

| OXIDE | WT % | MOL WT | ATOMS |
|----------|-------|--------|------------|
| W03 | 0.25 | 231.80 | 0.006 W |
| Ta205 | 74.40 | 220.90 | 1.772 Ta |
| Nb205 | 5.47 | 132.90 | 0.216 Nb |
| Ti02 | 0.09 | 79.90 | 0.006 Ti |
| Zr02 | 0.00 | 123.20 | 0.000 Zr |
| Sn02 | 0.01 | 150.70 | 0.000 Sn |
| Fe203 | 0.00 | 159.70 | 0.000 Fe+3 |
| Th02 | 0.00 | 264.00 | 0.000 Th |
| U02 | 0.00 | 270.00 | 0.000 U+4 |
| U03 | 0.36 | 286.00 | 0.007 U+6 |
| U308 | 0.00 | 842.00 | 0.000 U+8 |
| Y203 | 0.09 | 112.90 | 0.004 Y |
| La203 | 0.00 | 162.90 | 0.000 La |
| Ce203 | 0.04 | 164.10 | 0.001 Ce |
| Pr203 | 0.00 | 164.90 | 0.000 Pr |
| Nd203 | 0.00 | 168.20 | 0.000 Nd |
| Sm203 | 0.00 | 174.40 | 0.000 Sm |
| Sb203 | 0.09 | 145.70 | 0.003 Sb+3 |
| Bi203 | 0.16 | 233.00 | 0.004 Bi+3 |
| Mn0 | 0.06 | 70.94 | 0.004 Mn+2 |
| Fe0 | 0.00 | 71.85 | 0.000 Fe+2 |
| Ca0 | 11.70 | 56.08 | 1.097 Ca |
| Sr0 | 0.00 | 103.60 | 0.000 Sr |
| Ba0 | 0.00 | 153.30 | 0.000 Ba |
| Pb0 | 0.03 | 223.20 | 0.001 Pb+2 |
| Na20 | 4.23 | 30.99 | 0.718 Na |
| K20 | 0.00 | 47.10 | 0.000 K |
| Cs20 | 0.00 | 140.90 | 0.000 Cs |
| F | 2.82 | 19.00 | 0.781 F |
| H20+ | 0.00 | 9.01 | 0.000 OH |
| H20- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 99.80 | | 6.109 O |
| LESS O=F | 1.18 | | |
| TOTAL | 98.62 | | |

A B O (O OH F) . 0.00 H2O
 1.84 2.0 6.00 0.11 0.00 0.78

(O + OH + F) = 0.89 Vacancies: 0.16 A 0.11 Y
 Dose (alphas/mg) = 0.146E+17 DPA (displacements/atom) = 1.8

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,U+6 ,Mn+2,Y ,Bi+3,Sb+3,Ce ,Pb+2,K ,Sm ,Pr
 Mean A valence = 1.63

B = Ta ,Nb ,Ti ,W ,Sn ,Zr ,Fe+3
 Mean B valence = 5.00

| OXIDE | WT % | MOL WT | ATOMS |
|----------|--------|--------|------------|
| W03 | 0.37 | 231.80 | 0.008 W |
| Ta205 | 74.40 | 220.90 | 1.764 Ta |
| Nb205 | 5.66 | 132.90 | 0.223 Nb |
| Ti02 | 0.07 | 79.90 | 0.005 Ti |
| Zr02 | 0.00 | 123.20 | 0.000 Zr |
| Sn02 | 0.01 | 150.70 | 0.000 Sn |
| Fe203 | 0.00 | 159.70 | 0.000 Fe+3 |
| Th02 | 0.03 | 264.00 | 0.001 Th |
| U02 | 0.00 | 270.00 | 0.000 U+4 |
| U03 | 0.31 | 286.00 | 0.006 U+6 |
| U308 | 0.00 | 842.00 | 0.000 U+8 |
| Y203 | 0.06 | 112.90 | 0.003 Y |
| La203 | 0.00 | 162.90 | 0.000 La |
| Ce203 | 0.00 | 164.10 | 0.000 Ce |
| Pr203 | 0.00 | 164.90 | 0.000 Pr |
| Nd203 | 0.00 | 168.20 | 0.000 Nd |
| Sm203 | 0.00 | 174.40 | 0.000 Sm |
| Sb203 | 0.11 | 145.70 | 0.004 Sb+3 |
| Bi203 | 0.12 | 233.00 | 0.003 Bi+3 |
| MnO | 0.03 | 70.94 | 0.002 Mn+2 |
| FeO | 0.00 | 71.85 | 0.000 Fe+2 |
| CaO | 11.70 | 56.08 | 1.093 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.00 | 153.30 | 0.000 Ba |
| PbO | 0.03 | 223.20 | 0.001 Pb+2 |
| Na2O | 4.38 | 30.99 | 0.740 Na |
| K2O | 0.00 | 47.10 | 0.000 K |
| Cs2O | 0.00 | 140.90 | 0.000 Cs |
| F | 2.94 | 19.00 | 0.810 F |
| H2O+ | 0.00 | 9.01 | 0.000 OH |
| H2O- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 100.22 | | 6.094 O |
| LESS O=F | 1.23 | | |
| TOTAL | 98.98 | | |

A B O (O OH F) . 0.00 H2O
 1.85 2.0 6.00 0.09 0.00 0.81

(O + OH + F) = 0.90 Vacancies: 0.15 A 0.10 Y
 Dose (alphas/mg) = 0.124E+17 DPA (displacements/atom) = 1.5

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,U+6 ,Sb+3,Y ,Bi+3,Mn+2,Pb+2,Th ,K ,Sm ,U+8
 Mean A valence = 1.62

B = Ta ,Nb ,W ,Ti ,Sn ,Zr ,Fe+3
 Mean B valence = 5.00

| OXIDE | WT % | MOL WT | ATOMS |
|----------|--------|--------|------------|
| W03 | 0.28 | 231.80 | 0.006 W |
| Ta205 | 75.20 | 220.90 | 1.768 Ta |
| Nb205 | 5.63 | 132.90 | 0.220 Nb |
| Ti02 | 0.06 | 79.90 | 0.004 Ti |
| Zr02 | 0.00 | 123.20 | 0.000 Zr |
| Sn02 | 0.06 | 150.70 | 0.002 Sn |
| Fe203 | 0.00 | 159.70 | 0.000 Fe+3 |
| Th02 | 0.04 | 264.00 | 0.001 Th |
| U02 | 0.00 | 270.00 | 0.000 U+4 |
| U03 | 0.31 | 286.00 | 0.006 U+6 |
| U308 | 0.00 | 842.00 | 0.000 U+8 |
| Y203 | 0.06 | 112.90 | 0.003 Y |
| La203 | 0.00 | 162.90 | 0.000 La |
| Ce203 | 0.05 | 164.10 | 0.002 Ce |
| Pr203 | 0.00 | 164.90 | 0.000 Pr |
| Nd203 | 0.00 | 168.20 | 0.000 Nd |
| Sm203 | 0.00 | 174.40 | 0.000 Sm |
| Sb203 | 0.07 | 145.70 | 0.002 Sb+3 |
| Bi203 | 0.07 | 233.00 | 0.002 Bi+3 |
| Mn0 | 0.11 | 70.94 | 0.008 Mn+2 |
| Fe0 | 0.00 | 71.85 | 0.000 Fe+2 |
| Ca0 | 12.00 | 56.08 | 1.111 Ca |
| Sr0 | 0.00 | 103.60 | 0.000 Sr |
| Ba0 | 0.01 | 153.30 | 0.000 Ba |
| Pb0 | 0.00 | 223.20 | 0.000 Pb+2 |
| Na20 | 4.29 | 30.99 | 0.719 Na |
| K20 | 0.00 | 47.10 | 0.000 K |
| Cs20 | 0.01 | 140.90 | 0.000 Cs |
| F | 2.82 | 19.00 | 0.771 F |
| H20+ | 0.00 | 9.01 | 0.000 OH |
| H20- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 101.07 | | 6.125 O |
| LESS O=F | 1.18 | | |
| TOTAL | 99.88 | | |

A B O (O OH F) . 0.00 H2O
 1.85 2.0 6.00 0.12 0.00 0.77

(O + OH + F) = 0.90 Vacancies: 0.15 A 0.10 Y
 Dose (alphas/mg) = 0.123E+17 DPA (displacements/atom) = 1.5

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,Mn+2,U+6 ,Y ,Sb+3,Ce ,Bi+3,Th ,Ba ,K ,La
 Mean A valence = 1.63

B = Ta ,Nb ,W ,Ti ,Sn ,Zr ,Fe+3
 Mean B valence = 5.00

| OXIDE | WT % | MOL WT | ATOMS |
|----------|--------|--------|------------|
| W03 | 0.40 | 231.80 | 0.009 W |
| Ta205 | 74.80 | 220.90 | 1.758 Ta |
| Nb205 | 5.60 | 132.90 | 0.219 Nb |
| Ti02 | 0.19 | 79.90 | 0.012 Ti |
| Zr02 | 0.00 | 123.20 | 0.000 Zr |
| Sn02 | 0.04 | 150.70 | 0.001 Sn |
| Fe203 | 0.00 | 159.70 | 0.000 Fe+3 |
| Th02 | 0.00 | 264.00 | 0.000 Th |
| U02 | 0.00 | 270.00 | 0.000 U+4 |
| U03 | 0.40 | 286.00 | 0.007 U+6 |
| U308 | 0.00 | 842.00 | 0.000 U+8 |
| Y203 | 0.07 | 112.90 | 0.003 Y |
| La203 | 0.00 | 162.90 | 0.000 La |
| Ce203 | 0.11 | 164.10 | 0.003 Ce |
| Pr203 | 0.00 | 164.90 | 0.000 Pr |
| Nd203 | 0.00 | 168.20 | 0.000 Nd |
| Sm203 | 0.00 | 174.40 | 0.000 Sm |
| Sb203 | 0.12 | 145.70 | 0.004 Sb+3 |
| Bi203 | 0.02 | 233.00 | 0.000 Bi+3 |
| Mn0 | 0.05 | 70.94 | 0.004 Mn+2 |
| Fe0 | 0.00 | 71.85 | 0.000 Fe+2 |
| Ca0 | 12.10 | 56.08 | 1.120 Ca |
| Sr0 | 0.00 | 103.60 | 0.000 Sr |
| Ba0 | 0.00 | 153.30 | 0.000 Ba |
| Pb0 | 0.04 | 223.20 | 0.001 Pb+2 |
| Na20 | 4.19 | 30.99 | 0.702 Na |
| K20 | 0.00 | 47.10 | 0.000 K |
| Cs20 | 0.03 | 140.90 | 0.001 Cs |
| F | 2.95 | 19.00 | 0.806 F |
| H20+ | 0.00 | 9.01 | 0.000 OH |
| H20- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 101.11 | | 6.110 O |
| LESS O=F | 1.24 | | |
| TOTAL | 99.87 | | |

A B O (O OH F) . 0.00 H2O
 1.85 2.0 6.00 0.11 0.00 0.81

(O + OH + F) = 0.92 Vacancies: 0.15 A 0.08 Y
 Dose (alphas/mg) = 0.161E+17 DPA (displacements/atom) = 2.0

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,U+6 ,Sb+3,Mn+2,Ce ,Y ,Pb+2,Bi+3,K ,Sm ,U+8
 Mean A valence = 1.64

B = Ta ,Nb ,Ti ,W ,Sn ,Zr ,Fe+3
 Mean B valence = 5.00

| OXIDE | WT % | MOL WT | ATOMS |
|----------|--------|--------|------------|
| WO3 | 0.29 | 231.80 | 0.007 W |
| Ta2O5 | 76.50 | 220.90 | 1.823 Ta |
| Nb2O5 | 3.68 | 132.90 | 0.146 Nb |
| TiO2 | 0.37 | 79.90 | 0.024 Ti |
| ZrO2 | 0.00 | 123.20 | 0.000 Zr |
| SnO2 | 0.01 | 150.70 | 0.000 Sn |
| Fe2O3 | 0.00 | 159.70 | 0.000 Fe+3 |
| ThO2 | 0.00 | 264.00 | 0.000 Th |
| UO2 | 0.00 | 270.00 | 0.000 U+4 |
| UO3 | 0.47 | 286.00 | 0.009 U+6 |
| U3O8 | 0.00 | 842.00 | 0.000 U+8 |
| Y2O3 | 0.06 | 112.90 | 0.003 Y |
| La2O3 | 0.00 | 162.90 | 0.000 La |
| Ce2O3 | 0.08 | 164.10 | 0.003 Ce |
| Pr2O3 | 0.00 | 164.90 | 0.000 Pr |
| Nd2O3 | 0.00 | 168.20 | 0.000 Nd |
| Sm2O3 | 0.00 | 174.40 | 0.000 Sm |
| Sb2O3 | 0.16 | 145.70 | 0.006 Sb+3 |
| Bi2O3 | 0.00 | 233.00 | 0.000 Bi+3 |
| MnO | 0.12 | 70.94 | 0.009 Mn+2 |
| FeO | 0.00 | 71.85 | 0.000 Fe+2 |
| CaO | 12.80 | 56.08 | 1.201 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.00 | 153.30 | 0.000 Ba |
| PbO | 0.01 | 223.20 | 0.000 Pb+2 |
| Na2O | 3.05 | 30.99 | 0.518 Na |
| K2O | 0.00 | 47.10 | 0.000 K |
| Cs2O | 0.01 | 140.90 | 0.000 Cs |
| F | 2.45 | 19.00 | 0.679 F |
| H2O+ | 0.00 | 9.01 | 0.000 OH |
| H2O- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 100.06 | | 6.164 O |
| LESS O=F | 1.03 | | |
| TOTAL | 99.03 | | |

A B O (O OH F) . 0.00 H2O
 1.75 2.0 6.00 0.16 0.00 0.68

(O + OH + F) = 0.84 Vacancies: 0.25 A 0.16 Y
 Dose (alphas/mg) = 0.189E+17 DPA (displacements/atom) = 2.3

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,Mn+2,U+6 ,Sb+3,Y ,Ce ,Pb+2,K ,Nd ,Sm ,La
 Mean A valence = 1.73

B = Ta ,Nb ,Ti ,W ,Sn ,Zr ,Fe+3
 Mean B valence = 4.99

| OXIDE | WT % | MOL WT | ATOMS |
|----------|-------|--------|------------|
| WO3 | 0.14 | 231.80 | 0.003 W |
| Ta2O5 | 74.90 | 220.90 | 1.788 Ta |
| Nb2O5 | 5.01 | 132.90 | 0.199 Nb |
| TiO2 | 0.16 | 79.90 | 0.011 Ti |
| ZrO2 | 0.00 | 123.20 | 0.000 Zr |
| SnO2 | 0.00 | 150.70 | 0.000 Sn |
| Fe2O3 | 0.00 | 159.70 | 0.000 Fe+3 |
| ThO2 | 0.00 | 264.00 | 0.000 Th |
| UO2 | 0.00 | 270.00 | 0.000 U+4 |
| UO3 | 0.78 | 286.00 | 0.014 U+6 |
| U3O8 | 0.00 | 842.00 | 0.000 U+8 |
| Y2O3 | 0.08 | 112.90 | 0.004 Y |
| La2O3 | 0.00 | 162.90 | 0.000 La |
| Ce2O3 | 0.08 | 164.10 | 0.003 Ce |
| Pr2O3 | 0.00 | 164.90 | 0.000 Pr |
| Nd2O3 | 0.00 | 168.20 | 0.000 Nd |
| Sm2O3 | 0.00 | 174.40 | 0.000 Sm |
| Sb2O3 | 0.14 | 145.70 | 0.005 Sb+3 |
| Bi2O3 | 0.16 | 233.00 | 0.004 Bi+3 |
| MnO | 0.06 | 70.94 | 0.004 Mn+2 |
| FeO | 0.00 | 71.85 | 0.000 Fe+2 |
| CaO | 11.70 | 56.08 | 1.100 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.00 | 153.30 | 0.000 Ba |
| PbO | 0.01 | 223.20 | 0.000 Pb+2 |
| Na2O | 4.27 | 30.99 | 0.726 Na |
| K2O | 0.00 | 47.10 | 0.000 K |
| Cs2O | 0.00 | 140.90 | 0.000 Cs |
| F | 2.47 | 19.00 | 0.685 F |
| H2O+ | 0.00 | 9.01 | 0.000 OH |
| H2O- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 99.96 | | 6.187 O |
| LESS O=F | 1.04 | | |
| TOTAL | 98.93 | | |

A B O (O OH F) . 0.00 H2O
 1.86 2.0 6.00 0.19 0.00 0.69

(O + OH + F) = 0.87 Vacancies: 0.14 A 0.13 Y
 Dose (alphas/mg) = 0.317E+17 DPA (displacements/atom) = 3.9

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,U+6 ,Sb+3,Mn+2,Y ,Bi+3,Ce ,Pb+2,K ,Sm ,U+8
 Mean A valence = 1.65

B = Ta ,Nb ,Ti ,W ,Sn ,Zr ,Fe+3
 Mean B valence = 5.00

| OXIDE | WT % | MOL WT | ATOMS |
|----------|--------|--------|------------|
| WO3 | 0.16 | 231.80 | 0.004 W |
| Ta2O5 | 75.00 | 220.90 | 1.788 Ta |
| Nb2O5 | 5.27 | 132.90 | 0.209 Nb |
| TiO2 | 0.00 | 79.90 | 0.000 Ti |
| ZrO2 | 0.00 | 123.20 | 0.000 Zr |
| SnO2 | 0.00 | 150.70 | 0.000 Sn |
| Fe2O3 | 0.00 | 159.70 | 0.000 Fe+3 |
| ThO2 | 0.11 | 264.00 | 0.002 Th |
| UO2 | 0.00 | 270.00 | 0.000 U+4 |
| UO3 | 0.39 | 286.00 | 0.007 U+6 |
| U3O8 | 0.00 | 842.00 | 0.000 U+8 |
| Y2O3 | 0.06 | 112.90 | 0.003 Y |
| La2O3 | 0.00 | 162.90 | 0.000 La |
| Ce2O3 | 0.22 | 164.10 | 0.007 Ce |
| Pr2O3 | 0.00 | 164.90 | 0.000 Pr |
| Nd2O3 | 0.00 | 168.20 | 0.000 Nd |
| Sm2O3 | 0.00 | 174.40 | 0.000 Sm |
| Sb2O3 | 0.08 | 145.70 | 0.003 Sb+3 |
| Bi2O3 | 0.08 | 233.00 | 0.002 Bi+3 |
| MnO | 0.09 | 70.94 | 0.007 Mn+2 |
| FeO | 0.00 | 71.85 | 0.000 Fe+2 |
| CaO | 11.70 | 56.08 | 1.098 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.00 | 153.30 | 0.000 Ba |
| PbO | 0.00 | 223.20 | 0.000 Pb+2 |
| Na2O | 4.29 | 30.99 | 0.729 Na |
| K2O | 0.00 | 47.10 | 0.000 K |
| Cs2O | 0.00 | 140.90 | 0.000 Cs |
| F | 2.67 | 19.00 | 0.740 F |
| H2O+ | 0.00 | 9.01 | 0.000 OH |
| H2O- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 100.12 | | 6.149 O |
| LESS O=F | 1.12 | | |
| TOTAL | 99.00 | | |

