

УПРАЖНЕНИЯ ПО ГРАММАТИКЕ
АНГЛИЙСКОГО ЯЗЫКА
ДЛЯ СТУДЕНТОВ 1-2 КУРСОВ
ХИМИКО-ТЕХНОЛОГИЧЕСКИХ
СПЕЦИАЛЬНОСТЕЙ

Иваново 2008

Федеральное агентство по образованию
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Составители: Р.В. Кузьмина
А.Н. Смирнова

Под редакцией Р.В. Кузьминой

Иваново 2008

Составители: Кузьмина Р.В., Смирнова А.Н.

Упражнения по грамматике английского языка для студентов 1-2 курсов химико-технологических специальностей / Сост.: Кузьмина Р.В., Смирнова А.Н.; Под ред. Р.В. Кузьминой; Иван. гос. хим.-технол. ун-т. – Иваново, 2008. – 48 с.

Методические указания предназначены для студентов 1-2 курсов дневного отделения химико-технологического вуза. Их цель – подготовить студентов к переводу оригинальной технической литературы на основе закрепления навыков перевода трудных и часто встречающихся грамматических конструкций и на основе накопления определенного лексического минимума.

В методических указаниях предлагается в виде схем и таблиц краткое повторение основных грамматических тем, предусмотренных программой (степени сравнения прилагательных, неопределенные местоимения *some, any, no*, система времен страдательного залога, модальные глаголы и их эквиваленты, причастия и абсолютный причастный оборот, герундий и герундиальный оборот, инфинитив и инфинитивные конструкции, функции *it, one, that*, условные предложения), и после каждой таблицы или схемы даются упражнения для углубленной проработки грамматических явлений и конструкций, особенно часто встречающихся в технических текстах.

При подборе упражнений учитывалась лексика, необходимая для дальнейших переводов литературы по химии. Расположенный в конце методических указаний словарь поможет снять лексические трудности, возникающие у студентов при переводе предложений.

Все предложения подобраны из современной оригинальной литературы и отвечают программным требованиям по английскому языку в неязыковом вузе.

Методические указания могут быть использованы как для аудиторной, так и самостоятельной работы студентов.

Рецензент

старший преподаватель Л.Н. Григорьева
(Ивановский государственный химико-технологический университет)

1. Degrees of Comparison

<p><i>Положительная степень</i></p>	Прилагательное или наречие	<p>Переводится: прилагательным и наречием в положительной степени</p>	<p>Strong – сильный High –высокий Useful – полезный Carefully – осторожно</p>
<p><i>Сравнительная степень</i> односложные -ER многосложные MORE LESS</p>		<p>прилагательным, наречием с суффиксом –e более (менее) + прилагательное, наречие</p>	<p>Stronger – сильнее Higher – выше More (less) useful – полезнее More (less) carefully – осторожнее</p>
<p><i>Превосходная степень</i> односложные -EST многосложные (the) MOST LEAST</p>		<p>прилагательным с суффиксом –ейш(ий), наречием с суффиксом –ee всего (всех) самый / наиболее (наименее)+ прилагательное или наречие; наречием с суффиксом –ee всего (всех)</p>	<p>(the) strongest – самый сильный, сильнейший (the) highest – самый высокий, высочайший the most useful – самый полезный, полезнейший the most carefully – наиболее осторожно, осторожнее всего</p>

Exercise 1

Find the adjectives and state their degrees of comparison:

Oxide, important, stronger, successfully, manufacture, derivative, the most possible, application, possesses, colder, the smallest, obsolete, estimated, more sufficient, indicating, the most special, the purest, more natural.

Exercise 2

Translate the following sentences:

1. Aluminium is as good for transmission lines as copper.
2. He works at his experiment not so much as he must.
3. Sulfuric acid is the most important of all commercial chemicals.
4. More dilute acid is employed for most other purposes.
5. The amount of iron oxide permitted in most colourless glass is less than 0.7%.
6. The experimental error is probably as large as ten per cent.
7. The more we evaporate brine, the more crystals of sodium chloride we obtain from it.
8. Substances burn more rapidly in oxygen than they do it in air.
9. The more air there is present, the more complete will be the equilibrium.
10. The higher is the temperature, the less is the solubility of the gas.

