Oligocarbonates in Lithium Ion Battery Electrolyte by LC-IT-TOF-MS

ACE® Ultra-inert UHPLC & HPLC Columns

Application #**AN4880**

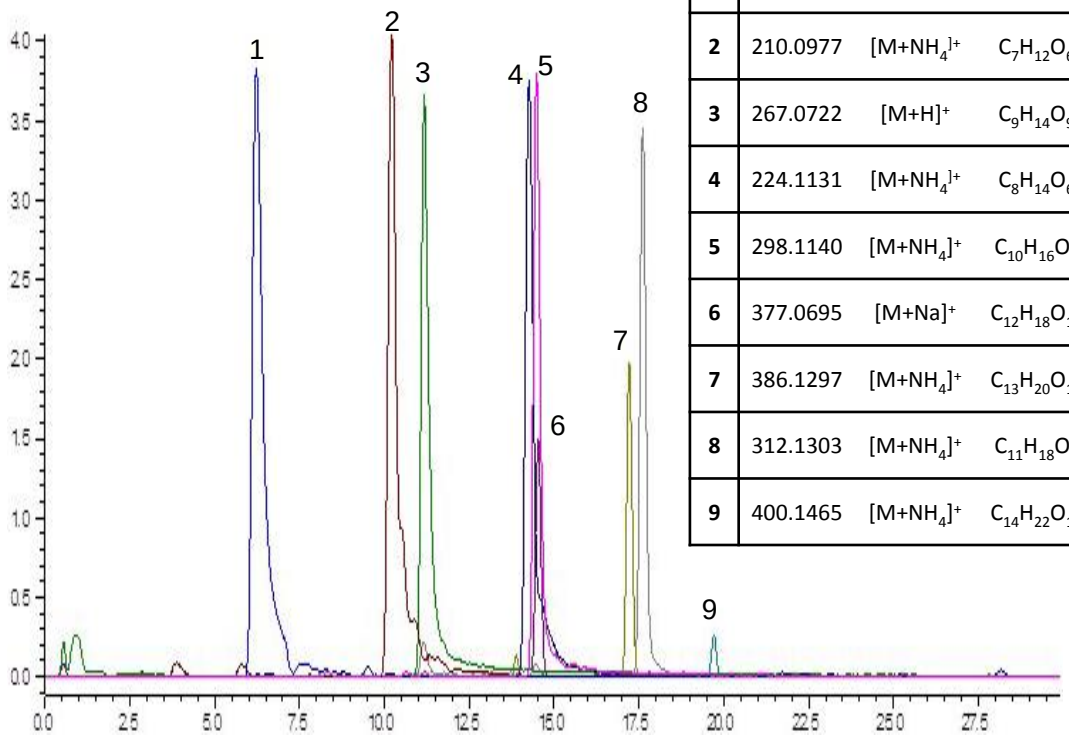
Conditions

Column:	ACE Excel 2 C18-Amide
Dimensions:	100 x 2.1 mm
Part Number:	EXL-1012-1002U
Mobile Phase:	A: 0.1% formic acid in H_2O
	B: MeOH

Time (mins)	%B
0	2
2.5	2
25	55
28	90
30	2

Flow Rate:	0.4 mL/min
Injection:	1 µL
Temperature:	40 °C
Detection:	Shimadzu LCMS-IT-TOF
	Positive ion mode ESI, Interface probe voltage: 4.5kV

Carbonate-based electrolyte systems are commonly used in lithium ion batteries. This method uses LC-IT-TOF-MS for the separation and identification of the main products generated by aging of common organic carbonate-based electrolyte systems



	m/z	Ion	Formula	Structure
1	196.0825	$[M+NH_4]^+$	$C_6H_{10}O_6$	
2	210.0977	$[M+NH_4]^+$	$C_7H_{12}O_6$	
3	267.0722	$[M+H]^+$	$C_9H_{14}O_9$	
4	224.1131	$[M+NH_4]^+$	$C_8H_{14}O_6$	
5	298.1140	$[M+NH_4]^+$	$C_{10}H_{16}O_9$	
6	377.0695	$[M+Na]^+$	$C_{12}H_{18}O_{12}$	
7	386.1297	$[M+NH_4]^+$	$C_{13}H_{20}O_{12}$	
8	312.1303	$[M+NH_4]^+$	$C_{11}H_{18}O_9$	
9	400.1465	$[M+NH_4]^+$	$C_{14}H_{22}O_{12}$	

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