

H	7.0728	.6549	-1.4800
H	7.6618	-1.5763	-2.4374
H	6.1063	-3.5055	-2.1063
H	4.0201	-3.2266	-.8348
H	1.4809	-1.5919	2.8574
H	2.4149	-.6005	4.0125
H	1.5087	.1936	2.7049
C	-1.5761	4.2730	3.2235
C	-1.2502	5.4009	3.9946
C	-.3518	6.3599	3.4979
C	.2249	6.1652	2.2339
C	-.0973	5.0283	1.4659
H	-2.2712	3.5477	3.6518
H	-1.6967	5.5312	4.9810
H	-.1036	7.2413	4.0891
H	.9288	6.8998	1.8400
H	.3921	4.9167	.4941
H	-3.7481	4.7250	1.0943
H	-4.7869	3.7130	.0574
H	-4.2481	3.0992	1.6347
H	-3.8107	6.2374	-2.1059
H	-2.4587	6.1597	-3.2512
H	-3.4203	4.2623	-4.2428
H	-4.7630	4.3404	-3.0868
H	7.1927	-2.7101	3.4604
H	6.3144	-2.4707	4.9844
H	4.9373	-4.2920	4.4523
H	5.7798	-4.4896	2.9024

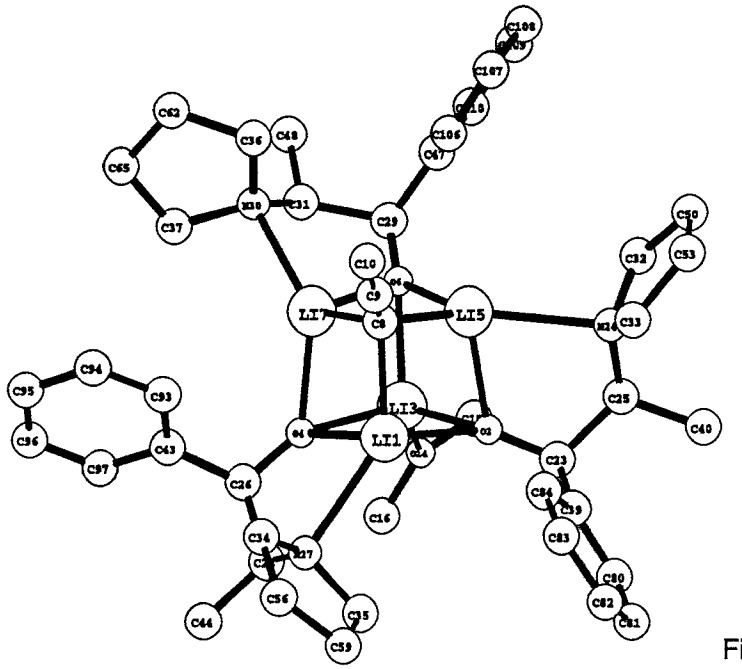

Figure XA

$(LiCCCH_3)\bullet[R,S\text{-}LiOCH(Ph)CH(Me)N(CH_2)_4]_3\bullet(Me_2O)$

ΔH_f^o = -223.0 kcal/mol

Li	.0000	.0000	.0000	C	1.0666	4.5960	-3.2549	H	-.0570	-1.4587	2.4408
O	2.2376	.0000	.0000	C	4.7610	-.6778	-3.1596	C	-2.0523	4.3448	-5.1687
Li	1.8677	2.1978	.0000	C	3.4219	-2.5760	-2.4846	H	-1.0094	2.4827	-4.6400
O	-.3472	2.1226	.3415	C	-2.8446	-.4601	1.5386	H	-.0045	3.6602	-5.5387
Li	1.8331	.2488	-2.1254	C	-.9450	-.9959	2.9369	C	-2.4407	5.2391	-3.9826
O	1.8005	2.4852	-2.2162	C	-.7795	3.5744	-4.7437	H	-.9880	5.9641	-2.5094
Li	-.3133	2.0705	-1.8895	C	-1.3874	4.9896	-2.8789	H	-1.8504	4.4959	-1.9899
C	-.3021	-.0892	-2.1454	H	3.7840	-.3401	1.2829	H	4.7884	-1.4796	-5.2123
C	-.9931	-.8318	-2.8440	C	2.6792	-2.1677	.9986	H	6.1268	-2.0553	-4.2023
C	-1.8074	-1.7039	-3.6638	C	5.5448	-1.9216	-.2566	H	4.8454	-3.8916	-3.5338
H	-2.8930	-1.5305	-3.4918	H	4.8492	.0430	-.7099	H	3.5071	-3.3298	-4.5529
H	-1.6050	-2.7762	-3.4464	H	-.8297	3.4323	1.8262	H	-4.1388	-1.5197	2.9741
H	-1.6145	-1.5439	-4.7479	C	-2.5905	2.9924	.6686	H	-3.5022	-2.5576	1.6844
O	3.2421	3.4862	1.2196	C	-2.3485	1.8637	3.5995	H	-1.6500	-3.0822	3.0234
C	4.5251	3.7438	.7053	H	-.3484	1.4876	2.9605	H	-2.2998	-2.0544	4.3134
C	2.8712	4.0416	2.4555	H	3.0666	4.0156	-2.6732	H	-1.8644	4.9494	-6.0818
H	4.6315	3.1839	-.2557	C	2.7068	2.8393	-4.4398	H	-2.8713	3.6422	-5.4316
H	5.3299	3.4059	1.4058	C	1.4679	5.7221	-4.2403	H	-3.4634	5.0067	-3.6183
H	4.6789	4.8342	.5054	H	1.0859	5.0888	-2.2383	H	-2.4594	6.3103	-4.2779
H	1.8433	3.6817	2.7004	C	5.0448	-1.8027	-4.1814	C	3.2996	-2.7344	2.1430
H	2.8607	5.1600	2.4200	H	4.2329	.1786	-3.6461	C	2.8725	-3.9568	2.6872
H	3.5626	3.7289	3.2779	H	5.7238	-.2623	-2.7773	C	1.7963	-4.6495	2.1081
C	3.2206	-.8291	.4178	C	4.2025	-3.0109	-3.7478	C	1.1424	-4.0921	.9988
N	3.8831	-1.2195	-2.0799	H	2.3261	-2.5230	-2.7112	C	1.5638	-2.8583	.4606
C	4.3877	-.9881	-.6918	H	3.5429	-3.3414	-1.6849	H	4.1314	-2.2230	2.6322
C	-1.2391	2.5175	1.2778	C	-3.2360	-1.7141	2.3562	H	3.3785	-4.3679	3.5614
N	-1.5198	.0267	2.0126	H	-2.7557	-.7232	.4534	H	1.4706	-5.6053	2.5186
C	-1.3686	1.4395	2.4771	H	-3.6500	.3052	1.6134	H	.2998	-4.6173	.5462
C	2.1807	3.4342	-3.1011	C	-2.0263	-2.0595	3.2363	H	1.0078	-2.4696	-.4013
N	-.3288	4.0860	-3.4203	H	-.5661	-.5620	3.8928	H	5.2495	-2.9817	-.1337

H	6.3849	-1.9036	-.9825
H	5.9669	-1.5803	.7116
C	-3.1959	2.3842	-.4606
C	-4.4440	2.8286	-.9451
C	-5.1020	3.9111	-.3416
C	-4.4959	4.5590	.7475
C	-3.2586	4.1090	1.2369
H	-2.7305	1.5351	-.9769
H	-4.9015	2.3236	-1.7974
H	-6.0685	4.2485	-.7159
H	-4.9860	5.4136	1.2154
H	-2.8168	4.6505	2.0760
H	-3.4069	1.9204	3.2793
H	-2.3105	1.1686	4.4645
H	-2.0675	2.8623	3.9943
C	2.1493	1.6909	-5.0570
C	2.6397	1.2168	-6.2917
C	3.7192	1.8519	-6.9242
C	4.3170	2.9628	-6.3061
C	3.8211	3.4410	-5.0821
H	1.3073	1.1488	-4.6093
H	2.1732	.3479	-6.7585
H	4.0926	1.4857	-7.8805
H	5.1683	3.4561	-6.7765
H	4.3243	4.2983	-4.6301
H	1.5474	5.3938	-5.2948
H	.7461	6.5655	-4.2194
H	2.4501	6.1506	-3.9511

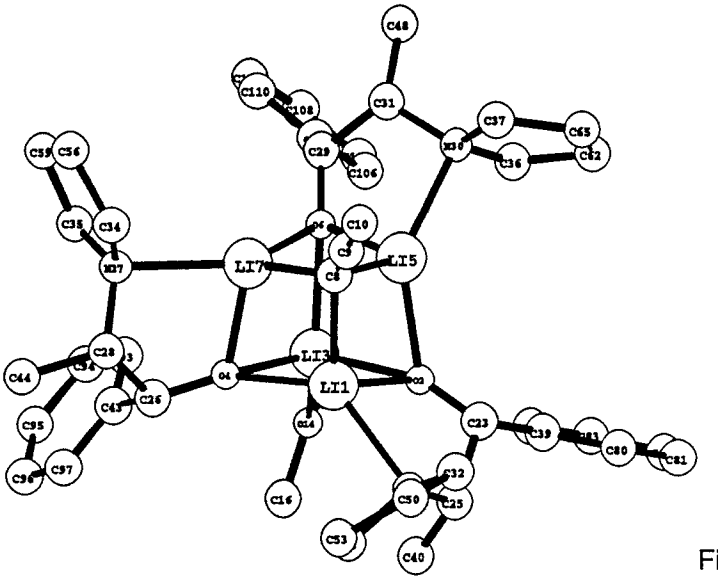

Figure XB

$(LiCCCH_3)\bullet[R,S\text{-}LiOCH(Ph)CH(Me)N(CH_2)_4]_3\bullet(Me_2O)$

ΔH_f^o = -219.3 kcal/mol

Li	.0000	.0000	.0000
O	2.1670	.0000	.0000
Li	1.7782	2.3009	.0000
O	-.4233	2.2523	.2712
Li	1.6532	.2927	-2.1661
O	1.6834	2.4152	-2.3394
Li	-.5220	1.9182	-1.8349
C	-.4647	-.1970	-2.0688
C	-1.0970	-1.0360	-2.7113
C	-1.8466	-2.0206	-3.4628
H	-2.8497	-2.1992	-3.0155
H	-1.3193	-2.9998	-3.4950
H	-2.0066	-1.6962	-4.5151
O	3.0046	3.4822	1.5731
C	4.1310	4.2331	1.1964
C	2.6159	3.4917	2.9244
H	4.3479	4.0093	.1260
H	5.0345	3.9720	1.8025
H	3.9506	5.3318	1.3057
H	1.6725	2.9036	3.0188
H	2.4274	4.5287	3.2990
H	3.3952	3.0288	3.5810
C	2.5816	-1.1736	.5323
N	.3221	-1.8563	1.5034
C	1.7572	-1.5925	1.8673
C	-1.4285	2.9922	.7957
N	-2.4837	3.2253	-1.5909
C	-2.7535	2.9772	-.1389
C	2.0013	2.9171	-3.5526
N	2.9547	.5271	-4.1160
C	2.3505	1.7812	-4.6652
C	.0649	-3.1937	.8941
C	-.7653	-1.5653	2.4797
C	-3.4142	2.5340	-2.5361
C	-2.2385	4.6123	-2.0745
C	4.3929	.4983	-3.7355
C	2.6092	-.7289	-4.8476
H	2.4011	-2.0236	-.2093
C	4.1153	-1.2557	.7944
C	1.9427	-.6061	3.0440
H	2.2106	-2.5585	2.2265
H	-1.8125	2.4806	1.7425
C	-.9678	4.4021	1.2619
C	-3.9390	3.7857	.4457
H	-3.0893	1.8991	-.0777
C	3.0192	4.0913	-3.4802
H	1.0678	3.3832	-4.0259
C	3.0558	2.3388	-5.9271
H	1.3243	1.4744	-5.0279
C	-1.3944	-3.5892	1.2139
H	.2300	-3.1414	-.2089
H	.7592	-3.9811	1.2806
C	-1.9538	-2.4935	2.1347
H	-1.0575	-.4859	2.4115
H	-.4668	-1.7519	3.5413
C	-3.6950	3.4810	-3.7245
H	-4.3812	2.2394	-2.0597
H	-2.9406	1.5812	-2.8864
C	-3.0236	4.8207	-3.3904
H	-1.1421	4.7403	-2.2567

