

OBTAINING GRANULAR CALCIUM NITRATE BY NITRIC ACID DECOMPOSITION OF ZARBANT MARBLE.

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Abstract. Background. The need for calcium and its compounds, due to their widespread use, is constantly growing, and methods of processing calcium-containing minerals are of both scientific and practical importance. marble and limestone, which have a high calcium content and are widespread in the Earth's crust, are more promising raw materials for obtaining calcium from it. Acid decomposition and mechanical chemical activation of marble and limestone from different mines were studied. Uzbekistan has its own large marble mine - Zarbant, where CaO is more than 52.16%, which is a promising raw material for the production of calcium nitrate in the republic

Key words: Zarbant marble, nitric acid, decomposition coefficient, temperature. Nitrogen loss, yield

Calcium in marbles is mostly bound to carbonate, and accompanying elements such as iron, aluminum, magnesium, and fluorine are found in minor but minor amounts [7]. Usually, the technology for obtaining calcium nitrate from marble and limestone is based on acid-hydrometallurgical methods, obtained at temperatures of 25-30 ° C [8].

Marble from a mine in Italy containing 55-56% CaO; 55-56% CaO; 43-44% CO₂ was decomposed by nitric acid with a concentration of 49.21% at a stoichiometric rate of 100%. The process takes place at a temperature of 25-30 ° C for 1-2 hours. The degree of decomposition of CaCO₃ was 99-99.5%, respectively

Marble from the Zarbant mine (Samarkand) containing 51-53% CaO; 51-53% CaO; 40.99% CO₂ was decomposed by nitric acid with a concentration of 49.21% at a stoichiometric rate of 100%. The process takes place at a temperature of 25-30 ° C for 1-2 hours. The degree of decomposition of CaCO₃ was 96-98.8%, respectively [9].

Marble from Ghazgan mine (Navoi) containing 55.29% CaO; 55.29% CaO and 43.44% CO₂. It was decomposed by nitric acid with a concentration of 49.21% at a stoichiometric rate of 100%. The process takes place at a temperature of 25-30 ° C for 1-2 hours. The degree of decomposition of CaCO₃ was 97-99%, respectively [8].

Limestone from Buloqboshi mine (Andijan) with 54-55% CaO content; 54-55% CaO; 43-44% CO₂ was decomposed by nitric acid with a concentration of 49.21% at a stoichiometric rate of 100%. The process takes place at a temperature of 25-30 ° C for 1.5-2 hours. The degree of decomposition of CaCO₃ was 95-96%, respectively

Limestone from the Kuvasoy mine (Kuvasoy) containing 54.12% CaO; 53.5-54.5% CaO; 42-43% CO₂ was decomposed by nitric acid with a concentration of 49.21% at a stoichiometric rate of 100%. The process takes place at a temperature of 25-30 ° C for 1-2 hours. The rate of decomposition of CaCO₃ was 96-98%, respectively [10].

However, the composition of the components in the liquid phase after decomposition is of great importance, which is important in the subsequent ammonification and granulation.

Table 2 Composition of raw marerials

	Name	CaO %	CO ₂ %	HNO ₃ %	Temperature °C	Time (soat)	Degradation rate
1	Italian	55.72	43.78	49.21	25-30	1-2	99-99.5
2	Zarbant	52.16	40.99	49.21	25-30	1-2	96-98.8
3	Ghazgan	55.29	43.44	49.21	25-30	1-2	97-99
4	Buloqboshi	55.23	43.39	49.21	25-30	1-2	95-96
5	Kuvasay	54.12	42.52	49.21	25-30	1-2	96-98

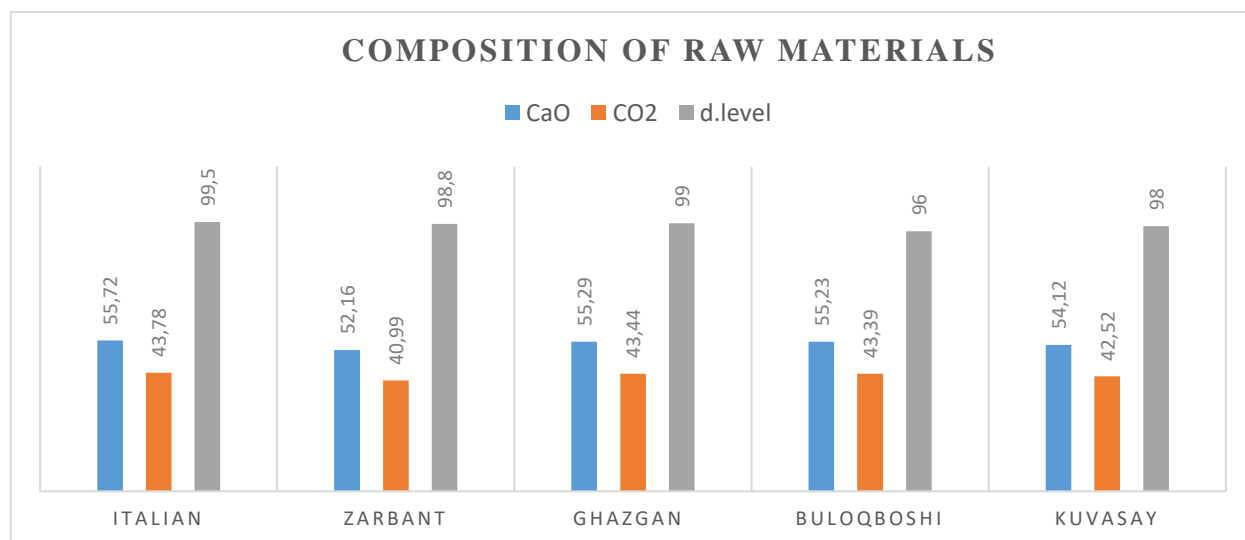


Fig 2. Composition of raw materials

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