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Aluminosilicates

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Abstract: Just as lead isotopes accumulate due to the decay of uranium contained in minerals that make up rocks and ores, radiogenic argon also accumulates in the mineral as a result of the decay of the potassium-40 isotope. Tests and experiments show that radiogenic argon is relatively well preserved in mica. For this reason, the potassium-argon method is widely used to determine the absolute age of mica.
Key words: Feldspar, mica, potassium, sodium, muscovite, biotite, lepidomelan, syndavlite, phlogopite, leucite.

Silicates make up 75% of the Earth's surface. This class includes more than 33% of total minerals(about 800 minerals).Silicates are divided into silicon and aluminochremnium residual minerals. These include in the field shale and minerals that belong to the class of sluices contain a high percentage of Al and Si oxides[1]. Depending on their chemical properties, Mica can be divided into three groups:1. Potassium-sodium: Muscovite – $KAl_2(OH)_2[AlSi_3O_{10}]$; paragonite – $NaAl_2(OH)_2[AlSi_3O_{10}]$;
2. Magnesium ferruginous: phlogopite – $KMg_3((OH)F)_2[AlSi_3O_{10}]$;
biotite – $K(Mg,Fe)_3(OH,F)_2[AlSi_3O_{10}]$; lepidomelan – $KFe_3(OH)_2[AlSi_3O_{10}]$;
3. Lithic: lepidolite – $KLi_{1,5}Al_{1,5}(OH,F)_2[AlSi_3O_{10}]$; Sinval'dit – $KLi_{1,5}(Al,Fe)_{1,5}(OH,F)_2[AlSi_3O_{10}]$;
Slugs form floor-to-floor plasticine and tabletop aggregates. Crystals are very rare. The main lines on the X-ray are: 10,03; 2,568; 1,498 (for Muscovite); 3,36; 2,170; 2,006 (for phlogopite); these minerals are easily separated into thin layers and have a high degree of mechanical and thermal resistance. These minerals are an important electroisolation material used in Electrical and radio engineering.The following varieties of Muscovite are known: 1) fengite is a more common Khili of kremnezem in Muscovite; 2) fuchsite is a light green Khili with chromium in its composition; 3) ferrimuscovite – Muscovite contains up to 13% iron oxide xyli; 4) cericite – finely crystallized Mica; hydrothermally formed from the decomposition of field sleepers; component of sericite shale; 5) Jil'bertite – close in composition to cericite, but with a large crystallized light green Khili; compared to normal Muscovite, this mineral is softrock and malleable; 6) roskoelite – vanadium – rich Muscovite; 7) shilkinite-radial-Muscovite in the form of nursimon, needle and fiber aggregate. Muscovite in granitic pegmatites is formed on the basis of the following reaction with a metasomatic route at the expense of potash field sleepers.

$$3K[AlSi_3O_8]+H_2O=KAl_2(OH)_2[AlSi_3O_{10}]+6SiO_2+K_2O$$
$$KAl_2(OH)_2[AlSi_3O_{10}]+SiO_2=K[AlSi_3O_8]+Al_2O[SiO_4]+H_2O$$

Biotite – $K(Mg,Fe)_3(OH,F)_2[AlSi_3O_{10}]$. Biotite phlogopite – $KMg_3(OH,F)_2[AlSi_3O_{10}]$ and lepidomelan – $KFe_3(OH)_2[AlSi_3O_{10}]$ an irreducible izmorf consisting of a series is an intermediate member. The Mineral was named after the French physicist J.It was named in honor of Bio. The name phlogopite is derived from the Greek word "phlogopos" - grass, fire (in which the color of the mineral is envisaged). The name Lepidomelanni is derived from the Greek words "lepis" - to - Tan, "melyas" - to-black (brown).

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Figure 1. Biotite mineral[3]

Just as lead isotopes accumulate due to the decay of uranium in the minerals that made up rocks and mines, radiogenic argon also accumulates in the mineral as a result of the decay of the potassium-40 isotope. Investigations and experiments show that radiogenic argon is relatively well conserved in MICA. For this reason, it is the potassium-argon method that is widely used in determining absolute age on slugs. [2] potassium sodium field sheets are an isomorphic mixture of K[AlSi3O8] and Na [AlSi3O8] in terms of composition. Unlike plagioclases, the components of potassium-sodium field sheets are bounded, which do not form a continuous series. Potassium sodium field shavings are considered stable as the same mineral, only at temperatures above 900°C, while at temperatures below this it decomposes to $K[AlSi_3O_8]$ (orthoclase or microcline) and $Na[AlSi_3O_8]$ (Al'bit). As a result of this decomposition, Al'bit legal growths are formed with orthoclase, called pertite, which has evolved in the gruppas of field shgpats. The growth of Al'bitni with potash field sleepers is called antipertitis. Field veneers with potassium sodium are divided into two rows: monocline and tricline. The first row includes sanidine, orthoclase. These two minerals are considered potash field sleepers in terms of composition. Nepheline and leucite make up the bulk of the minerals of field sleepers.Nefelin-$Na[AlSiO_4]$. The name is derived from the Greek word "nepheli" - cloud. When decomposed in strong acids, it forms a cloudy siliceous. Chemical composition: Na – 16.2%; Al – 19.0%; Si – 19.8%; O-45%. It can contain K_2O – 5%. The amount of SiO_2 is more than the theoretically calculated amount (it will be 3-10% more). Nepheline is colorless, but can often be gray-white or yellowish, brown, reddish, greener in color. Under laboratory conditions, artificially obtained nepheline, a solution containing nepheline, can be obtained by long heating at around 900-1000°C. Nepheline is used in aluminium ore extraction, soda extraction, glass industry. Leucite-$K[AlSi_2O_6]$. The name comes from the Greek word "leykos" - light-colored. Chemical composition: K – 17.9%; Al – 12.4%; Si – 25.7%; O – 44%. As a mixture, it can be Na_2O, CaO, H_2O. Singonia is tetragonal (becoming a cubic modification of leucite when heated to temperatures above 620°C). It is never found in association with primary Quartz, as it is converted to orthoclase upon exposure to nepheline-like kremnesem.[4]

$$K[AlSi_2O_6]+SiO_2=K[AlSi_3O_8]$$

Well-formed crystals of leucite have been found in Italy (Albanian mountains and Vesuvius lavas), the Urals, in Transcaucasia, in Aldan. In the Earth's surface area, leucite decomposes much faster without stability. Chalk minerals are formed as the final product from the decomposition of leucite. As an intermediate product, Muscovite, orthoclase, analsim are formed at some point. Leucite is used to obtain potassium and aluminum compounds.

List of bibliography

1. Miniralogy and geochemistry Tashkent 2019

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2. D.X.Atabaev, N.E.Atabaeva educational manual" fundamentals of Geophysics and geochemistry " Tashkent-2017
3. Biotite wiki.web.ru
4. M.V.Abdunabiyeva crystallography and Mineralogy 2019