H	-2.5306	5.3953	-1.3368
C	4.9743	-.8768	-4.1404
H	4.4805	.6511	-2.6307
H	4.9908	1.3075	-4.2176
C	3.8349	-1.6686	-4.7980
H	2.3201	-.5497	-5.9124
H	1.7175	-1.2044	-4.3627
H	-1.9975	-3.6901	.2872
H	-1.4300	-4.5826	1.7115
H	-2.3940	-2.9253	3.0589
H	-2.7744	-1.9316	1.6387
H	-3.2985	3.0584	-4.6727
H	-4.7880	3.6062	-3.8800
H	-3.7768	5.6300	-3.2772
H	-2.3469	5.1466	-4.2088
H	5.8297	-.7519	-4.8391
H	5.3789	-1.4140	-3.2565
H	3.6059	-2.5935	-4.2262
H	4.1157	-2.0036	-5.8197
C	4.7440	-2.5279	.8408
C	6.1249	-2.6623	1.0577
C	6.9273	-1.5218	1.2296
C	6.3307	-.2532	1.1782
C	4.9446	-.1227	.9644
H	4.1587	-3.4394	.7018
H	6.5747	-3.6552	1.0918
H	7.9994	-1.6220	1.3984
H	6.9436	.6403	1.3039
H	4.5295	.8862	.9302
H	1.3990	.3520	2.9179
H	1.6172	-1.0582	4.0063
H	3.0163	-.3640	3.1840
C	-.0213	5.1869	.5571
C	.3333	6.4765	1.0038
C	-.2196	7.0025	2.1814
C	-1.1238	6.2221	2.9205
C	-1.4830	4.9411	2.4701
H	.4559	4.8198	-.3583
H	1.0451	7.0693	.4274
H	.0524	8.0017	2.5216
H	-1.5489	6.6102	3.8468
H	-2.1783	4.3634	3.0828
H	-3.7444	4.8721	.5350
H	-4.8592	3.6731	-.1650
H	-4.1917	3.4097	1.4591
C	4.2729	4.0132	-2.8326
C	5.1678	5.1013	-2.8263
C	4.8226	6.3103	-3.4480
C	3.5701	6.4227	-4.0750
C	2.6860	5.3315	-4.0884
H	4.5798	3.1017	-2.3174
H	6.1357	5.0010	-2.3334
H	5.5147	7.1522	-3.4436
H	3.2835	7.3592	-4.5548
H	1.7232	5.4629	-4.5869
H	4.0563	2.7713	-5.7324
H	3.1889	1.5598	-6.7069
H	2.4347	3.1352	-6.3876

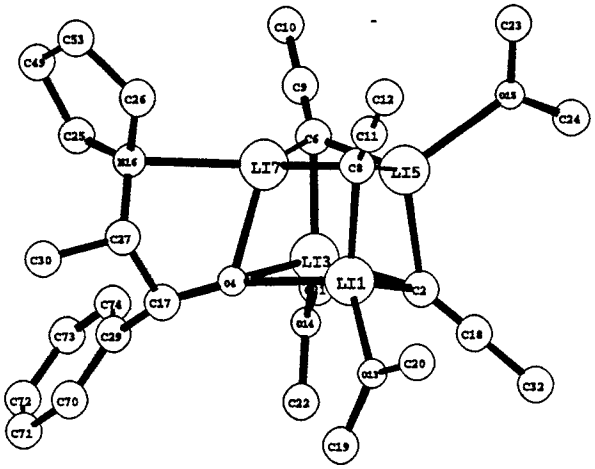

Figure XIA

$(LiCCCH_3)_3 \bullet [R,S\text{-}LiOCH(Ph)CH(Me)N(CH_2)_4]_2 \bullet (Me_2O)_3$

ΔH_f^o = -317.4 kcal/mol

Li	.0000	.0000	.0000
C	2.1266	.0000	.0000
Li	1.6981	2.1140	.0000
O	-.4946	2.1318	.5826
Li	1.5163	.5203	-2.0187
C	1.5450	2.6674	-2.0907
Li	-.4457	2.0982	-1.5700
C	-.5794	.0041	-2.0718
C	1.9840	3.5275	-2.8528
C	2.5089	4.5393	-3.7442
C	-1.3434	-.6701	-2.7609
C	-2.2416	-1.4633	-3.5720
O	-.8798	-1.6292	1.3548
O	3.2969	3.1548	1.3090
O	2.7892	-.4003	-3.7317
N	-2.3371	3.5996	-1.1429
C	-1.5317	2.7472	1.1914
C	2.9337	-.7457	.5535
C	-.9430	-1.3620	2.7332
C	-1.3510	-2.8611	.8715
C	4.3643	3.9013	.7840
C	3.2819	2.8521	2.6818
C	2.2262	-.5180	-5.0140
C	4.1010	-.8539	-3.5171
C	-2.0815	5.0606	-1.2537
C	-3.1275	3.1680	-2.3362
C	-2.7613	3.0191	.1684
H	-2.0131	2.0249	1.9356
C	-1.0897	3.9620	2.0535
C	-3.9824	3.7079	.8254
H	-3.1243	1.9736	-.0637
C	3.8831	-1.6248	1.2014
H	4.8384	-1.1006	1.4275
H	3.4863	-2.0181	2.1638
H	4.1305	-2.5017	.5627
H	2.6628	5.5079	-3.2185
H	3.4900	4.2363	-4.1734
H	1.8198	4.7309	-4.5964
H	-3.2000	-1.6647	-3.0437
H	-2.4916	-.9497	-4.5269
H	-1.7944	-2.4482	-3.8334
H	2.0974	-1.5892	-5.3112
H	2.8529	-.0179	-5.7946
H	1.2237	-.0264	-4.9984
H	4.1746	-1.9658	-3.6200
H	4.4001	-.5689	-2.4800
H	4.8281	-.3937	-4.2324
H	-2.2716	5.6151	-.3072

C	-2.9638	5.6330	-2.3886	H	-1.1279	-2.9106	-.2212	C	.2768	5.9672	2.4696
H	-1.0001	5.2130	-1.4960	H	-2.4553	-2.9666	1.0182	C	-.0931	4.8831	1.6489
H	-3.9936	2.5144	-2.0745	H	-.8525	-3.7277	1.3737	H	-2.4131	3.4578	3.7191
H	-2.4653	2.5580	-3.0089	H	4.1913	4.0268	-.3115	H	-1.7579	5.3510	5.1386
C	-3.6233	4.4308	-3.0805	H	5.3473	3.3880	.9334	H	-.0350	6.9884	4.3584
H	-3.7280	6.3316	-1.9853	H	4.4317	4.9157	1.2515	H	1.0357	6.6704	2.1238
H	-2.3546	6.2265	-3.1027	H	2.3521	2.2712	2.8976	H	.4137	4.7812	.6845
H	-3.3564	4.3869	-4.1577	H	3.2784	3.7771	3.3115	H	-4.3435	3.1036	1.6838
H	-4.7314	4.5041	-3.0433	H	4.1673	2.2374	2.9826	H	-3.7784	4.7279	1.2050
H	-.4609	-.3711	2.9167	C	-1.6635	4.1543	3.3371	H	-4.8373	3.7893	.1215
H	-.4023	-2.1360	3.3343	C	-1.2918	5.2304	4.1602				
H	-2.0003	-1.3217	3.0979	C	-.3214	6.1483	3.7259				

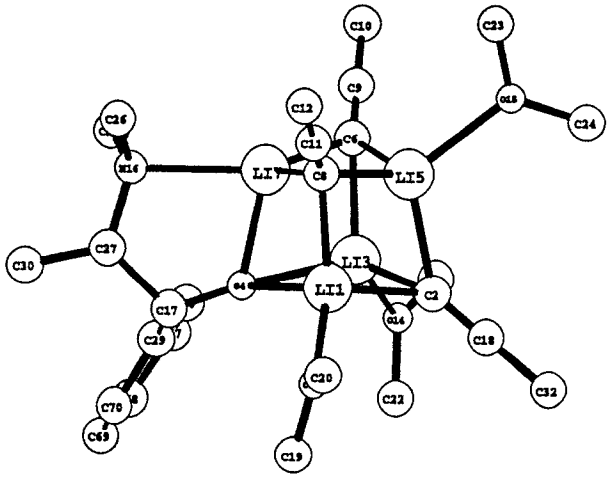

Figure XIB

$(LiCCCH_3)_3 \bullet [R,S\text{-}LiOCH(Ph)CH(Me)NMe_2]_2 \bullet (Me_2O)_3$

ΔH_f^o = -309.3 kcal/mol

Li	.0000	.0000	.0000	C	2.3066	-.2155	-5.0644	H	3.9041	-2.1530	-3.8986
C	2.1295	.0000	.0000	C	3.9846	-1.0914	-3.5540	H	4.2090	-1.0876	-2.4610
Li	1.7024	2.1130	.0000	C	-2.0374	4.9153	-1.4245	H	4.8435	-.6189	-4.0937
O	-.4924	2.1286	.5872	C	-3.1634	2.8676	-2.1679	H	-1.4699	5.4113	-.6096
Li	1.5274	.5226	-2.0208	C	-2.7315	3.1486	.2910	H	-2.9548	5.5291	-1.6062
C	1.5265	2.6687	-2.0874	H	-1.9558	2.0853	2.0031	H	-1.4162	4.9704	-2.3510
Li	-.4651	2.0719	-1.5648	C	-.9223	3.9686	2.0981	H	-3.3340	1.7845	-1.9595
C	-.5572	-.0188	-2.0816	C	-3.7676	4.1076	.9234	H	-2.6475	2.9529	-3.1580
C	1.9438	3.5519	-2.8353	H	-3.2759	2.1615	.2280	H	-4.1704	3.3416	-2.2802
C	2.4464	4.5909	-3.7082	C	3.8629	-1.6323	1.2247	H	-.3508	-.3889	2.9070
C	-1.2416	-.7220	-2.8234	H	4.9085	-1.2625	1.1330	H	-.3574	-2.1582	3.3114
C	-2.0527	-1.5474	-3.6921	H	3.6404	-1.7278	2.3109	H	-1.9238	-1.2677	3.1509
O	-.8967	-1.6143	1.3578	H	3.8348	-2.6563	.7901	H	-1.2941	-2.8618	-.2148
O	3.3648	3.1169	1.2799	H	2.4076	5.5899	-3.2198	H	-2.5512	-2.8713	1.0964
O	2.7871	-.3859	-3.7544	H	3.5047	4.4046	-3.9974	H	-.9690	-3.7112	1.3538
N	-2.3376	3.5028	-1.1099	H	1.8536	4.6581	-4.6474	H	4.1956	4.0149	-.3599
C	-1.4687	2.7891	1.2454	H	-3.0607	-1.7313	-3.2582	H	5.3971	3.2901	.7920
C	2.9260	-.7489	.5646	H	-2.2025	-1.0703	-4.6862	H	4.5604	4.8374	1.2149
C	-.8867	-1.3549	2.7393	H	-1.5823	-2.5402	-3.8689	H	2.4606	2.2528	2.9019
C	-1.4530	-2.8158	.8890	H	2.0556	-1.1951	-5.5438	H	3.4930	3.6938	3.2927
C	4.4274	3.8435	.7184	H	3.0507	.3058	-5.7177	H	4.2730	2.1151	2.8830
C	3.4088	2.7850	2.6453	H	1.3803	.4069	-5.0160	C	.0823	4.8579	1.6455

C	.5391	5.9165	2.4563
C	.0246	6.0995	3.7487
C	-.9496	5.2092	4.2300
C	-1.4101	4.1603	3.4173
H	.5259	4.7536	.6501
H	1.2988	6.5996	2.0736
H	.3780	6.9200	4.3730
H	-1.3504	5.3316	5.2369
H	-2.1618	3.4858	3.8329
H	-3.3743	5.1195	1.1423
H	-4.6560	4.2366	.2692
H	-4.1440	3.6845	1.8780

