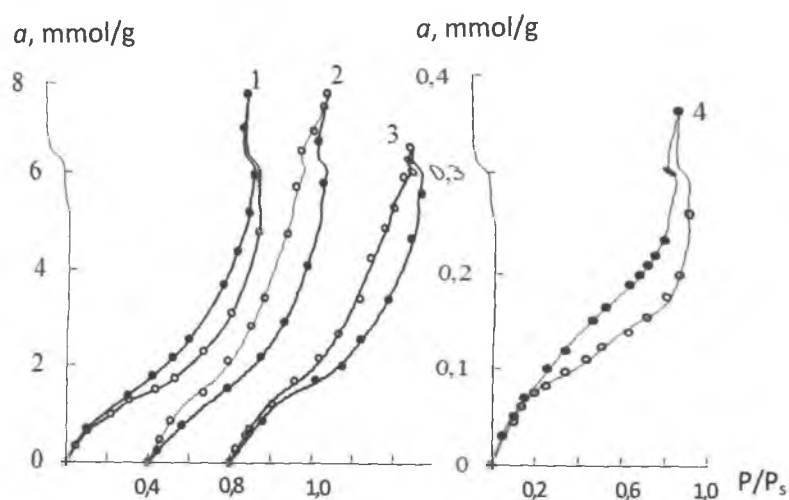


STRUCTURAL-ADSORPTION PARAMETERS OF NATURAL AND MODIFIED TRIPOLI

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Natural tripoli (N-Tr) is a polyphase mineral containing (in a certain ratio) α - SiO_2 tridymite, β -cristobalite, and α -cristobalite as well as some products of clay decomposition. We use tripoli modified by different ways as a support for anchoring Pd(II) and Cu(II) complexes. The compositions thus obtained show excellent catalytic properties in the reaction of carbon monoxide oxidation with air oxygen. In the work, we investigated effects of some modification methods on structural-adsorption parameters of tripoli from Konoplyanskoe deposit (Ukraine). The modified samples were designated as follows: H₂O-Tr (obtained as a result of N-Tr boiling in distilled water for 1 h), 300-Tr and 1000-Tr (obtained by N-Tr calcination in a muffle for 1 h at 300 and 1000 °C respectively). Gravimetric measurements by McBain technique permit plotting isotherms of water vapor ad/desorption by the samples



Ad/desorption isotherms of water vapor by the samples: N-Tr(1), H₂O-Tr (2), 300-Tr (3), and 1000-Tr (4)

Note: curves 1, 2, and 3 are arbitrarily separated one from another by 0.4 P/P.

samples. Values of a monolayer capacity (a_m) and a specific surface area (S_{sp}) increase in the order 1000-Tr < N-Tr < 300-Tr < H₂O-Tr. The largest changes taking place in the structure of 1000-Tr can be explained by the phase transformation α -quartz \rightarrow α -tridymite at 870 °C.

Table. Structural-adsorption characteristics of natural and modified Tripoli

Sample	Parameters of the BET equation		a_m , mmol/g	Q_1 , kJ/mol	S_{sp} , m ² /g
	a_m , mmol/g	C			
N-Tr	0.92	16.71	7.7	7.029	60
H ₂ O-Tr	1.14	6.02	7.7	4.523	74
300-Tr	1.17	7.90	6.6	5.196	76
1000-Tr	0.21	3.35	0.36	3.089	13