OFFRETITE WITH GLYCOL

4.8Na_2O:1.0K_2O:1.0Al_2O_3:15.8SiO_2:249.5H_2O:1.0TMACl:15.8glycol

Katarzyna Lukaszuk
lukaszuk.kasia@gmail.com

1 BATCH COMPOSITION CALCULATION

COMPOSITION MATRIX [C]

Compound	Na_2O	K_2O	Al_2O_3	SiO_2	H_2O	TMACl	glycol
Mole ratio	4.800	1.000	1.000	15.800	249.500	1.000	15.800
Weight [g]	297.499	94.196	101.961	949.332	4494.792	109.599	980.678
Mol. wt. [g/mol]	61.979	94.196	101.961	60.084	18.015	109.599	62.068

BATCH MATRIX [B]

Compound	Na_2O	K_2O	Al_2O_3	SiO_2	H_2O	TMACl	glycol
NaOH (98.0%)	0.7593	0.0000	0.0000	0.0000	0.2407	0.0000	0.0000
KOH (85.0%)	0.0000	0.7135	0.0000	0.0000	0.2865	0.0000	0.0000
Al(iPrO)3 (98.0%)	0.0000	0.0000	0.2496	0.0000	-0.1323	0.0000	0.0000
SiO_2 (100.0%)	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000
H_2O (100.0%)	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000
TMACl (98.0%)	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000
glycol (100.0%)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0000

RESULT MATRIX [X] = $[B]^{-1}$·[C] (SF= 60.0842)

Substance	Mass [g]	Scaled Mass [g] (60.084)	Weighted mass [g]
NaOH (98.0%)	391.8080	6.5210	
KOH (85.0%)	132.0132	2.1971	
Al(iPrO)3 (98.0%)	416.8258	6.9374	
SiO_2 (100.0%)	949.3319	15.8000	
H_2O (100.0%)	4416.7117	73.5087	
TMACl (98.0%)	111.8352	1.8613	
glycol (100.0%)	980.6776	16.3217	
Sum	7399.2034	123.1472	

RESULT MATRIX [X] = $[B]^{-1}$·[C] (SF=641.8526)

Substance	Mass [g]	Scaled Mass [g] (641.853)	Weighted mass [g]
NaOH (98.0%)	391.8080	0.6104	
KOH (85.0%)	132.0132	0.2057	
Al(iPrO)3 (98.0%)	416.8258	0.6494	
SiO_2 (100.0%)	949.3319	1.4790	
H_2O (100.0%)	4416.7117	6.8812	
TMACl (98.0%)	111.8352	0.1742	
Sum	7399.2034	11.5279	
glycol (100.0%)	980.6776	1.5279	