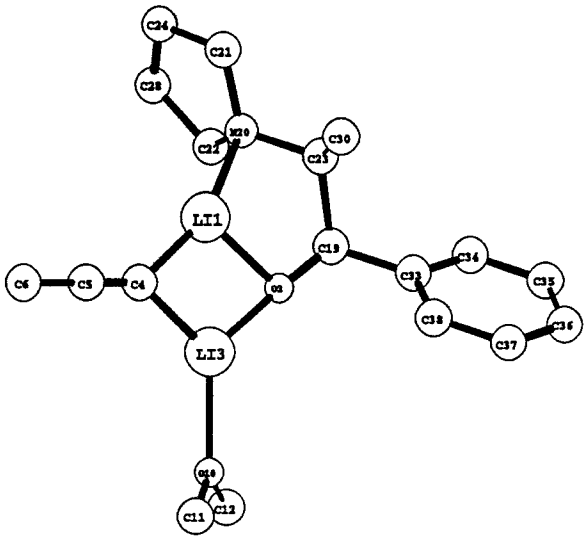

Figure XIIA

$(LiCCCH_3)\bullet[R,S\text{-}LiOCH(Ph)CH(Me)N(CH_2)_4]\bullet(Me_2O)$

ΔH_f^o = -129.1 kcal/mol

Li	.0000	.0000	.0000
O	2.0569	.0000	.0000
Li	1.4312	1.8941	.0000
C	-.5816	1.8789	.0001
C	-1.5570	2.6186	-.0080
C	-2.7083	3.4928	-.0192
H	-3.6576	2.9152	.0315
H	-2.6982	4.1922	.8462
H	-2.7433	4.1099	-.9444
O	2.7282	3.6188	-.0906
C	2.4802	4.8146	.6061
C	3.8971	3.4773	-.8620
H	1.5240	4.6884	1.1708
H	2.3749	5.6833	-.0906
H	3.2980	5.0484	1.3329
H	3.8651	2.4732	-1.3543
H	4.8178	3.5413	-.2295
H	3.9660	4.2637	-1.6551
C	2.5112	-1.2549	.1590
N	.2617	-2.1720	-.7548
C	-.9574	-3.0253	-.6460
C	.7651	-2.2556	-2.1577
C	1.2751	-2.2998	.3573
C	-1.4788	-3.2898	-2.0755
H	-1.7296	-2.4931	-.0365
H	-.7578	-4.0017	-.1385
H	1.0625	-1.2383	-2.5119
C	-.3735	-2.8239	-3.0354
H	1.6650	-2.9129	-2.2494
C	.5744	-2.1311	1.7408
H	1.7201	-3.3307	.3357
H	3.0622	-1.5915	-.7802
C	3.5763	-1.4105	1.2792
C	4.4839	-2.4995	1.2306
C	5.4903	-2.6603	2.1974
C	5.6235	-1.7293	3.2407
C	4.7410	-.6399	3.3038
C	3.7313	-.4822	2.3352
H	4.4197	-3.2381	.4290
H	6.1701	-3.5109	2.1355
H	6.4039	-1.8516	3.9919
H	4.8357	.0907	4.1082
H	3.0678	.3816	2.4299
H	1.3262	-2.1566	2.5578
H	-.0190	-1.1870	1.8676
H	-.1095	-2.9809	1.9594
H	-2.4295	-2.7459	-2.2611
H	-1.7098	-4.3674	-2.2160
H	-.0035	-3.6641	-3.6615
H	-.7526	-2.0576	-3.7446

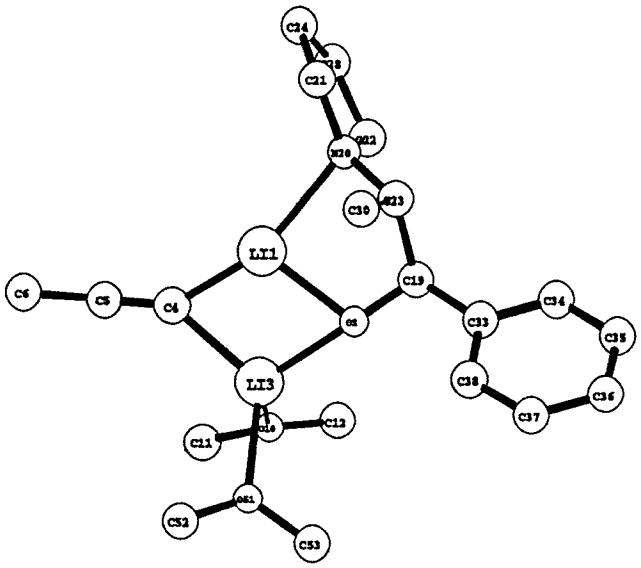

Figure XIIB

$(LiCCCH_3)\bullet[R,S\text{-}LiOCH(Ph)CH(Me)N(CH_2)_4]\bullet(Me_2O)_2$

ΔH_f^o = -178.9 kcal/mol

Li	.0000	.0000	.0000	C	3.7402	-1.6896	.4579
O	2.0454	.0000	.0000	C	4.6005	-2.6390	-.1508
Li	1.4231	2.0085	.0000	C	5.7957	-3.0498	.4622
C	-.6342	1.8468	.0689	C	6.1702	-2.5173	1.7071
C	-1.6474	2.5336	.1095	C	5.3367	-1.5735	2.3266
C	-2.8422	3.3446	.1561	C	4.1384	-1.1657	1.7102
H	-3.7587	2.7168	.2179	H	4.3484	-3.0709	-1.1217
H	-2.8444	4.0214	1.0397	H	6.4346	-3.7830	-.0313
H	-2.9395	3.9842	-.7497	H	7.0972	-2.8336	2.1853
O	2.2054	3.2844	-1.7313	H	5.6166	-1.1529	3.2933
C	1.4953	4.4291	-2.1311	H	3.5209	-.4329	2.2332
C	3.1477	2.7191	-2.6073	H	1.6271	-2.4668	2.1173
H	.8293	4.7335	-1.2878	H	.1865	-1.4562	1.7581
H	.8661	4.2378	-3.0359	H	.1254	-3.2486	1.6330
H	2.1820	5.2823	-2.3632	H	-2.8177	-2.4438	-2.1159
H	3.6265	1.8535	-2.0891	H	-2.1228	-4.0517	-2.4012
H	3.9480	3.4519	-2.8835	H	-.6548	-3.1426	-3.9861
H	2.6739	2.3569	-3.5540	H	-1.3697	-1.5407	-3.7186
C	2.4477	-1.2474	-.2862	O	2.4404	3.2945	1.5757
N	.0808	-2.0692	-.9721	C	1.7020	4.0471	2.5046
C	-1.1229	-2.9323	-.7951	C	3.8267	3.1527	1.7561
C	.3697	-1.9696	-2.4328	H	2.0735	5.1009	2.5738
C	1.2482	-2.3303	-.0513	H	1.7426	3.6005	3.5295
C	-1.8579	-3.0019	-2.1519	H	.6389	4.0687	2.1646
H	-1.7851	-2.4911	-.0096	H	4.0773	2.6950	2.7457
H	-.8650	-3.9678	-.4604	H	4.3529	4.1391	1.6924
H	.6438	-.9171	-2.6924	H	4.2167	2.4900	.9461
C	-.9036	-2.4027	-3.1954				
H	1.2250	-2.6198	-2.7438				
C	.7626	-2.3596	1.4292				
H	1.6753	-3.3434	-.2807				
H	2.7356	-1.3339	-1.3862				

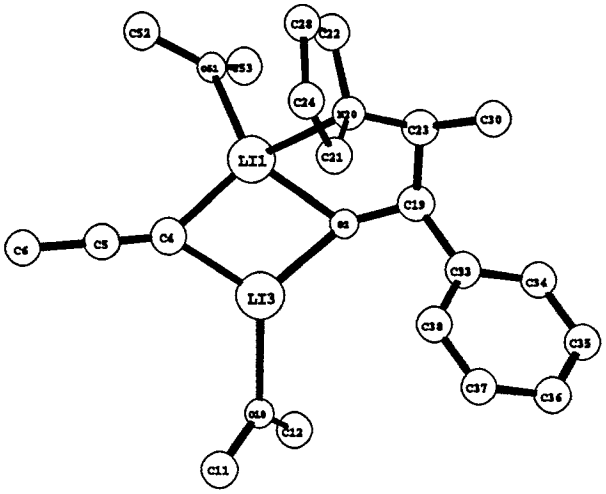

Figure XIIC

$(LiCCCH_3)\bullet[R,S\text{-}LiOCH(Ph)CH(Me)N(CH_2)_4]\bullet(Me_2O)_2$

ΔH_f^o = -177.8 kcal/mol

Li	.0000	.0000	.0000	C	5.3368	-1.0891	.9673
O	2.0522	.0000	.0000	C	6.5067	-.6140	1.5835
Li	1.5436	1.9244	.0000	C	6.4531	.5045	2.4314
C	-.4483	1.9874	.0601	C	5.2218	1.1429	2.6473
C	-1.3997	2.7545	.1399	C	4.0502	.6671	2.0268
C	-2.5206	3.6610	.2304	H	5.4209	-1.9543	.3063
H	-3.4746	3.1156	.4067	H	7.4584	-1.1141	1.4003
H	-2.3954	4.3855	1.0660	H	7.3580	.8736	2.9142
H	-2.6463	4.2528	-.7039	H	5.1710	2.0142	3.3018
O	2.8027	3.6408	-.4468	H	3.1166	1.2036	2.2288
C	2.6709	4.8836	.1962	H	3.5745	-3.5222	1.7192
C	3.7119	3.4849	-1.5091	H	3.2380	-2.3882	3.0596
H	1.9312	4.7611	1.0251	H	2.1423	-3.7545	2.7409
H	2.3009	5.6744	-.5030	H	-1.2147	-.4382	4.1424
H	3.6414	5.2307	.6313	H	-.1185	-1.6170	4.8873
H	3.6330	2.4313	-1.8769	H	-1.2330	-3.3358	3.7647
H	4.7648	3.6747	-1.1818	H	-2.2856	-2.1535	2.9646
H	3.4824	4.1798	-2.3559	O	-1.2451	-1.0100	-1.6108
C	2.8159	-1.0068	.4505	C	-2.6379	-.8312	-1.6578
N	.6501	-1.6131	1.7656	C	-.5577	-1.4054	-2.7714
C	.6380	-.7755	2.9970	H	-3.1662	-1.7788	-1.9336
C	-.4505	-2.6151	1.8381	H	-2.9376	-.0430	-2.3922
C	1.9532	-2.1290	1.2430	H	-2.9777	-.5218	-.6394
C	-.5119	-1.2661	3.9090	H	-.6847	-.6706	-3.6057
H	.4787	.2963	2.7113	H	-.9091	-2.4036	-3.1373
H	1.6001	-.8091	3.5608	H	.5284	-1.4824	-2.5208
H	-1.1272	-2.4746	.9582				
C	-1.2209	-2.4033	3.1606				
H	-.0916	-3.6711	1.7755				
C	2.7658	-2.9779	2.2499				
H	1.6727	-2.8509	.4213				
H	3.2181	-1.6111	-.4319				
C	4.0792	-.4711	1.1836				

