INVESTIGATION OF THE FORMATION OF Co-MO SYSTEMS ON TITANIUM-CONTAINING CATALYSTS (Communication 2)

1National University of Uzbekistan named after M.Ulugbek, 2Uzbek Scientific Research Chemical-Pharmaceutical Institute. A.Sultanov, E-mail: kh.a.nasullaev@gmail.com

Abstract. Background. Fine dispersed systems of transition metal oxides on titanium-containing substrates are promising as catalysts for hydrogenation processes resistant to coking. The structures formed during the preparation of CoO/TiO$_2$, CoO/Al$_2$O$_3$, and CoO-MoO$_3$/Al$_2$O$_3$ have been studied with a spectral method. Data on catalysts on mixed substrates are not known. It was of interest to study the formation of surface and volumetric compounds at the stages of preparation of CoO and CoO-MoO$_3$ catalysts on a highly dispersed alumina-carbonate substrate modified with titanium dioxide by the methods of diffuse reflection electron spectroscopy, X-ray phase analysis, thermo-programmed reduction, and oxygen chemisorption.

Purpose. To study the formation of surface and bulk compounds at the stages of preparation of CoO and CoO-MoO$_3$ catalysts by the method of thermo-programmed reduction (TPV).

Methodology. Methods of thermo-programmed reduction and oxygen chemisorption were used in the work. The histograms of the particle size distribution were compiled from the results of electron microscopy.

Originality. The scientific novelty of the work is that the surface compounds with Co$^{2+}$ ions and the oxide film, reducing in the range of 350-450°C, are reversibly reoxidized at temperature of 20-350°C.

Findings. The increased dispersity of the titanium-containing catalyst has a positive effect on improving the basic quality parameters of the hydrotreated base oil: chromaticity and total sulfur content.

Key words: catalyst, reduction, structure, calcination, thermoprogramming, absorption, intensity.

Highlights:

* Compounds with Co$^{2+}$ ions and an oxide film, are reversibly reoxidized at temperatures of 20-350°C;

* Increased dispersity improves the main indicators of oil quality.

To cite this article: Kh. A. Nasullaev, A. M. Hamidov, Sh. T. Gulomov, M. P. Yunusov. Investigation of the formation of Co-Mo systems on titanium-containing catalysts (Communication 2) // Uzbek
THEORETICAL ASPEKTS OF THE WEAK EXCHANGE INTERACTION IN ESR SPECTROSCOPY OF THE HOMOBINUCLEAR COMPLEXES OF THE COPPER (II)

Bukhara State University, Uzbekistan, E-mail: tursunovma@mail.ru [2]

Abstract. Background. The method of ESP is widely used for the investigation of electronic construction and geometrical structure of the polynucelar complexes of the transition metals. The majority of the well-known experimental works had been done using monocrystals and polycristal examples. Construction of homobinuclear complexes of the copper(II), the nature of antiferromagnetic exchange interaction and its value was the object of discussion by the scientists and that issue is being checked in the article.

Purpose. Synthesis of homobinuclear complexes of the copper(II) and investigation of the nature of the exchange interactions within these complexes. Determination of magnetic susceptibility of polycristal examples within the spacing of 77-300K by the method of Faraday and Gui.

Methodology. The method of synthesis of the homobinuclear complexes of the copper(II) had been worked out and magnitochemical characteristics of the received compounds was determined. By the interaction of alcohol solutions of the corresponding organic ligands with pyridine solutions of Cu(II) acetate in a ratio of 1:2 synthesized complex compounds Cu₂L•2Py. There is structural nature of homo-(I) and hetero-(II) binuclear complexes were established by elemental analysis and IR spectroscopy. Within the same way geterobinucliar complexes of NiCuL•2Py (II) has been equally synthesized. Specters of ESP polycristalic examples, fluid and freeze liquid in toluol and other solvent are taken up on the radio spectrometer SE/X-2542 by “Radiopan”.

References


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UDK 541.49+541.67+546.742

B. B. Umarov, M. A. Tursunov, V. V. Minin, K. G. Avezov
For the first time there was determined and calculated the value of antiferromagnetism inside of the binuclear complexes of the Cu(II) by the chain of s-bounds.

Firstly we’ve determined the nature of antiferromagnete exchange interaction by the chain of -(CH\textsubscript{2})\textsubscript{n}- of s-bounds. With the aim to check the experimental specters we’ve built the theoretical specters of ESR the solutions of complexes.

