

Supporting Information

Modeling of potassium sulfate production from potassium chloride by electrodialectic ion substitution

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The supporting information provides additional details as follows:

- (1) **Table S1.** Effect of sulfate species on ions content in by-product.
- (2) **Table S2.** Effect of current density on ions content in by-product.
- (3) **Table S3.** Effect of molar ratio on ions content in by-product.

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Table S1 Effect of sulfate species on ions content in by-product.

Sulfate species	Ion content in by-product (wt. %)					
	Cl ⁻	SO ₄ ²⁻	K ⁺	NH ₄ ⁺	Na ⁺	Mg ²⁺
(NH ₄) ₂ SO ₄	51.62	16.37	2.65	29.36		
Na ₂ SO ₄	45.64	14.33	2.15		37.88	
MgSO ₄	57.41	17.55	3.29			21.75

Table S2 Effect of current density on ions content in by-product.

Current Density mA/cm ²	Ion content in by-product (wt. %)			
	Cl ⁻	SO ₄ ²⁻	K ⁺	NH ₄ ⁺
20	52.40	15.71	3.09	28.81
30	51.62	16.37	2.65	29.36
40	51.11	17.09	2.34	29.45
50	48.92	19.20	1.92	29.97

Table S3 Effect of molar ratio on ions content in by-product.

Molar ratio	Ion content in by-product (wt. %)			
	Cl ⁻	SO ₄ ²⁻	K ⁺	NH ₄ ⁺
0.55/1	51.72	16.39	2.65	29.24
0.6/1	49.69	18.44	2.73	29.14
0.7/1	44.03	25.12	2.70	28.15
1/1	38.97	30.52	2.05	28.46