A B O (O OH F) . 0.00 H2O
 1.86 2.0 6.00 0.15 0.00 0.74

(O + OH + F) = 0.89 Vacancies: 0.14 A 0.11 Y
 Dose (alphas/mg) = 0.159E+17 DPA (displacements/atom) = 1.9

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,U+6 ,Ce ,Mn+2,Sb+3,Y ,Th ,Bi+3,K ,Sm ,La
 Mean A valence = 1.63

B = Ta ,Nb ,W ,Sn ,Ti ,Zr ,Fe+3
 Mean B valence = 5.00

| OXIDE | WT % | MOL WT | ATOMS |
|--------------------------------|--------|--------|------------------------|
| W ₃ | 0.21 | 231.80 | 0.005 W |
| Ta ₂ O ₅ | 75.70 | 220.90 | 1.794 Ta |
| Nb ₂ O ₅ | 5.12 | 132.90 | 0.202 Nb |
| TiO ₂ | 0.00 | 79.90 | 0.000 Ti |
| ZrO ₂ | 0.00 | 123.20 | 0.000 Zr |
| SnO ₂ | 0.00 | 150.70 | 0.000 Sn |
| Fe ₂ O ₃ | 0.00 | 159.70 | 0.000 Fe+3 |
| ThO ₂ | 0.02 | 264.00 | 0.000 Th |
| UO ₂ | 0.00 | 270.00 | 0.000 U+4 |
| UO ₃ | 0.18 | 286.00 | 0.003 U+6 |
| U ₃ O ₈ | 0.00 | 842.00 | 0.000 U+8 |
| Y ₂ O ₃ | 0.03 | 112.90 | 0.001 Y |
| La ₂ O ₃ | 0.00 | 162.90 | 0.000 La |
| Ce ₂ O ₃ | 0.16 | 164.10 | 0.005 Ce |
| Pr ₂ O ₃ | 0.00 | 164.90 | 0.000 Pr |
| Nd ₂ O ₃ | 0.00 | 168.20 | 0.000 Nd |
| Sm ₂ O ₃ | 0.00 | 174.40 | 0.000 Sm |
| Sb ₂ O ₃ | 0.10 | 145.70 | 0.004 Sb+3 |
| Bi ₂ O ₃ | 0.15 | 233.00 | 0.003 Bi+3 |
| MnO | 0.20 | 70.94 | 0.015 Mn+2 |
| FeO | 0.00 | 71.85 | 0.000 Fe+2 |
| CaO | 11.90 | 56.08 | 1.111 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.00 | 153.30 | 0.000 Ba |
| PbO | 0.01 | 223.20 | 0.000 Pb+2 |
| Na ₂ O | 4.44 | 30.99 | 0.750 Na |
| K ₂ O | 0.00 | 47.10 | 0.000 K |
| Cs ₂ O | 0.00 | 140.90 | 0.000 Cs |
| F | 2.80 | 19.00 | 0.771 F |
| H ₂ O+ | 0.00 | 9.01 | 0.000 OH |
| H ₂ O- | 0.00 | 18.02 | 0.000 H ₂ O |
| TOTAL | 101.02 | | 6.148 O |
| LESS O=F | 1.18 | | |
| TOTAL | 99.84 | | |

A B O (O OH F) . 0.00 H₂O
 1.89 2.0 6.00 0.15 0.00 0.77

(O + OH + F) = 0.92 Vacancies: 0.11 A 0.08 Y
 Dose (alphas/mg) = 0.723E+16 DPA (displacements/atom) = 0.9

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,Mn+2,Ce ,Sb+3,Bi+3,U+6 ,Y ,Th ,Pb+2,K ,Pr
 Mean A valence = 1.62

B = Ta ,Nb ,W ,Sn ,Ti ,Zr ,Fe+3
 Mean B valence = 5.00

| OXIDE | WT % | MOL WT | ATOMS |
|----------|-------|--------|------------|
| W03 | 0.14 | 231.80 | 0.003 W |
| Ta205 | 74.70 | 220.90 | 1.787 Ta |
| Nb205 | 5.27 | 132.90 | 0.210 Nb |
| Ti02 | 0.00 | 79.90 | 0.000 Ti |
| Zr02 | 0.00 | 123.20 | 0.000 Zr |
| Sn02 | 0.00 | 150.70 | 0.000 Sn |
| Fe203 | 0.00 | 159.70 | 0.000 Fe+3 |
| Th02 | 0.07 | 264.00 | 0.001 Th |
| U02 | 0.00 | 270.00 | 0.000 U+4 |
| U03 | 0.03 | 286.00 | 0.001 U+6 |
| U308 | 0.00 | 842.00 | 0.000 U+8 |
| Y203 | 0.05 | 112.90 | 0.002 Y |
| La203 | 0.00 | 162.90 | 0.000 La |
| Ce203 | 0.12 | 164.10 | 0.004 Ce |
| Pr203 | 0.00 | 164.90 | 0.000 Pr |
| Nd203 | 0.00 | 168.20 | 0.000 Nd |
| Sm203 | 0.00 | 174.40 | 0.000 Sm |
| Sb203 | 0.09 | 145.70 | 0.003 Sb+3 |
| Bi203 | 0.09 | 233.00 | 0.002 Bi+3 |
| Mn0 | 0.20 | 70.94 | 0.015 Mn+2 |
| Fe0 | 0.00 | 71.85 | 0.000 Fe+2 |
| Ca0 | 11.80 | 56.08 | 1.112 Ca |
| Sr0 | 0.00 | 103.60 | 0.000 Sr |
| Ba0 | 0.00 | 153.30 | 0.000 Ba |
| Pb0 | 0.00 | 223.20 | 0.000 Pb+2 |
| Na20 | 4.34 | 30.99 | 0.740 Na |
| K20 | 0.00 | 47.10 | 0.000 K |
| Cs20 | 0.00 | 140.90 | 0.000 Cs |
| F | 3.03 | 19.00 | 0.843 F |
| H20+ | 0.00 | 9.01 | 0.000 OH |
| H20- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 99.93 | | 6.099 O |
| LESS O=F | 1.27 | | |
| TOTAL | 98.66 | | |

A B O (O OH F) . 0.00 H2O
 1.88 2.0 6.00 0.10 0.00 0.84

(O + OH + F) = 0.94 Vacancies: 0.12 A 0.06 Y
 Dose (alphas/mg) = 0.129E+16 DPA (displacements/atom) = 0.2

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,Mn+2,Ce ,Sb+3,Y ,Bi+3,Th ,U+6 ,K ,Sm ,La
 Mean A valence = 1.62

B = Ta ,Nb ,W ,Sn ,Ti ,Zr ,Fe+3
 Mean B valence = 5.00

| OXIDE | WT % | MOL WT | ATOMS |
|----------|--------|--------|------------|
| W03 | 0.13 | 231.80 | 0.003 W |
| Ta205 | 75.20 | 220.90 | 1.785 Ta |
| Nb205 | 5.37 | 132.90 | 0.212 Nb |
| Ti02 | 0.00 | 79.90 | 0.000 Ti |
| Zr02 | 0.00 | 123.20 | 0.000 Zr |
| Sn02 | 0.00 | 150.70 | 0.000 Sn |
| Fe203 | 0.00 | 159.70 | 0.000 Fe+3 |
| Th02 | 0.06 | 264.00 | 0.001 Th |
| U02 | 0.00 | 270.00 | 0.000 U+4 |
| U03 | 0.00 | 286.00 | 0.000 U+6 |
| U308 | 0.00 | 842.00 | 0.000 U+8 |
| Y203 | 0.08 | 112.90 | 0.004 Y |
| La203 | 0.00 | 162.90 | 0.000 La |
| Ce203 | 0.14 | 164.10 | 0.004 Ce |
| Pr203 | 0.00 | 164.90 | 0.000 Pr |
| Nd203 | 0.00 | 168.20 | 0.000 Nd |
| Sm203 | 0.00 | 174.40 | 0.000 Sm |
| Sb203 | 0.08 | 145.70 | 0.003 Sb+3 |
| Bi203 | 0.12 | 233.00 | 0.003 Bi+3 |
| MnO | 0.17 | 70.94 | 0.013 Mn+2 |
| FeO | 0.00 | 71.85 | 0.000 Fe+2 |
| CaO | 12.00 | 56.08 | 1.122 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.00 | 153.30 | 0.000 Ba |
| PbO | 0.00 | 223.20 | 0.000 Pb+2 |
| Na2O | 4.51 | 30.99 | 0.763 Na |
| K2O | 0.00 | 47.10 | 0.000 K |
| Cs2O | 0.00 | 140.90 | 0.000 Cs |
| F | 2.90 | 19.00 | 0.800 F |
| H2O+ | 0.00 | 9.01 | 0.000 OH |
| H2O- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 100.76 | | 6.141 O |
| LESS O=F | 1.22 | | |
| TOTAL | 99.54 | | |

A B O (O OH F) . 0.00 H2O
 1.91 2.0 6.00 0.14 0.00 0.80

(O + OH + F) = 0.94 Vacancies: 0.09 A 0.06 Y
 Dose (alphas/mg) = 0.000E+00 DPA (displacements/atom) = 0.0

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,Mn+2,Ce ,Y ,Sb+3,Bi+3,Th ,K ,Nd ,Sm ,La
 Mean A valence = 1.61

B = Ta ,Nb ,W ,Sn ,Ti ,Zr ,Fe+3
 Mean B valence = 5.00

| OXIDE | WT % | MOL WT | ATOMS |
|--------------------------------|--------|--------|------------------------|
| W ₃ | 0.16 | 231.80 | 0.004 W |
| Ta ₂ O ₅ | 74.80 | 220.90 | 1.791 Ta |
| Nb ₂ O ₅ | 5.15 | 132.90 | 0.205 Nb |
| TiO ₂ | 0.00 | 79.90 | 0.000 Ti |
| ZrO ₂ | 0.00 | 123.20 | 0.000 Zr |
| SnO ₂ | 0.00 | 150.70 | 0.000 Sn |
| Fe ₂ O ₃ | 0.00 | 159.70 | 0.000 Fe+3 |
| ThO ₂ | 0.00 | 264.00 | 0.000 Th |
| UO ₂ | 0.00 | 270.00 | 0.000 U+4 |
| UO ₃ | 0.02 | 286.00 | 0.000 U+6 |
| U ₃ O ₈ | 0.00 | 842.00 | 0.000 U+8 |
| Y ₂ O ₃ | 0.05 | 112.90 | 0.002 Y |
| La ₂ O ₃ | 0.00 | 162.90 | 0.000 La |
| Ce ₂ O ₃ | 0.08 | 164.10 | 0.003 Ce |
| Pr ₂ O ₃ | 0.00 | 164.90 | 0.000 Pr |
| Nd ₂ O ₃ | 0.00 | 168.20 | 0.000 Nd |
| Sm ₂ O ₃ | 0.00 | 174.40 | 0.000 Sm |
| Sb ₂ O ₃ | 0.09 | 145.70 | 0.003 Sb+3 |
| Bi ₂ O ₃ | 0.21 | 233.00 | 0.005 Bi+3 |
| MnO | 0.13 | 70.94 | 0.010 Mn+2 |
| FeO | 0.00 | 71.85 | 0.000 Fe+2 |
| CaO | 11.80 | 56.08 | 1.113 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.00 | 153.30 | 0.000 Ba |
| PbO | 0.00 | 223.20 | 0.000 Pb+2 |
| Na ₂ O | 4.39 | 30.99 | 0.749 Na |
| K ₂ O | 0.00 | 47.10 | 0.000 K |
| Cs ₂ O | 0.01 | 140.90 | 0.000 Cs |
| F | 3.11 | 19.00 | 0.866 F |
| H ₂ O+ | 0.00 | 9.01 | 0.000 OH |
| H ₂ O- | 0.00 | 18.02 | 0.000 H ₂ O |
| TOTAL | 100.00 | | 6.087 O |
| LESS O=F | 1.31 | | |
| TOTAL | 98.69 | | |

A B O (O OH F) . 0.00 H₂O
 1.89 2.0 6.00 0.09 0.00 0.87

(O + OH + F) = 0.95 Vacancies: 0.11 A 0.05 Y
 Dose (alphas/mg) = 0.860E+15 DPA (displacements/atom) = 0.1

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,Mn+2,Bi+3,Sb+3,Ce ,Y ,U+6 ,K ,Nd ,Sm ,La
 Mean A valence = 1.61

B = Ta ,Nb ,W ,Sn ,Ti ,Zr ,Fe+3
 Mean B valence = 5.00

| OXIDE | WT % | MOL WT | ATOMS |
|----------|-------|--------|------------|
| WO3 | 0.12 | 231.80 | 0.003 W |
| Ta2O5 | 73.80 | 220.90 | 1.768 Ta |
| Nb2O5 | 5.52 | 132.90 | 0.220 Nb |
| TiO2 | 0.15 | 79.90 | 0.010 Ti |
| ZrO2 | 0.00 | 123.20 | 0.000 Zr |
| SnO2 | 0.00 | 150.70 | 0.000 Sn |
| Fe2O3 | 0.00 | 159.70 | 0.000 Fe+3 |
| ThO2 | 0.00 | 264.00 | 0.000 Th |
| UO2 | 0.00 | 270.00 | 0.000 U+4 |
| UO3 | 0.83 | 286.00 | 0.015 U+6 |
| U3O8 | 0.00 | 842.00 | 0.000 U+8 |
| Y2O3 | 0.09 | 112.90 | 0.004 Y |
| La2O3 | 0.00 | 162.90 | 0.000 La |
| Ce2O3 | 0.09 | 164.10 | 0.003 Ce |
| Pr2O3 | 0.00 | 164.90 | 0.000 Pr |
| Nd2O3 | 0.00 | 168.20 | 0.000 Nd |
| Sm2O3 | 0.00 | 174.40 | 0.000 Sm |
| Sb2O3 | 0.12 | 145.70 | 0.004 Sb+3 |
| Bi2O3 | 0.12 | 233.00 | 0.003 Bi+3 |
| MnO | 0.13 | 70.94 | 0.010 Mn+2 |
| FeO | 0.00 | 71.85 | 0.000 Fe+2 |
| CaO | 11.80 | 56.08 | 1.113 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.00 | 153.30 | 0.000 Ba |
| PbO | 0.00 | 223.20 | 0.000 Pb+2 |
| Na2O | 4.35 | 30.99 | 0.743 Na |
| K2O | 0.00 | 47.10 | 0.000 K |
| Cs2O | 0.03 | 140.90 | 0.001 Cs |
| F | 2.43 | 19.00 | 0.677 F |
| H2O+ | 0.00 | 9.01 | 0.000 OH |
| H2O- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 99.58 | | 6.220 O |
| LESS O=F | 1.02 | | |
| TOTAL | 98.56 | | |

A B O (O OH F) . 0.00 H2O
 1.90 2.0 6.00 0.22 0.00 0.68

(O + OH + F) = 0.90 Vacancies: 0.10 A 0.10 Y
 Dose (alphas/mg) = 0.336E+17 DPA (displacements/atom) = 4.1

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,U+6 ,Mn+2,Sb+3,Y ,Ce ,Bi+3,K ,Nd ,Sm ,La
 Mean A valence = 1.65

B = Ta ,Nb ,Ti ,W ,Sn ,Zr ,Fe+3
 Mean B valence = 5.00

Clevelandite Unit

| OXIDE | WT % | MOL WT | ATOMS |
|----------|-------|--------|------------|
| W03 | 0.25 | 231.80 | 0.006 W |
| Ta205 | 62.00 | 220.90 | 1.474 Ta |
| Nb205 | 10.50 | 132.90 | 0.415 Nb |
| Ti02 | 1.59 | 79.90 | 0.105 Ti |
| Zr02 | 0.00 | 123.20 | 0.000 Zr |
| Sn02 | 0.02 | 150.70 | 0.001 Sn |
| Fe203 | 0.00 | 159.70 | 0.000 Fe+3 |
| Th02 | 0.04 | 264.00 | 0.001 Th |
| U02 | 0.00 | 270.00 | 0.000 U+4 |
| U03 | 4.23 | 286.00 | 0.078 U+6 |
| U308 | 0.00 | 842.00 | 0.000 U+8 |
| Y203 | 0.07 | 112.90 | 0.003 Y |
| La203 | 0.00 | 162.90 | 0.000 La |
| Ce203 | 0.11 | 164.10 | 0.004 Ce |
| Pr203 | 0.00 | 164.90 | 0.000 Pr |
| Nd203 | 0.00 | 168.20 | 0.000 Nd |
| Sm203 | 0.00 | 174.40 | 0.000 Sm |
| Sb203 | 0.48 | 145.70 | 0.017 Sb+3 |
| Bi203 | 0.00 | 233.00 | 0.000 Bi+3 |
| Mn0 | 0.36 | 70.94 | 0.027 Mn+2 |
| Fe0 | 0.34 | 71.85 | 0.025 Fe+2 |
| Ca0 | 13.10 | 56.08 | 1.227 Ca |
| Sr0 | 0.00 | 103.60 | 0.000 Sr |
| Ba0 | 0.01 | 153.30 | 0.000 Ba |
| Pb0 | 0.10 | 223.20 | 0.002 Pb+2 |
| Na20 | 2.90 | 30.99 | 0.491 Na |
| K20 | 0.00 | 47.10 | 0.000 K |
| Cs20 | 0.00 | 140.90 | 0.000 Cs |
| F | 2.12 | 19.00 | 0.586 F |
| H20+ | 0.00 | 9.01 | 0.000 OH |
| H20- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 98.22 | | 6.455 O |
| LESS O=F | 0.89 | | |
| TOTAL | 97.33 | | |