**Keywords:** homobinuclear complexes of the Cu(II), bicyclical hexadentate ligands, intermolecular antiferromagnetism, energy of exchange interaction.

**Highlights:**

* We execute the nature of antiferomagnetism inside of the binuclear complexes of the Cu(II).

* It was executed that while prolonging the chain, the value of the exchange is becoming less.

**To cite this article:** B. B. Umarov, M. A. Tursunov, V. V. Minin, K. G. Avezov. Theoretical aspekts of the weak exchange interaction in esr spektroscopy of the homobinuclear complexes of the copper (II) // Uzbek chemical journal. - 2017. - Nr.4. - Pp. 8-15.

**Received:** 18.05.2017; **Accepted:** 05.08.2017; **Published:** 17.08.2017

**References**


7. Umarov B.B. Kompleksnyie soedineniya nekotoryih perehodnyih metallov s bis-5-oksipirazolinami: Dis. ... dokt. him. nauk.- Tashkent, IU AN RUz,1996.- 351 s.


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UDK 66.022


INHIBITORS OF CORROSION OF CARBON STEEL FOR AGGRESSIVE MEDIA OF OIL AND GAS FIELDS

Navaji State Mining Institute, Navoi, Uzbekistan

Abstract. Background. The gas industry of the republic includes 1,250 gas wells, the metal equipment of which, from carbon steel, is prone to corrosion due to the fact that it comes into contact with an aggressive environment - highly mineralized solutions with hydrogen sulfide dissolved in them and carbon dioxide lowering the pH of a medium. In these conditions, the use of corrosion inhibitors of steel is built-in.

Purpose: development, on a local resource base, of corrosion inhibitors of structural carbon steel for the use of products from it in the conditions of gas and oil wells of Uzbekistan.

Methodology. The corrosion rate and the degree of protection were evaluated by gravimetric method. The Binder ED115 thermostat was used. Diffractograms of the samples were obtained on an Empyrean diffractometer (Netherlands). Surface images of the samples were obtained on a scanning electron microscope MA10 (Carl Zeiss, Germany).

Originality. On the basis of propargyl alcohol and a number of nitrogen-containing compounds,
Effective corrosion inhibitors of carbon steel have been developed for mineralized media containing hydrogen sulphide application.

Findings. The corrosion inhibitors of carbon steel were synthesized: N-dimethylamino-butyn-2-ol-1; N-diethylamino-butyn-2-ol-1; N-diphenylamino-butyn-2-ol-1; N-piperidineamino-butyn-2-ol-1 - based on local raw materials. Their physicochemical and protective anticorrosive properties were studied. Inhibitors are suitable for operation in gas and oil wells in Uzbekistan.

Key words: corrosion of metals, propargyl alcohol, inhibitor, X-ray diffraction, electron microscopy, gravimetry, corrosion rate.

Highlights:
* Corrosion inhibitors of steel based on propargyl alcohol;
* Their protective and physico-chemical properties were studied;
* Diffractograms of the surface of steel and corrosion products were obtained;
* Electron microscopy images of the sample surface were obtained.


Received: 14.07.2017; Accepted: 10.08.2017; Published: 17.08.2017

References
Reducing of Hexavalent Chrome and Extraction of Chrome (III) Oxide from Chromium-Containing Waste Solutions

Institute of General and Inorganic Chemistry, Academy of Sciences of Uzbekistan, Tashkent, E-mail: erkabaevf@rambler.ru

Abstract. Background. All hexavalent chromium compounds are toxic and carcinogenic, there are various ways to reduce them. For the purification of waste water and waste solutions from chromium (VI) ions, methods based on various physico-chemical processes are used. The classical reagent method requires use of relatively expensive reagents, and as a final product gives an illiquid slurry.

The author offered using as a reducer of hexavalent chromium in waste solutions natural organic reducing agents in certain conditions, which are more economical, affordable and environmentally friendly in comparison with inorganic reducing agents.

The purpose of this study is to identify and evaluate the recovery ability and to compare the reducing properties of various organic reductants, as well as to determine the optimum process conditions.

Methodology. As the object of study, a model waste solution of chromium plating shop and crushed stems of various plants were used. A photocolorimetric method was used to determine the content of chromium ions in solutions.

Originality. The reduction properties of wood chips of reducing of hexavalent chromium ions to a trivalent form due to the OH group contained in the cellulose structure of sawdust are established by studying the heterogeneous reduction process in high concentrations of chromate ions in an acidic medium.