Exercise 3

Translate the following sentences:

1. The most important oxides of nitrogen are nitric oxide (NO), and nitrogen dioxide (NO₂).
2. Practically all nitric oxide now is made by the oxidation of ammonia.
3. Less than 3% of the total energy employed is taken up in the reaction.
4. The reaction mixture must be cooled as quickly as possible after it passes through the electric arc.
5. This process required a great deal of electrical energy and is now entirely obsolete.
6. Above 2.300° C the time required to reach equilibrium is very short.

2. Indefinite Pronouns *some, any, no*

Тип предложения	Местоимение	Исчисляемые существительные		Неисчисляемые существительные
		ед. число	мн. число	
Утвердительные	some	некоторая какая-то	несколько	не переводится
		some book	some books	some acid
	any	любая	любые	любая
		any book	any books	any acid
Вопросительные	any	какая-нибудь	какие-нибудь	сколько-нибудь
		any book	any books	any acid
Отрицательные	any	никакой	никакие	нисколько
		any book	any books	any acid
	no	никакой	никакие	нисколько
		no book	no books	no acid

Derivatives of *some, any, no*

some	-body, -one	-thing	-where
	кто-нибудь	что-нибудь	где (куда)-нибудь
	somebody, someone	something	somewhere
any	кто-нибудь	что-нибудь	где (куда)-нибудь
	anybody, anyone	anything	anywhere
no	никто	ничто	нигде, никуда
	nobody, no one (none)	nothing	nowhere

Exercise 1

*Translate the following sentences, paying attention to **some, any, no**:*

1. Because of the high concentration of ammonia no attempt was made to determine pH values.
2. This method eliminates any considerable change of temperature during the whole titration.
3. Any organic matter in the sample must be removed.
4. Helium belongs to the same category as argon since it combines with no other elements.
5. Any of the usual methods may be employed for comparison.
6. No interaction was found between the corresponding aquo-cations.
7. No preliminary treatment of the sample was employed in this method.
8. No appreciable change had taken place in a control tube even after half an hour.
9. No stable potential could be measured under such a circumstance.
10. In this ordinary case no preliminary separations are necessary, and the arsenic is reduced as described above.
11. The use of cement in this connection has already been discussed to some extent.
12. All the particles from any given radioactive substance have a certain definite velocity.
13. Some measurements were made to select phosphorus of various resistances for these tests.
14. Only a small proportion of an X-rays beam will be reflected from any given plane of atoms in the crystal.
15. The infrared spectrum showed no carbonyl adsorption.
16. No attempt was made to isolate any of the latter material.
17. No evidence of the formation of such compounds has ever been found by us.
18. No accurate quantitative data as to the relative amounts of the substances present in the mixture were obtained.

Exercise 2

What would you say in the following situations?

Examples: You walk into the shop, but there is nobody there.

You wait a minute or two then you shout: "Hallo! Is...?"

Answer: Is **anyone** there?

Use compounds of "any", "some" or "no".

1. You are busy with your homework when the telephone rings. The other members of your family are in the living-room, but nobody goes to answer the telephone. You shout: "Can...?"
2. Your teacher asks you a question and neither you nor the others in the class can answer it. Your teacher is surprised and asks: "Can't ...?"
3. You have lost your English book, so you ask the other students in your class: "Has...?"
4. After classes your friends want to go for a picnic. They ask you where you would like to go, but you don't mind where. You say: "We can..."
5. Your bike has a flat tyre. Some friends come cycling by. You stop them and ask: "Could...?"
6. You are going to work in the laboratory after classes. You are not sure whether one of your friends will join you, so you will ask: "Will ... join me in the laboratory to finish our experiment?"