A B O (O OH F) . 0.00 H2O
 1.88 2.0 6.00 0.45 0.00 0.59

(O + OH + F) = 1.04 Vacancies: 0.12 A -.04 Y
 Dose (alphas/mg) = 0.174E+18 DPA (displacements/atom) = 21.2

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,U+6 ,Mn+2,Fe+2,Sb+3,Ce ,Y ,Pb+2,Th ,Ba ,K
 Mean A valence = 1.92

B = Ta ,Nb ,Ti ,W ,Sn ,Zr ,Fe+3
 Mean B valence = 4.95

| OXIDE | WT % | MOL WT | ATOMS |
|----------|--------|--------|------------|
| WO3 | 0.33 | 231.80 | 0.007 W |
| Ta2O5 | 72.00 | 220.90 | 1.682 Ta |
| Nb2O5 | 7.37 | 132.90 | 0.286 Nb |
| TiO2 | 0.37 | 79.90 | 0.024 Ti |
| ZrO2 | 0.00 | 123.20 | 0.000 Zr |
| SnO2 | 0.02 | 150.70 | 0.001 Sn |
| Fe2O3 | 0.00 | 159.70 | 0.000 Fe+3 |
| ThO2 | 0.00 | 264.00 | 0.000 Th |
| UO2 | 0.00 | 270.00 | 0.000 U+4 |
| UO3 | 2.62 | 286.00 | 0.047 U+6 |
| U3O8 | 0.00 | 842.00 | 0.000 U+8 |
| Y2O3 | 0.13 | 112.90 | 0.006 Y |
| La2O3 | 0.00 | 162.90 | 0.000 La |
| Ce2O3 | 0.21 | 164.10 | 0.007 Ce |
| Pr2O3 | 0.00 | 164.90 | 0.000 Pr |
| Nd2O3 | 0.00 | 168.20 | 0.000 Nd |
| Sm2O3 | 0.00 | 174.40 | 0.000 Sm |
| Sb2O3 | 0.24 | 145.70 | 0.008 Sb+3 |
| Bi2O3 | 0.20 | 233.00 | 0.004 Bi+3 |
| MnO | 0.06 | 70.94 | 0.004 Mn+2 |
| FeO | 0.12 | 71.85 | 0.009 Fe+2 |
| CaO | 10.50 | 56.08 | 0.966 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.04 | 153.30 | 0.001 Ba |
| PbO | 0.12 | 223.20 | 0.003 Pb+2 |
| Na2O | 3.99 | 30.99 | 0.664 Na |
| K2O | 0.00 | 47.10 | 0.000 K |
| Cs2O | 0.05 | 140.90 | 0.002 Cs |
| F | 1.82 | 19.00 | 0.494 F |
| H2O+ | 0.00 | 9.01 | 0.000 OH |
| H2O- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 100.19 | | 6.240 O |
| LESS O=F | 0.76 | | |
| TOTAL | 99.42 | | |

A B O (O OH F) . 0.00 H2O
 1.72 2.0 6.00 0.24 0.00 0.49

(O + OH + F) = 0.73 Vacancies: 0.28 A 0.27 Y
 Dose (alphas/mg) = 0.105E+18 DPA (displacements/atom) = 13.2

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,U+6 ,Fe+2,Sb+3,Ce ,Y ,Bi+3,Mn+2,Pb+2,Ba ,K
 Mean A valence = 1.74

B = Ta ,Nb ,Ti ,W ,Sn ,Zr ,Fe+3
 Mean B valence = 4.99

| OXIDE | WT % | MOL WT | ATOMS |
|----------|-------|--------|------------|
| W03 | 0.28 | 231.80 | 0.006 W |
| Ta205 | 70.10 | 220.90 | 1.700 Ta |
| Nb205 | 6.96 | 132.90 | 0.281 Nb |
| Ti02 | 0.18 | 79.90 | 0.012 Ti |
| Zr02 | 0.00 | 123.20 | 0.000 Zr |
| Sn02 | 0.01 | 150.70 | 0.000 Sn |
| Fe203 | 0.00 | 159.70 | 0.000 Fe+3 |
| Th02 | 0.03 | 264.00 | 0.001 Th |
| U02 | 0.00 | 270.00 | 0.000 U+4 |
| U03 | 2.09 | 286.00 | 0.039 U+6 |
| U308 | 0.00 | 842.00 | 0.000 U+8 |
| Y203 | 0.10 | 112.90 | 0.005 Y |
| La203 | 0.00 | 162.90 | 0.000 La |
| Ce203 | 0.21 | 164.10 | 0.007 Ce |
| Pr203 | 0.00 | 164.90 | 0.000 Pr |
| Nd203 | 0.00 | 168.20 | 0.000 Nd |
| Sm203 | 0.00 | 174.40 | 0.000 Sm |
| Sb203 | 0.25 | 145.70 | 0.009 Sb+3 |
| Bi203 | 0.11 | 233.00 | 0.003 Bi+3 |
| Mn0 | 0.37 | 70.94 | 0.028 Mn+2 |
| Fe0 | 0.10 | 71.85 | 0.007 Fe+2 |
| Ca0 | 10.80 | 56.08 | 1.032 Ca |
| Sr0 | 0.00 | 103.60 | 0.000 Sr |
| Ba0 | 0.00 | 153.30 | 0.000 Ba |
| Pb0 | 0.06 | 223.20 | 0.001 Pb+2 |
| Na20 | 4.99 | 30.99 | 0.863 Na |
| K20 | 0.00 | 47.10 | 0.000 K |
| Cs20 | 0.05 | 140.90 | 0.002 Cs |
| F | 2.74 | 19.00 | 0.773 F |
| H20+ | 0.00 | 9.01 | 0.000 OH |
| H20- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 99.43 | | 6.265 O |
| LESS O=F | 1.15 | | |
| TOTAL | 98.28 | | |

A B O (O OH F) . 0.00 H2O
 2.00 2.0 6.00 0.27 0.00 0.77

(O + OH + F) = 1.04 Vacancies: 0.00 A -.04 Y
 Dose (alphas/mg) = 0.851E+17 DPA (displacements/atom) = 10.4

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,U+6 ,Mn+2,Sb+3,Fe+2,Ce ,Y ,Bi+3,Pb+2,Th ,K
 Mean A valence = 1.66

B = Ta ,Nb ,Ti ,W ,Sn ,Zr ,Fe+3
 Mean B valence = 5.00

P03.1

| OXIDE | WT % | MOL WT | ATOMS |
|----------|--------|--------|------------|
| WO3 | 0.48 | 231.80 | 0.011 W |
| Ta2O5 | 72.80 | 220.90 | 1.697 Ta |
| Nb2O5 | 7.49 | 132.90 | 0.290 Nb |
| TiO2 | 0.03 | 79.90 | 0.002 Ti |
| ZrO2 | 0.00 | 123.20 | 0.000 Zr |
| SnO2 | 0.01 | 150.70 | 0.000 Sn |
| Fe2O3 | 0.00 | 159.70 | 0.000 Fe+3 |
| ThO2 | 0.00 | 264.00 | 0.000 Th |
| UO2 | 0.00 | 270.00 | 0.000 U+4 |
| UO3 | 1.28 | 286.00 | 0.023 U+6 |
| U3O8 | 0.00 | 842.00 | 0.000 U+8 |
| Y2O3 | 0.09 | 112.90 | 0.004 Y |
| La2O3 | 0.00 | 162.90 | 0.000 La |
| Ce2O3 | 0.21 | 164.10 | 0.007 Ce |
| Pr2O3 | 0.00 | 164.90 | 0.000 Pr |
| Nd2O3 | 0.00 | 168.20 | 0.000 Nd |
| Sm2O3 | 0.00 | 174.40 | 0.000 Sm |
| Sb2O3 | 0.27 | 145.70 | 0.010 Sb+3 |
| Bi2O3 | 0.12 | 233.00 | 0.003 Bi+3 |
| MnO | 0.00 | 70.94 | 0.000 Mn+2 |
| FeO | 0.14 | 71.85 | 0.010 Fe+2 |
| CaO | 10.40 | 56.08 | 0.955 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.00 | 153.30 | 0.000 Ba |
| PbO | 0.06 | 223.20 | 0.001 Pb+2 |
| Na2O | 5.09 | 30.99 | 0.846 Na |
| K2O | 0.00 | 47.10 | 0.000 K |
| Cs2O | 0.01 | 140.90 | 0.000 Cs |
| F | 2.88 | 19.00 | 0.780 F |
| H2O+ | 0.00 | 9.01 | 0.000 OH |
| H2O- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 101.36 | | 6.107 O |
| LESS O=F | 1.21 | | |
| TOTAL | 100.15 | | |

A B O (O OH F) . 0.00 H2O
 1.86 2.0 6.00 0.11 0.00 0.78

(O + OH + F) = 0.89 Vacancies: 0.14 A 0.11 Y
 Dose (alphas/mg) = 0.513E+17 DPA (displacements/atom) = 6.2

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,U+6 ,Fe+2,Sb+3,Ce ,Y ,Bi+3,Pb+2,K ,Sm ,La
 Mean A valence = 1.61

B = Ta ,Nb ,W ,Ti ,Sn ,Zr ,Fe+3
 Mean B valence = 5.00

| OXIDE | WT % | MOL WT | ATOMS |
|--------------------------------|--------|--------|------------------------|
| W ₃ | 0.30 | 231.80 | 0.007 W |
| Ta ₂ O ₅ | 72.40 | 220.90 | 1.695 Ta |
| Nb ₂ O ₅ | 7.56 | 132.90 | 0.294 Nb |
| TiO ₂ | 0.07 | 79.90 | 0.005 Ti |
| ZrO ₂ | 0.00 | 123.20 | 0.000 Zr |
| SnO ₂ | 0.00 | 150.70 | 0.000 Sn |
| Fe ₂ O ₃ | 0.00 | 159.70 | 0.000 Fe+3 |
| ThO ₂ | 0.06 | 264.00 | 0.001 Th |
| UO ₂ | 0.00 | 270.00 | 0.000 U+4 |
| UO ₃ | 1.78 | 286.00 | 0.032 U+6 |
| U ₃ O ₈ | 0.00 | 842.00 | 0.000 U+8 |
| Y ₂ O ₃ | 0.12 | 112.90 | 0.005 Y |
| La ₂ O ₃ | 0.00 | 162.90 | 0.000 La |
| Ce ₂ O ₃ | 0.15 | 164.10 | 0.005 Ce |
| Pr ₂ O ₃ | 0.00 | 164.90 | 0.000 Pr |
| Nd ₂ O ₃ | 0.00 | 168.20 | 0.000 Nd |
| Sm ₂ O ₃ | 0.00 | 174.40 | 0.000 Sm |
| Sb ₂ O ₃ | 0.23 | 145.70 | 0.008 Sb+3 |
| Bi ₂ O ₃ | 0.08 | 233.00 | 0.002 Bi+3 |
| MnO | 0.04 | 70.94 | 0.003 Mn+2 |
| FeO | 0.07 | 71.85 | 0.005 Fe+2 |
| CaO | 10.10 | 56.08 | 0.931 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.00 | 153.30 | 0.000 Ba |
| PbO | 0.07 | 223.20 | 0.002 Pb+2 |
| Na ₂ O | 5.12 | 30.99 | 0.854 Na |
| K ₂ O | 0.00 | 47.10 | 0.000 K |
| Cs ₂ O | 0.04 | 140.90 | 0.001 Cs |
| F | 2.71 | 19.00 | 0.737 F |
| H ₂ O+ | 0.00 | 9.01 | 0.000 OH |
| H ₂ O- | 0.00 | 18.02 | 0.000 H ₂ O |
| TOTAL | 100.90 | | 6.130 O |
| LESS O=F | 1.14 | | |
| TOTAL | 99.76 | | |

A B O (O OH F) . 0.00 H₂O
 1.85 2.0 6.00 0.13 0.00 0.74

(O + OH + F) = 0.87 Vacancies: 0.15 A 0.13 Y
 Dose (alphas/mg) = 0.715E+17 DPA (displacements/atom) = 8.7

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,U+6 ,Sb+3,Y ,Fe+2,Ce ,Mn+2,Bi+3,Pb+2,Th ,K
 Mean A valence = 1.62

B = Ta ,Nb ,W ,Ti ,Sn ,Zr ,Fe+3
 Mean B valence = 5.00

| OXIDE | WT % | MOL WT | ATOMS |
|----------|--------|--------|------------|
| WO3 | 0.42 | 231.80 | 0.009 W |
| Ta2O5 | 75.50 | 220.90 | 1.788 Ta |
| Nb2O5 | 4.61 | 132.90 | 0.181 Nb |
| TiO2 | 0.30 | 79.90 | 0.020 Ti |
| ZrO2 | 0.00 | 123.20 | 0.000 Zr |
| SnO2 | 0.03 | 150.70 | 0.001 Sn |
| Fe2O3 | 0.00 | 159.70 | 0.000 Fe+3 |
| ThO2 | 0.02 | 264.00 | 0.000 Th |
| UO2 | 0.00 | 270.00 | 0.000 U+4 |
| UO3 | 2.12 | 286.00 | 0.039 U+6 |
| U3O8 | 0.00 | 842.00 | 0.000 U+8 |
| Y2O3 | 0.10 | 112.90 | 0.005 Y |
| La2O3 | 0.00 | 162.90 | 0.000 La |
| Ce2O3 | 0.20 | 164.10 | 0.006 Ce |
| Pr2O3 | 0.00 | 164.90 | 0.000 Pr |
| Nd2O3 | 0.00 | 168.20 | 0.000 Nd |
| Sm2O3 | 0.00 | 174.40 | 0.000 Sm |
| Sb2O3 | 0.27 | 145.70 | 0.010 Sb+3 |
| Bi2O3 | 0.07 | 233.00 | 0.002 Bi+3 |
| MnO | 0.27 | 70.94 | 0.020 Mn+2 |
| FeO | 0.07 | 71.85 | 0.005 Fe+2 |
| CaO | 10.70 | 56.08 | 0.998 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.00 | 153.30 | 0.000 Ba |
| PbO | 0.04 | 223.20 | 0.001 Pb+2 |
| Na2O | 4.61 | 30.99 | 0.778 Na |
| K2O | 0.00 | 47.10 | 0.000 K |
| Cs2O | 0.04 | 140.90 | 0.001 Cs |
| F | 2.41 | 19.00 | 0.664 F |
| H2O+ | 0.00 | 9.01 | 0.000 OH |
| H2O- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 101.78 | | 6.227 O |
| LESS O=F | 1.01 | | |
| TOTAL | 100.77 | | |

A B O (O OH F) . 0.00 H2O
 1.87 2.0 6.00 0.23 0.00 0.66

(O + OH + F) = 0.89 Vacancies: 0.13 A 0.11 Y
 Dose (alphas/mg) = 0.842E+17 DPA (displacements/atom) = 10.5

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,U+6 ,Mn+2,Sb+3,Ce ,Fe+2,Y ,Bi+3,Pb+2,Th ,K
 Mean A valence = 1.68

B = Ta ,Nb ,Ti ,W ,Sn ,Zr ,Fe+3
 Mean B valence = 4.99

| OXIDE | WT % | MOL WT | ATOMS |
|----------|-------|--------|------------|
| W03 | 0.43 | 231.80 | 0.010 W |
| Ta205 | 72.30 | 220.90 | 1.758 Ta |
| Nb205 | 4.67 | 132.90 | 0.189 Nb |
| Ti02 | 0.64 | 79.90 | 0.043 Ti |
| Zr02 | 0.00 | 123.20 | 0.000 Zr |
| Sn02 | 0.01 | 150.70 | 0.000 Sn |
| Fe203 | 0.00 | 159.70 | 0.000 Fe+3 |
| Th02 | 0.02 | 264.00 | 0.000 Th |
| U02 | 0.00 | 270.00 | 0.000 U+4 |
| U03 | 2.47 | 286.00 | 0.046 U+6 |
| U308 | 0.00 | 842.00 | 0.000 U+8 |
| Y203 | 0.08 | 112.90 | 0.004 Y |
| La203 | 0.00 | 162.90 | 0.000 La |
| Ce203 | 0.31 | 164.10 | 0.010 Ce |
| Pr203 | 0.00 | 164.90 | 0.000 Pr |
| Nd203 | 0.00 | 168.20 | 0.000 Nd |
| Sm203 | 0.00 | 174.40 | 0.000 Sm |
| Sb203 | 0.32 | 145.70 | 0.012 Sb+3 |
| Bi203 | 0.07 | 233.00 | 0.002 Bi+3 |
| MnO | 0.77 | 70.94 | 0.058 Mn+2 |
| FeO | 0.65 | 71.85 | 0.049 Fe+2 |
| CaO | 11.50 | 56.08 | 1.101 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.01 | 153.30 | 0.000 Ba |
| PbO | 0.07 | 223.20 | 0.002 Pb+2 |
| Na2O | 2.68 | 30.99 | 0.464 Na |
| K2O | 0.00 | 47.10 | 0.000 K |
| Cs2O | 0.02 | 140.90 | 0.001 Cs |
| F | 1.68 | 19.00 | 0.475 F |
| H2O+ | 0.00 | 9.01 | 0.000 OH |
| H2O- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 98.70 | | 6.370 O |
| LESS O=F | 0.71 | | |
| TOTAL | 97.99 | | |

A B O (O OH F) . 0.00 H2O
 1.75 2.0 6.00 0.37 0.00 0.47

(O + OH + F) = 0.84 Vacancies: 0.25 A 0.16 Y
 Dose (alphas/mg) = 0.101E+18 DPA (displacements/atom) = 12.9