Findings. In all the samples, except lignin, where the content of hexavalent chromium ions as a result of the reaction decreased only to 38340 mg / l, the reduction process occurred up to 94-99%. And the stems of cotton are slightly different from the sawdust of perennial trees, restoring to 277 mg / l. In other cases, the content of hexavalent chromium decreased from 50.000 mg / l to 134-154 mg / l, i.e.
Up to the limit that allows the use for final cleaning of the solution by electrocoagulation or other methods.

**Keywords:** waste solution, wood sawdust, cotton stalks, lignin.

**Highlights:**

* The nature of organic reducing agent does not affect Cr(VI) reducing process;

* The process of Cr(VI) reducing occurs in a strongly acidic environment.

**To cite this article:** F. I. Erkabaev. Reducing of hexavalent chrome and extraction of chrome (III) oxide from chromium-containing waste solutions // Uzbek chemical journal.- 2017. – Nr4. – Pp. 25-30.

**Received:** 05.06.2017; **Accepted:** 05.07.2017; **Published:** 17.08.2017

**References**


Abstract. Background. In connection with the development of new designs of thermal units with economical operation modes and the desire to save refractory materials in their traditional fields of application, research on the development of compositions and technologies for high porous lightweight refractory materials has been substantially developed in recent years.

At the same time, it should be noted that at present in the Republic many kinds of heat-insulating lightweight refractory ceramic materials are almost not produced, but imported from the CIS and foreign countries.

Purpose. Development of new import-substituting compositions of magnesia lightweight materials and the study of their physical-mechanical properties.

Methodology. The experimental work was carried out using modern physical-chemical and physical-mechanical methods, such as X-ray phase, crystal-optical, analytical and test methods adopted by the standards of refractory technology.

Originality. The influence of temperature regimes, the amount and type of various pore-forming additives from wastes of various industries on the processes of pore and structure formation during high-temperature firing of compositions for lightweight magnesia of refractories has been established.

Findings. Optimal conditions for obtaining lightweight magnesia of refractories based on domestic raw materials and secondary resources have been developed. Optimum technological regimes of high-temperature processing and optimal compositions of feedstocks for obtaining magnesian lightweight refractory materials are established. The main physical and mechanical characteristics of lightweight refractory materials from the optimal raw materials are determined.

Keywords: lightweight refractory, times formation, burnable additives, serpentinite, secondary resources, strength, water absorption.

Highlights:

* New compositions of magnesia lightweight refractory masses have been developed.
* Installation of optimal technological regimes for high-temperature processing of magnesia lightweight refractories
* The physicomechanical properties of lightweight refractories obtained were studied.

To cite this article: Z. R. Kadyrova, Kh. L. Usmanov, A. A. Eminov, A. A. Ahmadjanov A. P. Pirhanatdinov. Physical and mechanical properties of lightweight refractory materials obtained on the
DEVELOPMENT OF ORGANIC BINDERS SERIES FOR MOLYBDENITE CONCENTRATE ROASTING IN THE FLUIDIZED BED FURNACE

Institute of General and Inorganic Chemistry, Academy of Sciences of Uzbekistan, Tashkent,E-mail: vpguro@rambler.ru [5]

**Abstract.** Background. Molybdenite concentrate granulation batch contains 10% of kaolin, reducing the Mo content in the calcine. An alternative charge composition based on the binding of SK-K and SK-D is developed, providing a high content of Mo in the calcine, the porosity of the surface. A greater extraction of Mo, Re from a cinder is achieved, accompanied by a drawback: the shop-rotary kiln pellets of Mo-concentrate, based on organic binders, tend to stick together. To avoid this effect, the
replacement of a rotary kiln oven for a fluidized bed furnace is proposed

**Purpose.** To test series of binders: SK-N, SK-K and SK-D, in comparison with kaolin, for the reclaiming of Mo-concentrate and also to study the samples of granules and cinders based on them. Objectives of the study: to get samples of granules using different binders, to study their elemental composition and structure.

**Methodology.** The pellets were annealed in a laboratory fluidized bed furnace and at the drum furnace. Control of the composition of the samples of the calcine is implemented at AAS- and ICP-spectrometers, surface - by scanning electron microscopy, supplied by x-ray detector for trace element analysis; and by x-ray diffraction EMPYREAN XDR.

