

# Oil and gas.



- Oil - miscible complex multicomponent mixture of gaseous, liquid and solid hydrocarbons chemical different structure with a number of carbon atoms up to 100 and more hetero admixture with compounds of sulfur, nitrogen, oxygen, and some metals.

# *The history of the origin of oil.*

- ***Oil known to mankind since ancient times. Excavations on the banks of the Euphrates, the existence of oil field for 6000-4000 years BC. e. At that time it was used as a fuel and oil bitumen - in the construction and road case. Oil has been known and ancient Egypt, where it was used for embalming the dead. Plutarch and Dioscorides mention oil as a fuel to be used in ancient Greece.***

# **The main part of the oil consists of three groups of hydrocarbons - alkanes, arenes, and naphthenes.**

- Chemically, oil - a complex mixture of hydrocarbons, are divided into two groups - heavy and light oil. Light oil comprises about two percent less carbon than a heavy, but correspondingly larger amount of hydrogen and oxygen.

- **Alkanes (hydrocarbons, saturated hydrocarbons, paraffins) is chemically most stable. Their general formula  $C_nH_{(2n+2)}$ .**

- To naphthenes include alicyclic hydrocarbon structure  $C_nH_{2n}$ ,  $C_nH_{(2n-2)}$  and  $C_nH_{(2n-4)}$ . In oil contains mainly  $S_5N_{10}$  cyclopentane, cyclohexane  $S_6N_{10}$  and homologues thereof. Aro (aromatic hydrocarbons). They are considerably poorer than hydrogen, the ratio of carbon / hydrogen in the aro is highest, much higher than in the whole oil.

# Resources and oil fields

- World oil reserves are estimated at 141.3 billion tons. These stocks at current crude oil production will be enough 42 years. Of these, 66.4% are located in the countries of the Near and Middle East.

- In addition to the carbon in the oil are part of an asphalt-resinous component, porphyrins, sulfur and ash part.
- For non-hydrocarbon components of petroleum resins and asphaltenes are playing a very important role in the chemical activity of oil





- It may be added that the geological neighbor oil - natural gas - also a difficult matter in its composition. Most - 95% by volume - in the mixture of methane. There are also ethane, propane, butane and other alkanes.
- A more thorough analysis resulted in the discovery of natural gas and small amounts of helium.



- Use of natural gas began long ago, but was carried out at first only in the places of its natural outcrops. In Dagestan, Azerbaijan, Iran and other eastern regions.



- For centuries, people have used these gifts of nature, but the industrial development of these cases can not be called. Only in the mid-19th century, natural gas becomes fuel technology, and one of the first examples glassworks, organized on the basis of deposit Dagestan lights.