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,Mn+2,Fe+2,U+6 ,Sb+3,Ce ,Y ,Pb+2,Bi+3,Th ,Ba
 Mean A valence = 1.86

B = Ta ,Nb ,Ti ,W ,Sn ,Zr ,Fe+3
 Mean B valence = 4.98

| OXIDE | WT % | MOL WT | ATOMS |
|----------|-------|--------|------------|
| W03 | 0.22 | 231.80 | 0.005 W |
| Ta205 | 70.20 | 220.90 | 1.703 Ta |
| Nb205 | 5.20 | 132.90 | 0.210 Nb |
| Ti02 | 1.23 | 79.90 | 0.082 Ti |
| Zr02 | 0.00 | 123.20 | 0.000 Zr |
| Sn02 | 0.00 | 150.70 | 0.000 Sn |
| Fe203 | 0.00 | 159.70 | 0.000 Fe+3 |
| Th02 | 0.01 | 264.00 | 0.000 Th |
| U02 | 0.00 | 270.00 | 0.000 U+4 |
| U03 | 3.69 | 286.00 | 0.069 U+6 |
| U308 | 0.00 | 842.00 | 0.000 U+8 |
| Y203 | 0.07 | 112.90 | 0.003 Y |
| -La203 | 0.00 | 162.90 | 0.000 La |
| Ce203 | 0.23 | 164.10 | 0.008 Ce |
| Pr203 | 0.00 | 164.90 | 0.000 Pr |
| Nd203 | 0.00 | 168.20 | 0.000 Nd |
| Sm203 | 0.00 | 174.40 | 0.000 Sm |
| Sb203 | 0.23 | 145.70 | 0.008 Sb+3 |
| Bi203 | 0.00 | 233.00 | 0.000 Bi+3 |
| MnO | 0.29 | 70.94 | 0.022 Mn+2 |
| FeO | 0.30 | 71.85 | 0.022 Fe+2 |
| CaO | 11.80 | 56.08 | 1.127 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.00 | 153.30 | 0.000 Ba |
| PbO | 0.08 | 223.20 | 0.002 Pb+2 |
| Na2O | 2.54 | 30.99 | 0.439 Na |
| K2O | 0.00 | 47.10 | 0.000 K |
| Cs2O | 0.02 | 140.90 | 0.001 Cs |
| F | 1.58 | 19.00 | 0.446 F |
| H2O+ | 0.00 | 9.01 | 0.000 OH |
| H2O- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 97.69 | | 6.369 O |
| LESS O=F | 0.66 | | |
| TOTAL | 97.02 | | |

A B O (O OH F) . 0.00 H2O
 1.70 2.0 6.00 0.37 0.00 0.45

(O + OH + F) = 0.81 Vacancies: 0.30 A 0.19 Y
 Dose (alphas/mg) = 0.152E+18 DPA (displacements/atom) = 19.4

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,U+6 ,Fe+2,Mn+2,Sb+3,Ce ,Y ,Pb+2,Th ,K ,La
 Mean A valence = 1.92

B = Ta ,Nb ,Ti ,W ,Sn ,Zr ,Fe+3
 Mean B valence = 4.96

| OXIDE | WT % | MOL WT | ATOMS |
|----------|-------|--------|------------|
| W03 | 0.20 | 231.80 | 0.005 W |
| Ta205 | 71.20 | 220.90 | 1.739 Ta |
| Nb205 | 5.28 | 132.90 | 0.214 Nb |
| Ti02 | 0.62 | 79.90 | 0.042 Ti |
| Zr02 | 0.00 | 123.20 | 0.000 Zr |
| Sn02 | 0.00 | 150.70 | 0.000 Sn |
| Fe203 | 0.00 | 159.70 | 0.000 Fe+3 |
| Th02 | 0.05 | 264.00 | 0.001 Th |
| U02 | 0.00 | 270.00 | 0.000 U+4 |
| U03 | 3.07 | 286.00 | 0.058 U+6 |
| U308 | 0.00 | 842.00 | 0.000 U+8 |
| Y203 | 0.07 | 112.90 | 0.003 Y |
| La203 | 0.00 | 162.90 | 0.000 La |
| Ce203 | 0.17 | 164.10 | 0.006 Ce |
| Pr203 | 0.00 | 164.90 | 0.000 Pr |
| Nd203 | 0.00 | 168.20 | 0.000 Nd |
| Sm203 | 0.00 | 174.40 | 0.000 Sm |
| Sb203 | 0.14 | 145.70 | 0.005 Sb+3 |
| Bi203 | 0.00 | 233.00 | 0.000 Bi+3 |
| MnO | 0.16 | 70.94 | 0.012 Mn+2 |
| FeO | 0.12 | 71.85 | 0.009 Fe+2 |
| CaO | 11.90 | 56.08 | 1.145 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.00 | 153.30 | 0.000 Ba |
| PbO | 0.06 | 223.20 | 0.001 Pb+2 |
| Na2O | 3.09 | 30.99 | 0.538 Na |
| K2O | 0.00 | 47.10 | 0.000 K |
| Cs2O | 0.00 | 140.90 | 0.000 Cs |
| F | 1.65 | 19.00 | 0.469 F |
| H2O+ | 0.00 | 9.01 | 0.000 OH |
| H2O- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 97.78 | | 6.381 O |
| LESS O=F | 0.69 | | |
| TOTAL | 97.09 | | |

A B O (O OH F) . 0.00 H2O
 1.78 2.0 6.00 0.38 0.00 0.47

(O + OH + F) = 0.85 Vacancies: 0.22 A 0.15 Y
 Dose (alphas/mg) = 0.127E+18 DPA (displacements/atom) = 16.1

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,U+6 ,Mn+2,Fe+2,Ce ,Sb+3,Y ,Pb+2,Th ,K ,La
 Mean A valence = 1.84

B = Ta ,Nb ,Ti ,W ,Sn ,Zr ,Fe+3
 Mean B valence = 4.98

| OXIDE | WT % | MOL WT | ATOMS |
|----------|-------|--------|------------|
| WO3 | 0.06 | 231.80 | 0.001 W |
| Ta2O5 | 71.90 | 220.90 | 1.739 Ta |
| Nb2O5 | 4.86 | 132.90 | 0.195 Nb |
| TiO2 | 0.95 | 79.90 | 0.064 Ti |
| ZrO2 | 0.00 | 123.20 | 0.000 Zr |
| SnO2 | 0.03 | 150.70 | 0.001 Sn |
| Fe2O3 | 0.00 | 159.70 | 0.000 Fe+3 |
| ThO2 | 0.06 | 264.00 | 0.001 Th |
| UO2 | 0.00 | 270.00 | 0.000 U+4 |
| UO3 | 3.31 | 286.00 | 0.062 U+6 |
| U3O8 | 0.00 | 842.00 | 0.000 U+8 |
| Y2O3 | 0.07 | 112.90 | 0.003 Y |
| La2O3 | 0.00 | 162.90 | 0.000 La |
| Ce2O3 | 0.13 | 164.10 | 0.004 Ce |
| Pr2O3 | 0.00 | 164.90 | 0.000 Pr |
| Nd2O3 | 0.00 | 168.20 | 0.000 Nd |
| Sm2O3 | 0.00 | 174.40 | 0.000 Sm |
| Sb2O3 | 0.14 | 145.70 | 0.005 Sb+3 |
| Bi2O3 | 0.03 | 233.00 | 0.001 Bi+3 |
| MnO | 0.13 | 70.94 | 0.010 Mn+2 |
| FeO | 0.00 | 71.85 | 0.000 Fe+2 |
| CaO | 10.80 | 56.08 | 1.029 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.00 | 153.30 | 0.000 Ba |
| PbO | 0.07 | 223.20 | 0.002 Pb+2 |
| Na2O | 4.18 | 30.99 | 0.721 Na |
| K2O | 0.00 | 47.10 | 0.000 K |
| Cs2O | 0.01 | 140.90 | 0.000 Cs |
| F | 2.27 | 19.00 | 0.638 F |
| H2O+ | 0.00 | 9.01 | 0.000 OH |
| H2O- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 99.00 | | 6.258 O |
| LESS O=F | 0.95 | | |
| TOTAL | 98.04 | | |

A B O (O OH F) . 0.00 H2O
 1.84 2.0 6.00 0.26 0.00 0.64

(O + OH + F) = 0.90 Vacancies: 0.16 A 0.10 Y
 Dose (alphas/mg) = 0.135E+18 DPA (displacements/atom) = 16.8

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,U+6 ,Mn+2,Sb+3,Ce ,Y ,Pb+2,Th ,Bi+3,K ,La
 Mean A valence = 1.75

B = Ta ,Nb ,Ti ,W ,Sn ,Zr ,Fe+3
 Mean B valence = 4.97

| OXIDE | WT % | MOL WT | ATOMS |
|----------|-------|--------|------------|
| WO3 | 0.17 | 231.80 | 0.004 W |
| Ta2O5 | 73.60 | 220.90 | 1.784 Ta |
| Nb2O5 | 4.46 | 132.90 | 0.180 Nb |
| TiO2 | 0.48 | 79.90 | 0.032 Ti |
| ZrO2 | 0.00 | 123.20 | 0.000 Zr |
| SnO2 | 0.00 | 150.70 | 0.000 Sn |
| Fe2O3 | 0.00 | 159.70 | 0.000 Fe+3 |
| ThO2 | 0.09 | 264.00 | 0.002 Th |
| UO2 | 0.00 | 270.00 | 0.000 U+4 |
| UO3 | 2.50 | 286.00 | 0.047 U+6 |
| U3O8 | 0.00 | 842.00 | 0.000 U+8 |
| Y2O3 | 0.08 | 112.90 | 0.004 Y |
| La2O3 | 0.00 | 162.90 | 0.000 La |
| Ce2O3 | 0.15 | 164.10 | 0.005 Ce |
| Pr2O3 | 0.00 | 164.90 | 0.000 Pr |
| Nd2O3 | 0.00 | 168.20 | 0.000 Nd |
| Sm2O3 | 0.00 | 174.40 | 0.000 Sm |
| Sb2O3 | 0.14 | 145.70 | 0.005 Sb+3 |
| Bi2O3 | 0.06 | 233.00 | 0.001 Bi+3 |
| MnO | 0.26 | 70.94 | 0.020 Mn+2 |
| FeO | 0.13 | 71.85 | 0.010 Fe+2 |
| CaO | 11.50 | 56.08 | 1.098 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.01 | 153.30 | 0.000 Ba |
| PbO | 0.06 | 223.20 | 0.001 Pb+2 |
| Na2O | 3.88 | 30.99 | 0.670 Na |
| K2O | 0.00 | 47.10 | 0.000 K |
| Cs2O | 0.01 | 140.90 | 0.000 Cs |
| F | 2.34 | 19.00 | 0.660 F |
| H2O+ | 0.00 | 9.01 | 0.000 OH |
| H2O- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 99.92 | | 6.288 O |
| LESS O=F | 0.98 | | |
| TOTAL | 98.94 | | |

A B O (O OH F) . 0.00 H2O
 1.86 2.0 6.00 0.29 0.00 0.66

(O + OH + F) = 0.95 Vacancies: 0.14 A 0.05 Y
 Dose (alphas/mg) = 0.101E+18 DPA (displacements/atom) = 12.7

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,U+6 ,Mn+2,Fe+2,Sb+3,Ce ,Y ,Th ,Pb+2,Bi+3,Ba
 Mean A valence = 1.75

B = Ta ,Nb ,Ti ,W ,Sn ,Zr ,Fe+3
 Mean B valence = 4.99

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| OXIDE | WT % | MOL WT | ATOMS |
|----------|-------|--------|------------|
| W03 | 0.29 | 231.80 | 0.007 W |
| Ta205 | 73.40 | 220.90 | 1.768 Ta |
| Nb205 | 4.48 | 132.90 | 0.179 Nb |
| Ti02 | 0.67 | 79.90 | 0.045 Ti |
| Zr02 | 0.00 | 123.20 | 0.000 Zr |
| Sn02 | 0.03 | 150.70 | 0.001 Sn |
| Fe203 | 0.00 | 159.70 | 0.000 Fe+3 |
| Th02 | 0.01 | 264.00 | 0.000 Th |
| U02 | 0.00 | 270.00 | 0.000 U+4 |
| U03 | 2.61 | 286.00 | 0.048 U+6 |
| U308 | 0.00 | 842.00 | 0.000 U+8 |
| Y203 | 0.07 | 112.90 | 0.003 Y |
| La203 | 0.00 | 162.90 | 0.000 La |
| Ce203 | 0.21 | 164.10 | 0.007 Ce |
| Pr203 | 0.00 | 164.90 | 0.000 Pr |
| Nd203 | 0.00 | 168.20 | 0.000 Nd |
| Sm203 | 0.00 | 174.40 | 0.000 Sm |
| Sb203 | 0.23 | 145.70 | 0.008 Sb+3 |
| Bi203 | 0.06 | 233.00 | 0.001 Bi+3 |
| Mn0 | 0.02 | 70.94 | 0.002 Mn+2 |
| Fe0 | 0.11 | 71.85 | 0.008 Fe+2 |
| Ca0 | 10.50 | 56.08 | 0.996 Ca |
| Sr0 | 0.00 | 103.60 | 0.000 Sr |
| Ba0 | 0.01 | 153.30 | 0.000 Ba |
| Pb0 | 0.07 | 223.20 | 0.002 Pb+2 |
| Na20 | 4.68 | 30.99 | 0.804 Na |
| K20 | 0.00 | 47.10 | 0.000 K |
| Cs20 | 0.02 | 140.90 | 0.001 Cs |
| F | 2.41 | 19.00 | 0.675 F |
| H20+ | 0.00 | 9.01 | 0.000 OH |
| H20- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 99.88 | | 6.229 O |
| LESS O=F | 1.01 | | |
| TOTAL | 98.86 | | |

A B O (O OH F) . 0.00 H2O
 1.88 2.0 6.00 0.23 0.00 0.68

(O + OH + F) = 0.90 Vacancies: 0.12 A 0.10 Y
 Dose (alphas/mg) = 0.106E+18 DPA (displacements/atom) = 13.1

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,U+6 ,Sb+3,Fe+2,Ce ,Y ,Pb+2,Mn+2,Bi+3,Ba ,Th
 Mean A valence = 1.69

B = Ta ,Nb ,Ti ,W ,Sn ,Zr ,Fe+3
 Mean B valence = 4.98

| OXIDE | WT % | MOL WT | ATOMS |
|----------|-------|--------|------------|
| WO3 | 0.39 | 231.80 | 0.009 W |
| Ta2O5 | 72.40 | 220.90 | 1.734 Ta |
| Nb2O5 | 6.32 | 132.90 | 0.252 Nb |
| TiO2 | 0.07 | 79.90 | 0.005 Ti |
| ZrO2 | 0.00 | 123.20 | 0.000 Zr |
| SnO2 | 0.01 | 150.70 | 0.000 Sn |
| Fe2O3 | 0.00 | 159.70 | 0.000 Fe+3 |
| ThO2 | 0.08 | 264.00 | 0.002 Th |
| UO2 | 0.00 | 270.00 | 0.000 U+4 |
| UO3 | 1.42 | 286.00 | 0.026 U+6 |
| U3O8 | 0.00 | 842.00 | 0.000 U+8 |
| Y2O3 | 0.10 | 112.90 | 0.005 Y |
| La2O3 | 0.00 | 162.90 | 0.000 La |
| Ce2O3 | 0.18 | 164.10 | 0.006 Ce |
| Pr2O3 | 0.00 | 164.90 | 0.000 Pr |
| Nd2O3 | 0.00 | 168.20 | 0.000 Nd |
| Sm2O3 | 0.00 | 174.40 | 0.000 Sm |
| Sb2O3 | 0.18 | 145.70 | 0.007 Sb+3 |
| Bi2O3 | 0.07 | 233.00 | 0.002 Bi+3 |
| MnO | 0.00 | 70.94 | 0.000 Mn+2 |
| FeO | 0.14 | 71.85 | 0.010 Fe+2 |
| CaO | 9.93 | 56.08 | 0.937 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.01 | 153.30 | 0.000 Ba |
| PbO | 0.07 | 223.20 | 0.002 Pb+2 |
| Na2O | 5.12 | 30.99 | 0.874 Na |
| K2O | 0.00 | 47.10 | 0.000 K |
| Cs2O | 0.04 | 140.90 | 0.002 Cs |
| F | 2.90 | 19.00 | 0.808 F |
| H2O+ | 0.00 | 9.01 | 0.000 OH |
| H2O- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 99.43 | | 6.095 O |
| LESS O=F | 1.22 | | |
| TOTAL | 98.21 | | |

A B O (O OH F) . 0.00 H2O
 1.87 2.0 6.00 0.10 0.00 0.81

(O + OH + F) = 0.90 Vacancies: 0.13 A 0.10 Y
 Dose (alphas/mg) = 0.579E+17 DPA (displacements/atom) = 7.0

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,U+6 ,Fe+2,Sb+3,Ce ,Y ,Pb+2,Th ,Bi+3,Ba ,K
 Mean A valence = 1.60