3. Passive Voice

Be + Participle II (Past Participle)
(в соответств. времени, лице, числе)

	Indefinite	Continuous	Perfect
present	am built is built are built строят (обычно, всегда, каждый день)	am being built is being built are being built строится (сейчас); строят (сейчас)	have been built has been built построен в этом году (результат); построили уже
past	was built were built построили (вчера, в прошлом году, 3 года назад)	was being built were being built строили (когда я приехал); строился	had been built был построен (прежде, чем я приехал); построили
future	shall be built will be built будет построен (завтра, в будущем году)		will have been built будет построен (к январю)

Compare:

ЗАЛОГ	подлежащее	сказуемое	дополне- ние	обстоятель- ство
действи- тельный залог	The Curies	discovered	radium	in 1838
страда- тельный залог	Radium	was discovered	by the Curies	in 1838

Exercise 1

Translate into Russian, paying attention to the Passive Voice:

1. It is known that potassium permanganate and stannous chloride will react in acid solution.
2. His statement may be referred to as the opinion of a specialist.
3. This surface reaction is largely effected by the presence of protective colloids.
4. They were permitted to use the reference-book in their work.
5. It is recommended to use sulfuric acid in the preparation of carbon dioxide.
6. At all temperatures there was an initial rapid rate of oxidation, which was followed by an approximately constant rate of film growth.
7. The methane reaction occurs with a decrease in volume of 2 to 1, and is favorably affected by pressure.
8. In all cases, the course of the oxidation was followed by exact gas analyses.
9. A great many titrations can be followed by potentiometric measurements.
10. A secondary amine yields an insoluble compound, which is unaffected by acid.
11. Phenols are often identified through bromination products and certain esters and ethers.
12. The same is true of the case in which methane is acted on with steam or oxygen, where carbon dioxide and water are formed together with carbon monoxide and hydrogen.
13. Many of the investigations were carried out by simply heating mixtures of air or oxygen and the hydrocarbons.
14. The excitation of the electrons of both the metal ion and the ligand is influenced by their interaction.
15. It must be taken into account, that the potential is also influenced by the concentration of the amalgam.

16. The reductions with zinc are followed by titration with permanganate, whereby acetanilide is reduced and then reoxidized.
17. Removing small quantities of the acid for test may be followed by the course of the separation.
18. Chemical operations are carried out prior to molecular distillation.
19. Naturally the occurrence of foaming is also influenced by the properties of the material (viscosity, partial pressure, density).
20. Raw materials are directly subjected to molecular distillation.

4. Modal Verbs

<i>modal verbs</i>	<i>present</i>	<i>past</i>	<i>future</i>	<i>meaning</i>
can be able to	<i>can am/is/are able to</i>	<i>could was/were able to</i>	----- <i>will be able to</i>	<i>Физическая возможность (могу, умею)</i>
may be allowed to	<i>may am/is/are allowed to</i>	<i>might was/were allowed to</i>	---- <i>will be allowed to</i>	<i>Моральная возможность (могу разрешаю)</i>
must have to ought to be to should	<i>must have/has to ought to am/is/are to should</i>	----- <i>had to</i> ----- <i>was/were to</i> -----	----- <i>will have to</i> ----- <i>will be to</i> -----	<i>Долженствование (должен, обязан)</i>

Exercise 1

Translate into Russian:

1. Sulfuric acid is able to dissolve sulfur trioxide up to very high concentrations.
2. Pure nitrogen can be made by decomposition of nitrides.

3. The liquid was allowed to evaporate and went back into the pipelines.
4. Helium could be separated safely by liquefaction from the air.
5. The reaction mixture must be cooled as quickly as possible after it passed through the electric arc.
6. Zinc sulfide roasting requires careful control, since that compound had to be completely broken up for further treatment.
7. Since starch is to be broken down to sugars, ethyl alcohol may be regarded as a sugar product.

Exercise 2

Translate into Russian:

1. We are to study the equipment used to purify various chemicals.
2. We are asking the instructor to explain the general principles of purification.
3. We are asked by the instructor to explain this phenomenon.
4. A good practical knowledge of chemistry is of great importance for the people working at this plant.
5. The results of laboratory research are of great value for our country.
6. It is necessary to make accurate measurements of the temperatures and pressures at the different stages of the process.
7. A new plant for producing fertilizers is now being designed. It is to be set up in the area where the raw materials are available in great quantities.
8. This discovery was of great importance for the future work.
9. One minor source of salt is water from salt lakes.
10. The method now most generally employed for making sodium carbonate was developed in 1863.
11. Salt is thus available in unlimited amounts.
12. A great deal of naturally occurring calcium sulfate is in the form of the hydrate.
13. The usual method of avoiding such an error is to remove iron by precipitation with ammonia.
14. The object of this reaction is to recover nitrogen peroxide.

