

Electron Microprobe Data

Ruff ID: **R050182**

Mineral: **Diaoyudaoite**

Locality: Port Elizabeth, Essex County, New Jersey, USA [synthetic?]

Weight Percents

| Analysis | #1 | #2 | #6 | #7 | #8 | #9 | #12 | #19 | Average | StDev |
|--------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|---------|-------|
| Na ₂ O | 5.95 | 6.36 | 6.54 | 6.50 | 6.28 | 6.09 | 6.73 | 6.20 | 6.33 | 0.24 |
| CaO | 0.58 | 0.56 | 0.53 | 0.54 | 0.51 | 0.55 | 0.51 | 0.48 | 0.53 | 0.03 |
| Al ₂ O ₃ | 92.68 | 92.64 | 92.46 | 92.40 | 92.78 | 92.53 | 92.42 | 92.39 | 92.54 | 0.14 |
| Totals | 99.21 | 99.55 | 99.53 | 99.44 | 99.57 | 99.16 | 99.67 | 99.07 | 99.40 | 0.21 |

Cation numbers normalized to 17 Oxygens

| | | | | | | | | | ACN | StDev | CNISF* |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| Na | 1.15 | 1.23 | 1.27 | 1.26 | 1.21 | 1.18 | 1.30 | 1.20 | 1.23 | 0.05 | 1.221 |
| Ca | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.06 | 0.05 | 0.06 | 0.00 | 0.060 |
| Al | 10.91 | 10.88 | 10.87 | 10.88 | 10.89 | 10.90 | 10.86 | 10.90 | 10.89 | 0.02 | 0.990 |
| Totals | 12.12 | 12.17 | 12.20 | 12.19 | 12.16 | 12.14 | 12.22 | 12.15 | 12.17 | 0.03 | |

Ideal Chemistry: NaAl₁₁O₁₇

Calculated Chemistry: (Na_{1.22}Ca_{0.06})(Al_{0.99}?_{0.01})₁₁O₁₇

Microprobe Calibration Data

Instrument: Cameca SX50
 Sample Voltage: 15 kV
 Acceleration Current: 20 nA
 Beam Size: Spot
 Date of Analysis: 06/03/2006

| Xtal | El | Line | Pk(s) | Bkg(s) | Bkg(+) | Bkg(-) | Standards |
|------|----|------|-------|--------|--------|--------|-----------|
| TAP | Na | Ka | 20 | 10 | 400 | -600 | albite-Cr |
| TAP | Al | Ka | 20 | 10 | 600 | -600 | spinel |
| PET | Ca | Ka | 20 | 10 | 600 | -600 | diopside |

ACN: Average Number of Cations

CNISF*: Cation Numbers In Structural Formulae, charge balanced

StDev: Standard Deviation