B = Ta ,Nb ,W ,Ti ,Sn ,Zr ,Fe+3
 Mean B valence = 5.00

| OXIDE | WT % | MOL WT | ATOMS |
|----------|--------|--------|------------|
| WO3 | 0.48 | 231.80 | 0.011 W |
| Ta2O5 | 74.00 | 220.90 | 1.723 Ta |
| Nb2O5 | 6.82 | 132.90 | 0.264 Nb |
| TiO2 | 0.04 | 79.90 | 0.003 Ti |
| ZrO2 | 0.00 | 123.20 | 0.000 Zr |
| SnO2 | 0.01 | 150.70 | 0.000 Sn |
| Fe2O3 | 0.00 | 159.70 | 0.000 Fe+3 |
| ThO2 | 0.06 | 264.00 | 0.001 Th |
| UO2 | 0.00 | 270.00 | 0.000 U+4 |
| UO3 | 0.51 | 286.00 | 0.009 U+6 |
| U3O8 | 0.00 | 842.00 | 0.000 U+8 |
| Y2O3 | 0.10 | 112.90 | 0.005 Y |
| La2O3 | 0.00 | 162.90 | 0.000 La |
| Ce2O3 | 0.19 | 164.10 | 0.006 Ce |
| Pr2O3 | 0.00 | 164.90 | 0.000 Pr |
| Nd2O3 | 0.00 | 168.20 | 0.000 Nd |
| Sm2O3 | 0.00 | 174.40 | 0.000 Sm |
| Sb2O3 | 0.19 | 145.70 | 0.007 Sb+3 |
| Bi2O3 | 0.06 | 233.00 | 0.001 Bi+3 |
| MnO | 0.00 | 70.94 | 0.000 Mn+2 |
| FeO | 0.02 | 71.85 | 0.001 Fe+2 |
| CaO | 10.40 | 56.08 | 0.954 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.00 | 153.30 | 0.000 Ba |
| PbO | 0.02 | 223.20 | 0.000 Pb+2 |
| Na2O | 5.21 | 30.99 | 0.864 Na |
| K2O | 0.00 | 47.10 | 0.000 K |
| Cs2O | 0.02 | 140.90 | 0.001 Cs |
| F | 3.26 | 19.00 | 0.882 F |
| H2O+ | 0.00 | 9.01 | 0.000 OH |
| H2O- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 101.39 | | 6.008 O |
| LESS O=F | 1.37 | | |
| TOTAL | 100.02 | | |

A B O (O OH F) . 0.00 H2O
 1.85 2.0 6.00 0.01 0.00 0.88

(O + OH + F) = 0.89 Vacancies: 0.15 A 0.11 Y
 Dose (alphas/mg) = 0.204E+17 DPA (displacements/atom) = 2.4

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,U+6 ,Sb+3,Ce ,Y ,Fe+2,Bi+3,Th ,Pb+2,K ,U+8
 Mean A valence = 1.56

B = Ta ,Nb ,W ,Ti ,Sn ,Zr ,Fe+3
 Mean B valence = 5.00

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| OXIDE | WT % | MOL WT | ATOMS |
|----------|--------|--------|------------|
| W03 | 0.38 | 231.80 | 0.008 W |
| Ta205 | 76.00 | 220.90 | 1.771 Ta |
| Nb205 | 5.64 | 132.90 | 0.218 Nb |
| Ti02 | 0.03 | 79.90 | 0.002 Ti |
| Zr02 | 0.00 | 123.20 | 0.000 Zr |
| Sn02 | 0.00 | 150.70 | 0.000 Sn |
| Fe203 | 0.00 | 159.70 | 0.000 Fe+3 |
| Th02 | 0.03 | 264.00 | 0.001 Th |
| U02 | 0.00 | 270.00 | 0.000 U+4 |
| U03 | 0.05 | 286.00 | 0.001 U+6 |
| U308 | 0.00 | 842.00 | 0.000 U+8 |
| Y203 | 0.06 | 112.90 | 0.003 Y |
| La203 | 0.00 | 162.90 | 0.000 La |
| Ce203 | 0.14 | 164.10 | 0.004 Ce |
| Pr203 | 0.00 | 164.90 | 0.000 Pr |
| Nd203 | 0.00 | 168.20 | 0.000 Nd |
| Sm203 | 0.00 | 174.40 | 0.000 Sm |
| Sb203 | 0.14 | 145.70 | 0.005 Sb+3 |
| Bi203 | 0.07 | 233.00 | 0.002 Bi+3 |
| MnO | 0.00 | 70.94 | 0.000 Mn+2 |
| FeO | 0.05 | 71.85 | 0.004 Fe+2 |
| CaO | 10.40 | 56.08 | 0.955 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.00 | 153.30 | 0.000 Ba |
| PbO | 0.03 | 223.20 | 0.001 Pb+2 |
| Na2O | 5.24 | 30.99 | 0.870 Na |
| K2O | 0.00 | 47.10 | 0.000 K |
| Cs2O | 0.03 | 140.90 | 0.001 Cs |
| F | 3.35 | 19.00 | 0.908 F |
| H2O+ | 0.00 | 9.01 | 0.000 OH |
| H2O- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 101.64 | | 5.969 O |
| LESS O=F | 1.41 | | |
| TOTAL | 100.24 | | |

A B O (O OH F) . 0.00 H2O
 1.85 2.0 5.97 0.00 0.00 0.91

(O + OH + F) = 0.91 Vacancies: 0.15 A 0.09 Y
 Dose (alphas/mg) = 0.212E+16 DPA (displacements/atom) = 0.3

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,Sb+3,Ce ,Fe+2,Y ,Bi+3,U+6 ,Pb+2,Th ,K ,Pr
 Mean A valence = 1.54

B = Ta ,Nb ,W ,Ti ,Sn ,Zr ,Fe+3
 Mean B valence = 5.00

P04

| OXIDE | WT % | MOL WT | ATOMS |
|----------|--------|--------|------------|
| WO3 | 0.44 | 231.80 | 0.010 W |
| Ta2O5 | 75.90 | 220.90 | 1.778 Ta |
| Nb2O5 | 5.39 | 132.90 | 0.210 Nb |
| TiO2 | 0.03 | 79.90 | 0.002 Ti |
| ZrO2 | 0.00 | 123.20 | 0.000 Zr |
| SnO2 | 0.01 | 150.70 | 0.000 Sn |
| Fe2O3 | 0.00 | 159.70 | 0.000 Fe+3 |
| ThO2 | 0.02 | 264.00 | 0.000 Th |
| UO2 | 0.00 | 270.00 | 0.000 U+4 |
| UO3 | 0.50 | 286.00 | 0.009 U+6 |
| U3O8 | 0.00 | 842.00 | 0.000 U+8 |
| Y2O3 | 0.10 | 112.90 | 0.005 Y |
| La2O3 | 0.00 | 162.90 | 0.000 La |
| Ce2O3 | 0.19 | 164.10 | 0.006 Ce |
| Pr2O3 | 0.00 | 164.90 | 0.000 Pr |
| Nd2O3 | 0.00 | 168.20 | 0.000 Nd |
| Sm2O3 | 0.00 | 174.40 | 0.000 Sm |
| Sb2O3 | 0.15 | 145.70 | 0.005 Sb+3 |
| Bi2O3 | 0.11 | 233.00 | 0.002 Bi+3 |
| MnO | 0.04 | 70.94 | 0.003 Mn+2 |
| FeO | 0.07 | 71.85 | 0.005 Fe+2 |
| CaO | 10.30 | 56.08 | 0.950 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.00 | 153.30 | 0.000 Ba |
| PbO | 0.03 | 223.20 | 0.001 Pb+2 |
| Na2O | 5.34 | 30.99 | 0.892 Na |
| K2O | 0.00 | 47.10 | 0.000 K |
| Cs2O | 0.03 | 140.90 | 0.001 Cs |
| F | 3.01 | 19.00 | 0.820 F |
| H2O+ | 0.00 | 9.01 | 0.000 OH |
| H2O- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 101.66 | | 6.055 O |
| LESS O=F | 1.26 | | |
| TOTAL | 100.39 | | |

A B O (O OH F) . 0.00 H2O
 1.88 2.0 6.00 0.05 0.00 0.82

(O + OH + F) = 0.87 Vacancies: 0.12 A 0.13 Y
 Dose (alphas/mg) = 0.199E+17 DPA (displacements/atom) = 2.4

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,U+6 ,Ce ,Sb+3,Fe+2,Y ,Mn+2,Bi+3,Pb+2,Th ,K
 Mean A valence = 1.55

B = Ta ,Nb ,W ,Ti ,Sn ,Zr ,Fe+3
 Mean B valence = 5.00

P04

| OXIDE | WT % | MOL WT | ATOMS |
|----------|--------|--------|------------|
| WO3 | 0.49 | 231.80 | 0.011 W |
| Ta2O5 | 75.00 | 220.90 | 1.779 Ta |
| Nb2O5 | 5.25 | 132.90 | 0.207 Nb |
| TiO2 | 0.04 | 79.90 | 0.003 Ti |
| ZrO2 | 0.00 | 123.20 | 0.000 Zr |
| SnO2 | 0.02 | 150.70 | 0.001 Sn |
| Fe2O3 | 0.00 | 159.70 | 0.000 Fe+3 |
| ThO2 | 0.01 | 264.00 | 0.000 Th |
| UO2 | 0.00 | 270.00 | 0.000 U+4 |
| UO3 | 1.04 | 286.00 | 0.019 U+6 |
| U3O8 | 0.00 | 842.00 | 0.000 U+8 |
| Y2O3 | 0.10 | 112.90 | 0.005 Y |
| La2O3 | 0.00 | 162.90 | 0.000 La |
| Ce2O3 | 0.23 | 164.10 | 0.007 Ce |
| Pr2O3 | 0.00 | 164.90 | 0.000 Pr |
| Nd2O3 | 0.00 | 168.20 | 0.000 Nd |
| Sm2O3 | 0.00 | 174.40 | 0.000 Sm |
| Sb2O3 | 0.15 | 145.70 | 0.005 Sb+3 |
| Bi2O3 | 0.06 | 233.00 | 0.001 Bi+3 |
| MnO | 0.02 | 70.94 | 0.001 Mn+2 |
| FeO | 0.07 | 71.85 | 0.005 Fe+2 |
| CaO | 9.97 | 56.08 | 0.931 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.00 | 153.30 | 0.000 Ba |
| PbO | 0.04 | 223.20 | 0.001 Pb+2 |
| Na2O | 5.33 | 30.99 | 0.901 Na |
| K2O | 0.00 | 47.10 | 0.000 K |
| Cs2O | 0.04 | 140.90 | 0.001 Cs |
| F | 2.86 | 19.00 | 0.789 F |
| H2O+ | 0.00 | 9.01 | 0.000 OH |
| H2O- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 100.72 | | 6.085 O |
| LESS O=F | 1.20 | | |
| TOTAL | 99.52 | | |

A B O (O OH F) . 0.00 H2O
 1.88 2.0 6.00 0.09 0.00 0.79

(O + OH + F) = 0.87 Vacancies: 0.12 A 0.13 Y
 Dose (alphas/mg) = 0.418E+17 DPA (displacements/atom) = 5.1

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,U+6 ,Ce ,Sb+3,Fe+2,Y ,Mn+2,Bi+3,Pb+2,Th ,K
 Mean A valence = 1.57

B = Ta ,Nb ,W ,Ti ,Sn ,Zr ,Fe+3
 Mean B valence = 5.00

| OXIDE | WT % | MOL WT | ATOMS |
|----------|--------|--------|------------|
| W03 | 0.46 | 231.80 | 0.010 W |
| Ta205 | 74.70 | 220.90 | 1.774 Ta |
| Nb205 | 5.06 | 132.90 | 0.200 Nb |
| Ti02 | 0.23 | 79.90 | 0.015 Ti |
| Zr02 | 0.00 | 123.20 | 0.000 Zr |
| Sn02 | 0.01 | 150.70 | 0.000 Sn |
| Fe203 | 0.00 | 159.70 | 0.000 Fe+3 |
| Th02 | 0.06 | 264.00 | 0.001 Th |
| U02 | 0.00 | 270.00 | 0.000 U+4 |
| U03 | 1.95 | 286.00 | 0.036 U+6 |
| U308 | 0.00 | 842.00 | 0.000 U+8 |
| Y203 | 0.09 | 112.90 | 0.004 Y |
| La203 | 0.00 | 162.90 | 0.000 La |
| Ce203 | 0.26 | 164.10 | 0.008 Ce |
| Pr203 | 0.00 | 164.90 | 0.000 Pr |
| Nd203 | 0.00 | 168.20 | 0.000 Nd |
| Sm203 | 0.00 | 174.40 | 0.000 Sm |
| Sb203 | 0.17 | 145.70 | 0.006 Sb+3 |
| Bi203 | 0.13 | 233.00 | 0.003 Bi+3 |
| MnO | 0.06 | 70.94 | 0.004 Mn+2 |
| FeO | 0.12 | 71.85 | 0.009 Fe+2 |
| CaO | 9.64 | 56.08 | 0.902 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.03 | 153.30 | 0.001 Ba |
| PbO | 0.10 | 223.20 | 0.002 Pb+2 |
| Na2O | 5.34 | 30.99 | 0.904 Na |
| K2O | 0.00 | 47.10 | 0.000 K |
| Cs2O | 0.04 | 140.90 | 0.001 Cs |
| F | 2.64 | 19.00 | 0.729 F |
| H2O+ | 0.00 | 9.01 | 0.000 OH |
| H2O- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 101.09 | | 6.146 O |
| LESS O=F | 1.11 | | |
| TOTAL | 99.98 | | |

A B O (O OH F) . 0.00 H2O
 1.88 2.0 6.00 0.15 0.00 0.73

(O + OH + F) = 0.88 Vacancies: 0.12 A 0.12 Y
 Dose (alphas/mg) = 0.781E+17 DPA (displacements/atom) = 9.6

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Na ,Ca ,U+6 ,Fe+2,Ce ,Sb+3,Mn+2,Y ,Bi+3,Pb+2,Th ,Ba
 Mean A valence = 1.61

B = Ta ,Nb ,Ti ,W ,Sn ,Zr ,Fe+3
 Mean B valence = 5.00

| OXIDE | WT % | MOL WT | ATOMS |
|----------|-------|--------|------------|
| W03 | 0.03 | 231.80 | 0.001 W |
| Ta205 | 69.80 | 220.90 | 1.683 Ta |
| Nb205 | 5.82 | 132.90 | 0.233 Nb |
| Ti02 | 1.25 | 79.90 | 0.083 Ti |
| Zr02 | 0.00 | 123.20 | 0.000 Zr |
| Sn02 | 0.00 | 150.70 | 0.000 Sn |
| Fe203 | 0.00 | 159.70 | 0.000 Fe+3 |
| Th02 | 0.03 | 264.00 | 0.001 Th |
| U02 | 0.00 | 270.00 | 0.000 U+4 |
| U03 | 3.05 | 286.00 | 0.057 U+6 |
| U308 | 0.00 | 842.00 | 0.000 U+8 |
| Y203 | 0.06 | 112.90 | 0.003 Y |
| La203 | 0.00 | 162.90 | 0.000 La |
| Ce203 | 0.23 | 164.10 | 0.007 Ce |
| Pr203 | 0.00 | 164.90 | 0.000 Pr |
| Nd203 | 0.00 | 168.20 | 0.000 Nd |
| Sm203 | 0.00 | 174.40 | 0.000 Sm |
| Sb203 | 0.30 | 145.70 | 0.011 Sb+3 |
| Bi203 | 0.00 | 233.00 | 0.000 Bi+3 |
| MnO | 0.15 | 70.94 | 0.011 Mn+2 |
| FeO | 0.20 | 71.85 | 0.015 Fe+2 |
| CaO | 12.00 | 56.08 | 1.140 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.04 | 153.30 | 0.001 Ba |
| PbO | 0.06 | 223.20 | 0.001 Pb+2 |
| Na2O | 3.01 | 30.99 | 0.517 Na |
| K2O | 0.00 | 47.10 | 0.000 K |
| Cs2O | 0.00 | 140.90 | 0.000 Cs |
| F | 1.55 | 19.00 | 0.434 F |
| H2O+ | 0.00 | 9.01 | 0.000 OH |
| H2O- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 97.58 | | 6.372 O |
| LESS O=F | 0.65 | | |
| TOTAL | 96.93 | | |

A B O (O OH F) . 0.00 H2O
 1.76 2.0 6.00 0.37 0.00 0.43

(O + OH + F) = 0.81 Vacancies: 0.24 A 0.19 Y
 Dose (alphas/mg) = 0.126E+18 DPA (displacements/atom) = 15.9

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,U+6 ,Fe+2,Mn+2,Sb+3,Ce ,Y ,Pb+2,Ba ,Th ,K
 Mean A valence = 1.85

B = Ta ,Nb ,Ti ,W ,Sn ,Zr ,Fe+3
 Mean B valence = 4.96

P08.1

| OXIDE | WT % | MOL WT | ATOMS |
|----------|-------|--------|------------|
| W03 | 0.15 | 231.80 | 0.003 W |
| Ta205 | 73.00 | 220.90 | 1.759 Ta |
| Nb205 | 5.52 | 132.90 | 0.221 Nb |
| Ti02 | 0.23 | 79.90 | 0.015 Ti |
| Zr02 | 0.00 | 123.20 | 0.000 Zr |
| Sn02 | 0.02 | 150.70 | 0.001 Sn |
| Fe203 | 0.00 | 159.70 | 0.000 Fe+3 |
| Th02 | 0.00 | 264.00 | 0.000 Th |
| U02 | 0.00 | 270.00 | 0.000 U+4 |
| U03 | 1.66 | 286.00 | 0.031 U+6 |
| U308 | 0.00 | 842.00 | 0.000 U+8 |
| Y203 | 0.04 | 112.90 | 0.002 Y |
| La203 | 0.00 | 162.90 | 0.000 La |
| Ce203 | 0.16 | 164.10 | 0.005 Ce |
| Pr203 | 0.00 | 164.90 | 0.000 Pr |
| Nd203 | 0.00 | 168.20 | 0.000 Nd |
| Sm203 | 0.00 | 174.40 | 0.000 Sm |
| Sb203 | 0.18 | 145.70 | 0.007 Sb+3 |
| Bi203 | 0.00 | 233.00 | 0.000 Bi+3 |
| MnO | 0.04 | 70.94 | 0.003 Mn+2 |
| FeO | 0.02 | 71.85 | 0.001 Fe+2 |
| CaO | 10.70 | 56.08 | 1.016 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.00 | 153.30 | 0.000 Ba |
| PbO | 0.04 | 223.20 | 0.001 Pb+2 |
| Na2O | 4.46 | 30.99 | 0.766 Na |
| K2O | 0.00 | 47.10 | 0.000 K |
| Cs2O | 0.01 | 140.90 | 0.000 Cs |
| F | 2.08 | 19.00 | 0.583 F |
| H2O+ | 0.00 | 9.01 | 0.000 OH |
| H2O- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 98.31 | | 6.220 O |
| LESS O=F | 0.87 | | |
| TOTAL | 97.44 | | |