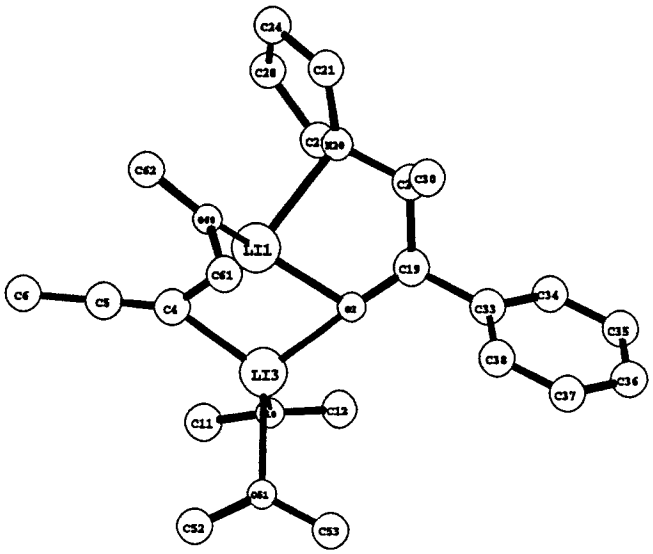

Figure XIID

$(LiCCCH_3)\bullet[R,S\text{-}LiOCH(Ph)CH(Me)N(CH_2)_4]\bullet(Me_2O)_3$

ΔH_f^o = -226.4 kcal/mol

Li	.0000	.0000	.0000	C	5.0903	-1.8025	-1.0745	H	-3.3019	-1.8405	1.7395
O	2.0805	.0000	.0000	C	6.3671	-2.1718	-.6190	H	-3.0629	-.8413	.2439
Li	1.5723	2.0407	.0000	C	6.6739	-2.1098	.7503				
C	-.4559	1.9702	-.1416	C	5.6906	-1.6765	1.6531				
C	-1.4512	2.6676	-.2997	C	4.4117	-1.3097	1.1936				
C	-2.6219	3.4910	-.4894	H	4.8934	-1.8591	-2.1472				
H	-3.5517	2.8802	-.5278	H	7.1215	-2.5064	-1.3319				
H	-2.7461	4.2269	.3369	H	7.6638	-2.3945	1.1067				
H	-2.5692	4.0693	-1.4392	H	5.9167	-1.6245	2.7190				
O	2.6036	3.4225	-1.5220	H	3.6780	-.9849	1.9340				
C	1.9097	4.5442	-2.0062	H	2.5526	-3.4368	.6118				
C	3.7560	2.9879	-2.1976	H	1.0159	-2.6262	1.0432				
H	1.0653	4.7568	-1.3074	H	1.0364	-4.0680	-.0195				
H	1.4950	4.3692	-3.0304	H	-2.5230	-2.1816	-2.5827				
H	2.5655	5.4505	-2.0514	H	-1.6763	-3.3055	-3.6622				
H	4.1995	2.1440	-1.6170	H	-.6149	-1.5031	-4.7209				
H	4.5227	3.7997	-2.2787	H	-1.4871	-.3780	-3.6619				
H	3.5233	2.6321	-3.2325	O	2.4470	3.2187	1.7554				
C	2.6920	-.9330	-.7445	C	1.6441	4.0603	2.5426				
N	.4262	-1.8012	-1.6118	C	3.7257	2.8638	2.2166				
C	-.5823	-2.8815	-1.8028	H	2.1406	5.0445	2.7381				
C	.4792	-1.0075	-2.8776	H	1.3981	3.5986	3.5317				
C	1.7495	-2.2194	-1.0313	H	.6935	4.2491	1.9886				
C	-1.5156	-2.4602	-2.9591	H	3.6816	2.3058	3.1854				
H	-1.1595	-3.0255	-.8587	H	4.3752	3.7633	2.3691				
H	-.1203	-3.8699	-2.0511	H	4.2027	2.2109	1.4467				
H	.5856	.0820	-2.6469	O	-1.5014	-.7919	1.5628				
C	-.8313	-1.2747	-3.6551	C	-1.0135	-.6900	2.8769				
H	1.3494	-1.2887	-3.5234	C	-2.8853	-.8788	1.3456				
C	1.5656	-3.1196	.2157	H	-1.2353	-1.6143	3.4692				
H	2.2964	-2.8433	-1.7928	H	-1.4530	.1797	3.4270				
H	2.9482	-.5270	-1.7813	H	.0958	-.5582	2.8261				
C	4.0796	-1.3647	-.1812	H	-3.4475	-.0394	1.8248				

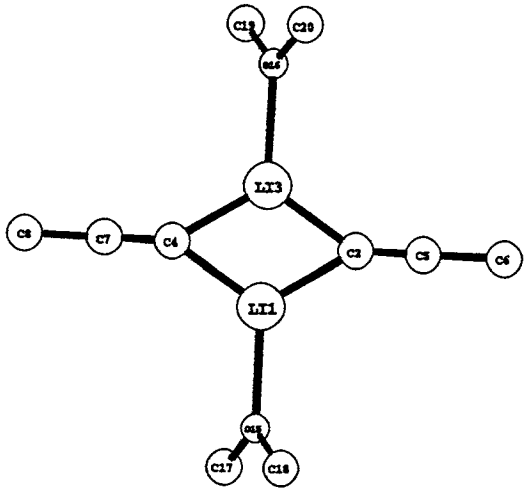

Figure XIIIA

$(LiCCCH_3)_2 \bullet (Me_2O)$

ΔH_f^o = -159.6 kcal/mol

Li	.0000	.0000	.0000
C	1.9931	.0000	.0000
Li	1.1812	1.8203	.0000
C	-.8120	1.8202	.0007
C	3.0202	-.6652	-.0047
C	4.2330	-1.4508	-.0103
C	-1.8375	2.4877	.0065
C	-3.0486	3.2760	.0134
H	4.0119	-2.5412	-.0021
H	4.8495	-1.2437	-.9131
H	4.8642	-1.2334	.8799
H	-3.9548	2.6304	.0036
H	-3.1105	3.9214	.9176
H	-3.1066	3.9429	-.8754
O	-1.1867	-1.8259	-.0026
O	2.3664	3.6470	-.0004
C	-1.8234	-2.2475	-1.1829
C	-1.3110	-2.5729	1.1818
C	2.4630	4.4137	-1.1747
C	3.0302	4.0495	1.1716
H	-1.5741	-1.5092	-1.9856
H	-2.9348	-2.2868	-1.0626
H	-1.4721	-3.2598	-1.5045
H	-.7297	-2.0451	1.9789
H	-.9024	-3.6075	1.0640
H	-2.3774	-2.6552	1.5098
H	1.8671	3.8968	-1.9681
H	3.5220	4.5057	-1.5237
H	2.0532	5.4446	-1.0311
H	2.7983	3.2993	1.9684
H	2.6878	5.0572	1.5166
H	4.1387	4.0895	1.0267

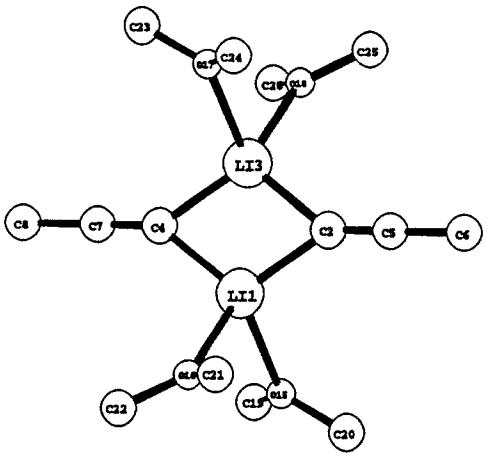

Figure XIIIB

$(LiCCCH_3)_2 \cdot (Me_2O)_4$

ΔH_f^o = -256.1 kcal/mol

Li	.0000	.0000	.0000	C	-1.6871	-.8644	-2.6547	H	-2.6012	-.4136	2.7830
C	2.0342	.0000	.0000	C	-.2078	-2.6234	-1.8933	H	-2.9405	-2.0340	2.0539
Li	1.3639	1.9208	.0000	C	-.2608	-1.8793	2.6532	H	.9635	4.7969	.9826
C	-.6705	1.9206	.0008	C	-2.4089	-1.0618	1.8919	H	2.3148	5.3713	2.0456
C	3.0338	-.7074	-.0252	C	1.5708	4.5496	1.8861	H	.8948	4.5220	2.7770
C	4.2120	-1.5405	-.0548	C	3.0451	2.7902	2.6562	H	3.4780	1.8351	2.2737
C	-1.6678	2.6312	.0275	C	3.7768	2.9816	-1.8883	H	2.4934	2.5803	3.6068
C	-2.8425	3.4692	.0571	C	1.6292	3.7931	-2.6576	H	3.8874	3.4877	2.8966
H	3.9496	-2.6222	-.0736	H	-2.1218	.0882	-2.2678	H	4.2109	2.4900	-.9848
H	4.8370	-1.3384	-.9536	H	-2.5280	-1.5632	-2.8960	H	4.3071	3.9549	-2.0481
H	4.8565	-1.3744	.8378	H	-1.1378	-.6495	-3.6056	H	3.9732	2.3341	-2.7791
H	-3.7776	2.8653	.0711	H	.3999	-2.8735	-.9908	H	.5850	3.8869	-2.2745
H	-2.8599	4.1227	.9583	H	.4681	-2.5911	-2.7841	H	1.6125	3.2026	-3.6079
H	-2.8954	4.1358	-.8332	H	-.9505	-3.4455	-2.0561	H	2.0099	4.8181	-2.8985
O	-.8402	-1.3900	-1.6652	H	.7819	-1.9755	2.2665				
O	-1.0359	-1.2524	1.6638	H	-.6434	-2.9037	2.8939				
O	2.2016	3.3144	1.6631	H	-.2392	-1.2904	3.6044				
O	2.4028	3.1698	-1.6646	H	-2.8450	-.5698	.9896				

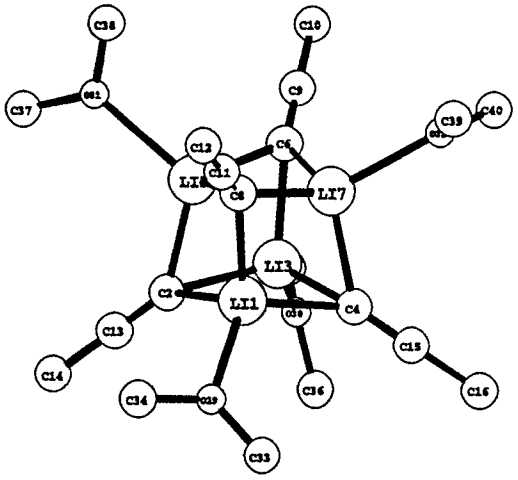

Figure XIIIC

$(LiCCCH_3)_4 \cdot (Me_2O)_4$

ΔH_f^o = -364.5 kcal/mol

Li	.0000	.0000	.0000
C	2.1532	.0000	.0000
Li	1.4989	2.0420	.0000
C	-.5641	1.9913	.6275
Li	1.4800	.4936	-1.9945
C	1.4314	2.6388	-2.0750
Li	-.5352	1.9541	-1.5144
C	-.5793	-.1331	-2.0660
C	1.9029	3.4910	-2.8257
C	2.4554	4.4975	-3.7057
C	-1.2394	-.9177	-2.7448
C	-2.0186	-1.8400	-3.5417
C	3.0320	-.6221	.5940
C	4.0696	-1.3515	1.2897
C	-1.2726	2.5700	1.4495
C	-2.1012	3.2510	2.4202
H	2.3527	5.5184	-3.2747
H	3.5384	4.3259	-3.8949
H	1.9436	4.5026	-4.6938
H	-3.0191	-2.0254	-3.0913
H	-2.1860	-1.4510	-4.5709
H	-1.5117	-2.8257	-3.6391
H	5.0780	-.9324	1.0757
H	3.9244	-1.3180	2.3923
H	4.0870	-2.4234	.9909
H	-1.8430	2.9512	3.4604
H	-1.9832	4.3556	2.3554
H	-3.1799	3.0237	2.2687
O	-.8863	-1.7601	1.2546
O	2.8771	3.3314	1.3764
O	2.7435	-.3930	-3.7500
O	-2.2682	3.2617	-2.3757
C	-1.8133	-1.5850	2.2947
C	-.4736	-3.0619	.9220
C	3.9090	4.1299	.8567
C	2.6742	3.2987	2.7665
C	3.9531	-1.0801	-3.5590
C	2.2703	-.1976	-5.0590
C	-3.4541	2.6963	-2.8722
C	-2.1180	4.6588	-2.3967
H	-2.0206	-.4931	2.3927
H	-2.7782	-2.1126	2.0874
H	-1.4186	-1.9617	3.2717
H	.2485	-2.9908	.0727
H	.0344	-3.5688	1.7808
H	-1.3340	-3.7037	.6053
H	3.9604	3.9551	-.2444
H	3.7213	5.2179	1.0391
H	4.9033	3.8736	1.3016
H	1.8678	2.5569	2.9816
H	3.5970	2.9877	3.3179
H	2.3587	4.2972	3.1616
H	4.1636	-1.1116	-2.4637
H	3.8998	-2.1302	-3.9420
H	4.8084	-.5709	-4.0704
H	1.3183	.3836	-5.0005
H	2.9994	.3757	-5.6851
H	2.0647	-1.1691	-5.5752
H	-3.4178	1.5966	-2.6855
H	-4.3618	3.1104	-2.3653
H	-3.5656	2.8702	-3.9721
H	-1.1516	4.9112	-1.8975
H	-2.0967	5.0563	-3.4427
H	-2.9448	5.1777	-1.8494

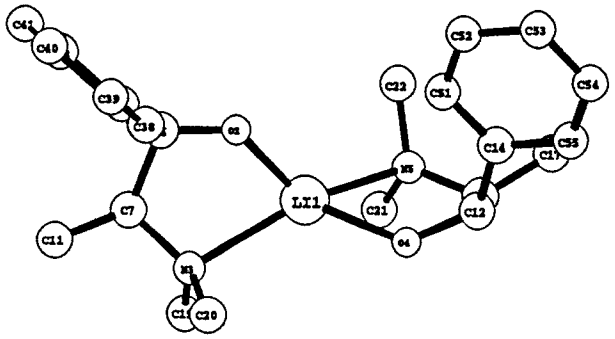

Figure XIIID

[*R,S*-LiOCH(Ph)CH(Me)N$(CH_2)_4$]•[*R,S*-HOCH(Ph)CH(Me)N$(CH_2)_4$]

