

CHEMICAL AND PHYSICAL CHARACTERISTICS OF FLUORITES OF MARIA ISABEL AND FACUNDO DEPOSITS, RIO NEGRO PROVINCE, ARGENTINA.

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Na, K, Mn, Ba and Na/K in inclusions and crystallographic parameters: size and ordering (l_{620}) of unit cell in the fluorites were determined. The cells are extremely variable: a_0 between 5,46224 and 5,46383 Å and l_{620} between 1,83 and 3,8. Some fluorites were heated to 500°C during 1 hour and then cooled quickly. This modified notably the reticular values: a_0 500° between 5,46258 and 5,46396 Å and l_{620} 500° between 2,4 and 3,3. The samples with a_0 greater than 5,4630 Å reduce and the smaller increase. The correlation between Δa_0 ($a_{500}-a$) and Δl_{620} ($l_{500}-l$) is 0,93, with the cells that more increase showing the greater increment of l_{620} ; this correlates with the color of fluorite: with the first yellow, the intermediate green and those of negative Δa and Δl violet. This is interpreted by the thermal destruction of tetragonal symmetry centers originated by the charge compensation by the entry of REE³⁺ that would produce the color. The values are : Na 250-680 ppm, K: 100 - 600 ppm, Mn 0-70 ppm, Ba: 110-380 ppm and Na/K in inclusions: 7-19. The depositional temperatures were between 97 and 298°C. The most important correlations are: a_0/Na : - 0,80 , vs. K: 0,99 ; l_{620} vs. Na/K: 0,91, vs. T° : 0,80; a_{500}/Mn : 0,92; l_{500}/Na : 0,98 ; $\Delta a/\text{Na}$: 0,76, vs. K: 1, vs. Na/K: - 0,95; $\Delta l/\text{K}$: 0,99, vs Na/K: - 0,95 , vs. T° : - 0,82; Na/K : 0,80.