A B O (O OH F) . 0.00 H2O
 1.83 2.0 6.00 0.22 0.00 0.58

(O + OH + F) = 0.80 Vacancies: 0.17 A 0.20 Y
 Dose (alphas/mg) = 0.684E+17 DPA (displacements/atom) = 8.5

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,U+6 ,Sb+3,Ce ,Mn+2,Y ,Fe+2,Pb+2,K ,Sm ,U+8
 Mean A valence = 1.66

B = Ta ,Nb ,Ti ,W ,Sn ,Zr ,Fe+3
 Mean B valence = 4.99

| OXIDE | WT % | MOL WT | ATOMS |
|----------|-------|--------|------------|
| W03 | 0.26 | 231.80 | 0.006 W |
| Ta205 | 73.40 | 220.90 | 1.774 Ta |
| Nb205 | 5.45 | 132.90 | 0.219 Nb |
| Ti02 | 0.02 | 79.90 | 0.001 Ti |
| Zr02 | 0.00 | 123.20 | 0.000 Zr |
| Sn02 | 0.00 | 150.70 | 0.000 Sn |
| Fe203 | 0.00 | 159.70 | 0.000 Fe+3 |
| Th02 | 0.07 | 264.00 | 0.001 Th |
| U02 | 0.00 | 270.00 | 0.000 U+4 |
| U03 | 1.14 | 286.00 | 0.021 U+6 |
| U308 | 0.00 | 842.00 | 0.000 U+8 |
| Y203 | 0.06 | 112.90 | 0.003 Y |
| La203 | 0.00 | 162.90 | 0.000 La |
| Ce203 | 0.25 | 164.10 | 0.008 Ce |
| Pr203 | 0.00 | 164.90 | 0.000 Pr |
| Nd203 | 0.00 | 168.20 | 0.000 Nd |
| Sm203 | 0.00 | 174.40 | 0.000 Sm |
| Sb203 | 0.13 | 145.70 | 0.005 Sb+3 |
| Bi203 | 0.00 | 233.00 | 0.000 Bi+3 |
| MnO | 0.04 | 70.94 | 0.003 Mn+2 |
| FeO | 0.11 | 71.85 | 0.008 Fe+2 |
| CaO | 11.00 | 56.08 | 1.047 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.02 | 153.30 | 0.001 Ba |
| PbO | 0.04 | 223.20 | 0.001 Pb+2 |
| Na2O | 4.06 | 30.99 | 0.699 Na |
| K2O | 0.00 | 47.10 | 0.000 K |
| Cs2O | 0.00 | 140.90 | 0.000 Cs |
| F | 2.14 | 19.00 | 0.601 F |
| H2O+ | 0.00 | 9.01 | 0.000 OH |
| H2O- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 98.19 | | 6.202 O |
| LESS O=F | 0.90 | | |
| TOTAL | 97.30 | | |

A B O (O OH F) . 0.00 H2O
 1.80 2.0 6.00 0.20 0.00 0.60

(O + OH + F) = 0.80 Vacancies: 0.20 A 0.20 Y
 Dose (alphas/mg) = 0.471E+17 DPA (displacements/atom) = 5.9

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,U+6 ,Fe+2,Ce ,Sb+3,Mn+2,Y ,Th ,Pb+2,Ba ,K
 Mean A valence = 1.67

B = Ta ,Nb ,W ,Ti ,Sn ,Zr ,Fe+3
 Mean B valence = 5.00

| OXIDE | WT % | MOL WT | ATOMS |
|----------|-------|--------|------------|
| WO3 | 0.12 | 231.80 | 0.003 W |
| Ta2O5 | 73.40 | 220.90 | 1.763 Ta |
| Nb2O5 | 5.85 | 132.90 | 0.234 Nb |
| TiO2 | 0.01 | 79.90 | 0.001 Ti |
| ZrO2 | 0.00 | 123.20 | 0.000 Zr |
| SnO2 | 0.00 | 150.70 | 0.000 Sn |
| Fe2O3 | 0.00 | 159.70 | 0.000 Fe+3 |
| ThO2 | 0.00 | 264.00 | 0.000 Th |
| UO2 | 0.00 | 270.00 | 0.000 U+4 |
| UO3 | 1.11 | 286.00 | 0.021 U+6 |
| U3O8 | 0.00 | 842.00 | 0.000 U+8 |
| Y2O3 | 0.05 | 112.90 | 0.002 Y |
| La2O3 | 0.00 | 162.90 | 0.000 La |
| Ce2O3 | 0.18 | 164.10 | 0.006 Ce |
| Pr2O3 | 0.00 | 164.90 | 0.000 Pr |
| Nd2O3 | 0.00 | 168.20 | 0.000 Nd |
| Sm2O3 | 0.00 | 174.40 | 0.000 Sm |
| Sb2O3 | 0.08 | 145.70 | 0.003 Sb+3 |
| Bi2O3 | 0.00 | 233.00 | 0.000 Bi+3 |
| MnO | 0.08 | 70.94 | 0.006 Mn+2 |
| FeO | 0.01 | 71.85 | 0.001 Fe+2 |
| CaO | 11.10 | 56.08 | 1.050 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.01 | 153.30 | 0.000 Ba |
| PbO | 0.04 | 223.20 | 0.001 Pb+2 |
| Na2O | 4.22 | 30.99 | 0.723 Na |
| K2O | 0.00 | 47.10 | 0.000 K |
| Cs2O | 0.00 | 140.90 | 0.000 Cs |
| F | 2.42 | 19.00 | 0.676 F |
| H2O+ | 0.00 | 9.01 | 0.000 OH |
| H2O- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 98.68 | | 6.161 O |
| LESS O=F | 1.02 | | |
| TOTAL | 97.67 | | |

A B O (O OH F) . 0.00 H2O
 1.81 2.0 6.00 0.16 0.00 0.68

(O + OH + F) = 0.84 Vacancies: 0.19 A 0.16 Y
 Dose (alphas/mg) = 0.456E+17 DPA (displacements/atom) = 5.6

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,U+6 ,Mn+2,Ce ,Sb+3,Y ,Pb+2,Fe+2,Ba ,K ,La
 Mean A valence = 1.65

B = Ta ,Nb ,W ,Ti ,Sn ,Zr ,Fe+3
 Mean B valence = 5.00

| OXIDE | WT % | MOL WT | ATOMS | |
|----------|-------|--------|-------|------|
| W03 | 0.05 | 231.80 | 0.001 | W |
| Ta205 | 74.20 | 220.90 | 1.765 | Ta |
| Nb205 | 5.86 | 132.90 | 0.232 | Nb |
| Ti02 | 0.03 | 79.90 | 0.002 | Ti |
| Zr02 | 0.00 | 123.20 | 0.000 | Zr |
| Sn02 | 0.00 | 150.70 | 0.000 | Sn |
| Fe203 | 0.00 | 159.70 | 0.000 | Fe+3 |
| Th02 | 0.02 | 264.00 | 0.000 | Th |
| U02 | 0.00 | 270.00 | 0.000 | U+4 |
| U03 | 0.97 | 286.00 | 0.018 | U+6 |
| U308 | 0.00 | 842.00 | 0.000 | U+8 |
| Y203 | 0.07 | 112.90 | 0.003 | Y |
| La203 | 0.00 | 162.90 | 0.000 | La |
| Ce203 | 0.19 | 164.10 | 0.006 | Ce |
| Pr203 | 0.00 | 164.90 | 0.000 | Pr |
| Nd203 | 0.00 | 168.20 | 0.000 | Nd |
| Sm203 | 0.00 | 174.40 | 0.000 | Sm |
| Sb203 | 0.10 | 145.70 | 0.004 | Sb+3 |
| Bi203 | 0.00 | 233.00 | 0.000 | Bi+3 |
| Mn0 | 0.08 | 70.94 | 0.006 | Mn+2 |
| Fe0 | 0.01 | 71.85 | 0.001 | Fe+2 |
| Ca0 | 11.00 | 56.08 | 1.031 | Ca |
| Sr0 | 0.00 | 103.60 | 0.000 | Sr |
| Ba0 | 0.02 | 153.30 | 0.001 | Ba |
| Pb0 | 0.02 | 223.20 | 0.000 | Pb+2 |
| Na20 | 4.28 | 30.99 | 0.726 | Na |
| K20 | 0.00 | 47.10 | 0.000 | K |
| Cs20 | 0.00 | 140.90 | 0.000 | Cs |
| F | 2.39 | 19.00 | 0.661 | F |
| H20+ | 0.00 | 9.01 | 0.000 | OH |
| H20- | 0.00 | 18.02 | 0.000 | H2O |
| TOTAL | 99.29 | | 6.144 | O |
| LESS O=F | 1.00 | | | |
| TOTAL | 98.29 | | | |

A B O (O OH F) . 0.00 H2O
 1.80 2.0 6.00 0.14 0.00 0.66

(O + OH + F) = 0.81 Vacancies: 0.20 A 0.19 Y
 Dose (alphas/mg) = 0.397E+17 DPA (displacements/atom) = 4.9

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,U+6 ,Ce ,Mn+2,Sb+3,Y ,Fe+2,Ba ,Pb+2,Th ,K
 Mean A valence = 1.64

B = Ta ,Nb ,Ti ,W ,Sn ,Zr ,Fe+3
 Mean B valence = 5.00

| OXIDE | WT % | MOL WT | ATOMS |
|----------|--------|--------|------------|
| WO3 | 0.18 | 231.80 | 0.004 W |
| Ta2O5 | 76.10 | 220.90 | 1.787 Ta |
| Nb2O5 | 5.34 | 132.90 | 0.208 Nb |
| TiO2 | 0.01 | 79.90 | 0.001 Ti |
| ZrO2 | 0.00 | 123.20 | 0.000 Zr |
| SnO2 | 0.00 | 150.70 | 0.000 Sn |
| Fe2O3 | 0.00 | 159.70 | 0.000 Fe+3 |
| ThO2 | 0.06 | 264.00 | 0.001 Th |
| UO2 | 0.00 | 270.00 | 0.000 U+4 |
| UO3 | 0.13 | 286.00 | 0.002 U+6 |
| U3O8 | 0.00 | 842.00 | 0.000 U+8 |
| Y2O3 | 0.05 | 112.90 | 0.002 Y |
| La2O3 | 0.00 | 162.90 | 0.000 La |
| Ce2O3 | 0.16 | 164.10 | 0.005 Ce |
| Pr2O3 | 0.00 | 164.90 | 0.000 Pr |
| Nd2O3 | 0.00 | 168.20 | 0.000 Nd |
| Sm2O3 | 0.00 | 174.40 | 0.000 Sm |
| Sb2O3 | 0.10 | 145.70 | 0.004 Sb+3 |
| Bi2O3 | 0.00 | 233.00 | 0.000 Bi+3 |
| MnO | 0.01 | 70.94 | 0.001 Mn+2 |
| FeO | 0.00 | 71.85 | 0.000 Fe+2 |
| CaO | 10.70 | 56.08 | 0.990 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.01 | 153.30 | 0.000 Ba |
| PbO | 0.01 | 223.20 | 0.000 Pb+2 |
| Na2O | 5.11 | 30.99 | 0.855 Na |
| K2O | 0.00 | 47.10 | 0.000 K |
| Cs2O | 0.00 | 140.90 | 0.000 Cs |
| F | 2.94 | 19.00 | 0.803 F |
| H2O+ | 0.00 | 9.01 | 0.000 OH |
| H2O- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 100.91 | | 6.045 O |
| LESS O=F | 1.23 | | |
| TOTAL | 99.67 | | |

A B O (O OH F) . 0.00 H2O
 1.86 2.0 6.00 0.04 0.00 0.80

(O + OH + F) = 0.85 Vacancies: 0.14 A 0.15 Y
 Dose (alphas/mg) = 0.511E+16 DPA (displacements/atom) = 0.6

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,Ce ,Sb+3,U+6 ,Y ,Th ,Mn+2,Ba ,Pb+2,K ,U+8
 Mean A valence = 1.55

B = Ta ,Nb ,W ,Ti ,Sn ,Zr ,Fe+3
 Mean B valence = 5.00

| OXIDE | WT % | MOL WT | ATOMS |
|----------|--------|--------|------------|
| W03 | 0.03 | 231.80 | 0.001 W |
| Ta205 | 75.70 | 220.90 | 1.788 Ta |
| Nb205 | 5.31 | 132.90 | 0.208 Nb |
| Ti02 | 0.04 | 79.90 | 0.003 Ti |
| Zr02 | 0.00 | 123.20 | 0.000 Zr |
| Sn02 | 0.00 | 150.70 | 0.000 Sn |
| Fe203 | 0.00 | 159.70 | 0.000 Fe+3 |
| Th02 | 0.03 | 264.00 | 0.001 Th |
| U02 | 0.00 | 270.00 | 0.000 U+4 |
| U03 | 0.18 | 286.00 | 0.003 U+6 |
| U308 | 0.00 | 842.00 | 0.000 U+8 |
| Y203 | 0.04 | 112.90 | 0.002 Y |
| La203 | 0.00 | 162.90 | 0.000 La |
| Ce203 | 0.23 | 164.10 | 0.007 Ce |
| Pr203 | 0.00 | 164.90 | 0.000 Pr |
| Nd203 | 0.00 | 168.20 | 0.000 Nd |
| Sm203 | 0.00 | 174.40 | 0.000 Sm |
| Sb203 | 0.11 | 145.70 | 0.004 Sb+3 |
| Bi203 | 0.03 | 233.00 | 0.001 Bi+3 |
| Mn0 | 0.03 | 70.94 | 0.002 Mn+2 |
| Fe0 | 0.07 | 71.85 | 0.005 Fe+2 |
| Ca0 | 10.90 | 56.08 | 1.014 Ca |
| Sr0 | 0.00 | 103.60 | 0.000 Sr |
| Ba0 | 0.01 | 153.30 | 0.000 Ba |
| Pb0 | 0.00 | 223.20 | 0.000 Pb+2 |
| Na20 | 5.19 | 30.99 | 0.874 Na |
| K20 | 0.00 | 47.10 | 0.000 K |
| Cs20 | 0.00 | 140.90 | 0.000 Cs |
| F | 2.90 | 19.00 | 0.796 F |
| H20+ | 0.00 | 9.01 | 0.000 OH |
| H20- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 100.80 | | 6.091 O |
| LESS O=F | 1.22 | | |
| TOTAL | 99.58 | | |

A B O (O OH F) . 0.00 H2O
 1.91 2.0 6.00 0.09 0.00 0.80

(O + OH + F) = 0.89 Vacancies: 0.09 A 0.11 Y
 Dose (alphas/mg) = 0.724E+16 DPA (displacements/atom) = 0.9

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,Ce ,Fe+2,Sb+3,U+6 ,Mn+2,Y ,Bi+3,Th ,Ba ,K
 Mean A valence = 1.56

B = Ta ,Nb ,Ti ,W ,Sn ,Zr ,Fe+3
 Mean B valence = 5.00

| OXIDE | WT % | MOL WT | ATOMS |
|----------|--------|--------|------------|
| WO3 | 0.06 | 231.80 | 0.001 W |
| Ta2O5 | 76.20 | 220.90 | 1.796 Ta |
| Nb2O5 | 5.14 | 132.90 | 0.201 Nb |
| TiO2 | 0.01 | 79.90 | 0.001 Ti |
| ZrO2 | 0.00 | 123.20 | 0.000 Zr |
| SnO2 | 0.02 | 150.70 | 0.001 Sn |
| Fe2O3 | 0.00 | 159.70 | 0.000 Fe+3 |
| ThO2 | 0.10 | 264.00 | 0.002 Th |
| UO2 | 0.00 | 270.00 | 0.000 U+4 |
| UO3 | 0.07 | 286.00 | 0.001 U+6 |
| U3O8 | 0.00 | 842.00 | 0.000 U+8 |
| Y2O3 | 0.06 | 112.90 | 0.003 Y |
| La2O3 | 0.00 | 162.90 | 0.000 La |
| Ce2O3 | 0.16 | 164.10 | 0.005 Ce |
| Pr2O3 | 0.00 | 164.90 | 0.000 Pr |
| Nd2O3 | 0.00 | 168.20 | 0.000 Nd |
| Sm2O3 | 0.00 | 174.40 | 0.000 Sm |
| Sb2O3 | 0.07 | 145.70 | 0.003 Sb+3 |
| Bi2O3 | 0.00 | 233.00 | 0.000 Bi+3 |
| MnO | 0.09 | 70.94 | 0.007 Mn+2 |
| FeO | 0.05 | 71.85 | 0.004 Fe+2 |
| CaO | 10.70 | 56.08 | 0.993 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.02 | 153.30 | 0.001 Ba |
| PbO | 0.01 | 223.20 | 0.000 Pb+2 |
| Na2O | 5.01 | 30.99 | 0.842 Na |
| K2O | 0.00 | 47.10 | 0.000 K |
| Cs2O | 0.00 | 140.90 | 0.000 Cs |
| F | 2.74 | 19.00 | 0.751 F |
| H2O+ | 0.00 | 9.01 | 0.000 OH |
| H2O- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 100.51 | | 6.073 O |
| LESS O=F | 1.15 | | |
| TOTAL | 99.36 | | |

A B O (O OH F) . 0.00 H2O
 1.86 2.0 6.00 0.07 0.00 0.75

(O + OH + F) = 0.82 Vacancies: 0.14 A 0.18 Y
 Dose (alphas/mg) = 0.299E+16 DPA (displacements/atom) = 0.4

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,Mn+2,Ce ,Fe+2,Y ,Sb+3,Th ,U+6 ,Ba ,Pb+2,K
 Mean A valence = 1.56