15. It is to be expected, that the primary particles formed will be of colloidal dimensions.
16. Were you at home last night?
17. The solutions were in a copper flask.

5. Participles

Форма причастия	Залог		Примечание
	действительный Active	страдательный Passive	
Participle I = Present Participle	Heating Making	Being heated Being made	Выражает действие одновременное с действием, выраженным глаголом-сказуемым
Participle II = Past Participle		Heated Made	
Perfect Participle	Having heated Having made	Having been heated Having been made	Выражает действие, предшествующее действию глагола-сказуемого, указывает на завершенность действия

Absolute Participial Construction

существительное в общем падеже или местоимение в именительном падеже	+ причастие + (...), ...
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Exercise 1

Translate into Russian, paying attention to the Participles:

1. The liquid remaining in the flask contains only a very small proportion of water.

2. The liquid decomposes rapidly when heated at ordinary atmospheric pressure.
3. When exposed to the atmosphere, boron trioxide absorbs moisture with which it combines.
4. Having cooled the solution we poured it into the flask.
5. Being heated magnetized steel loses its magnetism.
6. Having made a great number of experiments with different substances, the chemists found that most of them could be decomposed into other substances.
7. Having been tested the new apparatus was recommended for work in all the laboratories.
8. Gases are composed of a number of molecular particles moving at tremendous speed.
9. The heat required to start the reaction does not account for the amount of heat developed during the reaction.
10. When treating cold aqueous solution of sodium peroxide with dilute and cold hydrochloric acid, a solution of hydrogen peroxide mixed with sodium chloride is obtained.
11. It is a familiar fact of observation that gases and vapours, if cooled sufficiently and subjected to sufficiently high pressures, condense into liquids.
12. A floating body displaces some water.
13. The atom contains a number of electrons revolving around the nucleus.
14. The test being carried out is of great significance.
15. Being placed in the open air iron rusts and deteriorates.
16. When speaking of water, we must remember that it is composed of only tiny particles – its molecules.
17. Being taken in proper proportion hydrogen and oxygen combine forming water.
18. The described method is widely used in electroplating.
19. When heated mercuric oxide decomposes rather rapidly.

Exercise 2

Translate into Russian, paying attention to the Participles:

1. The experiment followed by a lecture was carried out by our professor's assistant.

2. The method followed by us was accurate.
3. The data referred to in this paper are quite reliable.
4. The common feature of acids is the acidic hydrogen already referred to.
5. Since ozone is more active than oxygen it reacts with some substances not affected by oxygen at ordinary temperature.
6. Mercury is used in barometers, having a great specific gravity.
7. Reacting with a base an acid gives rise to a salt and water.
8. Having replaced the fuses I switched on the current.
9. Having been measured with unreliable instruments the data were incorrect.
10. Having been warmed to 0°C ice began to melt.
11. If heated to redness and plunged into cold water, steel becomes as hard as glass.
12. A piece of ice will melt if thrown into water.

Exercise 3

Translate into Russian, paying attention to the Absolute Participial Construction:

1. Aluminium dissolves slowly in cold dilute hydrochloric acid, and rapidly in hot, the concentrated acid giving an aqueous solution of aluminium chloride and hydrogen gas.
2. The mixture is poured into ice-water, care being taken that no rise in temperature takes place.
3. It is found that the solubility of a substance determined changes with temperature, a rise in temperature usually causing an increase in solubility.
4. A proton of this powder having been heated in a test tube, we obtained quite a new substance, iron sulfide.
5. Iron being treated with hydrochloric acid, we see that it goes into solution.
6. Both diamond and graphite being a pure form of a carbon, the former is the hardest substance known and latter is a very soft one.

