TYPES OF ADSORBENTS USED IN COTTON OIL BLEACHING AND ITS CHARACTERISTICS

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ABSTRACT

This article presents the types of adsorbents used in cotton oil refining industry, their quality requirements, comparative descriptions of used adsorbents and classification of adsorbents.

Key words: adsorption, adsorbent, silica gel, porosity, desorption

INTRODUCTION

The oil industry is one of the leading branches of the republic's food industry[1-7]. Oil is produced in our country from the seeds of flax, rapeseed, sesame, cottonseed and many other plants. But the efficiency of the oil production industry depends on the correctness of the production process and the suitability of the raw materials used. It follows from this that the development of suitable technology of product production in oil-oil producing enterprises is of great importance[8-13]. It is known that adsorbents used in various sectors of the economy should have as large a specific surface as possible.

Chemistry , food and another in industries activated coal, silcogels, aluminum gels, zeolites, celluloses, ionites, mineral soil (bentonite, diatomite, kaolin) and another materials as adsorbents is used[14-18] .

Excuse of the process efficiency justified of oil color, amount of used sorbent , loss and waste to the norm and justified of oil exit to the amount looking is determined . Excuse in the process activated soil when used a little isomerization and one so much in the composition consecutively connected fatty acids has been glycerides fruit will be This is justified fat and oils quality to decrease and keep the term to shorten take will come

METHODS

As an adsorbent used different different carbon materials (coal , active carbons , min removable of coals some types, cokes, half cokes , resins and that's it similar) among active carbons usually from 95 more than weight own into takes _ to % according to 87-97 m. carbon is big to himself special to the surface have was , har different kind of pore to structure have and surface functional groups there is Har

different physical of forms combination (irregular in the form of grains, tablets, spherical and cylindrical granules, powders), good chemical and thermal stability, preservation stability, hydrophobicity, low gravimetric density and another one series indicators this unique from adsorbents of use very wide scope defines, Adsorbents-dryers to water relatively high absorbency, light regeneration , mechanical consistency and that's it such as another properties have to be it is necessary

Table 1

San o atda of the ads o rb e nts used classification pointers

Adsorbents	Density, g/cm3			of the pore volume, cm3/g	Pores radius, A	Comparison surface, m2/g
	Real	ABSTRACT	Stacked			
Slicagel small porous, large porous	2.1-2.3 2.1-2.3	1.3-1.4 0.75-0.85	0.8 0.5	0.28 0.90	5-30 70-100	4270-35050-500
Aluminium-coated catalyst	2.3	1.06-1.09	0.7	0.57	20-25	300-350
Activated coal	1.75-2.1	0.5-1.0	0.2-0.6	-	from 70 less	600-1700
Aluminum active oxide	-	-	0.4-0.6	0.8-1.0	60-100	180-220
Sleolites	-	1.08-1.16	0.62-0.78	0.20-0.24	3-9	-

RESULTS

The efficiency of cleaning during the adsorption process depends on the porous structure of the adsorbent, in which the micropore plays the main role. It is recommended to use the limit volume of the activated carbon adsorption space of 0.3 cm 3/g in the cleaning process. It is known that the size of micropores determines the speed of catalytic reactions. Activated carbons with a micropore size of 0.8...1.0 μm are considered optimal.