**Originality.** A new binder SK is developed, alternative to kaolin used in the Mo-concentrate pelletizing process, the mode of roasting is fulfilled in the fluidized bed furnace, instead of a rotary kiln. Its use provides greater molybdenum content in the commodity product, better extraction of molybdenum and rhenium from cinder.

**Findings.** A comparative test of the SK binding and kaolin in the compositions of the furnace feed granulation and modes of firing pellets revealed the following: 1) the content of Mo in experimental batch is higher than in the control one on 2.63 %; 2) the contents of Re in an experimental batch No. 1 is 0.0087%, in the control one is 0.016%; oxidation state of Mo 97% and 96.8%, respectively; 3) the strength of unfired pellets from experimental and control parties, are satisfactory; 4) the calcination of Mo-concentrate granules with a SK binder should take place in the fluidized bed furnace at a temperature of 510-570°C. the baking time is 1 h instead of 7 h in the existing kiln of Mo-concentrate with kaolin binder. The analysis data of the surface of the pellets and calcine is obtained by electron microscopy and x-ray device supplied with a probe microanalysis unit.

**Key words:** cinder, molybdenum concentrate, a binder SK.

**Highlights:**

* Binder mixture granulation of Mo-concentrate – kaolin;
* Binder mixture granulation of Mo-concentrate – polymer series SK;
* Diffraction images and electron microscopy pictures are obtained.

**To cite this article:** E. T. Safarov, V. P. Guro, M. A. Ibragimova. Development of organic binders series for molybdenite concentrate roasting in the fluidized bed furnace // Uzbek chemical journal. - 2017. – Nr4. – Pp.35-42.

**Received:** 16.02.2017; **Accepted:** 03.08.2017; **Published:** 17.08.2017

**References**


3. Pat. 2227165 RF, MPK6 C 22 B 1/242. Kompleksnoe svyazuyus`hee dlya proizvodstva...


8. Patent RU 2353678. Sposob okomkovaniya sul`fidnyih molibdenitovyih koncentratov. C1 MPK; C22B1/244 (2006.01); Zayavka: 2007125956/02, 10.07.2007;


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UDK 631.85.661

PHOSPHORUS CONTAINING ORGANIC MINERAL FERTILIZERS PREPARATION

Institute of General and Inorganic Chemistry, Academy of Sciences of Uzbekistan, Tashkent

Abstract. Background. At present the wastes are formed as balanced ore containing 13-15% $\text{P}_2\text{O}_5$ and slime phosphorite containing 8-10% at Kyzylkum phosphorite combine during the enrichment of high calcareous phosphorite from Central Kyzylkum. Total amount of piled wastes has reached already 13 million tonnes. One of practical and rational ways for processing of-grade phosphorites is compost based on cattle dung. The phosphorus of low grade phosphorite transfers into acceptable for plant form during the compost with cattle while organic matter of manure converts into humic substances.

Purpose. Investigation of organic mineral fertilizers preparation based on cattle and slime phosphorite of Central Kyzylkum by compost.

Methodology. Preparation of composts can be performed by mixing cattle manure and the sludge depending on the weight ratio, as well as study of resulting compost composition by known techniques.

Originality. For the first time there has been explored the rate and kinetics of the manure’s organic part transformation in humic substances and $\text{P}_2\text{O}_5$ conversion of slime phosphorite into acceptable form for plant during the composting process.

Findings. The composts have been prepared based on the cattle manure and slime phosphorite with weight ratio of cattle : phosphorite (from 100:2 to 100: 25). Water was added into the prepared mixing calculated on 70% of humidity. The kinetics and transformation rate of cattle’s organic part in humic matter and unacceptable form of phosphorus into acceptable for plant one in the sludge. It has been presented that with over a span of compost increase on all ratios it raised the humic substances and movable phosphorus while amount of slime phosphorite growth in the compost decreased that loss of organic matter and transformation rate of cattle’s organic part in humic matter rose. It has been found that with weight ratio of cattle : phosphorite 100:2 during the compost the organic matter’s loss into gas phase is 16.62% as relative $\text{P}_2\text{O}_5$ accep. on EDTA and 2% citric acid solution is 82.50% and 72.50% respectively. Whether the ratio of 100:25 the loss of organic matter is 3.82% and relative $\text{P}_2\text{O}_5$ accep. on EDTA and 2% citric acid solution is 61.68% and 52.34%, respectively.