7. The corresponding amide and anilide also crystallize in monosymmetric prisms, the former melting at 252°C, the latter at 241°C.
8. The concentrated solution of hydrogen peroxide obtained by evaporation at ordinary pressure is placed in the flask and heated to 30-40°C, the pressure being reduced to 15 mm.
9. These solutions vary in their colour, brown, white, blue, red and yellow being well known.
10. When a steel is dissolved in nitric acid a brown-coloured solution is obtained, the intensity of colour being proportional to the amount of carbon present.
11. The compressibility of the kerosene being known, the compressibility of the gas could be calculated.
12. This material being unsuitable on account of its brittle nature, they could not use it for these articles.
13. Chromium having been added, strength and hardness of the steel increased.
14. The mixture having been cooled, some alcohol was added into it.
15. Atomic radiation being harmful to living organisms, concrete walls six or seven feet thick must surround the reactor.
16. The solution being allowed to evaporate, the sulphur will again be deposited in the form of yellow crystals.

6. Gerund

	Active	Passive	Примечание
Indefinite	heating reading	being heated being read	одновременность с действием глагола- сказуемого
Perfect	having heated having read	having been heated having been read	предшествование с действием глагола- сказуемого

Gerund Construction

<p style="text-align: center;">существительное в притяжат. падеже ПРЕДЛОГ + существительное в общем падеже + GERUND притяжательное местоимение</p>
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Exercise 1

Translate the sentences into Russian, paying attention to the gerund:

1. Compressing a gas is, in fact, reducing the empty space of which it chiefly consists.
2. The teacher was against your being given this article to translate.
3. Friction between two bodies is called static friction if slipping does not occur.
4. The students did not know of this specimen having been measured before.
5. Rising the output, we must not forget the task of rising the quality at the same time.
6. We were told of some samples containing traces of ozone.
7. We know of Mendeleev's having predicted the existence of elements unknown at his time.
8. By placing a chlorine in the certain position, a polar polystyrene can be prepared.
9. Heating the polymer of methylvinylketene leads to a loss of water.
10. This solution, which is usually referred to as viscose, after being allowed to stand and partially decompose, is fabricated into threads or films.
11. We were informed of surface active materials having been examined.
12. Increasing the chain length of a given product will decrease the solubility and increase the melting or softening point.
13. Owing to cadmium salts added to the investigated solution, the rate of reaction 13 is decreased.
14. Cooling the benzene solution precipitated unreacted glycol.
15. We know of ethylene being usually prepared by the action of concentrated sulphuric acid on alcohol.
16. He told me of having measured the strength of the bonds existing between the atoms of the metal.
17. We know of the electric furnace being an ideal melting and refining unit for the steel industry.

18. In spite of its having been compressed, the gas returns to its original volume as soon as applied force is removed.
19. The problem of using thermonuclear reactions for the production of power is being studied by scientists.

7. Revision of Ing- forms

Exercise 1

Translate the sentences into Russian, identifying the ing- forms:

1. The molecules of gas are moving freely.
2. The energy of a body is its capacity for doing work.
3. Knowing the volume, the pressure, and the temperature of the gas, we can determine the states of its mass.
4. He is interested in collecting rare minerals.
5. Being taken in proper proportion hydrogen and oxygen combine forming water.
6. We know of wood having been used as structural material in prehistoric times.
7. The forces acting between atoms within a molecules are very strong.
8. A body may be at rest without being in equilibrium.
9. When speaking of water, we must remember that it is composed of tiny particles – its molecules.
10. Their doing it at once is absolutely imperative.
11. Having added an alkaline solution, we got a dark precipitate at the bottom of the vessel.
12. At the continued heating of a solid body the movement of its molecules becomes still faster.
13. Having been evaporated, the solution of the mother liquid of calcium chloride gave white precipitate.
14. Chromium having been added, strength and hardness of the steel increased.
15. When testing the properties of the gas evolved while heating mercuric oxide, we find that it is pure oxygen.
16. The article deals with microwaves, particular attention being paid to radio location.

17. Being heated magnetized steel loses its magnetism.
18. Warming water in a glass, we see that water gives off bubbles of air dissolved in it.
19. He began telling them about his experiments.

