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RESEARCH ON OBTAINING GRANULAR CALCIUM NITRATE FROM LOCAL RAW MATERIALS

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Abstract

The article presents the importance of granular calcium nitrate and the state of their production. By interacting with nitric acid (49.21%) and CaCO₃ with samples from various deposits, the processes of obtaining liquid and granular calcium nitrate by evaporating it were studied. At a concentration of 49.21% of nitric acid, 90-100-110% of the stoichiometry was obtained for its optimal rate. The resulting granular calcium nitrate fully meets the requirements of GOST 4142-77-80 in terms of quality

Keywords: Local raw materials, nitric acid, decomposition coefficient, temperature. Nitrogen loss, yield.

Calcium in marbles is mainly bound to carbonate, and accompanying elements such as iron, aluminum, magnesium and fluorine are found in small but small amounts... Usually, the technology for obtaining calcium nitrate from marble and limestone is based on acid-hydrometallurgical methods, obtained at temperatures of 25-30 ° C. First, we analyzed chemically and geologically the base of local raw materials and their waste, as well as limestone, marble and calcium raw materials in neighboring countries. We received the following information.

Table 2; composition of raw materials

№	Raw material name	Amount of components, %			Product 10%-li solution pH
		CaO	CO ₂	CaCO ₃	
1		55,72	43,78	99,50	9,32
2	"Italian" brand calcium carbonate (Italy)	55,23	43,39	98,62	8,80
3	Limestone (Andijan vil. Bulagboshi)	54,12	42,52	96,64	9,13
4	Limestone (Fergana vil. Kuvasoy)	52,16	40,99	93,15	8,99
5	Zarbant Marble (Samarkand)	29,75	23,38	53,13	9,88
6	White marble waste (Afghanistan)	55.29	43.44	98.73	9.55



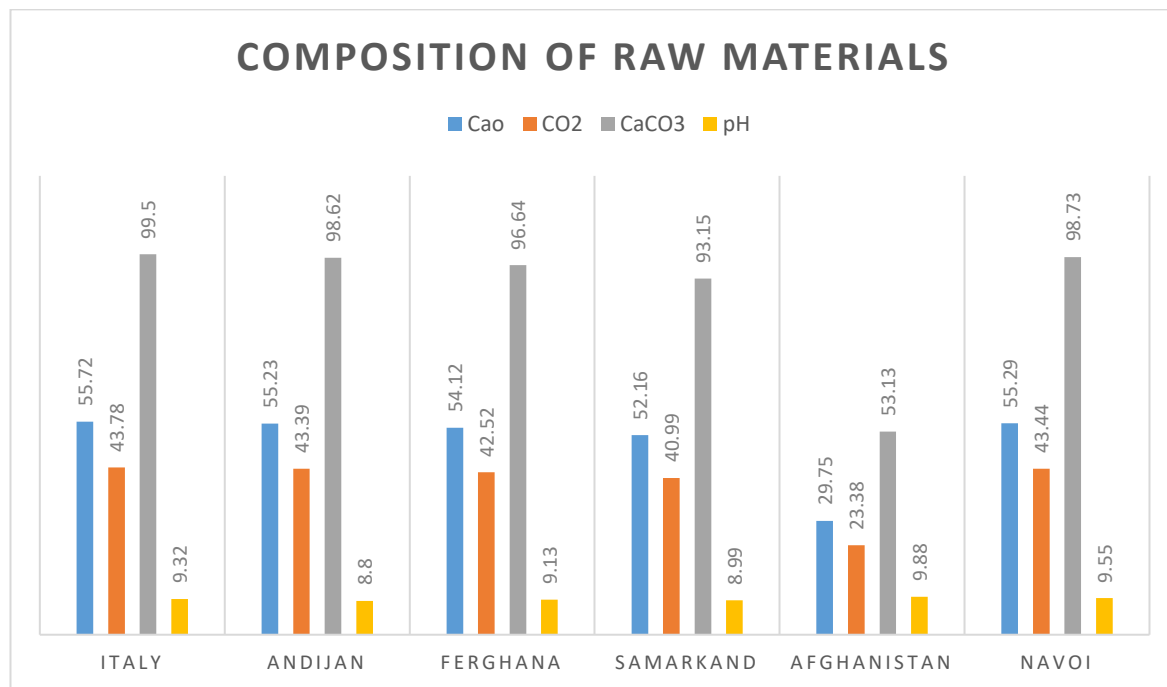


Fig 2 Composition of raw materials

After we determined the chemical composition of the raw materials. In this case, we determined calcium oxide, carbon dioxide, magnesium oxide, iron oxide, fluorine, aluminum oxide, sulfur oxide of raw materials..

