

AZƏRBAYCAN RESPUBLİKASI TƏHSİL NAZİRLİYİ  
SUMQAYIT DÖVLƏT UNİVERSİTETİNİN NƏZDİNDƏ  
SUMQAYIT DÖVLƏT TEXNİKİ KOLLECI

**«İngilis dili »**

fənnindən mühazirələr

Orta ixtisas təhsili müəssisələrində  
fənnin tədrisi üçün nəzərdə tutulub  
(040562 ixtisası üçün)

**Tərtib edən: “Xarici dillər” Fənn birləşmə komissiyası**

**SUMQAYIT-2020**

## S A L T

There are the following salt sources in the world:

1. Sea water
2. Rock salt
3. Salt brines derived from springs, lakes or wells.

Atlantic sea water, except near the mouths of large rivers, average about 3,4% of solid matter which about 5% is sodium chloride. The concentration of sea water for salt is carried on to some extent in warm, dry countries by solar evaporation. The water usually being exposed in shallow tanks or ponds to the sun's rays. Sea water is seldom evaporated over fire because of the cost of fuel. Salt made from sea water (sea salt) is coarse and is usually damp owing to the presence of some magnesium chloride, which attracts moisture from the air.

Rock salt is found in many countries and often very pure. In England, Austria, Germany, Spain and Louisiana there are large deposits, some so pure that it is only necessary to grind it for use, but in most cases it is contaminated with iron oxides, clay, sand and other impurities which often necessitate its purification. The salt is derived from natural brines. There are salt deposits in some places such as in New York, Warsaw, Michigan, Salina, Kansas, Virginia.

Brines are obtained by board wells 8 inches in diameter, similar to these for petroleum. The wells are lined with iron casings to exclude water from the over-lying strata. The brine on it comes from the well has some turbidity, due to clay or fine sand, together with minute bubbles of carbon dioxide which the brine is usually charged. Ferrous carbonate is also hold in solution by the carbon dioxide and an exposure to this air a yellowish and precipitate of ferrio hydroxide separates. This is usually hastened

by adding “milk of lime”, or soda ash which also throws out some of the calcium or magnesium salts from the brine.

Salt source	- duz mənbəyi	exposure-qorunmayan
Rock salt	- daş duz	sodium- natrium
Salt brine	- duz məhlulu	
Mouth of river	- çayın mənbəyi	
Shallow tank	- kiçik qab, çən	
Pond[pond]	- bulaq. hovuz	
Moisture	- nəm	
To grind	-əzmək. üyütmək	
To contaminate	- korlamaq	
To necessitate	-məcbur etmək	
Purification	- təmizlənmə	
Iron casing	- dəmir örtük	
Over lying strata	– örtük,qabıq	
Turbidity	- bulanıqlıq,çirklilik	
Bubble	- qabar.qabarcıq	
To hasten	-tezləşdirmək	
Coarse	- iri,aşılanmış	
Charge	-yüklənmək	
Milk of lime	- əhəng südü	
Ferrous	-dəmir	
Inch	- 2,5 sm.	

## COAL. KINDS OF COAL.

Coal consists of free carbon mixed with complex organic compounds. All formed from the original plant material. Usually soft coal was formed by the action of lower pressure, and hard coal by the action of higher pressures.

Even in the atomic age coal is still useful to our society. Coal is also broken down to produce a wide variety of useful compounds. Coal is one of the most valuable of all substances. There are several ways of breaking the molecules of coal a part. A common method- and one of the simplest – is to heat coal to a high temperature in a container air cannot enter. The result is that the coal cannot burn, instead the heat breaks the complex molecules of the coal into smaller bits.

Coal is usually classified as hard and soft. Hard coal which is called anthracite coal is about 90% carbon. Bituminous coal is often called “soft coal”. This form has not been subjected to as great pressured as hard coal ,and still contains some compounds of C and NH<sub>3</sub>.

Lignite is softer than bituminous coal. It has brownish black colour and contains more compounds of carbon and hydrogen than does bituminous coal. When stored it disintegrates and changes to a powdery substance.

Peat is a brown mass of moss, sedges and leaves that has undergone only to a slight extent the changes by which coal is formed.

Coal	-daş kömür	anthracite - antrasit
Compound	- birləşmə	bituminous – qətran kömürü
Complex	-mürəkkəb	lignite -linyit(kömür növü)
Organic	- üzvü	to store - saxlamaq
Pressure	-təzyig	disintegrate - dağılmaq
Large quantities-	böyük həcmdə	peat - torf
To break down –	dağılmaq, parçalamaq	moss - mamır
Substance	- maddə	sedges - qamış
Bit	- zərrəcik	extent - hədd, səviyyə

## CHARCOAL

Charcoal is made by heating wood without contact with air. It is done in large iron retorts, or in large holding capacities on an industrial scale. This process is called destructive distillation. Many volatile substances are driven out of the wood, among them wood alcohol (methyl alcohol) acetic acid and acetone.

When all of the volatile substances have been driven off charcoal remains in the retort. One cubic inch of charcoal is able to adsorb as much as 90 cubic inches of ammonia.