8. Infinitive

	Active	Passive	Примечание
Indefinite	to ask	to be asked	Выражает или действие вообще или действие, одновременное с действием гл.-сказуемого
Continuous	to be asking		Выражает действие, которое продолжается одновременно с действием гл.-сказуемого
Perfect	to have asked	to have been asked	Выражает действие, которое произошло ранее действия гл.-сказуемого

Nominative with the Infinitive

Личное местоимение в именительном падеже	+ сказуемое в пассивной форме + Infinitive
Существительное в общем падеже	

Objective with the Infinitive

Личное местоимение в объектном падеже или существительное в общем падеже	+ Infinitive
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Exercise 1

Translate the sentences into Russian, identifying the infinitives and their functions:

1. To measure atmospheric pressure is often very important.
2. To recognize substance, it is not necessary to examine all their properties.
3. These solutions, which have to be heated, are prepared the day before.
4. The object is to recover the nitrogen peroxide produced by the decomposition of nitric acid.
5. Sodium amalgam is allowed to act on bromobenzene in benzene solution.
6. The mixture is treated with salt to obtain the dye.
7. Our desire to promote this reaction was obtainable.
8. He wished to be shown this experiment.
9. He remembered to have heard about new experiments with isotopes.
10. Gases differ in density, colour, combustibility, capacity to support combustion, and action on lime water.
11. It is sufficient to examine only a few properties in order to identify the material.
12. The magnetic method is used to separate minerals such as tinstone.
13. In order to test the truth of Lavoisier's statement it is obvious that the chemical reaction, as it is usually called, must be carried out in a closed space.
14. This process was to be brought about by a special substance.
15. In order to examine the nature of the dew, Cavendish performed an experiment similar to the following one.
16. Another interesting conclusion to be drawn from the above table is that the hypothesis is a true one.
17. The liquid to be purified should be kept in a well cleaned bottle.
18. Crooks was the first to recognize the cathode rays as negatively charged particles.
19. The copper was allowed to cool in the bulb in a stream of hydrogen.
20. Chlorides can be made by methods to be described later.

21. Heat the mixture to be distilled in the flask to gentle boiling with a very small flame.
22. It is necessary to determine whether or not an organic substance or an organic compound is contained in any sample to be analyzed.
23. If larger quantities of liquid are to be distilled it is more convenient to use a Liebig's condenser.
24. The water used in the experiment must have been boiled to remove dissolved air, and cooled in a corked flask.
25. The function of the applied e. m. f. will be to direct the ions towards the appropriate electrode.
26. The object of these experiments was to find the connection between these secondary electrons and the primary beta rays.

Exercise 2

Translate the sentences into Russian, paying attention to the Nominative with the Infinitive Construction:

1. This compound was found to give an acid on oxidation.
2. The electrons are assumed to move in wide orbits round the positive nucleus.
3. It is quite permissible to add a moderate excess of barium chloride to reduce the solubility of the barium sulphate.
4. Cupric iodine appears to be unstable at ordinary temperature.
5. The cuprous compound seems to be formed in a similar way.
6. The vessel containing this mass must also be externally cooled to prevent overheating.
7. This substance proved to be a new element of the argon family, to which the name "neon" was given.
8. The automatic burette described here has been found to be very satisfactory and a great time saver in our control laboratories.
9. Such solids are said to be amorphous as distinguished from crystalline ones.
10. These solutions under the ultramicroscope, exhibit particles, which have been shown to be about 5 mm in diameter.
11. Material changes are found to be divisible into two large but not sharply defined classes.
12. The mass of a body is supposed to be an unalterable property of the body itself.

13. A red precipitate of mercury iodine is formed, but the weight will be found to be unchanged.
14. The name "Chemistry" occurs later, and is supposed to be derived from the word "chemi", meaning "block" or "burnt".
15. Modern chemistry may be said to have begun with Robert Boyle.
16. Oxygen seems to be the most abundant element.
17. The metals except gold and silver were found to change when heated in open crucibles.
18. The temperature is assumed to be maintained constant.
19. The mechanical mixture of ice and solid was supposed to be a compound and called a cryohydrate.
20. The vapour pressure proves to be slightly diminished.
21. This rule appears to have been connected with Newton's theory of the repulsion of atoms.
22. The volume of a gas proved to have contracted slightly.
23. Soft waters more than hard are likely to attack iron.
24. The nature of a neutron is unlikely to change.
25. The hydrogen therefore appears not to be homogeneously distributed throughout the metal.
26. The effect is negative at room temperature for any pressure that is likely to be employed.
27. Positive electricity always appears to be associated with the atoms of matter.
28. This difference between positive and negative electricity seems to be fundamental.
29. Townsend found the number of ions produced by an electron moving in an electric field to be small.
30. In 1783 he decided to make the experiment of burning hydrogen in oxygen.