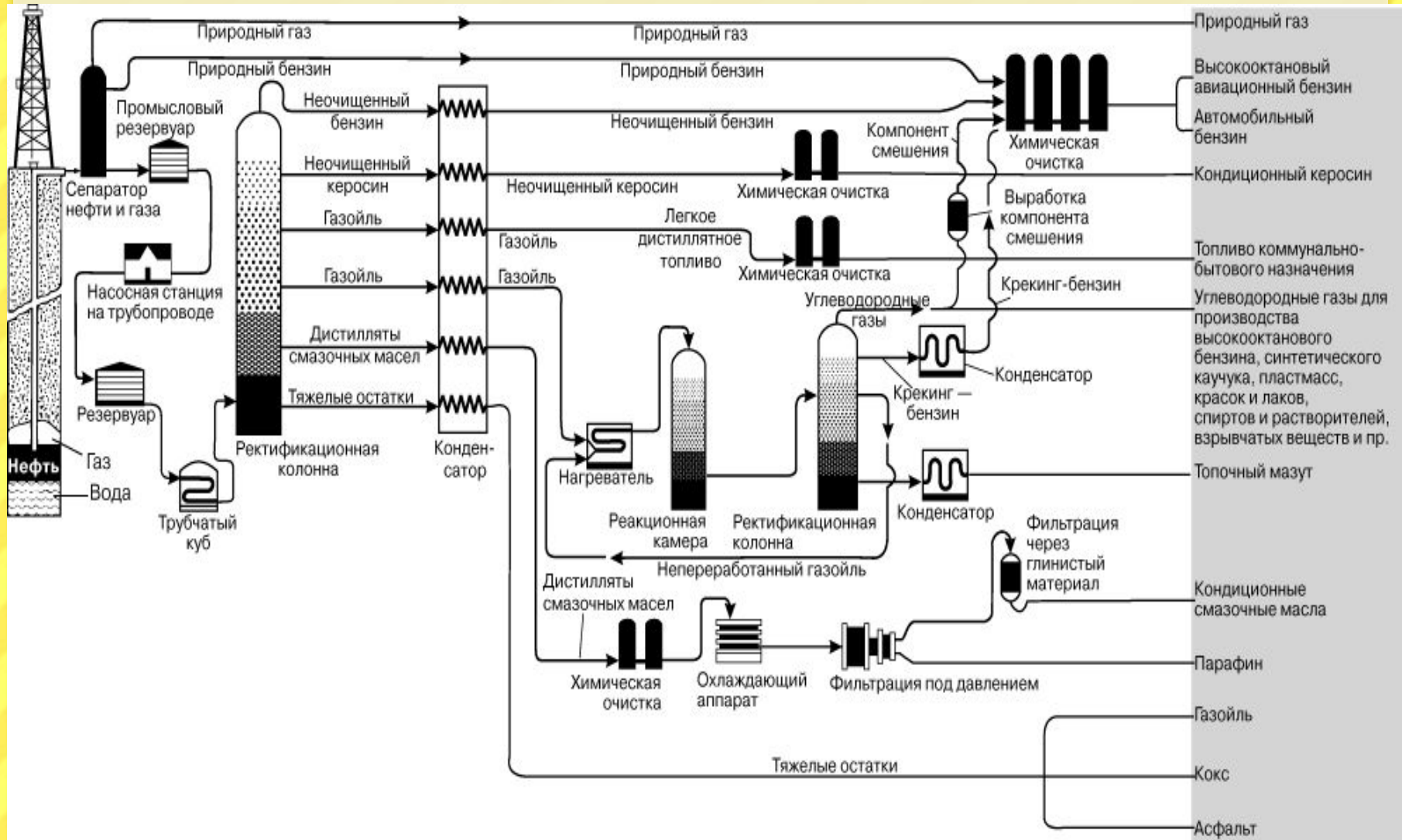
# Using

- Oil and gas - a unique and extremely valuable resources. Derived products are used in virtually all industries, in all types of transport, military and civil engineering, agriculture, energy, life, and so on. Forth. From oil and gas produce a variety of chemical materials, such as plastics, synthetic fibers, rubbers , paints, road and construction bitumen, detergents

# Processing methods

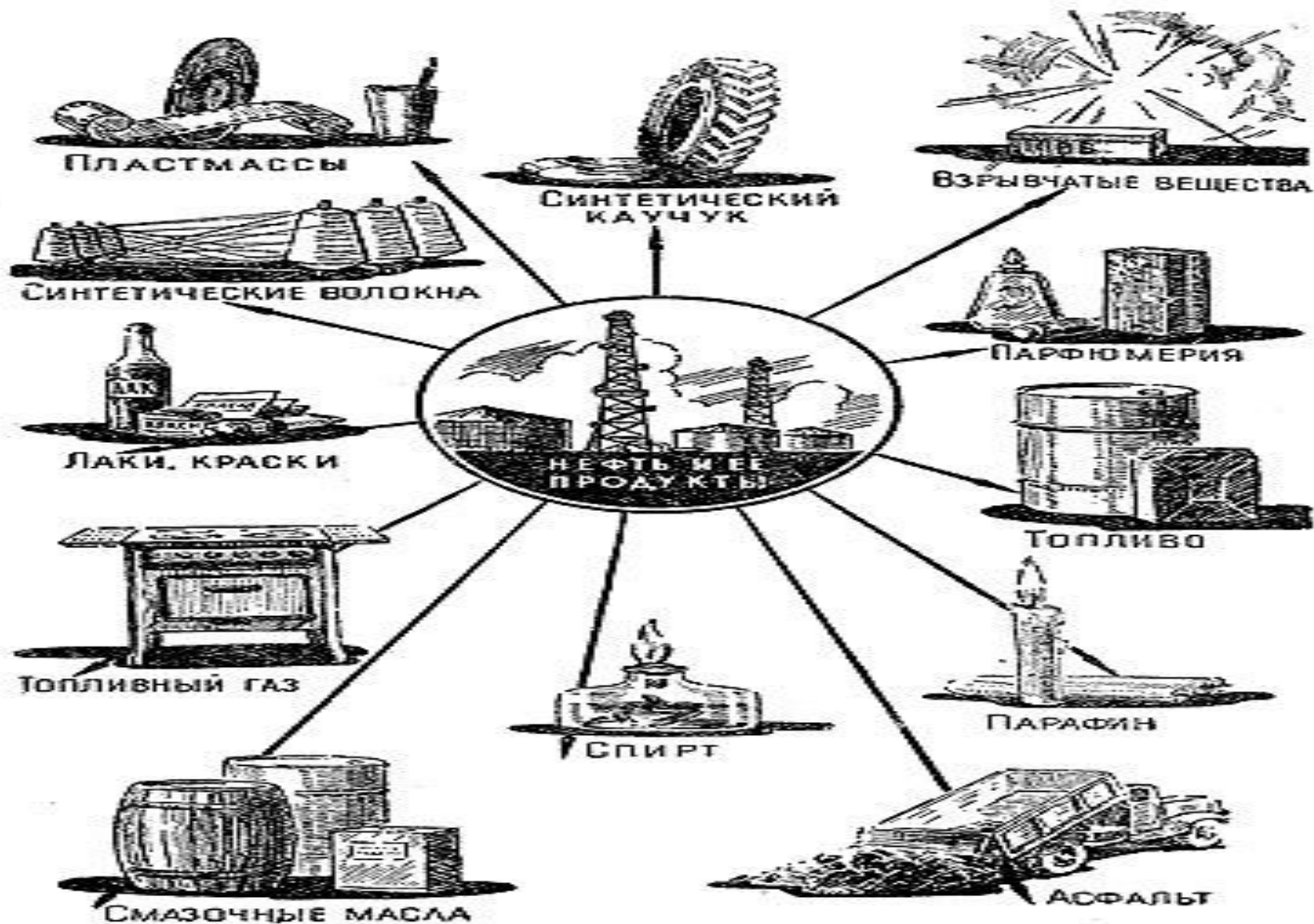
- oil production
- petroleum Refining
- cracking of petroleum products
- reforming

# The processing of oil and gas.





# Application of oil.



# Oil production