ΔH_f^o = -44.7 kcal/mol

Li	.0000	.0000	.0000
O	1.8789	.0000	.0000
N	.4607	2.3370	.0000
O	-1.2519	-1.0082	-1.5359
N	-1.2815	-1.5666	1.1736
C	2.6804	1.0191	.2857
C	1.9041	2.4481	.4044
C	3.9364	1.0419	-.6336
H	3.1017	.9110	1.3446
H	1.8962	2.6341	1.5158
C	2.6303	3.6757	-.1874
C	-1.8080	-2.2686	-1.2338
C	-2.2592	-2.2673	.2946
C	-.9186	-3.4188	-1.7301
H	-2.7858	-2.3490	-1.8017
H	-3.2009	-1.6442	.2831
C	-2.7342	-3.6511	.8023
H	-1.1367	-.8981	-2.4707
C	-.4698	3.1003	.8586
C	.1345	2.4632	-1.4382
C	-1.8791	-.5212	2.0426
C	-.2362	-2.3604	1.8647
H	-1.5278	2.8494	.6047
H	-.3654	4.2081	.7608
H	-.3158	2.8431	1.9321
H	.1705	3.5180	-1.8096
H	-.9087	2.0992	-1.6264
H	.8269	1.8655	-2.0743
H	-1.0787	.0470	2.5783
H	-2.5624	-.9440	2.8200
H	-2.4746	.2044	1.4353
H	-.6343	-2.9112	2.7531
H	.5780	-1.6864	2.2255
H	.2193	-3.1126	1.1846
H	2.0627	4.6154	-.0146
H	3.6112	3.8139	.3125
H	2.8179	3.6061	-1.2768
C	3.8796	.7860	-2.0240
C	5.0438	.7652	-2.8142
C	6.3008	.9944	-2.2334
C	6.3830	1.2408	-.8531
C	5.2179	1.2604	-.0678
H	2.9266	.5897	-2.5179
H	4.9676	.5662	-3.8839
H	7.2026	.9783	-2.8453
H	7.3538	1.4146	-.3876
H	5.3241	1.4458	1.0030
H	-3.1366	-3.5758	1.8338
H	-3.5634	-4.0224	.1649
H	-1.9446	-4.4266	.8058
C	.4948	-3.3996	-1.6485
C	1.2610	-4.4724	-2.1461
C	.6374	-5.5817	-2.7381
C	-.7645	-5.6121	-2.8365
C	-1.5290	-4.5430	-2.3434
H	1.0332	-2.5567	-1.2052
H	2.3488	-4.4347	-2.0715
H	1.2350	-6.4092	-3.1212
H	-1.2622	-6.4650	-3.2992
H	-2.6146	-4.5965	-2.4490

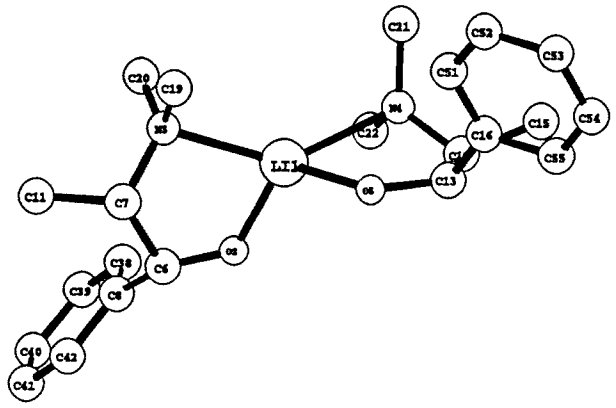

Figure XIIIE

[*R,S*-LiOCH(Ph)CH(Me)N$(CH_2)_4$]•[*R,S*-HOCH(Ph)CH(Me)N$(CH_2)_4$]

ΔH_f^o = -44.5 kcal/mol

Li	.0000	.0000	.0000
O	1.8898	.0000	.0000
N	.3550	2.2859	.0000
N	-1.5860	-1.5898	-.7703
O	-.7476	-1.0666	1.7814
C	2.6422	1.0707	.2270
C	1.7660	2.4201	.5018
C	3.7753	1.2280	-.8285
H	3.1935	.9663	1.2249
H	1.6926	2.4389	1.6269
C	2.4414	3.7591	.1378
C	-1.5809	-2.7336	.1855
C	-1.4824	-2.2647	1.7082
H	-.6070	-3.2836	.0303
C	-2.6671	-3.8069	-.0724
C	-2.7834	-2.1585	2.5225
H	-.8725	-3.0847	2.1966
H	-.2563	-1.0118	2.5916
C	-.6814	2.7756	.9368
C	.0776	2.6604	-1.4025
C	-2.8824	-1.0067	-1.1716
C	-.6385	-1.7338	-1.9130
H	-1.6994	2.4859	.5768
H	-.6821	3.8867	1.0579
H	-.5445	2.3292	1.9503
H	-.0143	3.7644	-1.5557
H	-.8923	2.2096	-1.7325
H	.8697	2.2936	-2.0910
H	-3.3964	-1.5888	-1.9751
H	-2.7231	.0280	-1.5591
H	-3.5847	-.9353	-.3137
H	-.5436	-.7584	-2.4571
H	-.9859	-2.4916	-2.6589
H	.3774	-2.0492	-1.5644
H	1.8092	4.6300	.4158
H	3.3882	3.8718	.7055
H	2.6846	3.8644	-.9377
C	3.5884	.9713	-2.2072
C	4.6499	1.0785	-3.1250
C	5.9343	1.4367	-2.6872
C	6.1484	1.6801	-1.3207
C	5.0853	1.5723	-.4083
H	2.6132	.6701	-2.5934
H	4.4726	.8774	-4.1822
H	6.7565	1.5203	-3.3977
H	7.1434	1.9499	-.9649
H	5.2962	1.7562	.6473
H	-2.6345	-4.1614	-1.1235
H	-2.4816	-4.6955	.5658
H	-3.6994	-3.4615	.1297
C	-3.5795	-.9904	2.5722
C	-4.7476	-.9370	3.3561
C	-5.1453	-2.0482	4.1157
C	-4.3609	-3.2144	4.0910
C	-3.1951	-3.2648	3.3096
H	-3.3047	-.0958	2.0104
H	-5.3434	-.0236	3.3730
H	-6.0506	-2.0068	4.7217
H	-4.6545	-4.0823	4.6825
H	-2.6050	-4.1836	3.3271

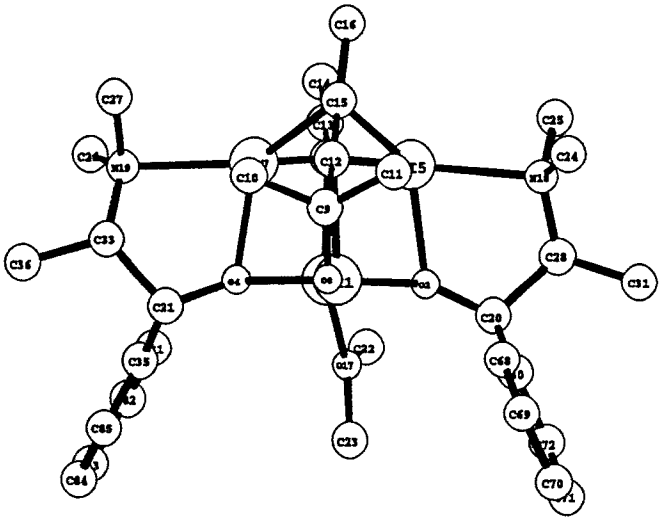

Figure XIVA

$(LiCCCH_3)_2$•[*R,S*-LiOCH(Ph)CH(CH_3)NMe_2]$_2$•(Me_2O)•(CH_3COCH_3)
ΔH_f^o = -198.8 KCAL/MOL

Li	.0000	.0000	.0000
O	2.2237	.0000	.0000
Li	1.9393	2.2442	.0000
O	-.2655	2.2802	.0656
Li	2.1246	.3832	-2.0981
C	2.1674	2.5128	-2.1710
Li	.0618	2.2789	-2.0323
O	-1.5716	-1.3286	-.0073
C	-1.7621	-1.3836	-1.2763
C	-3.1179	-.7921	-1.7805
C	-1.4349	-2.7542	-1.9568
C	-.5315	-.2894	-2.1411
C	2.8616	3.3216	-2.7871
C	3.6784	4.2678	-3.5198
C	.0007	.1346	-3.1760
C	.4261	.4095	-4.5576
O	3.4356	3.1264	1.4979
N	3.7656	-1.2840	-1.9652
N	-1.6144	3.9022	-1.8797
C	3.2507	-.7077	.5325
C	-1.2779	3.0290	.5705
C	4.6103	3.8178	1.1610
C	3.2175	2.7561	2.8388
C	3.1515	-2.5635	-2.3846
C	4.6394	-.7046	-3.0174
C	-1.0811	5.2695	-2.0740
C	-2.3470	3.4349	-3.0856
C	4.3300	-1.1974	-.5775
H	3.9018	-.0130	1.1641
C	2.7656	-1.7938	1.5297
C	5.1874	-2.4183	-.1676
H	5.0649	-.3405	-.5965
C	-2.2893	3.5752	-.5780
H	-1.9695	2.3609	1.1823
C	-.7751	4.1147	1.5633
C	-3.2893	4.6529	-.0951
H	-2.9360	2.6735	-.7806
H	3.4513	4.2426	-4.6086
H	4.7625	4.0479	-3.4015
H	3.5101	5.3098	-3.1689
H	.1721	1.4443	-4.8882
H	-.0987	-.2885	-5.2508
H	1.5220	.2631	-4.7210
H	4.5739	4.0460	.0689
H	5.5265	3.2102	1.3683
H	4.7024	4.7821	1.7208
H	2.2454	2.2068	2.8921
H	3.1624	3.6501	3.5096
H	4.0304	2.0915	3.2250
H	2.5265	-3.0007	-1.5767
H	3.9038	-3.3354	-2.6815
H	2.4925	-2.3937	-3.2711
H	4.9435	.3379	-2.7551
H	4.0964	-.6663	-3.9945
H	5.5743	-1.2927	-3.1873
H	-.6158	5.6712	-1.1501
H	-1.8621	6.0031	-2.3934
H	-.2963	5.2552	-2.8690
H	-2.6179	2.3553	-3.0024
H	-1.7072	3.5581	-3.9953
H	-3.2930	3.9996	-3.2728
H	-3.3400	.1978	-1.3372
H	-3.9445	-1.4756	-1.4906
H	-3.1497	-.6872	-2.8835
H	-.4115	-3.1125	-1.7321
H	-1.5397	-2.7105	-3.0595
H	-2.1445	-3.5249	-1.5875
C	1.6251	-2.6015	1.3052
C	1.2048	-3.5521	2.2583
C	1.9075	-3.7134	3.4619
C	3.0354	-2.9131	3.7105
C	3.4519	-1.9668	2.7606
H	1.0503	-2.5236	.3779
H	.3236	-4.1629	2.0571
H	1.5809	-4.4481	4.1980
H	3.5875	-3.0235	4.6445
H	4.3267	-1.3574	2.9977
H	4.6026	-3.3425	.0054
H	5.9555	-2.6543	-.9346
H	5.7435	-2.1951	.7664
C	.3607	4.9263	1.3245
C	.7513	5.9215	2.2437
C	.0412	6.1078	3.4394
C	-1.0636	5.2849	3.7153
C	-1.4607	4.3033	2.7923
H	.9581	4.8167	.4122
H	1.6126	6.5531	2.0215
H	.3446	6.8791	4.1473
H	-1.6157	5.4078	4.6478
H	-2.3201	3.6797	3.0478
H	-2.8146	5.6027	.2196
H	-4.0301	4.9033	-.8839
H	-3.8722	4.2704	.7682