Table 4; Chemical composition of "Italiya" brand calcium carbonate, Zarbant marble, Gozgon marbles and Bulagboshi, Kuvasoy limestones

Selected objects names	The amount of components is heavy. %								
	CaO	CO ₂	MgO	Fe ₂ O ₃	F	Al ₂ O ₃	SiO	P ₂ O ₅	SO ₃
"Italy"	55.72	43.78	0.01	0.1577	0.047	0.1234	-	-	0.033
Zarbant	52.16	40.99	0.57	0.138	0.0466	0.1046	-	-	0.196
Ghazgon	55.29	43.44	0.577	0.1148	0.0397	0.08	-	-	0.201
Bulagboshi	55.23	43.39	0.569	0.061	0.0452	0.073	-	-	0.102
Kuvasoy	54.12	42.52	1.5	0.138	0.039	0.1234	-	-	0.068



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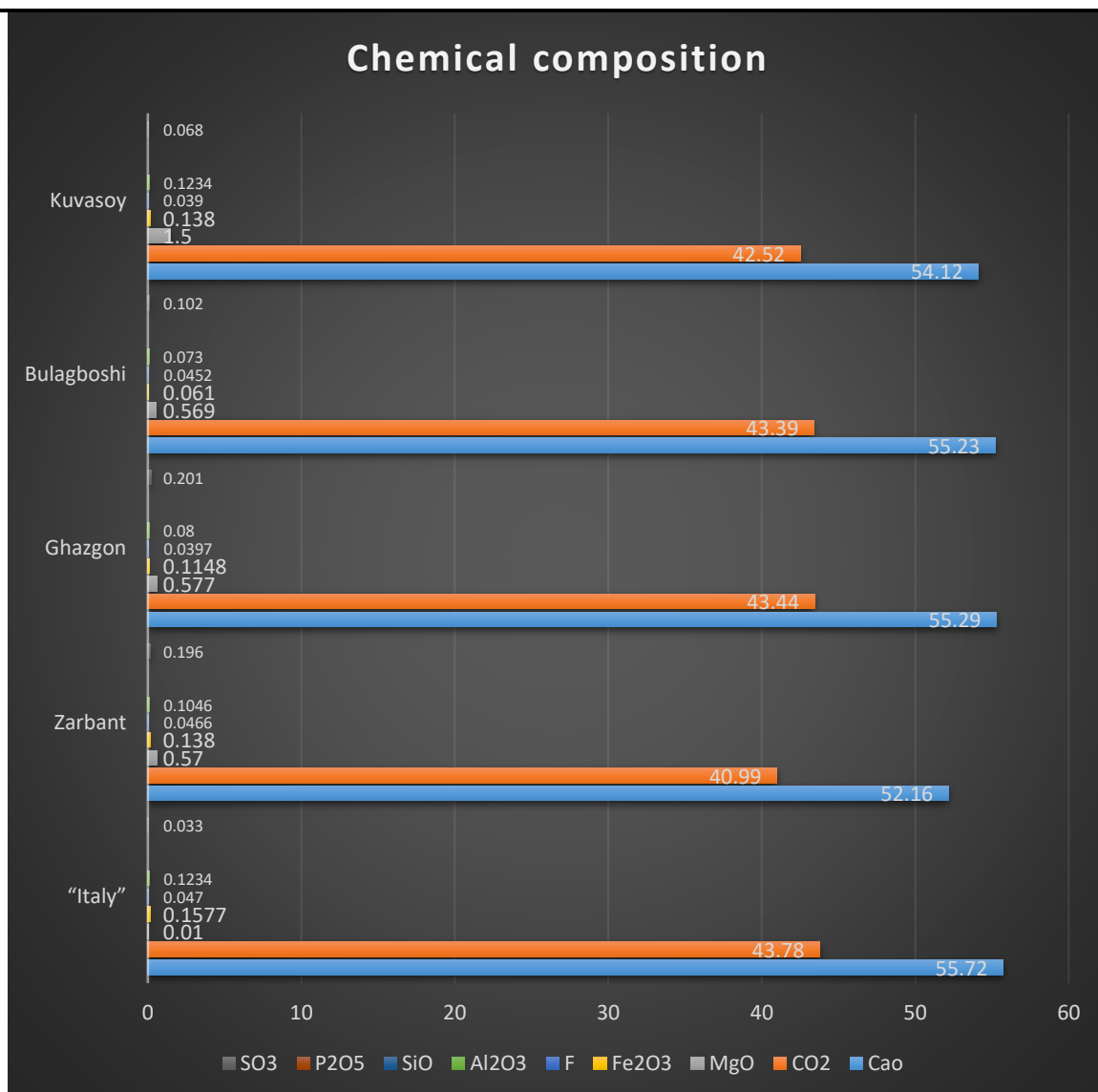


Fig 4; Chemical composition

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