# PRELIMINARY STUDY OF EUCLASE FROM RN, BRAZIL

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Euclase is a nesosilicate with general formula $BeAlSiO_4(OH)$. It crystallizes in monoclinic system, space space group $P2_1/a$. Investigated crystals were collected in two distinct pegmatite bodies near the city of Equador, RN, Brazil: Jacu and Mina do Santino pegmatites.

XRD patterns of natural samples and samples heated at 1025°C were analyzed using X'Pert High Score programme (PANALYTICAL, 2004). All crystals are confirmed as single phase euclase with small differences in unit cell parameters. Unit cell parameters were calculated using Unit cell programme (HOLLAND & REDFERN, 1997). For natural sample from Jacu pegmatite (sample: 2018) they are: $a$ = 4.7814(2) Å, $b$ = 14.3355(7) Å, $c$ = 4.6348(2) Å and β = 100.331(5)° and for natural sample from Mina do Santina pegmatite (sample: 1474): $a$ = 4.7842(3) Å, $b$ = 14.3391(6) Å, $c$ = 4.6356(2) Å and β = 100.311(5)°. High accuracy of unit cell parameters is due to pure euclase phase with no inclusions which is observed by very sharp lines in XRD pattern. Heating of euclase samples at 1025°C for 3 h yields break down of euclase structure to several products: coesite ($SiO_2$), phenakite ($Be_2SiO_4$), mullite ($Al_{4+2x}Si_{2-2x}O_{10-x}$) and beryllium aluminium silicate ($2BeO \cdot 3.67Al_2O_3 \cdot 6SiO_2$, JCPDS card 18-204, also reported in literature: GRAZIANI & GUIDI, 1980).

Crystals of euclase were measured using two-circle goniometer. They are well developed with following forms: {100}, {120}, {010}, {111}, {011}, {021}, {031}, $\{\bar{1}31\}$, $\{\bar{2}21\}$ and $\{\bar{6}31\}$. Identification of forms was done using axial ratio a:b:c=0.3237:1:0.3332 after GOLDSCHMIDT (1916).

Wet chemical analysis show common euclase chemistry (GRAZIANI & GUIDI, 1980), but these investigations also showed the unexpected presence of calcium.

Samples from both localities are colourless with colored domains in every crystal. As for samples from the Jacu pegmatite, these domains are greyish blue and in crystals from Mina do Santino pegmatite are greenish blue.

Chemical and optical study as well as a study about the inclusions will be carried out.

**References**

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