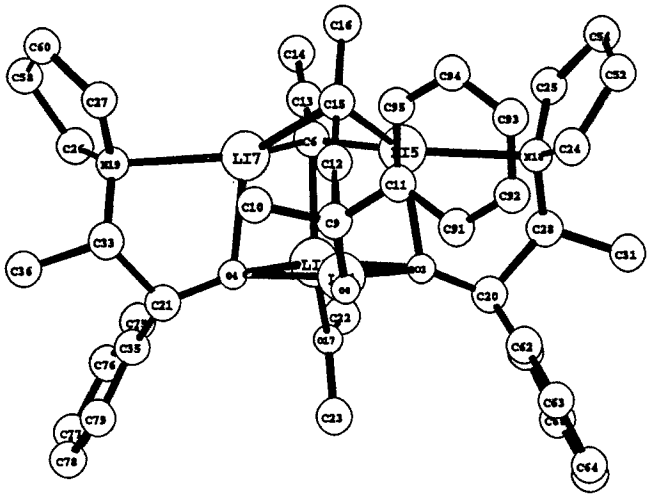

Figure XIVB

$(LiCCCH_3)_2$•[*R,S*-$LiOCH(Ph)CH(CH_3)N(CH_2)_4]_2$•$(Me_2O)$•$(PhCOCH_3)$

ΔH_f^o = -175.9 kcal/mol

Li	.0000	.0000	.0000	H	-1.9163	2.4352	1.2480	H	1.2274	-2.6245	.2697
O	2.2234	.0000	.0000	C	-.7273	4.2210	1.4632	H	.6519	-4.4062	1.8651
Li	1.9356	2.2475	.0000	C	-3.3865	4.5167	-.0819	H	1.9353	-4.6906	3.9869
O	-.2570	2.2896	.0743	H	-2.8811	2.5684	-.7752	H	3.8184	-3.1271	4.5041
Li	2.1366	.3692	-2.1003	H	3.5553	4.1548	-4.6022	H	4.4137	-1.3316	2.9386
C	2.1704	2.4999	-2.1670	H	4.8387	3.9271	-3.3711	H	5.0834	-3.0252	.0942
Li	.0557	2.2650	-2.0238	H	3.6283	5.2352	-3.1732	H	6.2517	-2.1898	-.9601
O	-1.5255	-1.3908	.0485	H	.2934	1.4148	-4.7989	H	6.0152	-1.6288	.7071
C	-1.8556	-1.3994	-1.1895	H	-.0639	-.2929	-5.1947	C	.3882	5.0262	1.1263
C	-3.2012	-.6777	-1.5259	H	1.5675	.1519	-4.6075	C	.8014	6.0849	1.9609
C	-1.7302	-2.7540	-1.9372	H	4.5790	4.0431	.1237	C	.1347	6.3455	3.1675
C	-.5903	-.3320	-2.1005	H	5.4825	3.2309	1.4722	C	-.9490	5.5328	3.5405
C	2.9032	3.2757	-2.7812	H	4.6439	4.8070	1.7669	C	-1.3682	4.4866	2.7022
C	3.7652	4.1838	-3.5100	H	2.1500	2.2386	2.8839	H	.9519	4.8619	.2013
C	-.0092	.0929	-3.1081	H	3.0337	3.6971	3.5147	H	1.6466	6.7075	1.6637
C	.4767	.3628	-4.4728	H	3.9210	2.1397	3.2875	H	.4551	7.1660	3.8096
O	3.3882	3.1457	1.5234	H	2.1103	-2.5299	-2.3627	H	-1.4673	5.7138	4.4828
N	3.8132	-1.3055	-1.9886	H	3.3804	-3.3721	-1.4305	H	-2.2096	3.8737	3.0326
N	-1.6811	3.8817	-1.8929	C	3.8277	-3.1965	-3.5696	H	-2.9845	5.4942	.2479
C	3.2947	-.6646	.5008	H	4.2196	.0022	-3.6336	H	-4.1459	4.7264	-.8645
C	-1.2549	3.0658	.5665	C	4.7205	-2.0880	-4.1470	H	-3.9375	4.0796	.7767
C	4.5742	3.8334	1.2200	H	5.7022	-.6144	-2.8534	H	-3.3675	.2128	-.8883
C	3.1201	2.7936	2.8601	H	-.0024	5.1524	-2.2134	H	-4.0436	-1.3777	-1.3381
C	3.2188	-2.6449	-2.2587	H	-1.2730	5.9189	-1.2162	H	-3.2703	-.3523	-2.5821
C	4.6665	-.9074	-3.1502	C	-1.7379	5.8681	-3.3577	C	-1.5347	-3.9568	-1.2112
C	-1.1113	5.2451	-2.0878	H	-1.9819	2.6794	-3.6366	C	-1.4799	-5.2055	-1.8577
C	-2.4873	3.5265	-3.1019	C	-2.5796	4.7676	-4.0197	C	-1.6263	-5.2925	-3.2507
C	4.3955	-1.0216	-.6382	H	-3.5128	3.1632	-2.8530	C	-1.8353	-4.1171	-3.9895
H	3.9026	.0419	1.1623	C	1.8173	-2.7087	1.1865	C	-1.8910	-2.8714	-3.3403
C	2.8920	-1.8261	1.4472	C	1.4807	-3.7349	2.0932	H	-1.4332	-3.9479	-.1243
C	5.4792	-2.0279	-.1790	C	2.1983	-3.8969	3.2876	H	-1.3263	-6.1107	-1.2690
H	4.9493	-.0429	-.7574	C	3.2571	-3.0193	3.5753	H	-1.5832	-6.2594	-3.7521
C	-2.3097	3.5214	-.5797	C	3.5921	-1.9993	2.6706	H	-1.9595	-4.1682	-5.0718

H	-2.0712	-1.9922	-3.9611	H	4.3739	-1.7738	-5.1546	H	-.9502	6.2436	-4.0447
H	4.4140	-4.1202	-3.3753	H	5.7647	-2.4434	-4.2814	H	-2.2092	4.5347	-5.0407
H	3.0301	-3.4867	-4.2859	H	-2.3636	6.7494	-3.0998	H	-3.6356	5.0898	-4.1444

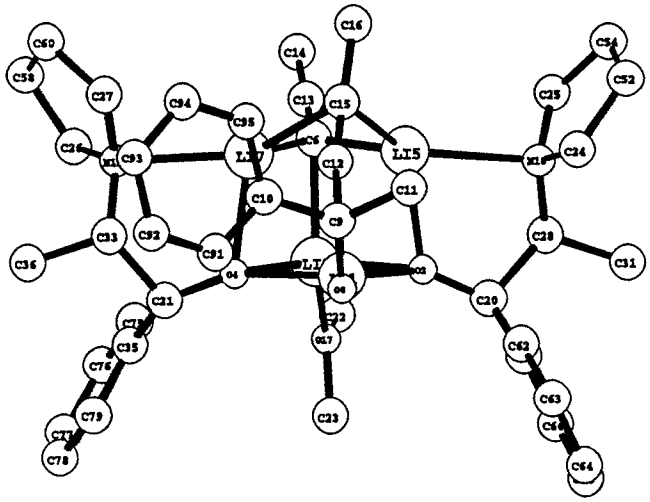

Figure XIVC

$(LiCCCH_3)_2$•[*R,S*-LiOCH(Ph)CH(CH_3)N(CH_2)$_4$]$_2$•(Me_2O)•($PhCOCH_3$)

ΔH_f^o = -175.4 kcal/mol

Li	.0000	.0000	.0000	H	4.9545	-.0112	-.6745	C	1.3758	-3.7711	1.9661
O	2.2210	.0000	.0000	C	-2.3390	3.4231	-.5971	C	2.0586	-3.9824	3.1733
Li	1.9292	2.2472	.0000	H	-1.9426	2.3443	1.2359	C	3.1232	-3.1319	3.5165
O	-.2575	2.2685	.0911	C	-.8244	4.1693	1.4860	C	3.4985	-2.0885	2.6553
Li	2.1526	.3762	-2.0992	C	-3.4875	4.3392	-.1077	H	1.1936	-2.6019	.1727
C	2.1536	2.5044	-2.1697	H	-2.8432	2.4415	-.8359	H	.5414	-4.4186	1.6932
Li	.0455	2.2468	-2.0132	H	3.4738	4.1906	-4.6174	H	1.7644	-4.7929	3.8400
O	-1.5787	-1.3222	.0544	H	4.7723	4.0088	-3.3947	H	3.6574	-3.2786	4.4559
C	-1.8454	-1.4101	-1.1956	H	3.5221	5.2781	-3.1928	H	4.3216	-1.4421	2.9675
C	-3.2276	-.8748	-1.6515	H	.2853	1.2864	-4.8766	H	5.1094	-3.0052	.1303
C	-1.5216	-2.7939	-1.8526	H	.0402	-.4627	-5.1664	H	6.2957	-2.1327	-.8731
C	-.6051	-.3104	-2.1027	H	1.6249	.1196	-4.5686	H	5.9997	-1.6059	.7958
C	2.8627	3.2980	-2.7890	H	4.5415	4.0856	.1069	C	.2841	4.9999	1.1905
C	3.6902	4.2305	-3.5269	H	5.4624	3.3092	1.4647	C	.6494	6.0604	2.0446
C	.0041	.0661	-3.1130	H	4.5826	4.8658	1.7434	C	-.0613	6.2998	3.2303
C	.5195	.2714	-4.4772	H	2.1493	2.2498	2.8787	C	-1.1405	5.4637	3.5622
O	3.3711	3.1704	1.5123	H	3.0098	3.7255	3.5016	C	-1.5107	4.4147	2.7047
N	3.8725	-1.2694	-1.9587	H	3.9226	2.1818	3.2799	H	.8808	4.8526	.2837
N	-1.6927	3.8586	-1.8787	H	2.2165	-2.5202	-2.4342	H	1.4917	6.7009	1.7792
C	3.2736	-.6776	.5227	H	3.4489	-3.3488	-1.4421	H	.2220	7.1216	3.8878
C	-1.2928	3.0037	.5706	C	4.0055	-3.1439	-3.5542	H	-1.6932	5.6284	4.4879
C	4.5394	3.8859	1.2052	H	4.2808	.0629	-3.5830	H	-2.3493	3.7826	3.0045
C	3.1102	2.8206	2.8511	C	4.8821	-2.0018	-4.0899	H	-3.1542	5.3312	.2544
C	3.3198	-2.6168	-2.2714	H	5.7602	-.4985	-2.7560	H	-4.2373	4.5216	-.9061
C	4.7478	-.8307	-3.0891	H	-.0673	5.2131	-2.1090	H	-4.0335	3.8499	.7256
C	-1.1816	5.2520	-2.0096	H	-1.3961	5.8852	-1.1192	H	-.5312	-3.1863	-1.5493
C	-2.4443	3.5106	-3.1245	C	-1.8034	5.8930	-3.2728	H	-1.5377	-2.7656	-2.9594
C	4.4125	-.9996	-.5878	H	-1.8776	2.7150	-3.6780	H	-2.2858	-3.5322	-1.5283
H	3.8549	.0099	1.2264	C	-2.5773	4.7813	-3.9957	C	-4.2386	-.6094	-.6913
C	2.8349	-1.8650	1.4199	H	-3.4551	3.0842	-2.9206	C	-5.5329	-.2156	-1.0785
C	5.4974	-1.9972	-.1133	C	1.7549	-2.7226	1.1030	C	-5.8574	-.0736	-2.4367

C	-4.8723	-.3273	-3.4043	H	-5.1092	-.2230	-4.4637	H	5.9422	-2.3207	-4.1849
C	-3.5797	-.7212	-3.0153	H	-2.8552	-.9118	-3.8088	H	-2.4745	6.7359	-3.0008
H	-4.0413	-.7111	.3782	H	4.6156	-4.0463	-3.3350	H	-1.0162	6.3279	-3.9245
H	-6.2883	-.0231	-.3156	H	3.2512	-3.4608	-4.3053	H	-2.1749	4.6068	-5.0163
H	-6.8611	.2275	-2.7367	H	4.5646	-1.6925	-5.1085	H	-3.6447	5.0581	-4.1319

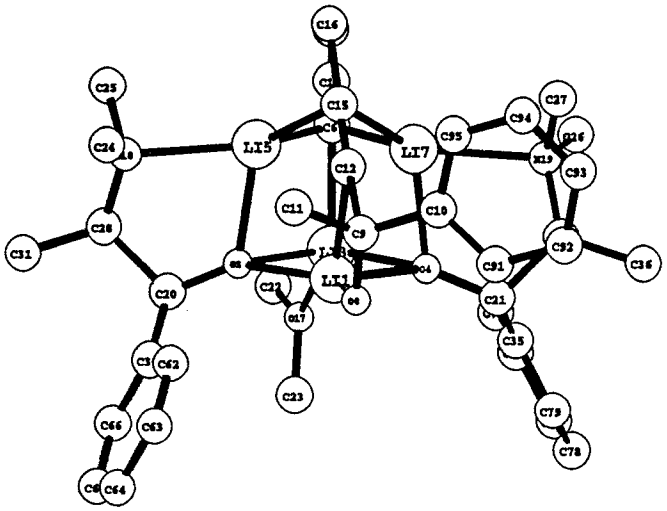

Figure XIVD

$(LiCCCH_3)_2$•[*R,S*-LiOCH(Ph)CH(CH_3)NMe_2]$_2$•(Me_2O)•($PhCOCH_3$)

