

## PRODUCTION OF TITANIUM COMPLEX SALTS FROM ILMENITE CONCENTRATE OF IRSHANSK GOK (UKRAINE)

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Innovative technologies applying in industry envisages the rational use of minerals on the basis of zero-emission and, at the same time ecologically clean reception, will provide the proper competitiveness to the home producers. In addition, considerable expansion of industries of the use of titanium-containing connections, except standard and production of electro generating photocells, includes pharmacology and cosmetology that largely differs from the traditional use of the last and is the mortgage of steady titanium mining industry development [1].

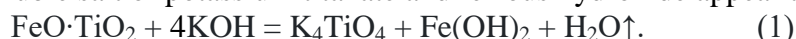
A receipt of titanium glycerate is one of the key stages of synthesis of titanium-containing glycerol hydrogel [2]. At present, such titanium-containing glycerol-hydrogel is known of the medical and cosmetic setting, as tizol (tetraglycerate-decapolition titanium):  $\text{Ti}[\text{O}-\text{CH}_2-\text{CH}(\text{OH})-\text{CH}_2-\text{OH}]_4 \cdot 10\text{C}_3\text{H}_8\text{O} \cdot 40\text{H}_2\text{O}$  [2].

Tizol has an anti-inflammatory and antimicrobial action, accelerates the reparative processes in a skin and diminishes the used for setting fire phenomena, assists disappearance of itch. Tizol is not toxic does not cause carcinogenic, mutagen and allergenic action, does not accumulate in organs and fabrics.

The aim of this study is the methods development of the complex titanium processing of containing minerals that is obtained on the domestic enterprises of ore mining and processing direction.

The source of titan as a basic component of complex salts (titanates), the industrial prototypes of the ilmenite concentrate got on Irshansky ore mining and processing combine (Zhytomyr region) are select in our research. The last contains the minerals of anything of composition however, mass part of main mineral – ilmenite ( $\text{FeO} \cdot \text{TiO}_2$ ), 74 other-admixture present: quartz ( $\text{SiO}_2$ ), magnetite ( $\text{FeFe}_2\text{O}_4$ ), limonite ( $\text{FeO}(\text{OH}) \cdot n\text{H}_2\text{O}$ ) and marcasite ( $\text{FeS}_2$ ).

On the first stage of receipt of complex salt of titanin vestigated the reaction of lixiviating of ilmenite in a non aqueous environment for temperatures 443 K – with the use of potassium hydroxide; water- soluble salt of potassium titanate and ferrous hydroxide appear thus:



For confirmation of presence in well-educated salt of ions of titan used a quality reaction from hydrogen peroxide:



On the next stage of research the got salt of  $\text{K}_4\text{TiO}_4$  was dissolved in glycerin. This reaction passes at heating (393 K) and active interfusion.



The presence of ions of titan is also confirmed by a quality reaction from to the hydrogen peroxide.

[1] И.Н. Масленицкий, В.В. Доливо-Добровольский, Г.Н. Доброхотов с соавт. Автоклавные процессы в цветной металлургии. – М.: Металлургия, 1969. – 349 с.

[2] Хонина Т.Г., Чупахин О.Н., Ларионов Л.П. с соавт. Синтез и биологическая активность кремнийтитанорганических глицерогидрогелей. *Химико – фармацевтический журнал* **2009**, 43(2), сс. 26–32.