Exercise 3

Translate the sentences into Russian, paying attention to the Objective with the Infinitive Construction:

1. They found the heat of reaction to be -21.4 k/cal./mole.
2. At the time of Cavendish people thought water to be an element.
3. Force must have been applied to generate acceleration.
4. We see substances possess different properties and forms characterizing them.

5. Loss of the material to be weighed may not only occur during precipitation, but may arise through the use of unsuitable temperature for ignition.
6. One such particle contains about 10 molecules, but is too small to settle out on standing.
7. He considered all materials to be derived from water.
8. We may assume the composition of the sun and stars to be similar to that of the earth.
9. Before collecting the hydrogen care must be taken to allow all the air to be displaced from the apparatus.
10. Scientists do not consider this effect to be an experimental error of any kind.
11. He found this ratio to have about the same large value as for cathode rays.
12. We knew pressure to be required for forcing water through a pipe.
13. If we assumed chlorine to be univalent in all its oxygen compounds, the latter would have the following formulae.
14. This reaction suggests the substance to be similar to chlorine.

9. Revision of Infinitives

Exercise 1

Translate the sentences into Russian, identifying the infinitives:

1. The glow will continue to spread through the entire content of the test tube and give off a great deal of heat.
2. Many devices to measure different properties of substances are used in our laboratories.
3. This liquid was first to distil.
4. Mendelejev even described some of the elements to be discovered in the nearest time.
5. Students know the plasticity at elevated temperature to be a natural property of glass.
6. One can watch the components of a mixture retain their properties.
7. They consider mixtures to be substances whose components are mostly distinguishable without great difficulty.
8. You will have to heat sulphates which will yield metallic oxides and sulphur dioxide.

9. This solution is believed to contain a certain amount of hydrochloric acid.
10. At a certain temperature the contents of the kettle again appear to be boiling.
11. To evaporate this solution was very difficult.
12. Some scientists assume the more easily meltable metal to have been used by man first.
13. Subhalides prove to be mixtures of the normal compound with the excess of the metal.
14. A mixture is assumed to contain no less than two ingredients.
15. The existence of different varieties of liquids may be appreciated by examining some specimens.
16. He was able to collect over mercury many gases which are very soluble in water.
17. On account of his attempts to find the cases of the acidity of the water, Cavendish delayed publication until 1784.

10. Functions of “It”

	<i>Функция, перевод</i>	<i>Примеры</i>
Указательное местоимение	Переводится словом «это»	<i>It is methane.</i> – Это метан.
Личное местоимение	Переводится «он, она, оно» в зависимости от рода неодушевленного существительного в русском языке в качестве подлежащего в предложении.	<i>Aluminium is a metal.</i> <i>It is light.</i> Алюминий – металл. Он легкий.
	Переводится «его, ее, ему, ей» в зависимости от рода неодушевленного существительного в русском языке в качестве дополнения в предложении.	<i>Chemistry is a very interesting subject.</i> <i>We study it.</i> Химия – очень интересный предмет. Мы изучаем ее.