ΔH_f^o = -159.6 kcal/mol

Li	.0000	.0000	.0000	C	-2.3202	3.3996	-3.0794	H	4.9473	.2902	-2.7680
O	2.2269	.0000	.0000	C	4.3259	-1.2161	-.5673	H	4.0958	-.7292	-3.9916
Li	1.9479	2.2464	.0000	H	3.9166	.0138	1.1476	H	5.5661	-1.3531	-3.1699
O	-.2523	2.2685	.0770	C	2.7814	-1.7544	1.5698	H	-.7332	5.7082	-1.1065
Li	2.1316	.3812	-2.0992	C	5.1634	-2.4478	-.1487	H	-1.9606	5.9791	-2.3817
C	2.1719	2.5116	-2.1703	H	5.0756	-.3725	-.5977	H	-.3478	5.3086	-2.8152
Li	.0675	2.2762	-2.0265	C	-2.2946	3.5229	-.5701	H	-2.5522	2.3104	-3.0007
O	-1.6058	-1.2951	.0361	H	-1.9427	2.3528	1.2150	H	-1.6717	3.5499	-3.9793
C	-1.8211	-1.4235	-1.2205	C	-.7641	4.1274	1.5441	H	-3.2837	3.9292	-3.2800
C	-3.1937	-.9252	-1.7429	C	-3.3454	4.5498	-.0847	C	1.6279	-2.5535	1.3844
C	-1.4384	-2.8178	-1.8214	H	-2.8971	2.5936	-.7853	C	1.2150	-3.4782	2.3656
C	-.5846	-.3138	-2.1148	H	3.4485	4.2449	-4.6088	C	1.9382	-3.6214	3.5594
C	2.8638	3.3224	-2.7866	H	4.7615	4.0550	-3.4030	C	3.0792	-2.8286	3.7695
C	3.6766	4.2712	-3.5203	H	3.5050	5.3127	-3.1695	C	3.4884	-1.9081	2.7915
C	-.0122	.1116	-3.1275	H	.1792	1.4037	-4.8521	H	1.0369	-2.4883	.4664
C	.4546	.3819	-4.4980	H	-.0240	-.3404	-5.2001	H	.3237	-4.0835	2.1941
O	3.4413	3.1345	1.4972	H	1.5602	.2675	-4.6267	H	1.6174	-4.3362	4.3172
N	3.7551	-1.3069	-1.9519	H	4.5905	4.0350	.0647	H	3.6472	-2.9249	4.6955
N	-1.6237	3.8926	-1.8621	H	5.5332	3.2161	1.3818	H	4.3739	-1.3035	2.9991
C	3.2583	-.6952	.5399	H	4.7071	4.7926	1.7078	H	4.5625	-3.3585	.0404
C	-1.2671	3.0160	.5805	H	2.2428	2.2295	2.8936	H	5.9209	-2.7081	-.9184
C	4.6188	3.8212	1.1598	H	3.1553	3.6798	3.5013	H	5.7313	-2.2236	.7779
C	3.2149	2.7787	2.8405	H	4.0255	2.1185	3.2390	C	.3698	4.9347	1.2813
C	3.1155	-2.5795	-2.3537	H	2.4825	-2.9928	-1.5392	C	.7630	5.9515	2.1755
C	4.6358	-.7545	-3.0126	H	3.8519	-3.3702	-2.6406	C	.0574	6.1656	3.3691
C	-1.1533	5.2842	-2.0418	H	2.4592	-2.4092	-3.2421	C	-1.0458	5.3487	3.6685

C	-1.4452	4.3449	2.7708	H	-4.0928	4.7720	-.8757	C	-5.8016	-.1739	-2.6435
H	.9629	4.8057	.3685	H	-3.9142	4.1347	.7730	C	-4.8030	-.5220	-3.5669
H	1.6229	6.5784	1.9351	H	-.4657	-3.1887	-1.4425	C	-3.5216	-.8911	-3.1211
H	.3628	6.9536	4.0575	H	-1.3788	-2.8169	-2.9270	H	-4.0406	-.5725	.2490
H	-1.5947	5.4935	4.5997	H	-2.2134	-3.5587	-1.5306	H	-6.2676	.0698	-.5434
H	-2.3027	3.7266	3.0447	C	-4.2180	-.5658	-.8287	H	-6.7969	.1083	-2.9870
H	-2.9164	5.5180	.2397	C	-5.5015	-.1968	-1.2726	H	-5.0206	-.5105	-4.6355
								H	-2.7855	-1.1563	-3.8819

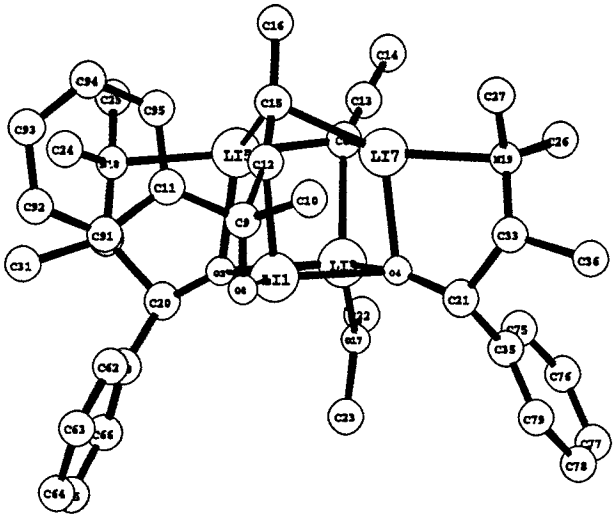

Figure XIVE

$(LiCCCH_3)_2$•[*R,S*-LiOCH(Ph)CH(CH_3)NMe_2]$_2$•(Me_2O)•($PhCOCH_3$)

ΔH_f^o = -159.2 kcal/mol

Li	.0000	.0000	.0000	C	-1.0462	5.2676	-2.0985	H	3.6875	-3.4147	-2.6177
O	2.2274	.0000	.0000	C	-2.3527	3.4482	-3.0872	H	2.3497	-2.3960	-3.2466
Li	1.9481	2.2445	.0000	C	4.2995	-1.2549	-.6034	H	4.9509	.1966	-2.8297
O	-.2598	2.2857	.0564	H	3.9595	.0363	1.0809	H	4.0283	-.7899	-4.0272
Li	2.1169	.3756	-2.0989	C	2.8299	-1.7098	1.6008	H	5.4826	-1.4779	-3.2279
C	2.1890	2.5077	-2.1662	C	5.0992	-2.5144	-.1933	H	-.5672	5.6673	-1.1807
Li	.0800	2.2946	-2.0400	H	5.0792	-.4400	-.6547	H	-1.8173	6.0122	-2.4167
O	-1.5529	-1.3608	.0440	C	-2.2721	3.6027	-.5831	H	-.2679	5.2349	-2.8996
C	-1.8421	-1.4137	-1.2030	H	-1.9614	2.3835	1.1750	H	-2.6316	2.3712	-2.9979
C	-3.1914	-.7315	-1.6006	C	-.7497	4.1256	1.5549	H	-1.7239	3.5637	-4.0053
C	-1.6632	-2.7866	-1.9049	C	-3.2506	4.7001	-.1002	H	-3.2958	4.0211	-3.2635
C	-.5795	-.3362	-2.1066	H	-2.9357	2.7116	-.7770	C	1.6762	-2.5199	1.4751
C	2.9151	3.2918	-2.7777	H	3.5572	4.1775	-4.5987	C	1.2965	-3.4099	2.5009
C	3.7640	4.2125	-3.5062	H	4.8412	3.9736	-3.3644	C	2.0532	-3.5073	3.6784
C	-.0331	.1361	-3.1127	H	3.6090	5.2620	-3.1718	C	3.1961	-2.7038	3.8278
C	.4068	.4667	-4.4800	H	-.1503	-.1649	-5.2109	C	3.5729	-1.8177	2.8060
O	3.4417	3.1266	1.5047	H	1.4944	.2728	-4.6559	H	1.0604	-2.4896	.5714
N	3.6998	-1.3337	-1.9764	H	.2045	1.5294	-4.7585	H	.4044	-4.0255	2.3781
N	-1.6009	3.9105	-1.8913	H	4.5854	4.0448	.0791	H	1.7569	-4.1956	4.4699
C	3.2741	-.6867	.5213	H	5.5331	3.1988	1.3755	H	3.7909	-2.7652	4.7398
C	-1.2636	3.0448	.5625	H	4.7182	4.7742	1.7335	H	4.4624	-1.2044	2.9652
C	4.6205	3.8124	1.1702	H	2.2478	2.2074	2.8958	H	4.4688	-3.4007	.0148
C	3.2199	2.7568	2.8450	H	3.1628	3.6510	3.5153	H	5.8300	-2.8081	-.9767
C	2.9932	-2.5799	-2.3515	H	4.0317	2.0926	3.2341	H	5.6950	-2.3059	.7193
C	4.5853	-.8338	-3.0586	H	2.3369	-2.9389	-1.5294	C	.3883	4.9327	1.3112

C	.7866	5.9264	2.2288	H	-2.7578	5.6434	.2062	C	-1.6574	-4.2107	-3.9180
C	.0830	6.1148	3.4279	H	-3.9919	4.9589	-.8858	C	-1.7602	-2.9476	-3.3094
C	-1.0232	5.2954	3.7090	H	-3.8348	4.3325	.7686	H	-1.4255	-3.9225	-.0459
C	-1.4284	4.3158	2.7875	H	-3.3685	.2048	-1.0356	H	-1.2366	-6.1152	-1.1196
H	.9813	4.8210	.3962	H	-4.0281	-1.4233	-1.3639	H	-1.3837	-6.3409	-3.6060
H	1.6489	6.5552	2.0025	H	-3.2575	-.4902	-2.6793	H	-1.7334	-4.2955	-5.0026
H	.3923	6.8849	4.1345	C	-1.4804	-3.9643	-1.1355	H	-1.9259	-2.0903	-3.9638
H	-1.5701	5.4197	4.6444	C	-1.3786	-5.2303	-1.7413				
H	-2.2890	3.6953	3.0467	C	-1.4631	-5.3605	-3.1361				

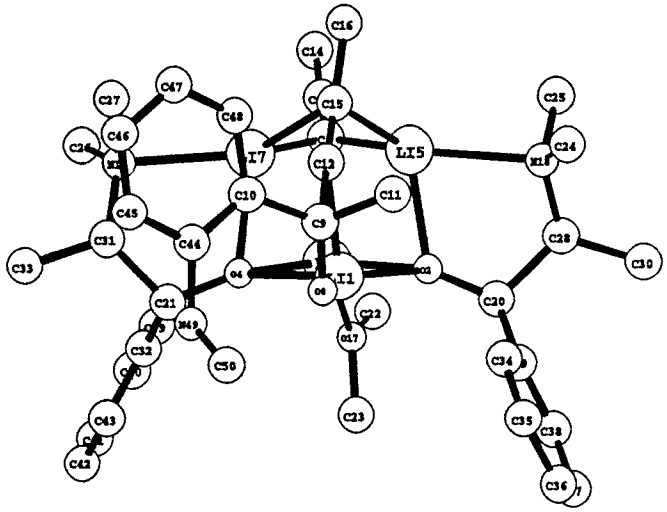

Figure XIVF

$(LiCCCH_3)_2$•[*R,S*-LiOCH(Ph)CH(CH_3)NMe_2]$_2$•(Me_2O)•(*ortho*-MeNH-$PhCOCH_3$)
ΔH_f^o = -150.7 kcal/mol

Li	.0000	.0000	.0000	C	3.2208	2.7858	2.8414	C	-5.6901	-.4409	-1.5046
O	2.2211	.0000	.0000	C	3.1031	-2.5882	-2.3402	C	-5.8244	-.3317	-2.8927
Li	1.9506	2.2524	.0000	C	4.6418	-.7761	-2.9941	C	-4.7016	-.5434	-3.7069
O	-.2467	2.2662	.0807	C	-1.1768	5.2813	-2.0432	C	-3.4676	-.8564	-3.1209
Li	2.1392	.3843	-2.0984	C	-2.3322	3.3847	-3.0698	N	-4.5035	-.8014	.5302
C	2.1727	2.5129	-2.1700	C	4.3150	-1.2316	-.5504	C	-4.8726	-2.0696	1.1644
Li	.0655	2.2782	-2.0243	C	2.7561	-1.7486	1.5820	H	-3.6747	-.4225	.9585
O	-1.6575	-1.2505	.0696	C	5.1386	-2.4701	-.1245				
C	-1.8947	-1.4219	-1.1758	C	-2.2940	3.5133	-.5607				
C	-3.2818	-.9752	-1.7172	C	-.7379	4.1466	1.5273				
C	-1.4923	-2.8240	-1.7480	C	-3.3526	4.5310	-.0729				
C	-.6397	-.3249	-2.0895	C	1.5932	-2.5345	1.3977				
C	2.8603	3.3271	-2.7867	C	1.1684	-3.4511	2.3814				
C	3.6681	4.2797	-3.5211	C	1.8883	-3.5986	3.5768				
C	-.0280	.0961	-3.0804	C	3.0380	-2.8184	3.7859				
C	.4748	.3558	-4.4417	C	3.4593	-1.9060	2.8053				
O	3.4526	3.1298	1.4960	C	.3995	4.9420	1.2433				
N	3.7507	-1.3199	-1.9378	C	.8057	5.9704	2.1182				
N	-1.6329	3.8858	-1.8573	C	.1101	6.2084	3.3132				
C	3.2457	-.6982	.5489	C	-.9962	5.4039	3.6336				
C	-1.2549	3.0228	.5857	C	-1.4087	4.3885	2.7551				
C	4.6357	3.8054	1.1560	C	-4.4403	-.7667	-.9017				

