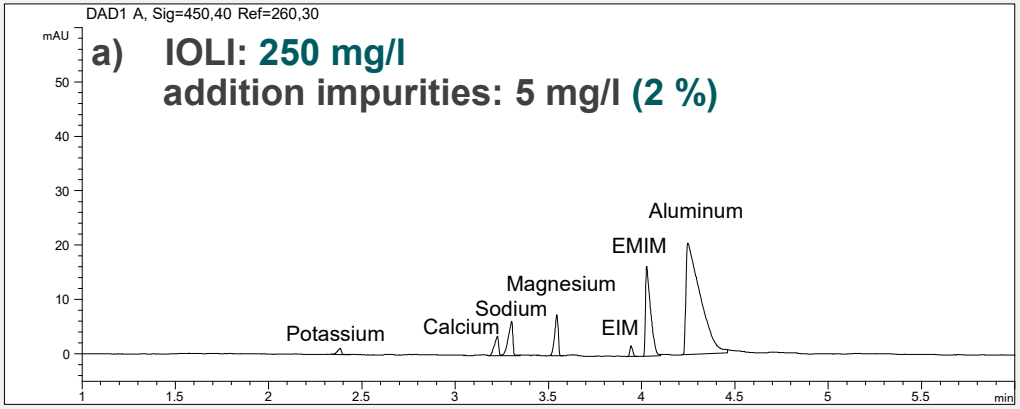
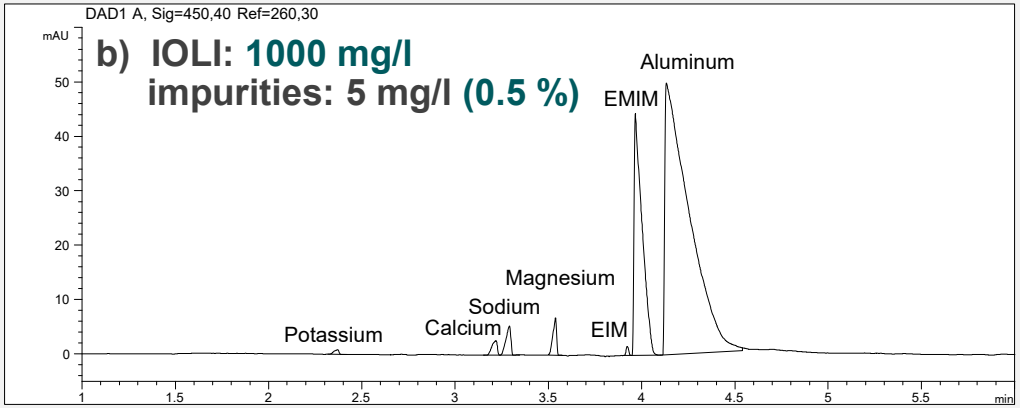
Determination of LOD and LOQ for cationic impurities in EMIM $AlCl_4$



	potassium	calcium	sodium	magnesium	EIM
S/N	10.2	30.6	53.8	60.6	15.8
LOQ [%]	2.0	0.7	0.4	0.3	1.3
LOD [%]	**0.6**	**0.2**	**0.1**	**0.1**	**0.4**



	potassium	calcium	sodium	magnesium	EIM
S/N	7.8	23.6	47.4	44.8	11.2
LOQ [%]	0.6	0.2	0.1	0.1	0.4
LOD [%]	**0.2**	**0.06**	**0.03**	**0.03**	**0.1**

(calculation: ICH guidelines: LOD for S/N=3 and LOQ for S/N=10)

- **Mode: CZE**
- **Electrolyte: CE-Ki01**
- **Capillary: 50 µm ID, 64 cm**
- **Separation: +30 kV, 25°C**
- **Injection: pressure, 50 mbar, 15 s**
- **Detection: indirect UV, 260 nm**

→NOTE:

- The higher IOLI concentration of 1000 mg/l should be used to investigate purity, as this achieves better LOD and LOQ.
- For the quantification of EMIM and aluminum, the lower IOLI concentration of 250 ppm should be used, as the resolution and peak integration are better.