B = Ta ,Nb ,W ,Sn ,Ti ,Zr ,Fe+3
 Mean B valence = 5.00

P10.1

| OXIDE | WT % | MOL WT | ATOMS |
|----------|--------|--------|------------|
| W03 | 0.23 | 231.80 | 0.005 W |
| Ta205 | 75.70 | 220.90 | 1.785 Ta |
| Nb205 | 5.32 | 132.90 | 0.209 Nb |
| Ti02 | 0.02 | 79.90 | 0.001 Ti |
| Zr02 | 0.00 | 123.20 | 0.000 Zr |
| Sn02 | 0.00 | 150.70 | 0.000 Sn |
| Fe203 | 0.00 | 159.70 | 0.000 Fe+3 |
| Th02 | 0.02 | 264.00 | 0.000 Th |
| U02 | 0.00 | 270.00 | 0.000 U+4 |
| U03 | 0.14 | 286.00 | 0.003 U+6 |
| U308 | 0.00 | 842.00 | 0.000 U+8 |
| Y203 | 0.06 | 112.90 | 0.003 Y |
| La203 | 0.00 | 162.90 | 0.000 La |
| Ce203 | 0.12 | 164.10 | 0.004 Ce |
| Pr203 | 0.00 | 164.90 | 0.000 Pr |
| Nd203 | 0.00 | 168.20 | 0.000 Nd |
| Sm203 | 0.00 | 174.40 | 0.000 Sm |
| Sb203 | 0.09 | 145.70 | 0.003 Sb+3 |
| Bi203 | 0.00 | 233.00 | 0.000 Bi+3 |
| MnO | 0.03 | 70.94 | 0.002 Mn+2 |
| FeO | 0.00 | 71.85 | 0.000 Fe+2 |
| CaO | 10.80 | 56.08 | 1.003 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.00 | 153.30 | 0.000 Ba |
| PbO | 0.02 | 223.20 | 0.000 Pb+2 |
| Na2O | 5.10 | 30.99 | 0.857 Na |
| K2O | 0.00 | 47.10 | 0.000 K |
| Cs2O | 0.00 | 140.90 | 0.000 Cs |
| F | 2.89 | 19.00 | 0.792 F |
| H2O+ | 0.00 | 9.01 | 0.000 OH |
| H2O- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 100.54 | | 6.063 O |
| LESS O=F | 1.21 | | |
| TOTAL | 99.32 | | |

A B O (O OH F) . 0.00 H2O
1.88 2.0 6.00 0.06 0.00 0.79

(O + OH + F) = 0.86 Vacancies: 0.12 A 0.14 Y
Dose (alphas/mg) = 0.555E+16 DPA (displacements/atom) = 0.7

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,Ce ,Sb+3,Y ,U+6 ,Mn+2,Pb+2,Th ,K ,Sm ,U+8
Mean A valence = 1.55

B = Ta ,Nb ,W ,Ti ,Sn ,Zr ,Fe+3
Mean B valence = 5.00

| OXIDE | WT % | MOL WT | ATOMS |
|----------|--------|--------|------------|
| W03 | 0.12 | 231.80 | 0.003 W |
| Ta205 | 75.10 | 220.90 | 1.778 Ta |
| Nb205 | 5.55 | 132.90 | 0.218 Nb |
| Ti02 | 0.01 | 79.90 | 0.001 Ti |
| Zr02 | 0.00 | 123.20 | 0.000 Zr |
| Sn02 | 0.00 | 150.70 | 0.000 Sn |
| Fe203 | 0.00 | 159.70 | 0.000 Fe+3 |
| Th02 | 0.05 | 264.00 | 0.001 Th |
| U02 | 0.00 | 270.00 | 0.000 U+4 |
| U03 | 0.12 | 286.00 | 0.002 U+6 |
| U308 | 0.00 | 842.00 | 0.000 U+8 |
| Y203 | 0.02 | 112.90 | 0.001 Y |
| La203 | 0.00 | 162.90 | 0.000 La |
| Ce203 | 0.21 | 164.10 | 0.007 Ce |
| Pr203 | 0.00 | 164.90 | 0.000 Pr |
| Nd203 | 0.00 | 168.20 | 0.000 Nd |
| Sm203 | 0.00 | 174.40 | 0.000 Sm |
| Sb203 | 0.09 | 145.70 | 0.003 Sb+3 |
| Bi203 | 0.00 | 233.00 | 0.000 Bi+3 |
| MnO | 0.02 | 70.94 | 0.001 Mn+2 |
| FeO | 0.05 | 71.85 | 0.004 Fe+2 |
| CaO | 10.90 | 56.08 | 1.017 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.00 | 153.30 | 0.000 Ba |
| PbO | 0.00 | 223.20 | 0.000 Pb+2 |
| Na2O | 5.14 | 30.99 | 0.868 Na |
| K2O | 0.00 | 47.10 | 0.000 K |
| Cs2O | 0.00 | 140.90 | 0.000 Cs |
| F | 3.04 | 19.00 | 0.837 F |
| H2O+ | 0.00 | 9.01 | 0.000 OH |
| H2O- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 100.42 | | 6.063 O |
| LESS O=F | 1.28 | | |
| TOTAL | 99.14 | | |

A B O (O OH F) . 0.00 H2O
 1.90 2.0 6.00 0.06 0.00 0.84

(O + OH + F) = 0.90 Vacancies: 0.10 A 0.10 Y
 Dose (alphas/mg) = 0.471E+16 DPA (displacements/atom) = 0.6

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,Ce ,Fe+2,Sb+3,U+6 ,Mn+2,Th ,Y ,K ,Sm ,Nd
 Mean A valence = 1.56

B = Ta ,Nb ,W ,Ti ,Sn ,Zr ,Fe+3
 Mean B valence = 5.00

| OXIDE | WT % | MOL WT | ATOMS |
|----------|--------|--------|------------|
| W03 | 0.00 | 231.80 | 0.000 W |
| Ta205 | 69.20 | 220.90 | 1.763 Ta |
| Nb205 | 4.81 | 132.90 | 0.204 Nb |
| Ti02 | 0.47 | 79.90 | 0.033 Ti |
| Zr02 | 0.00 | 123.20 | 0.000 Zr |
| Sn02 | 0.00 | 150.70 | 0.000 Sn |
| Fe203 | 0.00 | 159.70 | 0.000 Fe+3 |
| Th02 | 0.00 | 264.00 | 0.000 Th |
| U02 | 0.00 | 270.00 | 0.000 U+4 |
| U03 | 8.77 | 286.00 | 0.173 U+6 |
| U308 | 0.00 | 842.00 | 0.000 U+8 |
| Y203 | 0.00 | 112.90 | 0.000 Y |
| La203 | 0.00 | 162.90 | 0.000 La |
| Ce203 | 0.32 | 164.10 | 0.011 Ce |
| Pr203 | 0.00 | 164.90 | 0.000 Pr |
| Nd203 | 0.00 | 168.20 | 0.000 Nd |
| Sm203 | 0.00 | 174.40 | 0.000 Sm |
| Sb203 | 0.10 | 145.70 | 0.004 Sb+3 |
| Bi203 | 0.11 | 233.00 | 0.003 Bi+3 |
| MnO | 0.43 | 70.94 | 0.034 Mn+2 |
| FeO | 0.64 | 71.85 | 0.050 Fe+2 |
| CaO | 10.70 | 56.08 | 1.074 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.00 | 153.30 | 0.000 Ba |
| PbO | 1.84 | 223.20 | 0.046 Pb+2 |
| Na2O | 1.99 | 30.99 | 0.361 Na |
| K2O | 0.00 | 47.10 | 0.000 K |
| Cs2O | 0.05 | 140.90 | 0.002 Cs |
| F | 1.00 | 19.00 | 0.296 F |
| H2O+ | 0.00 | 9.01 | 0.000 OH |
| H2O- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 100.43 | | 6.766 O |
| LESS O=F | 0.42 | | |
| TOTAL | 100.01 | | |

A B O (O OH F) . 0.00 H2O
 1.76 2.0 6.00 0.77 0.00 0.30

(O + OH + F) = 1.06 Vacancies: 0.24 A -.06 Y
 Dose (alphas/mg) = 0.351E+18 DPA (displacements/atom) = 49.0

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,U+6 ,Fe+2,Pb+2,Mn+2,Ce ,Sb+3,Bi+3,K ,Sm ,Pr
 Mean A valence = 2.20

B = Ta ,Nb ,Ti ,Sn ,W ,Zr ,Fe+3
 Mean B valence = 4.98

| OXIDE | WT % | MOL WT | ATOMS |
|----------|--------|--------|------------|
| W03 | 0.03 | 231.80 | 0.001 W |
| Ta205 | 69.50 | 220.90 | 1.767 Ta |
| Nb205 | 4.76 | 132.90 | 0.201 Nb |
| Ti02 | 0.43 | 79.90 | 0.030 Ti |
| Zr02 | 0.00 | 123.20 | 0.000 Zr |
| Sn02 | 0.02 | 150.70 | 0.001 Sn |
| Fe203 | 0.00 | 159.70 | 0.000 Fe+3 |
| Th02 | 0.00 | 264.00 | 0.000 Th |
| U02 | 0.00 | 270.00 | 0.000 U+4 |
| U03 | 9.08 | 286.00 | 0.178 U+6 |
| U308 | 0.00 | 842.00 | 0.000 U+8 |
| Y203 | 0.00 | 112.90 | 0.000 Y |
| La203 | 0.00 | 162.90 | 0.000 La |
| Ce203 | 0.10 | 164.10 | 0.003 Ce |
| Pr203 | 0.00 | 164.90 | 0.000 Pr |
| Nd203 | 0.00 | 168.20 | 0.000 Nd |
| Sm203 | 0.00 | 174.40 | 0.000 Sm |
| Sb203 | 0.02 | 145.70 | 0.001 Sb+3 |
| Bi203 | 0.22 | 233.00 | 0.005 Bi+3 |
| MnO | 0.68 | 70.94 | 0.054 Mn+2 |
| FeO | 0.17 | 71.85 | 0.013 Fe+2 |
| CaO | 10.40 | 56.08 | 1.042 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.00 | 153.30 | 0.000 Ba |
| PbO | 1.46 | 223.20 | 0.037 Pb+2 |
| Na2O | 2.93 | 30.99 | 0.531 Na |
| K2O | 0.00 | 47.10 | 0.000 K |
| Cs2O | 0.02 | 140.90 | 0.001 Cs |
| F | 1.81 | 19.00 | 0.535 F |
| H2O+ | 0.00 | 9.01 | 0.000 OH |
| H2O- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 101.63 | | 6.678 O |
| LESS O=F | 0.76 | | |
| TOTAL | 100.87 | | |

A B O (O OH F) . 0.00 H2O
 1.87 2.0 6.00 0.68 0.00 0.54

(O + OH + F) = 1.21 Vacancies: 0.13 A -.21 Y
 Dose (alphas/mg) = 0.361E+18 DPA (displacements/atom) = 48.9

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,U+6 ,Mn+2,Pb+2,Fe+2,Bi+3,Ce ,Sb+3,K ,Sm ,Nd

Mean A valence = 2.10

B = Ta ,Nb ,Ti ,Sn ,W ,Zr ,Fe+3

Mean B valence = 4.98

| OXIDE | WT % | MOL WT | ATOMS |
|----------|-------|--------|------------|
| W03 | 0.00 | 231.80 | 0.000 W |
| Ta205 | 67.60 | 220.90 | 1.774 Ta |
| Nb205 | 4.56 | 132.90 | 0.199 Nb |
| Ti02 | 0.37 | 79.90 | 0.027 Ti |
| Zr02 | 0.00 | 123.20 | 0.000 Zr |
| Sn02 | 0.02 | 150.70 | 0.001 Sn |
| Fe203 | 0.00 | 159.70 | 0.000 Fe+3 |
| Th02 | 0.01 | 264.00 | 0.000 Th |
| U02 | 0.00 | 270.00 | 0.000 U+4 |
| U03 | 8.79 | 286.00 | 0.178 U+6 |
| U308 | 0.00 | 842.00 | 0.000 U+8 |
| Y203 | 0.00 | 112.90 | 0.000 Y |
| La203 | 0.00 | 162.90 | 0.000 La |
| Ce203 | 0.20 | 164.10 | 0.007 Ce |
| Pr203 | 0.00 | 164.90 | 0.000 Pr |
| Nd203 | 0.00 | 168.20 | 0.000 Nd |
| Sm203 | 0.00 | 174.40 | 0.000 Sm |
| Sb203 | 0.10 | 145.70 | 0.004 Sb+3 |
| Bi203 | 0.13 | 233.00 | 0.003 Bi+3 |
| MnO | 0.91 | 70.94 | 0.074 Mn+2 |
| FeO | 0.81 | 71.85 | 0.065 Fe+2 |
| CaO | 11.80 | 56.08 | 1.219 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.00 | 153.30 | 0.000 Ba |
| PbO | 1.19 | 223.20 | 0.031 Pb+2 |
| Na2O | 1.89 | 30.99 | 0.353 Na |
| K2O | 0.00 | 47.10 | 0.000 K |
| Cs2O | 0.00 | 140.90 | 0.000 Cs |
| F | 1.49 | 19.00 | 0.454 F |
| H2O+ | 0.00 | 9.01 | 0.000 OH |
| H2O- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 99.87 | | 6.882 O |
| LESS O=F | 0.63 | | |
| TOTAL | 99.25 | | |

A B O (O OH F) . 0.00 H2O
 1.94 2.0 6.00 0.88 0.00 0.45

(O + OH + F) = 1.34 Vacancies: 0.06 A -.34 Y
 Dose (alphas/mg) = 0.355E+18 DPA (displacements/atom) = 48.9

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,U+6 ,Mn+2,Fe+2,Pb+2,Ce ,Sb+3,Bi+3,Th ,K ,Pr
 Mean A valence = 2.19

B = Ta ,Nb ,Ti ,Sn ,W ,Zr ,Fe+3
 Mean B valence = 4.99

| OXIDE | WT % | MOL WT | ATOMS |
|----------|--------|--------|------------|
| W03 | 0.22 | 231.80 | 0.005 W |
| Ta205 | 68.10 | 220.90 | 1.761 Ta |
| Nb205 | 4.63 | 132.90 | 0.199 Nb |
| Ti02 | 0.49 | 79.90 | 0.035 Ti |
| Zr02 | 0.00 | 123.20 | 0.000 Zr |
| Sn02 | 0.00 | 150.70 | 0.000 Sn |
| Fe203 | 0.00 | 159.70 | 0.000 Fe+3 |
| Th02 | 0.00 | 264.00 | 0.000 Th |
| U02 | 0.00 | 270.00 | 0.000 U+4 |
| U03 | 8.76 | 286.00 | 0.175 U+6 |
| U308 | 0.00 | 842.00 | 0.000 U+8 |
| Y203 | 0.00 | 112.90 | 0.000 Y |
| La203 | 0.00 | 162.90 | 0.000 La |
| Ce203 | 0.13 | 164.10 | 0.005 Ce |
| Pr203 | 0.00 | 164.90 | 0.000 Pr |
| Nd203 | 0.00 | 168.20 | 0.000 Nd |
| Sm203 | 0.00 | 174.40 | 0.000 Sm |
| Sb203 | 0.08 | 145.70 | 0.003 Sb+3 |
| Bi203 | 0.00 | 233.00 | 0.000 Bi+3 |
| MnO | 1.08 | 70.94 | 0.087 Mn+2 |
| FeO | 0.75 | 71.85 | 0.060 Fe+2 |
| CaO | 12.10 | 56.08 | 1.232 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.00 | 153.30 | 0.000 Ba |
| PbO | 1.22 | 223.20 | 0.031 Pb+2 |
| Na2O | 2.17 | 30.99 | 0.400 Na |
| K2O | 0.00 | 47.10 | 0.000 K |
| Cs2O | 0.03 | 140.90 | 0.001 Cs |
| F | 1.50 | 19.00 | 0.451 F |
| H2O+ | 0.00 | 9.01 | 0.000 OH |
| H2O- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 101.26 | | 6.907 O |
| LESS O=F | 0.63 | | |
| TOTAL | 100.63 | | |

A B O (O OH F) . 0.00 H2O
 1.99 2.0 6.00 0.91 0.00 0.45

(O + OH + F) = 1.36 Vacancies: 0.01 A -.36 Y
 Dose (alphas/mg) = 0.349E+18 DPA (displacements/atom) = 47.8

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,U+6 ,Mn+2,Fe+2,Pb+2,Ce ,Sb+3,K ,Nd ,Sm ,Pr
 Mean A valence = 2.15

B = Ta ,Nb ,Ti ,W ,Sn ,Zr ,Fe+3
 Mean B valence = 4.99

| OXIDE | WT % | MOL WT | ATOMS |
|----------|--------|--------|------------|
| WO3 | 0.05 | 231.80 | 0.001 W |
| Ta2O5 | 70.00 | 220.90 | 1.791 Ta |
| Nb2O5 | 4.19 | 132.90 | 0.178 Nb |
| TiO2 | 0.40 | 79.90 | 0.028 Ti |
| ZrO2 | 0.00 | 123.20 | 0.000 Zr |
| SnO2 | 0.02 | 150.70 | 0.001 Sn |
| Fe2O3 | 0.00 | 159.70 | 0.000 Fe+3 |
| ThO2 | 0.00 | 264.00 | 0.000 Th |
| UO2 | 0.00 | 270.00 | 0.000 U+4 |
| UO3 | 8.57 | 286.00 | 0.169 U+6 |
| U3O8 | 0.00 | 842.00 | 0.000 U+8 |
| Y2O3 | 0.00 | 112.90 | 0.000 Y |
| La2O3 | 0.00 | 162.90 | 0.000 La |
| Ce2O3 | 0.14 | 164.10 | 0.005 Ce |
| Pr2O3 | 0.00 | 164.90 | 0.000 Pr |
| Nd2O3 | 0.00 | 168.20 | 0.000 Nd |
| Sm2O3 | 0.00 | 174.40 | 0.000 Sm |
| Sb2O3 | 0.03 | 145.70 | 0.001 Sb+3 |
| Bi2O3 | 0.00 | 233.00 | 0.000 Bi+3 |
| MnO | 0.90 | 70.94 | 0.072 Mn+2 |
| FeO | 0.50 | 71.85 | 0.039 Fe+2 |
| CaO | 11.30 | 56.08 | 1.139 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.00 | 153.30 | 0.000 Ba |
| PbO | 1.62 | 223.20 | 0.041 Pb+2 |
| Na2O | 2.77 | 30.99 | 0.505 Na |
| K2O | 0.00 | 47.10 | 0.000 K |
| Cs2O | 0.04 | 140.90 | 0.002 Cs |
| F | 1.72 | 19.00 | 0.512 F |
| H2O+ | 0.00 | 9.01 | 0.000 OH |
| H2O- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 102.25 | | 6.792 O |
| LESS O=F | 0.72 | | |
| TOTAL | 101.53 | | |