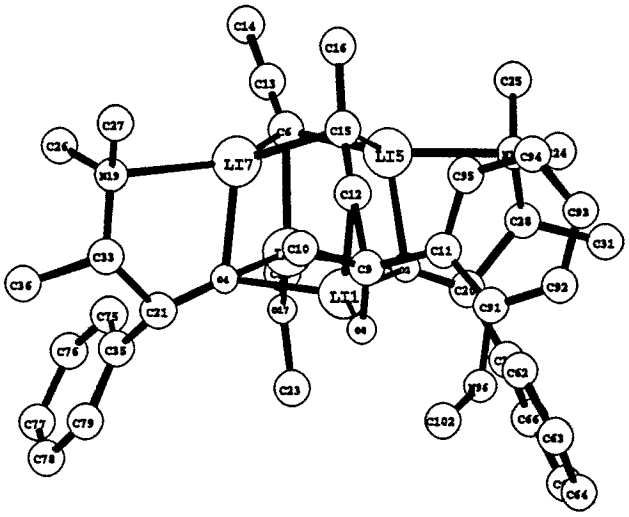

Figure XIVG

$(LiCCCH_3)_2$•[*R,S*-LiOCH(Ph)CH(CH3)NMe_2]$_2$•(Me_2O)•(*ortho*-MeNH-$PhCOCH_3$)

ΔH_f^o = -149.4 kcal/mol

Li	.0000	.0000	.0000	C	-3.3364	4.6135	-.1296	H	4.4722	-1.1501	2.9556
O	2.2248	.0000	.0000	H	-2.9755	2.6291	-.7976	H	4.6791	-3.2749	-.0446
Li	1.9158	2.2495	.0000	H	3.5074	4.2547	-4.5674	H	5.9987	-2.5693	-1.0176
O	-.2927	2.2674	.0316	H	4.7818	4.0750	-3.3193	H	5.8187	-2.1055	.6853
Li	2.1156	.3889	-2.0955	H	3.5131	5.3282	-3.1313	C	.3101	4.9304	1.2699
C	2.1637	2.5228	-2.1634	H	-.2398	-.0925	-5.1518	C	.6917	5.9384	2.1790
Li	.0575	2.2891	-2.0632	H	1.4333	.2611	-4.6247	C	-.0157	6.1259	3.3760
O	-1.5921	-1.3177	.1166	H	.1831	1.5643	-4.6277	C	-1.1086	5.2911	3.6638
C	-1.8484	-1.5196	-1.1202	H	4.5298	4.0827	.1166	C	-1.4971	4.2969	2.7508
C	-3.1694	-.8882	-1.6698	H	5.4671	3.2549	1.4322	H	.9056	4.8207	.3563
C	-1.6767	-2.9728	-1.6511	H	4.6206	4.8178	1.7714	H	1.5439	6.5790	1.9477
C	-.5815	-.4578	-2.0657	H	2.1732	2.2090	2.8935	H	.2805	6.9071	4.0760
C	2.8683	3.3365	-2.7614	H	3.0533	3.6673	3.5293	H	-1.6581	5.4146	4.5977
C	3.7003	4.2861	-3.4722	H	3.9527	2.1236	3.2619	H	-2.3473	3.6645	3.0153
C	-.0535	.0861	-3.0448	H	2.4890	-2.9230	-1.5697	H	-2.8651	5.5695	.1712
C	.3582	.4819	-4.4057	H	3.8667	-3.3190	-2.6553	H	-4.0851	4.8512	-.9148
O	3.3750	3.1497	1.5235	H	2.4774	-2.3704	-3.2831	H	-3.9101	4.2365	.7422
N	3.7645	-1.2434	-2.0045	H	4.9535	.3442	-2.8454	H	-3.3443	.1315	-1.2747
N	-1.6719	3.8544	-1.9203	H	4.0610	-.6618	-4.0494	H	-4.0333	-1.5129	-1.3591
C	3.2989	-.6553	.5056	H	5.5452	-1.3037	-3.2665	H	-3.1889	-.8325	-2.7759
C	-1.3104	3.0090	.5372	H	-.6742	5.6348	-1.2161	C	-1.9274	-4.1386	-.8556
C	4.5487	3.8534	1.2089	H	-1.9303	5.9495	-2.4538	C	-1.7737	-5.4364	-1.4215
C	3.1367	2.7747	2.8597	H	-.3654	5.2015	-2.9333	C	-1.4169	-5.6089	-2.7640
C	3.1275	-2.5245	-2.3871	H	-2.6670	2.2908	-3.0240	C	-1.2132	-4.4780	-3.5671
C	4.6253	-.6962	-3.0845	H	-1.8057	3.5139	-4.0349	C	-1.3487	-3.1969	-3.0124
C	-1.1446	5.2219	-2.1325	H	-3.3825	3.9215	-3.2762	N	-2.2999	-4.1696	.5284
C	-2.4214	3.3759	-3.1113	C	1.8200	-2.6280	1.3768	H	-1.9312	-6.3263	-.8081
C	4.3577	-1.1372	-.6302	C	1.5087	-3.5909	2.3590	H	-1.3026	-6.6105	-3.1791
H	3.9474	.0806	1.0921	C	2.2571	-3.6718	3.5429	H	-.9534	-4.5906	-4.6200
C	2.9054	-1.7365	1.5468	C	3.3240	-2.7796	3.7424	H	-1.2041	-2.3582	-3.6950
C	5.2445	-2.3419	-.2343	C	3.6383	-1.8277	2.7598	H	-1.8659	-3.4375	1.0647
H	5.0777	-.2685	-.6735	H	1.2040	-2.6032	.4736	C	-3.7249	-4.2566	.8533
C	-2.3333	3.5371	-.6091	H	.6788	-4.2795	2.1969	H	-3.8281	-4.3797	1.9559
H	-1.9918	2.3377	1.1570	H	2.0125	-4.4160	4.3009	H	-4.3205	-3.3607	.5580
C	-.8147	4.1070	1.5200	H	3.9089	-2.8249	4.6617	H	-4.1874	-5.1425	.3631

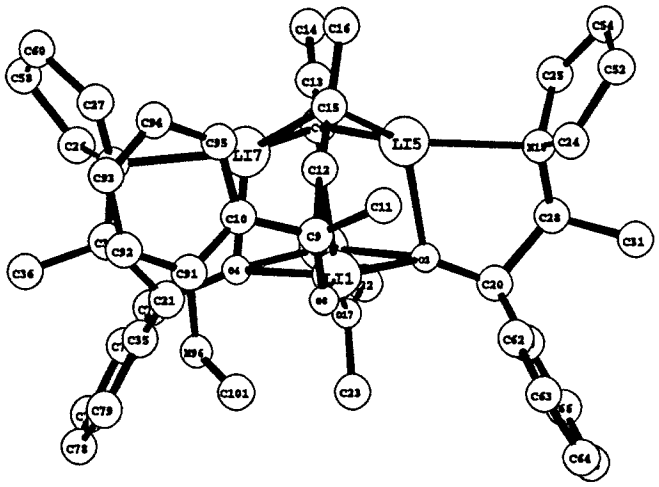

Figure XIVH

$(LiCCCH_3)_2$•[*R,S*-LiOCH(Ph)CH(CH_3)N(CH_2)$_4$]$_2$•(Me_2O)•(*ortho*-MeNH-Ph$COCH_3$)
ΔH_f^o = -167.0 kcal/mol

Li	.0000	.0000	.0000	C	-.8157	4.1776	1.4781	H	1.7099	-4.7890	3.8374
O	2.2142	.0000	.0000	C	-3.5006	4.3139	-.0964	H	3.6103	-3.2881	4.4635
Li	1.9278	2.2532	.0000	H	-2.8382	2.4227	-.8255	H	4.2934	-1.4544	2.9799
O	-.2563	2.2652	.0959	H	3.4414	4.2089	-4.6215	H	5.0897	-3.0149	.1520
Li	2.1584	.3815	-2.0977	H	4.7505	4.0272	-3.4101	H	6.2858	-2.1486	-.8451
C	2.1485	2.5072	-2.1698	H	3.4971	5.2909	-3.1928	H	5.9824	-1.6192	.8217
Li	.0385	2.2485	-2.0100	H	.3063	1.2519	-4.8389	C	.2952	5.0010	1.1713
O	-1.6258	-1.2834	.0871	H	.0682	-.5003	-5.1133	C	.6661	6.0690	2.0136
C	-1.9178	-1.4056	-1.1524	H	1.6405	.0883	-4.4909	C	-.0411	6.3234	3.1983
C	-3.3160	-.9123	-1.6204	H	4.5512	4.0725	.0980	C	-1.1227	5.4949	3.5411
C	-1.5771	-2.7951	-1.7915	H	5.4685	3.3055	1.4635	C	-1.4985	4.4382	2.6955
C	-.6618	-.3177	-2.0776	H	4.5910	4.8658	1.7283	H	.8890	4.8431	.2642
C	2.8487	3.3066	-2.7918	H	2.1516	2.2630	2.8807	H	1.5101	6.7039	1.7396
C	3.6665	4.2454	-3.5326	H	3.0172	3.7394	3.4948	H	.2466	7.1511	3.8464
C	-.0157	.0518	-3.0671	H	3.9245	2.1911	3.2826	H	-1.6729	5.6714	4.4661
C	.5326	.2418	-4.4219	H	2.2139	-2.5182	-2.4252	H	-2.3389	3.8124	3.0037
O	3.3769	3.1707	1.5089	H	3.4426	-3.3530	-1.4339	H	-3.1767	5.3103	.2623
N	3.8739	-1.2739	-1.9456	C	4.0023	-3.1453	-3.5449	H	-4.2549	4.4862	-.8927
N	-1.7042	3.8520	-1.8716	H	4.3025	.0618	-3.5619	H	-4.0379	3.8202	.7398
C	3.2610	-.6804	.5310	C	4.8867	-2.0066	-4.0749	H	-.5761	-3.1648	-1.4946
C	-1.2897	3.0035	.5764	H	5.7725	-.5174	-2.7307	H	-1.6078	-2.7855	-2.8982
C	4.5470	3.8817	1.1979	H	-.0955	5.2235	-2.1156	H	-2.3229	-3.5428	-1.4471
C	3.1144	2.8303	2.8497	H	-1.4198	5.8791	-1.1088	C	-4.4500	-.7683	-.7577
C	3.3168	-2.6187	-2.2618	C	-1.8508	5.8897	-3.2580	C	-5.7168	-.4012	-1.2974
C	4.7585	-.8385	-3.0700	H	-1.8741	2.7181	-3.6784	C	-5.8911	-.1867	-2.6689
C	-1.2090	5.2510	-2.0036	C	-2.6172	4.7712	-3.9784	C	-4.7919	-.3307	-3.5285
C	-2.4549	3.4975	-3.1162	H	-3.4556	3.0491	-2.9105	C	-3.5409	-.6844	-3.0043
C	4.4061	-1.0067	-.5713	C	1.7259	-2.7152	1.1031	N	-4.4697	-.9093	.6691
H	3.8390	.0055	1.2388	C	1.3362	-3.7622	1.9633	H	-6.5792	-.2759	-.6389
C	2.8108	-1.8657	1.4254	C	2.0124	-3.9796	3.1731	H	-6.8690	.0902	-3.0635
C	5.4837	-2.0089	-.0900	C	3.0812	-3.1367	3.5219	H	-4.9085	-.1725	-4.6010
H	4.9527	-.0205	-.6542	C	3.4675	-2.0949	2.6634	H	-2.7277	-.7937	-3.7246
C	-2.3438	3.4098	-.5883	H	1.1698	-2.5899	.1701	C	-4.8170	-2.2214	1.2201
H	-1.9327	2.3492	1.2527	H	.4990	-4.4042	1.6859	H	-3.6297	-.5584	1.0993