Charcoal also removes small particles of colored substances from liquids. Many colored liquids such as vinegar and vegetable oils, maybe decolorized by heating them with a little charcoal.

This form of carbon like all the other doesn't react with acids, basic or other ordinary chemical reagents. It burns readily in an excess of air or oxygen, forming carbon dioxide.

Retort	- peç	liquid	- maye, maddə
Capacity	- həcm, tutum	reagent	- reaktiv
Industrial scale-	sənaye miqyaslı	excess	- ifrat
Destructive	- dağıdıcı		
Distillation	- distillə		
Volatile	- uçucu		
Substance	- maddə		
Acetic acid	- sirkə		
Charcoal	- ağac kömür		
Cubic	- kub (ölçü vahidi)		
Adsorb	- adsorbsiya etmək		

## COAL TAR

The three by products of coal are coal gas, coal tar and coke. The remarkable is certainly coal tar. Coal tar is a mixture like petroleum and can be separated into its several ingredients by fractional distillation. From the ingredients distilled out of this black tar the organic chemist prepares a large variety of useful compounds.

Today nearly all dyes are made from the ingredients of coal tar. Chemists have created from coal fine perfumes an important kind of synthetic rubber, many chemicals used in photography.

Coal tar also plays a prominent part in medicine. It is used in making sulfa drugs which stop bacteria from multiplying in the human body.

Also many enamels as well as plastics, nylon and compounds for improving the properties of motor fuel are made from the naphthalene obtained from coal tar.

Tar	- qətran	organic chemists-üzvü kimya
Varierty	-müxtəliflik	rubber -kauçuk
Ingredient	- əsas, tərkib hissə	enamels - mina qatı
Dyes	- boyaq, boyadıcı maddələr	
Coke	- koks	
Fractional	- fraksiya(kəsirli)	
Sulfa drug	-antibiotik dərmanlar	
To multiply	- çoxalmaq, yayılmaq	
Chemical	- kimyavi maddə	
Motor fuel	- mühərrik yağı	

## OPTICAL GLASS

Glass which is to be used for lenses must be almost colourless, free from defects. These requirements mean that optical glass must be stirred for a long time in the melting pot; and cooled very slowly during a period of 5 or 6 days.

In the modern optical glasses a part or all of the silior of ordinary glass is often replaced by boric oxide ( $B_2O_3$ ), or phosphoric oxide ( $PO_10$ ) and a part or all of the lime and soda by the oxides of barium, zinc, magnesium, or even aliminium.

Great progress has lately been made in developing special glasses that are more transparent than ordinary glass to ultraviolet light. Such glass must be free from iron and sometimes contains beryllium oxide ( $B_2O$ ). This glass of this type is used in the bulbs of “sun ray” lamps sometimes on hospital windows when the therapeutic properties of the ultra-violet part of the sun’s rays are to be tested.

Optical glass – optic şüşə

Requirement - tələbat, tələb

To cool - soyutmaq

Melting pan - əritmə çəni

Bulbs - dəstələri(günəş şüasının)

Therapeutic - terapevt

To test - yoxlamaq

Transparent- aydın

## ALIMINIUM

We know different kinds of metals in nature. The heavy metals include iron, copper, tin, lead and some others. Some metals are light (aluminium), some metals are hard (iron) and others are soft (tin, lead). Aluminium is a metal found in clay. It is the most abundant metallic element found in nature only in the form of compound. Aluminium is a very important metal used in many industries. It has a white colour, doesn't corrode and is resistant to all inorganic acids except hydrochloric. Aluminium things are in wide use. Aluminium combined with steel and other metals called an "Alloy". Alloys formed in combination with aluminium are better for various purposes than the basic metal itself. Engineers often use combined metals in industry. Its importance is growing from day today.

Lead	-qurğuşun
Abundant	- bol,zəngin
Tin	- qalay
Copper	- mis
Light	- yüngül
Clay	-gil
Corrode	- paslanmaq kə roud
Steel	- polad
Alloy	- ərinti
Inorganic	- qeyri üzvü

# ALLOYS

The most useful metals are iron, copper and aluminium. Only small quantities of the above metals are used in their pure form. The great majority of useful metallic materials are formed from combinations of the above metals, known as alloys.

An alloy is an intimate mixture of two or more metals melted together. Mixtures of this kind are generally mechanical in their nature; in some cases they may form chemical compounds. When two metals melted together form an alloy. The substance formed is a new metal.

Metals are usually mixed in their liquid state to form an alloy. If the metals chosen dissolve in each other when they are liquid, the solution will form an alloy after solidification, metals that do not dissolve in each other when liquid will not form an alloy when they solidify. Steel contains some metallic element other than iron and carbon, is generally known as "special steel". These various metals when added to steel in certain increase the hardness and the toughness of the steel.

Majority - çoxluq

Combination - birləşmə

Intimate - yaxın( oxşar)

Mixture - qarışıq

To melt - ərimək

Alloy - ərinti

Solidification – bərkimə

Toughness - davamlılıq,yapışqanlıq

Dissolve - həll olmaq

steel - polad

## POLYMERS

The name polymers doesn't give any idea of science's now achievements. What are polymers? Polymers comprise a great variety of synthetic substances produced iron chemicals. A typical instance of polymers is plastics; when moulded under heat and pressure they can take any form and are in wide use in industry and household.

