# OFFRETITE METHOD 3 TMAOH

$9.05Na_2O:1.72K_2O:1.0Al_2O_3:13.52SiO_2:280.05H_2O:0.68TMAOH$

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## 1 BATCH COMPOSITION CALCULATION

### COMPOSITION MATRIX [C]

| Compound | $Na_2O$ | $K_2O$ | $Al_2O_3$ | $SiO_2$ | $H_2O$ | TMAOH |
|---|---|---|---|---|---|---|
| Mole ratio | 9.050 | 1.720 | 1.000 | 13.520 | 280.050 | 0.680 |
| Weight [g] | 560.909 | 162.017 | 101.961 | 812.340 | 5045.157 | 61.984 |
| Mol. wt. [g/mol] | 61.979 | 94.196 | 101.961 | 60.084 | 18.015 | 91.153 |

### BATCH MATRIX [B]

| Compound | $Na_2O$ | $K_2O$ | $Al_2O_3$ | $SiO_2$ | $H_2O$ | TMAOH |
|---|---|---|---|---|---|---|
| NaOH (98.0%) | 0.7593 | 0.0000 | 0.0000 | 0.0000 | 0.2407 | 0.0000 |
| KOH (87.0%) | 0.0000 | 0.7303 | 0.0000 | 0.0000 | 0.2697 | 0.0000 |
| $Na_2Al_2O_4$ (100.0%) | 0.3781 | 0.0000 | 0.6219 | 0.0000 | 0.0000 | 0.0000 |
| $SiO_2$ (40.0%) | 0.0000 | 0.0000 | 0.0000 | 0.4000 | 0.6000 | 0.0000 |
| $H_2O$ (100.0%) | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 0.0000 |
| TMAOH (97.0%) | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.4970 | 0.5030 |

### RESULT MATRIX [X] = $[B]^{-1}\cdot[C]$ (SF=200.1428)

| Substance | Mass [g] | Scaled Mass [g] ( 200.143) | Weighted mass [g] |
|---|---|---|---|
| NaOH (98.0%) | 657.0947 | 3.2831 | |
| KOH (87.0%) | 221.8428 | 1.1084 | |
| $Na_2Al_2O_4$ (100.0%) | 163.9402 | 0.8191 | |
| $SiO_2$ (40.0%) | 2030.8493 | 10.1470 | |
| $H_2O$ (100.0%) | 3547.4055 | 17.7244 | |
| TMAOH (97.0%) | 127.0470 | 0.6348 | |
| Sum | 6748.1796 | 33.7168 | |

### RESULT MATRIX [X] = $[B]^{-1}\cdot[C]$ (SF=337.4090)

| Substance | Mass [g] | Scaled Mass [g] ( 337.409) | Weighted mass [g] |
|---|---|---|---|
| NaOH (98.0%) | 657.0947 | 1.9475 | |
| KOH (87.0%) | 221.8428 | 0.6575 | |
| $Na_2Al_2O_4$ (100.0%) | 163.9402 | 0.4859 | |
| $SiO_2$ (40.0%) | 2030.8493 | 6.0190 | |
| $H_2O$ (100.0%) | 3547.4055 | 10.5137 | |
| TMAOH (97.0%) | 127.0470 | 0.3765 | |
| Sum | 6748.1796 | 20.0000 | |