Keywords: manure, slime phosphorite, compost, humic acid, organic mineral fertilizers, composition and property.

Highlights:
* The compost have been prepared by mixing cattle and sludge phosphorite;
* It has been studied their composition and optimal condition.


Received: 31.03.2017; Accepted: 21.06.2017; Published: 17.08.2017

References
1. Sergeev Yu.A. Prigotovlenie komposta iz othodov derevoobrabotki i navoza krupnogo rogatogo

**NPS-FERTILIZERS BASED ON MELT OF AMMONIUM NITRATE, AMMONIUM SULPHATE AND PHOSPHORITE POWDER FROM KYZYLKUM PHOSPHORITE**

*Institute of General and Inorganic Chemistry, Academy of Sciences of Uzbekistan, Tashkent*

1JSC "Farzoneaazot"

**Abstract.** Background. Our chemical industry has all premises to produce complex NPS-fertilizers. Ammonium sulphate from JSC “Maxam-Chirchik” and “Navoiazot” can be served as additive to...
ammonium nitrate, whether phosphorite from Central Kyzylkum, which has enormous reserves, can be used as P-additive, as well. Production of granular complex fertilizers by direct mixing ammonium nitrate’s melt with phosphate raw subsequent addition of ammonium sulphate is the most perspective way due to its cheapness as phosphorus in the phosphate raw material transfers into acceptable form for plant in presence of ammonium nitrate without deficient sulphuric acid application.

**Purpose.** Investigation of NРS-fertilizers preparation based on ammonium nitrate, phosphorite powder and ammonium sulphate.

**Methodology.** Introduction of phosphorite powder and ammonium sulphate in the melt of ammonium nitrate with subsequent granulation of nitrate-phosphate-sulphate mixing generated by balling, as well as study of compositions and properties of resulting fertilizers by known ways.

**Originality.** For the first time ammonium sulphate and phosphorite powder from Central Kyzylkum were used to generate triple complex NРS-fertilizers based on ammonium nitrate.

**Findings.** To obtain NРS-fertilizers weight ratio of AN:PR changed from 100 : 20 to 100 : 30 while molar ratio of ammonium sulphate to ammonium nitrate was from 1 : 1 too 1 : 8. For granulation of nitrate-phosphate-sulphate melt balling approach was used. It has been shown the melt ammonium nitrate activated phosphate raw, i.e. it transfers unacceptable form of \( \text{P}_2\text{O}_5 \) into acceptable for plant form. Addition both as phosphorite powder and ammonium sulphate in ammonium nitrate leads to rise the strength of the latter. If for pure ammonium nitrate it equals to 1.6 MPa the fertilizer with molar ratio of \((\text{NH}_4)\text{SO}_4 : \text{NH}_4\text{NO}_3 = 1 : 1\) and 10.17% of phosphorite powder addition is 8.04 MPa.

**Keywords:** ammonium nitrate, phosphorite powder, ammonium sulphate, NРS-fertilizers, composition.

**Highlights:**

* NPS-fertilizers were obtained by introduction phosphate and ammonium sulphate in ammonium nitrate melt;

* Their composition, strength and in water dissolution speed were studied.

**To cite this article:** D. G. Pak, Sh. S. Namazov, A. A. Mamataliev, A. R. Setnazarov, Sh. Yu. Nomozov, A. R. Reymov. NPS-fertilizers based on melt of ammonium nitrate, ammonium sulphate and phosphorite powder from kyzylkum phosphorite // Uzbek chemical journal.- 2017. – Nr4. – Pp.49-55.

**Received:** 21.04.2017; **Accepted:** 21.05.2017; **Published:** 17.08.2017

**References**


M. A. Kurbanova, N. G. Valeeva

INVESTIGATION OF THE MECHANISM OF THE POLYMERIZATION REACTION ON THE BASIS OF ACRYLONITRILE WITH SILICATESP FOR THE PREPARATION OF ANTIPIRENES

Tashkent State Technical University, E-mail: mohira.k@rambler.ru

Abstract. Background. Recently, copolymers consisting of hydrophobic and hydrophilic units, for example: acrylonitriles, which are widely used in various industries, are of practical interest. Polymerization of acrylonitrile can be carried out by block, emulsion, suspension and varnish methods.

There are many studies on the polymerization and copolymerization of acrylonitrile with initiators, especially the persulfate-tri-ethanolamine system. The effectiveness of the persulfate-triethanolamine system as the initiator of the polymerization of acrylonitrile in aqueous solutions has been established, although the mechanism of the process is complex and occurs stepwise at room temperature.

