



Department of Foreign Languages

Independent Students Work

WATER

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Course: 1



Plan:

- Water is a compound substance
- Properties of Water
- Types of Water
- Water Application
- Beneficial properties of Water
- Water Pollution - Nature Pollution
- Conclusion
- Literature



Water (hydrogen oxide) is a binary inorganic compound with the chemical formula H_2O . A water molecule consists of two hydrogen atoms and one oxygen, which are

interconnected by a covalent bond. Under normal conditions, it is a clear liquid that does not have color (with a small thickness of the layer), smell and taste. In solid state is called ice (ice crystals can form snow or frost), and in the gaseous form - water vapor. Water can also exist as liquid crystals (on hydrophilic surfaces)



Research

The origin of water on the planet
Main article: [Origin of water on Earth](#)

The origin of water on Earth is the subject of scientific controversy. Some scientists believe that water was brought in by asteroids or comets at an early stage of the formation of the Earth, about four billion years ago, when the planet had already formed into a ball. It is now established that water appeared in the Earth's mantle no later than 2.7 billion years ago



Basic physical properties It is customary to attribute the crystal lattice, boiling points and melting points, and special individual characteristics to those. All of them and consider.

The structure of the crystal lattice of hydrogen oxide depends on the state of aggregation. It can be solid - ice, liquid - the main water under normal conditions, gaseous - steam when the water temperature rises above 100°C . Beautiful patterned crystals form ice. The grill is generally loose, but the joint is very strong, the density is low. You can see it on the example of snowflakes or frost patterns on the glass. In ordinary water, the lattice does not have a permanent form, it changes and passes from one state to another. The conductivity of hydrogen oxide in the liquid state depends on how much and what salts are dissolved in it. Distilled water that does not contain any impurities, does not conduct electric current.



Chemical properties

Water is the most common solvent on planet Earth, largely determining the nature of earth chemistry, as a science. Most of chemistry, when it was born as a science, began precisely as the chemistry of aqueous solutions of substances.

It is sometimes considered as ampholyte - both acid and base simultaneously (cation H⁺ + anion OH⁻). In the absence of foreign substances in water, the concentration of hydroxide ions and hydrogen ions (or hydroxonium ions) is the same, pK_a ≈ 16.

Water is a chemically active substance. Strongly polar water molecules solvate ions and molecules, form hydrates and crystalline hydrates. Solvolysis, and in particular hydrolysis, occurs in animate and inanimate nature, and is widely used in the chemical industry.

Water can be obtained during the reactions:

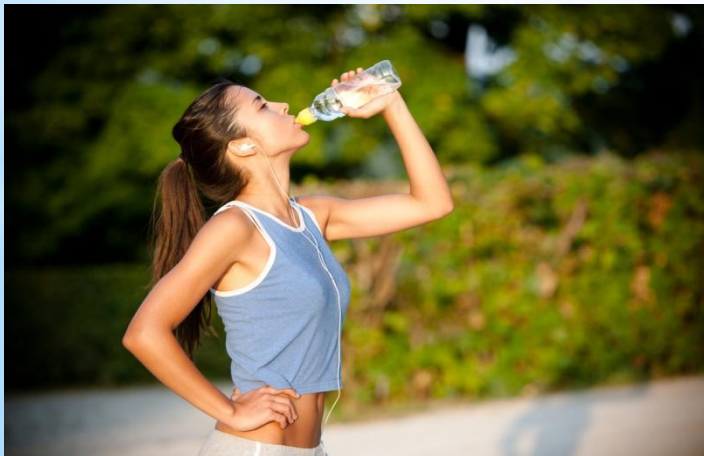




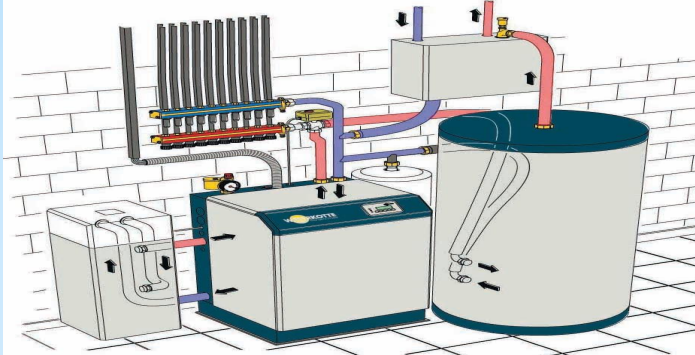
The chemical composition of natural water Natural unboiled water includes oxygen and useful organic substances that have a beneficial effect on the circulatory, digestive and lymphatic systems, metabolism and cleansing the body of toxins. In other words, it provides the human body with vital energy for normal activity, growth and reproduction. In water, most salts are represented as ions: anions (iodine, sulfate, bicarbonate, chloride, etc.) and cations (iron, potassium, calcium, magnesium, copper, sodium, etc.)