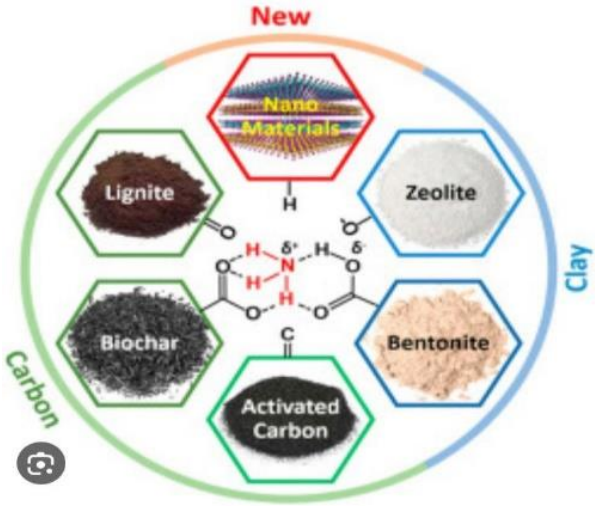

Figure 2. Adsorbent types

Zeolites are synthetic sorbents with specific and unchanging pore sizes in the crystal lattice, they are called molecular sieves.

Porous glasses are borosilicate glasses whose pores are interconnected to form a spatial grid. They are used in gas-liquid chromatography as solid inert carriers. The adsorption properties of porous glasses are due to the presence of silanol groups in them, which form hydrogen bonds with substances that have electron-donating functional groups in their molecules. The main difference of porous bottles from other materials used for this purpose is their chemical inertness, the possibility of controlling the size of their pores, and the ease of regeneration.

Activated carbons are very finely structured adsorbents that selectively adsorb (absorb) hydrocarbons and their derivatives, aromatic compounds, dyes. Absorbs lower alcohols, carbonic acids and complex esters less.

Graphitized body - ordinary body is prepared by processing in vacuum or inert gas environment at 3000 0C. The adsorption properties of the surface of the graphitized body are very close to the adsorption properties of the graphite group, and they belong to the group of non-specific adsorbents.

Polymeric sorbents - later became widely used in gas chromatography. Porous materials made on the basis of styrene, ethylstyrene and divinylbenzene are used most often. Porous polymers are mechanically mature, have a large surface area, have strong selectivity and are thermally stable.

Porous polymers are used as highly selective adsorbents in gas-adsorption and liquid-adsorption chromatography for the separation of multicomponent mixtures into components, as well as carriers in gas-liquid chromatography.

Surface layer sorbents - began to be used only later. Sorbents whose active

substances are uniformly distributed only on the outer surface of the carrier are called surface layer sorbents. A solid or liquid sorbent can serve as an active substance. Due to the thinness of the sorbent layer and the ease with which absorbed substances reach the sorbent, the resistance to mass transfer in the surface layers of the sorbents decreases and, therefore, the residence time in the sorption layer is shortened. This leads to an increase in the efficiency of the chromatographic column.

Alumogels are taken orally in various forms. They are also widely used as carriers in the preparation of desired catalysts.

Zeolites are called molecular sieves because they can separate hydrocarbon mixtures with molecules of different sizes. It was used for the first time in 1959 by the company "Linde" (USA). Zeolites can be natural (minerals - bentonite, analcite, etc.) and synthetic (SiO2-Al2O3).

The recovery of the adsorbent involves the removal of molecules of the absorbed substance - the adsorbate - from its pores. This process is called desorption.

Desorption can be done in the following ways:

1. Heating the adsorbent to a temperature higher than the boiling point of the adsorbate (the adsorbent is regenerated in this way in our laboratory);

2. Evacuation, if the adsorbate begins to decompose when the adsorbent is heated;

3. Cleaning with inert gas (again we get a gas stream with absorbed adsorbent);

4. Replacing the adsorbate with water vapor or another substance that is better absorbed;

5. A combination of these methods.

In practice, regeneration is usually done with steam. At the same time, the adsorbent is heated. After the process, a mixture of water vapor condensate and absorbed component is obtained. This mixture can be homogeneous or heterogeneous. In any case, it must be separated, because the adsorbate has material value (expensive) or is toxic. Or both. Therefore, condensate cannot be discharged into the sewer. Separation of the target component from water is an independent problem.

CONCLUSION

After desorption with water vapor (evaporation), the adsorbent, firstly, becomes saturated with water, and secondly, it becomes hot. Therefore, it is blown with air to remove water and cool it.

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