The assortment of polymer materials manufactured by our industry is growing every year. Polymers have two main disadvantages. Like metals, wood and stone polymer materials and articles made of them lose their initial properties under the influence of atmospheric conditions: light, moisture and temperature changes.

Much effort is being made to develop polymers withstanding high temperature. For instance in order to protect certain types of rubbers from the influence of ozone destroying some of their properties, wax is added to them and a protecting coating develops on the article produced. The introduction of aliminium, titanium, cobalt and other elements into the molecules of polymers can produce a material resembling minerals I their properties, is able to withstand temperature changes. Research into these problems is of great theoretical and practical interest.

Polymer –	- polimer	mould –	qəlibə salmaq
To comprise	- daxil etmək	titanium	- titan
Assortment	- seçmə, qruplaşdırma	cobalt	- kobalt
Initial	- əvvəlki	theoretical-	nəzəri
To withstand –	davam gətirmək	influence –	təsir
Wax	- parafin		
Moisture	-nəmişlik		



## PETROLEUM

Petroleum is a raw material. If petroleum suddenly disappeared we would find ourselves without any gasoline, lubricating oil for our machines. We would have no asphalt for paving our highway, no fuel oil for heating our homes.

Petroleum is a dark oily liquid found in underground deposits. Probably it had its origin millions of years ago at the bottoms of ancient seas, where the remains of countless animal and vegetable organisms settled. During hundreds of years –they were subjected to pressure and to chemical and bacteriological action which transformed them into oil.

Crude oil is composed very largely of compounds of two elements hydrogen and carbon. In this family of compounds the boiling point increases with increasing molecular size. Methane, ethane, propane and butane are gases; next come liquids boiling in a range suitable for motor fuel then kerosene or paraffin and all kinds of industrial purposes and so on.

As various compounds have different boiling points they can be separated very easily from the original mixture.

### The new words:

Petroleum	- neft	raw material - xammal
Fuel	-yanacaq	gasoline - qazolin
Deposit	- çöküntü	lubricating oil - sürtkü yağı
To settle	- həll etmək	crude oil - xam neft
To be subjected to	- məruz qalmaq	mixture - qarışıq
To transform	-çevrilmək	purpose- məqsəd
To be composed of-	ibarət olmaq	to pave highways- asphalt yolların
Range-	masştab, diapason	salınması

## GASEOUS FUELS

For the first time gas was used as a fuel in 1802. Since that time gas has been produced on a large scale. The first gas used for heating purposes was manufactured. Although much gas is still manufactured, natural gas is being used more and more.

**Natural gas** – The composition of natural gas varies with the locality from which it is obtained. The chief constituent of natural gas is methane, which is in most cases present in the gas to the extent of 85 to 95%. Natural gas is properly mixed with air, burns with blue, nonluminous flame. Natural gas is used as a fuel for heating.

**Coal gas** - This gas is made by the destructive distillation of bituminous coal. Coal gas consists of approximately 10% hydrogen, 40% methane, 10% carbon monoxide. It is the most widely used artificial gas for heating purposes.

Nonluminous - işıqlanmayan

Approximately – təqribən

Bituminous - bitum, qətran, asfalt

Purpose - təyinat, məqsəd

On a large scale – böyük həcmdə

Composition - tərkib

Artificial - sünü

Destructive - parçalanma

To obtain - almaq, alınmaq

To vary - dəyişmək

Extent - hədd, səviyyə

To manufacture - istehsal etmək, emal etmək

## SOME SPECIAL KINDS OF GLASS

The soft glass of window panes, bottles and electric light bulbs is shaped by blowing with compressed air in automatic machines which produces articles at a light speed with very little aid from human hands. Plate glass is made by rolling a pasty mass of glass after annealing and polishing.

Colored glass usually owes its color to metallic oxides(of copper, cobalt, manganese ) Cobalt oxide gives a blue color, selenium dioxide or gold – a ruby red, chromium trioxide – a green, silver oxide – a yellow, manganese dioxide –a violet.

Safety glass or shatter-proof glass consists of two thin sheets of plate glass, cemented with a layer of organic plastic materials. The sheets are pressed together at a temperature sufficient to soften the organic plastics and create permanent bond between the two sheets of glass.

Pane [pein] – pəncərə şüşəsi	shatter-proof – sınımaya davamlı
Bulb [b lb] - işıq lampası	sheet - təbəqə
To shape [ eip]- formaya salmaq	bond -əlaqəçmünasibət
Aid [eid] - kömək	to soften - yumşaltmaq
Compressed air –sıxılmış hava	polishing - cilalama
Speed [spi:d] - sürət	selenium - selen
To owe - borclu olmaq	ruby-red - rubin
Rolling [rouli ] - fırlama	
Pasty [p sti]- kündəvari	
Annealing [ ni:li ] - qızdırmaq	