Acrylonitrile and its copolymers meet an important application in the chemical industry as a basis for the production of various synthetic fibers and additives (fire retardants), which are a valuable material.

Purpose. Investigation of the mechanism of the polymerization reaction for the preparation of a silicon-containing oligomer based on acrylonitrile monomers with sodium silicates in the presence of
Methodology. The IR spectrum was analyzed and the kinetics of acrylonitrile and silicon-containing polymers was studied. Determination of flammability and inflammability of polyethylene compositions was carried out in accordance with GOST 21207-81 and UL-94. The following reagents were used in the synthesis of the silicon-containing flame retardant: silicon dioxide $\text{SiO}_2$, epichlorohydrin $\text{CH}_2\text{OCHCH}_2\text{Cl}$, acrylonitrile-$\text{CH}_2=\text{CHCN}$, as initiator triethanolamine-$\text{HOCH}_2\text{CH}_2(\text{HOCH}_2\text{CH}_2)_3\text{N}$ and potassium peroxosulphate $\text{K}_2\text{S}_2\text{O}_8$, polymer for the modification of low density polyethylene of P-Y 342 and F--720.

Originality. It offers a flame retardant AP-8, obtained on the basis of sodium silicate with acrylonitrile under the action of initiators. The mechanism of the reaction for the preparation of silicon-containing polyacrylonitrile has been established and their chemical properties have been studied. The possibility of attaching silicate groups to acrylonitrile molecules is shown, forming a cross-link like siloxane groups. A material containing such a fire retardant forms a melted film during combustion, which limits the access of oxygen to the surface. As a result, some of the heat is expended on the melting of the flame retardant.

Finding. As a result of studies of the mechanism of the polymerization reaction based on acrylonitrile with silicates, a method for the synthesis of the flame retardant AP-8 has been developed in the preparation of flame retardants. Oxygen index of fire retardant is 25.3%, this is higher than for polyethylene without a stabilizer which is 18%. The burning time of 96 s is not inferior to the existing flame retardant CESATM-flam PE 41329 / A, which is proposed to be used as a flame retardant for modification in the production of flame retardant and hard combustible polyethylenes.

Keywords: polymerization, synthesis, oligomer, monomer, acrylic acid, acrylonitrile, sodium silicate, polyethylene, initiator, siloxane.

Highlights:

* Copolymerization of acrylonitrile with epichlorohydrin and sodium silicate;
* Production of fire retardant AP-8 based on acrylonitrile with silicates;
* The oxygen index of PE with flame retardant is 25.3% for 96 sec of combustion.

To cite this article: M. A. Kurbanova, N. G. Valeeva. Investigation of the mechanism of the polymerization reaction on the basis of acrylonitrile with silicatesp for the preparation of antipirenes // Uzbek chemical journal.- 2017. – Nr4. – Pp.56-62.

Received: 23.03.2017; Accepted: 17.08.2017; Published: 17.08.2017

References


DEVELOPMENT OF THE COMPOSITION AND TECHNOLOGY OF ANTICOAGULANT OUTSIDE OF EXTERNAL ACTION

Institute of Bioorganic Chemistry, Academy of Sciences of the Republic of Uzbekistan, Tashkent. E-mail: ibchem@uzsci.net [8]
**Abstract.** Background: It is known that the most demanded medicines for treatment of thromboses, are direct anticoagulants from which main active substance is heparin. However application of heparin is contraindicated at the diseases which are followed by fibrillation process delay and also at a hyper permeability of vessels, bleedings of any localization (heavy dysfunction of a liver and kidneys, sharp and chronic leukoses, aplastic and hypoplastic anemias, sharply developed aneurism of heart and venous gangrene. Therefore searching of new efficient and safe anticoagulant mean remains extremely urgent so far.

Purpose. To develop the composition and technology of obtaining an anticoagulant external agent to use in varicose veins and to study its complications, swelling, thrombophlebitis, superficial periphpleitits.

Methodology: Synthesis of trisulphate ester of cellulose was performed by a complex a pyridine - HSO$_3$Cl, with preliminary activation of cellulose.

IR - spectra of the studied examples are obtained on IR-Fourier a spectrometer of system of PerkinElmer 2000 in a frequency range of 400-4000 cm$^{-1}$ in a tablet form in KBr.