A B O (O OH F) . 0.00 H2O
 1.97 2.0 6.00 0.79 0.00 0.51

(O + OH + F) = 1.30 Vacancies: 0.03 A -.30 Y
 Dose (alphas/mg) = 0.338E+18 DPA (displacements/atom) = 46.1

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,U+6 ,Mn+2,Pb+2,Fe+2,Ce ,Sb+3,K ,Nd ,Sm ,Pr
 Mean A valence = 2.09

B = Ta ,Nb ,Ti ,W ,Sn ,Zr ,Fe+3
 Mean B valence = 4.99

| OXIDE | WT % | MOL WT | ATOMS |
|----------|--------|--------|------------|
| WO3 | 0.19 | 231.80 | 0.004 W |
| Ta2O5 | 71.50 | 220.90 | 1.774 Ta |
| Nb2O5 | 4.70 | 132.90 | 0.194 Nb |
| TiO2 | 0.41 | 79.90 | 0.028 Ti |
| ZrO2 | 0.00 | 123.20 | 0.000 Zr |
| SnO2 | 0.00 | 150.70 | 0.000 Sn |
| Fe2O3 | 0.00 | 159.70 | 0.000 Fe+3 |
| ThO2 | 0.00 | 264.00 | 0.000 Th |
| UO2 | 0.00 | 270.00 | 0.000 U+4 |
| UO3 | 8.61 | 286.00 | 0.165 U+6 |
| U3O8 | 0.00 | 842.00 | 0.000 U+8 |
| Y2O3 | 0.00 | 112.90 | 0.000 Y |
| La2O3 | 0.00 | 162.90 | 0.000 La |
| Ce2O3 | 0.14 | 164.10 | 0.005 Ce |
| Pr2O3 | 0.00 | 164.90 | 0.000 Pr |
| Nd2O3 | 0.00 | 168.20 | 0.000 Nd |
| Sm2O3 | 0.00 | 174.40 | 0.000 Sm |
| Sb2O3 | 0.09 | 145.70 | 0.003 Sb+3 |
| Bi2O3 | 0.00 | 233.00 | 0.000 Bi+3 |
| MnO | 0.01 | 70.94 | 0.001 Mn+2 |
| FeO | 0.03 | 71.85 | 0.002 Fe+2 |
| CaO | 8.97 | 56.08 | 0.876 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.00 | 153.30 | 0.000 Ba |
| PbO | 1.71 | 223.20 | 0.042 Pb+2 |
| Na2O | 3.81 | 30.99 | 0.674 Na |
| K2O | 0.00 | 47.10 | 0.000 K |
| Cs2O | 0.01 | 140.90 | 0.000 Cs |
| F | 1.53 | 19.00 | 0.441 F |
| H2O+ | 0.00 | 9.01 | 0.000 OH |
| H2O- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 101.71 | | 6.533 O |
| LESS O=F | 0.64 | | |
| TOTAL | 101.07 | | |

A B O (O OH F) . 0.00 H2O
 1.77 2.0 6.00 0.53 0.00 0.44

(O + OH + F) = 0.97 Vacancies: 0.23 A 0.03 Y
 Dose (alphas/mg) = 0.341E+18 DPA (displacements/atom) = 46.1

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,U+6 ,Pb+2,Ce ,Sb+3,Fe+2,Mn+2,K ,Nd ,Sm ,La
 Mean A valence = 2.00

B = Ta ,Nb ,Ti ,W ,Sn ,Zr ,Fe+3
 Mean B valence = 4.99

| OXIDE | WT % | MOL WT | ATOMS |
|----------|--------|--------|------------|
| WO3 | 0.01 | 231.80 | 0.000 W |
| Ta2O5 | 70.30 | 220.90 | 1.770 Ta |
| Nb2O5 | 4.81 | 132.90 | 0.201 Nb |
| TiO2 | 0.41 | 79.90 | 0.029 Ti |
| ZrO2 | 0.00 | 123.20 | 0.000 Zr |
| SnO2 | 0.00 | 150.70 | 0.000 Sn |
| Fe2O3 | 0.00 | 159.70 | 0.000 Fe+3 |
| ThO2 | 0.00 | 264.00 | 0.000 Th |
| UO2 | 0.00 | 270.00 | 0.000 U+4 |
| UO3 | 9.23 | 286.00 | 0.179 U+6 |
| U3O8 | 0.00 | 842.00 | 0.000 U+8 |
| Y2O3 | 0.00 | 112.90 | 0.000 Y |
| La2O3 | 0.00 | 162.90 | 0.000 La |
| Ce2O3 | 0.11 | 164.10 | 0.004 Ce |
| Pr2O3 | 0.00 | 164.90 | 0.000 Pr |
| Nd2O3 | 0.00 | 168.20 | 0.000 Nd |
| Sm2O3 | 0.00 | 174.40 | 0.000 Sm |
| Sb2O3 | 0.01 | 145.70 | 0.000 Sb+3 |
| Bi2O3 | 0.24 | 233.00 | 0.006 Bi+3 |
| MnO | 0.05 | 70.94 | 0.004 Mn+2 |
| FeO | 0.09 | 71.85 | 0.007 Fe+2 |
| CaO | 8.25 | 56.08 | 0.818 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.00 | 153.30 | 0.000 Ba |
| PbO | 2.19 | 223.20 | 0.055 Pb+2 |
| Na2O | 3.51 | 30.99 | 0.630 Na |
| K2O | 0.00 | 47.10 | 0.000 K |
| Cs2O | 0.02 | 140.90 | 0.001 Cs |
| F | 1.25 | 19.00 | 0.366 F |
| H2O+ | 0.00 | 9.01 | 0.000 OH |
| H2O- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 100.48 | | 6.555 O |
| LESS O=F | 0.52 | | |
| TOTAL | 99.95 | | |

A B O (O OH F) . 0.00 H2O
 1.70 2.0 6.00 0.55 0.00 0.37

(O + OH + F) = 0.92 Vacancies: 0.30 A 0.08 Y
 Dose (alphas/mg) = 0.370E+18 DPA (displacements/atom) = 50.8

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,U+6 ,Pb+2,Fe+2,Bi+3,Mn+2,Ce ,Sb+3,K ,Sm ,Nd
 Mean A valence = 2.06

B = Ta ,Nb ,Ti ,W ,Sn ,Zr ,Fe+3
 Mean B valence = 4.99

| OXIDE | WT % | MOL WT | ATOMS |
|----------|--------|--------|------------|
| W03 | 0.05 | 231.80 | 0.001 W |
| Ta205 | 70.00 | 220.90 | 1.763 Ta |
| Nb205 | 4.89 | 132.90 | 0.205 Nb |
| Ti02 | 0.42 | 79.90 | 0.029 Ti |
| Zr02 | 0.00 | 123.20 | 0.000 Zr |
| Sn02 | 0.04 | 150.70 | 0.001 Sn |
| Fe203 | 0.00 | 159.70 | 0.000 Fe+3 |
| Th02 | 0.00 | 264.00 | 0.000 Th |
| U02 | 0.00 | 270.00 | 0.000 U+4 |
| U03 | 9.43 | 286.00 | 0.183 U+6 |
| U308 | 0.00 | 842.00 | 0.000 U+8 |
| Y203 | 0.00 | 112.90 | 0.000 Y |
| La203 | 0.00 | 162.90 | 0.000 La |
| Ce203 | 0.19 | 164.10 | 0.006 Ce |
| Pr203 | 0.00 | 164.90 | 0.000 Pr |
| Nd203 | 0.00 | 168.20 | 0.000 Nd |
| Sm203 | 0.00 | 174.40 | 0.000 Sm |
| Sb203 | 0.06 | 145.70 | 0.002 Sb+3 |
| Bi203 | 0.20 | 233.00 | 0.005 Bi+3 |
| Mn0 | 0.11 | 70.94 | 0.009 Mn+2 |
| Fe0 | 0.05 | 71.85 | 0.004 Fe+2 |
| Ca0 | 9.09 | 56.08 | 0.902 Ca |
| Sr0 | 0.00 | 103.60 | 0.000 Sr |
| Ba0 | 0.00 | 153.30 | 0.000 Ba |
| Pb0 | 1.95 | 223.20 | 0.049 Pb+2 |
| Na20 | 3.29 | 30.99 | 0.591 Na |
| K20 | 0.00 | 47.10 | 0.000 K |
| Cs20 | 0.01 | 140.90 | 0.000 Cs |
| F | 1.22 | 19.00 | 0.357 F |
| H20+ | 0.00 | 9.01 | 0.000 OH |
| H20- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 101.00 | | 6.636 O |
| LESS O=F | 0.51 | | |
| TOTAL | 100.49 | | |

A B O (O OH F) . 0.00 H2O
 1.75 2.0 6.00 0.64 0.00 0.36

(O + OH + F) = 0.99 Vacancies: 0.25 A 0.01 Y
 Dose (alphas/mg) = 0.376E+18 DPA (displacements/atom) = 51.8

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,U+6 ,Pb+2,Mn+2,Ce ,Bi+3,Fe+2,Sb+3,K ,Sm ,Nd
 Mean A valence = 2.09

B = Ta ,Nb ,Ti ,Sn ,W ,Zr ,Fe+3
 Mean B valence = 4.99

| OXIDE | WT % | MOL WT | ATOMS |
|----------|--------|--------|------------|
| WO3 | 0.10 | 231.80 | 0.002 W |
| Ta2O5 | 70.10 | 220.90 | 1.773 Ta |
| Nb2O5 | 4.71 | 132.90 | 0.198 Nb |
| TiO2 | 0.37 | 79.90 | 0.026 Ti |
| ZrO2 | 0.00 | 123.20 | 0.000 Zr |
| SnO2 | 0.02 | 150.70 | 0.001 Sn |
| Fe2O3 | 0.00 | 159.70 | 0.000 Fe+3 |
| ThO2 | 0.03 | 264.00 | 0.001 Th |
| UO2 | 0.00 | 270.00 | 0.000 U+4 |
| UO3 | 9.05 | 286.00 | 0.177 U+6 |
| U3O8 | 0.00 | 842.00 | 0.000 U+8 |
| Y2O3 | 0.00 | 112.90 | 0.000 Y |
| La2O3 | 0.00 | 162.90 | 0.000 La |
| Ce2O3 | 0.19 | 164.10 | 0.006 Ce |
| Pr2O3 | 0.00 | 164.90 | 0.000 Pr |
| Nd2O3 | 0.00 | 168.20 | 0.000 Nd |
| Sm2O3 | 0.00 | 174.40 | 0.000 Sm |
| Sb2O3 | 0.04 | 145.70 | 0.002 Sb+3 |
| Bi2O3 | 0.19 | 233.00 | 0.005 Bi+3 |
| MnO | 0.00 | 70.94 | 0.000 Mn+2 |
| FeO | 0.01 | 71.85 | 0.001 Fe+2 |
| CaO | 9.11 | 56.08 | 0.908 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.00 | 153.30 | 0.000 Ba |
| PbO | 1.73 | 223.20 | 0.043 Pb+2 |
| Na2O | 3.35 | 30.99 | 0.604 Na |
| K2O | 0.00 | 47.10 | 0.000 K |
| Cs2O | 0.05 | 140.90 | 0.002 Cs |
| F | 1.39 | 19.00 | 0.409 F |
| H2O+ | 0.00 | 9.01 | 0.000 OH |
| H2O- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 100.44 | | 6.588 O |
| LESS O=F | 0.58 | | |
| TOTAL | 99.85 | | |

A B O (O OH F) . 0.00 H2O
 1.75 2.0 6.00 0.59 0.00 0.41

(O + OH + F) = 1.00 Vacancies: 0.25 A 0.00 Y
 Dose (alphas/mg) = 0.363E+18 DPA (displacements/atom) = 49.7

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,U+6 ,Pb+2,Ce ,Bi+3,Sb+3,Fe+2,Th ,K ,Sm ,Y
 Mean A valence = 2.07

B = Ta ,Nb ,Ti ,W ,Sn ,Zr ,Fe+3
 Mean B valence = 4.99

| OXIDE | WT % | MOL WT | ATOMS |
|----------|--------|--------|------------|
| WO3 | 0.11 | 231.80 | 0.003 W |
| Ta2O5 | 70.00 | 220.90 | 1.779 Ta |
| Nb2O5 | 4.53 | 132.90 | 0.191 Nb |
| TiO2 | 0.39 | 79.90 | 0.027 Ti |
| ZrO2 | 0.00 | 123.20 | 0.000 Zr |
| SnO2 | 0.00 | 150.70 | 0.000 Sn |
| Fe2O3 | 0.00 | 159.70 | 0.000 Fe+3 |
| ThO2 | 0.03 | 264.00 | 0.001 Th |
| UO2 | 0.00 | 270.00 | 0.000 U+4 |
| UO3 | 8.91 | 286.00 | 0.175 U+6 |
| U3O8 | 0.00 | 842.00 | 0.000 U+8 |
| Y2O3 | 0.00 | 112.90 | 0.000 Y |
| La2O3 | 0.00 | 162.90 | 0.000 La |
| Ce2O3 | 0.11 | 164.10 | 0.004 Ce |
| Pr2O3 | 0.00 | 164.90 | 0.000 Pr |
| Nd2O3 | 0.00 | 168.20 | 0.000 Nd |
| Sm2O3 | 0.00 | 174.40 | 0.000 Sm |
| Sb2O3 | 0.08 | 145.70 | 0.003 Sb+3 |
| Bi2O3 | 0.31 | 233.00 | 0.007 Bi+3 |
| MnO | 0.06 | 70.94 | 0.005 Mn+2 |
| FeO | 0.00 | 71.85 | 0.000 Fe+2 |
| CaO | 8.52 | 56.08 | 0.853 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.00 | 153.30 | 0.000 Ba |
| PbO | 2.16 | 223.20 | 0.054 Pb+2 |
| Na2O | 3.85 | 30.99 | 0.697 Na |
| K2O | 0.00 | 47.10 | 0.000 K |
| Cs2O | 0.03 | 140.90 | 0.001 Cs |
| F | 1.38 | 19.00 | 0.408 F |
| H2O+ | 0.00 | 9.01 | 0.000 OH |
| H2O- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 100.47 | | 6.592 O |
| LESS O=F | 0.58 | | |
| TOTAL | 99.89 | | |

A B O (O OH F) . 0.00 H2O
 1.80 2.0 6.00 0.59 0.00 0.41

(O + OH + F) = 1.00 Vacancies: 0.20 A 0.00 Y
 Dose (alphas/mg) = 0.357E+18 DPA (displacements/atom) = 48.9

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,U+6 ,Pb+2,Bi+3,Mn+2,Ce ,Sb+3,Th ,K ,Sm ,Pr
 Mean A valence = 2.01

B = Ta ,Nb ,Ti ,W ,Sn ,Zr ,Fe+3
 Mean B valence = 4.99

| OXIDE | WT % | MOL WT | ATOMS |
|----------|-------|--------|------------|
| WO3 | 0.18 | 231.80 | 0.004 W |
| Ta2O5 | 64.80 | 220.90 | 1.517 Ta |
| Nb2O5 | 11.30 | 132.90 | 0.440 Nb |
| TiO2 | 0.61 | 79.90 | 0.039 Ti |
| ZrO2 | 0.00 | 123.20 | 0.000 Zr |
| SnO2 | 0.00 | 150.70 | 0.000 Sn |
| Fe2O3 | 0.00 | 159.70 | 0.000 Fe+3 |
| ThO2 | 0.19 | 264.00 | 0.004 Th |
| UO2 | 0.00 | 270.00 | 0.000 U+4 |
| UO3 | 3.10 | 286.00 | 0.056 U+6 |
| U3O8 | 0.00 | 842.00 | 0.000 U+8 |
| Y2O3 | 0.06 | 112.90 | 0.003 Y |
| La2O3 | 0.00 | 162.90 | 0.000 La |
| Ce2O3 | 0.22 | 164.10 | 0.007 Ce |
| Pr2O3 | 0.00 | 164.90 | 0.000 Pr |
| Nd2O3 | 0.00 | 168.20 | 0.000 Nd |
| Sm2O3 | 0.00 | 174.40 | 0.000 Sm |
| Sb2O3 | 0.18 | 145.70 | 0.006 Sb+3 |
| Bi2O3 | 0.03 | 233.00 | 0.001 Bi+3 |
| MnO | 0.31 | 70.94 | 0.023 Mn+2 |
| FeO | 0.01 | 71.85 | 0.001 Fe+2 |
| CaO | 11.60 | 56.08 | 1.070 Ca |
| SrO | 0.00 | 103.60 | 0.000 Sr |
| BaO | 0.00 | 153.30 | 0.000 Ba |
| PbO | 0.12 | 223.20 | 0.003 Pb+2 |
| Na2O | 4.06 | 30.99 | 0.677 Na |
| K2O | 0.00 | 47.10 | 0.000 K |
| Cs2O | 0.00 | 140.90 | 0.000 Cs |
| F | 2.66 | 19.00 | 0.724 F |
| H2O+ | 0.00 | 9.01 | 0.000 OH |
| H2O- | 0.00 | 18.02 | 0.000 H2O |
| TOTAL | 99.43 | | 6.256 O |
| LESS O=F | 1.12 | | |
| TOTAL | 98.32 | | |

A B O (O OH F) . 0.00 H2O
 1.85 2.0 6.00 0.26 0.00 0.72

(O + OH + F) = 0.98 Vacancies: 0.15 A 0.02 Y
 Dose (alphas/mg) = 0.126E+18 DPA (displacements/atom) = 15.1

microlite Age = 0.130E+10 years

Cation abundances (decreasing order):

A = Ca ,Na ,U+6 ,Mn+2,Ce ,Sb+3,Th ,Pb+2,Y ,Fe+2,Bi+3,K
 Mean A valence = 1.77

B = Ta ,Nb ,Ti ,W ,Sn ,Zr ,Fe+3
 Mean B valence = 4.98