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## PROPERTIES OF HIGH MOLECULAR WEIGHT COMPOUNDS

**Abstract:** This in the article high molecular of compounds come output , in nature harvest to be and polymer of sorbents structures about information given .

**Key words:** Polymer , sorbent , sorption , porosity , inert, high molecular compounds , synthetic polymers , natural polymers .

**Introduction.** Today in the day the world scale polymer to the materials has been need 400 mln from the ton more than is , from that polyethylene 37%, polypropylene 26%, polyvinyl chloride 18 % organize is enough Thermoelastoplast of compositions the world according to gross work release volume 3 million per year . from the ton more is synthetic and artificial polymer materials in consumption their share by 65-67 % enough

In nature of polymers harvest to be and decay simple in the circumstances continuously respectively special order with happen being stands Such changes special regulators , complicated organic catalysts , enzymes , vitamins in the presence of done increases . But their effect reach mechanism for now until good not studied . That's it regardless of chemistry this field fast is developing . Now new - new high molecular materials : plastics , artificial fibers and rubbers , lacquers , paints , artificial leather and films work release from year to year increasing their use field too expanded is going Synthetic of fibers some of them very stable , strong , hardness to the diamond approaches . Of them construction materials , ion changer sorbents , light and beautiful construction materials , machines details , chemical devices in preparation wide in use .[1]

Polymers - high molecular are compounds . Usually , molecular mass from 500 one how many up to a million has been substances high molecular compounds is considered Molecular mass from 500 to 5000 has been substances properties in terms of lower molecular to compounds too , high molecular to compounds too dissimilarity for officially oligomers that is called High molecular compounds molecules of dimensions size means catch , often them macromolecules as , high molecular compounds chemistry while macromolecules chemistry that is conducted . High molecular compounds chemistry one how many face and thousands of atoms Created macromolecules chemical properties , structure , synthesis and analysis , in them observable laws learns .[2]

High molecular compounds chemistry thousands and one how many face thousands of atoms Created macromolecules chemical properties , structure synthesis and analysis , in them observable laws high molecules the most important about concepts learns High molecular compounds molecular mass very big one how many out of a thousand one how many up to a million to be natural and synthetic substances .

All high molecular compounds come to exit looking as follows classified as :

1. Synthetic polymers - lower molecular from compounds site the way with is taken
2. Natural polymers - natural of materials is taken ;
3. Artificial polymers - natural polymers chemical modification through is taken ;
4. Biopolymers - biological to activity have natural polymers , proteins , nucleic acids , some polysaccharides and mixed polymers .[3]

Polymer sorbents structure and properties according to series to himself characteristic have being them to use on time and porous structure parameters in determining account get it is necessary

1. Polymers not only hard , maybe high elastic is also available and from this pore and porosity concepts of use authenticity about natural question is born These are concepts spaces and time with variable hard polymers for when using right will be Elastic in polymers to be spaces or holes , that is own shape and size non-stop by changing standing fluctuating to the character have Spaces look like pores possible not , but known in the circumstances harvest to be done , that is always there is to be cavities , for example , porous tires or styrofoam call pores can

2. From classic mineral sorbents different like polymers sorption in the process will be , that is their volume and of the structure in change expressed to riot happen will be This is a riot of the sorbent to the polymer thermodynamic inclination how much big if so , that's it high will be Bukkake in the polymer or in the gel free volume , each how in liquid as , fluctuating to the character have , therefore for him porosity with equalization possible it's not .

3. Nitrogen low- temperature vapors sorption volume expansion thermal coefficient  $10^{-5}$ – $10^{-6}$  , that is activated coal  $\alpha$  like has been to polymers only relatively apply can When the temperature drops to  $220^{\circ}$  C of the sorbent comparison volume a change of only 0.002 - 0.003 cm<sup>3</sup> / g possible , that is example porosity when cooled almost does not change . Such polymers for porosity nitrogen according to to benzene than big said the rule stored , but a lot of polymers thermal expansion coefficient one in order high will be So, when the sample is cooled to  $200^{\circ}$  C his decrease in volume by 0.1 cm<sup>3</sup> / g need

4. Hard in the case in polymers big pressures under the influence of forced-elastic return deformation development can It is mercury-porometric in dimensions manifestation to be can Homosexual in the porous polymer all pores one different pressure under when filled , pores walls two bilaterally to pressure occurs and compression can their pressing happen will be Different sizes pores each different in pressures mercury with paid Under these conditions one mercury with full , the second yet incomplete two pore between the wall one sided to pressure meeting deformed pores closed puts of polymers lower molecular compounds sorption mechanism very complicated . He is very a lot factors , including the polymer to the sorbent relatively thermodynamic inclination depend This inclination to the value of looking sorption in the process polymer is different level agitated in case to be and in consequence sorption mechanism differently to be can

a ) Inert vapors sorption mechanism .

To the polymer relatively being sorbed steam thermodynamic inclination extremely small if , in the polymer arousal very small will be and his volume barking in practice to zero equal to will be In this case sorption mechanism mineral sorbents sorption from the mechanism almost difference does not For example , nogovak crystal , vitreous or high elastic polymers are inert sorbents with only external on the surface very less are affected . Polymer and between the sorbent chemical effect when not only physical adsorption manifestation will be Microporous in sorbents affective centers whole volume across inside them come in goes , therefore inert gas for or in the body size of this melting process as to look possible has been of pores volume pay off mechanism observed .

Connection porous sorbents for pore of the walls floor by floor pay off mechanism special being fruit divisor polycoats and capillary condensation by joining goes and in consequence sorption hysteresis manifestation will be Macroporous in sorbents pores of the walls one from one the distance because of polycoats the addition of happen it won't be . That's why for capillary condensation process won't be and only physical adsorption observed . Very much so big pores the surface external surface task does and very small that it was for macroporous in sorbents adsorption non-porous in sorbents from adsorption difference does not

b) Noninert vapors sorption mechanism .

of the sorbent to the polymer inclination much big when of the polymer to himself special properties manifestation be begins , polymer barks and own structure changes . In this case, the polymer of chains their flexibility location density , intermolecular effect and sucking of the polymer physicist status big important have will be

s) Non-porous dense is located polymers .

Noninert of vapors such polymers by sorption process differently glazing from the temperature high and below happen to be of components mutually melting process as to look possible .[4]

On earth lower and high molecular substances non-stop respectively to each other turning around stands In nature do not polymerize harvest paint and break up of processes continuously alternately standing of substances chemical of movement the most important and to himself special is a feature . Lower molecular from compounds high molecular don't get attached harvest to be and their disintegration as a result again lower molecular to substance cycle of substances chemical properties just change it not only their energetic situation and changing the mass of nature in general development process done increases .

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