Anticoagulant activity of the analyzed substances was determined by the calibration curve of the activity of standard analog (heparin) in experiments of in vitro on the following tests: blood clotting time, activated partial thromboplastin time (APTT), thrombin time (TT).

Originality: The structure and technology of anticoagulant medicine of external action on the basis of cellulose trisulphate were for the first time studied and developed for treatment of a varicosity and hypostases.

Findings: As a result of the performed studies the preparation on a gel basis for the treatment of a varicosity and hypostases is received. Specific activity of the preparation is investigated. The technology of preparation is developed. Methods of the quantitative and qualitative test of the active components are developed.

Keywords: anticoagulant activity, cellulose trisulphate, thrombin time, activated partial thromboplastin time, gel, thrombosis.

Highlights:

* The original composition and technology of an anticoagulant drug were developed;

* For the first time on the basis of cellulose sulfate, a drug was prepared;

* The drug is import substitute, domestic.


**Received:** 21.07.2017; **Accepted:** 15.08.2017; **Published:** 17.08.2017

**References**


5. Tareeva I. E. idr. Vliyanie prednizolona i geparina na sirkuliruyushie T- i B- limfositii u bol'nih glomerulinefritom i sistemnoy krasnoy volchankoy.Klin.med. 1978., No 7, s. 79-83,


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UDK 678.64.0.01:539.3.

U. B. Tadjixodjaeva

RESEARCH OF LUBRICANTS OBTAINED ON THE BASES OF SECONDARY PRODUCTS

Tashkent Institute of Chemical Technology, Uzbekistan, E-mail: Tadjixodjaeva-Umida@rambler.ru [9]

Abstract. Background. Polyethylene terephthalate - containing household waste is mainly used packaging of various products, the largest in terms of volume of education after polyethylene packaging. The development of new methods for processsing polyethylene terephthalate containing household waste is of great interest. In the production of caprolactam, a significant amount of waste (product-T) is formed, which is a mixture of many organic compounds. One of the waste of the oil and fat industry of Uzbekistan is the Gossypol resin (GS). The proximity of the nature of Gossypol resin and product -T allows us to develop a unified approach to their utilization and unifled technology to obtain products with a wide range.
**Purpose.** Investigation of lubricant oligomeric products from polyethylene terephthalate and fat-ah-oil waste.

**Methodology.** To carry out the research the following methods have been used: The average molecular weight by cryoscopy, the dropping point was determined in accordance with GOST 6793-84, the content of mechanical impurities in accordance with GOST 6479-73, foams at 25°C in accordance with GOST 5346-78 with mixing and the physical-chemical properties of washed Hydroxyl-containing polyesters. Approach to rational scientific novelty number-average molecular weight, fusion temperature and physical-chemical properties of washed hydroxylcontaining polyether.

**Originality.** It has been suggested single approach to the rational utilization of industrial and domestic wastes. It has been studied the interaction regularity (mechanism) of products of chemical destruction of polyethylene terephthalate domestic wastes with polyatomic alcohols. It has been shown the possibility in principle of the application of lubricant materials.

**Findings.** Lubricants with physical-mechanical chemical, operational characteristics.

**Keywords:** secondary polyethylene terephthalate, diethylene glycol, synthesis, processing, oligomer, gossipol tar, lubricants.

**Highlights:**

* Alcoholysis of secondary polyethylene terephthalate with diethyleneglycol;
* Alcoholysis products possessing different long chains;
* Physical-chemical properties as the duration of alcoholysis varies.

**To cite this article:** U. B. Tadjixodjaeva. Research of lubricants obtained on the bases of secondary products // Uzbek chemical journal.- 2017. – Nr4. – Pp.68-74.

**Received:** 22.05.2017; **Accepted:** 10.08.2017; **Published:** 17.08.2017

**REFERENCES**


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Uzbek Chemical Journal

Developed by Eskiz.uz

Source URL: http://uzchemj.uz/en/2017/volume-nr-4

Links
[1] mailto:kh.a.nasullaev@gmail.com
[2] mailto:tursunovma@mail.ru
[3] mailto:erkabaevf@rambler.ru
[4] mailto:kad.zulayho@mail.ru
[5] mailto:vpuro@rambler.ru
[7] mailto:mohira.k@rambler.ru
[8] mailto:ibchem@uzsci.net
[9] mailto:adjixodjaeva-Umida@rambler.ru