- **In agriculture**
Cultivating a sufficient number of crops in open drylands requires significant amounts of water for irrigation, reaching up to 90% in some countries.



- **For drinking and cooking**
A glass of clean drinking water
The living human body contains from 50% to 75% water [40], depending on weight and age. Loss of more than 10% water by the body can lead to death. Depending on the temperature and humidity of the environment, physical activity, etc., a person needs to drink a different amount of water.
As solvent
Water is a solvent for many substances. It is used to clean both the person himself and various objects of human activity. Water is used as a solvent in industry



- As a coolant
Scheme of operation of a nuclear power plant in a double-circuit water-cooled power reactor (VVER)
Among the liquids existing in nature, water has the greatest heat capacity. The heat of its evaporation is higher than the heat of evaporation of any other liquids, and the heat of crystallization is inferior only to ammonia. As a coolant, water is used in heat networks for the transfer of heat along heating lines from heat producers to consumers. Water in the form of ice is used for cooling in catering systems, in medicine. Most nuclear power plants use water as a coolant.
- For fire extinguishing
In fire extinguishing, water is often used not only as a coolant, but also to isolate the fire from the air as part of the foam, since combustion is maintained only with sufficient oxygen.
- In sports
Many sports are practiced on water surfaces, on ice, on snow and even under water. These include scuba diving, ice hockey, boat sports, biathlon, short track, etc.



Useful properties and benefits of water for the human body

Preventing and treating colds and flu, nourishes cells and organs with oxygen and nutrients, prevents cancer, regulates body temperature, strengthens the cardiovascular system, prevents heart attacks and strokes, makes the vessels elastic, normalizes pressure, dissolves and removes toxins, helps to lose weight, normalizes metabolism, promotes the absorption of useful substances, helps to recover from stress, gives elasticity and tone to muscles, participates in the process of growth of muscle tissue, protects the Ava, tones, improves brain function, prevents deterioration with age memory, relieves fatigue, improves the skin and hair, prevention and treatment of skin diseases has a rejuvenating effect moisturizes the air inhaled.



Water pollution is a serious environmental problem. After all, water is necessary for the existence of all living organisms, including humans. But its pollution makes it impossible to use water for drinking.

The main causes of water pollution are: Wastewater, Industrial Waste, Farmers, Oil Leaks, Solid Waste, Thermal Pollution, Atmospheric Pollution.

effects of water pollution

There is already a shortage of fresh water in the world (mainly in regions close to the equator). Water pollution only aggravates the situation. All this threatens the lack of fresh water for a large number of people. And, as a result, an increase in the number of deaths from thirst



Conclusion

Everyone knows that water is life. Without it, the Earth would be as dry and lifeless as the rest of the planets in our solar system. Most of the planet Earth is water in the oceans, seas, rivers, lakes, underground sources, glaciers and clouds. Also, water is an essential part of our body, which recalls the need to replenish water balance with a feeling of thirst. What could be better than drinking a glass of cool water on a hot day? Unfortunately, despite the fact that everyone and everyone understands the value and importance of water, we still continue to pollute it. Plants dump their own waste into the seas and rivers, the chemistry with which the fields are processed gets into the groundwater, and the harmful substances from the incinerated garbage fall out after rains. Therefore, we all must remember that water is the most important part of our planet. It must be protected, rationally used and in every way possible to avoid its pollution.



Literature:

- <https://ru.wikipedia.org/wiki/Вода>
- <https://bestlavka.ru/voda-eto-zhizn/>
- https://www.syl.ru/article/172000/new_voda-i-ee-svoystva-fizicheskie-i-himicheskie-struktura-vodyi
- <https://naturaе.ru/ekologiya/ekologicheskie-problemy/zagryaznenie-vody.html>

**С.Ж.АСФЕНДИЯРОВ АТЫНДАҒЫ
ҚАЗАҚ ҰЛТТЫҚ МЕДИЦИНА
УНИВЕРСИТЕТІ**



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THANKS FOR ATTENTION