

## ION EXCHANGE PROPERTIES OF GEORGIAN NATURAL ZEOLITES

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**Abstract.** Ion exchange properties of Georgian analcime, phillipsite and scolecite have been studied. The exchange capacity of analcimes is higher for sodium cations, decreasing in the following series:  $\text{Na}^+ > \text{K}^+ > \text{Ag}^+ > \text{NH}_4^+ > \text{Ca}^{+2} > \text{Sr}^{+2} > \text{Li}^+$ , the selectivity sequence for the sodium-enriched form is  $\text{NH}_4^+ > \text{Ag}^+ > \text{Li}^+ > \text{Ca}^{+2} > \text{K}^+ \sim \text{Sr}^{+2}$ . For phillipsite ion exchange isotherms prove the high selectivity towards  $\text{NH}_4^+$  and  $\text{K}^+$  depending on the origin of zeolite:  $\text{K}^+ > \text{NH}_4^+ > \text{Ca}^{+2} > \text{Mg}^{+2}$  for samples with comparatively low content of potassium, and  $\text{NH}_4^+ > \text{K}^+ > \text{Na}^+ > \text{Ca}^{+2} > \text{Mg}^{+2}$  for samples with high K-content. For scolecite selectivity sequences depend on temperature and flow rate, at low temperatures and under static conditions the selectivity sequence is  $\text{Sr}^{+2} > \text{Ba}^{+2} > \text{Rb}^+ > \text{Ca}^{+2} > \text{Cs}^+ > \text{K}^+ > \text{NH}_4^+ > \text{Na}^+ > \text{Mg}^{+2} > \text{Li}^+ > \text{Cd}^{+2} > \text{Cu}^{+2} > \text{Mn}^{+2} > \text{Zn}^{+2} > \text{Co}^{+2} > \text{Ni}^{+2}$ .

**Keywords:** ion exchange, analcime, phillipsite, scolecite.

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