<p>Формальное подлежащее</p>	<p>Не переводится:</p> <p>1. при сообщениях о явлениях природы, при обозначении времени и расстояния.</p> <p>2. с глаголами to seem – казаться to chance – случаться to happen – случаться to turn out – оказываться to appear – казаться.</p> <p>3. при наличии в предложении логического подлежащего, выраженного инфинитивом, герундиальным оборотом или придаточным предложением подлежащим, которые стоят после именного сказуемого.</p> <p>4. при смысловом выделении какого-либо члена предложения употребляется следующий оборот “It is (was)... that (who, which, whom, etc.)”; при переводе перед выделяемым словом ставится «именно», “it” не переводится.</p> <p>5. при пассивном сказуемом.</p>	<p>It is 5 o’clock.</p> <p>It seems that there is a great danger of contamination of the boron by the electrode material.</p> <p>It is never too late <u>to learn</u>.</p> <p>It was wonderful <u>seeing London</u>.</p> <p>It is quite evident that <u>titanium will be widely used in industry</u>.</p> <p>It was him who told me the truth.</p> <p>It is seen that on cooling sufficiently water forms ice.</p>
<p>Формальное дополнение</p>	<p>при последующем логическом дополнении, выраженном инфинитивом или дополнительным придаточным предложением</p>	<p>Modern methods have made it profitable to extract copper from ores.</p>

Exercise 1

Translate into Russian, state the functions of “it”:

1. It was not known whether this substance was oxidized under the action of air.
2. It is important not to confuse the physical and the chemical properties of these materials.
3. It is the same substance – water, but it may exist in the three physical forms mentioned above.
4. In describing the materials used in chemistry it is common to refer to their properties.
5. In every above mentioned case, it is work that produces heat, directly or indirectly.
6. It must be said that according to this law any change in the temperature of a system in a state of equilibrium is followed by a reverse chemical change within the system.
7. It is probable that in the first place substitution takes place.
8. Lead nitrate, although it crystallizes in the same form as alum, is much heavier.
9. In general, it is sufficient to examine only a few properties in order to identify the material.
10. It is very difficult to fix any position where definite colour change occurs.
11. It is evident that of the volatile parts contained in the powder, water is only a small portion.
12. It was not until Roentgen discovered his mysterious rays that many diseases could be easily diagnosed.
13. From these experiments it is seen that chemical changes are often accompanied by an evolution of heat.
14. It follows from the definition of a compound that its composition is independent on the method of preparation.
15. It was noticed in the 16-th century that this oxide is heavier than the metal.

16. It appears, however, that the nature of the chemical action producing the hydrogen is very important.

11. Functions of “One”

	<i>Функция, перевод</i>	<i>Примеры</i>
Числительное	В значении «один»	There is <u>one more</u> distinction to be mentioned.
Неопределенное местоимение	1. Подлежащее (не переводится, а сказуемое переводится глаголом во 2л. ед.ч. или в 3л. мн.ч.)	One can assume that the mechanism of energy transfer is the same in the liquid as in the gas.
	2. Для замены существительного в ед.ч. или (ones) во мн.ч. Не переводится или переводится ранее упомянутым существит.	The electric cell is a device for converting chemical energy into electric one.
	3. “The one” для замены ранее упомянутого существительного в значении «тот, который»	An elementary substance is the one which consists of only one kind of atoms.
	4. “One’s” (в форме притяж. местоим.) переводится «свой»	One should write down the results of one’s experiments into a notebook.

Exercise 1

Translate into Russian, state the functions of “one”:

1. Over two hundred thousand compounds are known and new ones are being prepared.
2. One has to admit one’s mistakes.
3. One should pay more attention to the results of one’s experiments.

4. A large excess of ammonia gives a purple tint instead of the red one obtained when solution is just ammoniacal.
5. There is one more problem to solve, the one which is of great importance to us.
6. If one attempts to carry out the reduction of sulphuric dioxide by means of hydrocarbon vapours in combination tubes, very complex and incomplete reactions occur.
7. The atom therefore retains its position in the Periodic Table, and the new element thus formed is isotropic with the original one.
8. The lead and mercurous compounds may be employed for a similar experiment if one substitutes hot sulphuric acid for water.
9. As examples of these one may point to the synthetic ammonia industry, the synthetic methanol industry, and the rapidly expanding development of the hydrogenation of coal and oil.
10. Polycondensation and polymerization processes of the type just described are the only ones which can be characterized by one single rate constant.
11. One more side reaction which occurs with certain residue in dimethylformamide remains to be mentioned.

Exercise 2

Translate into Russian, state the functions of "one":

1. There are many different forms of energy and one may convert energy of one kind into the energy of another kind.
2. One can't learn the language in one month.
3. One must plan one's work.
4. One can easily forget foreign words that one doesn't use.
5. These books are more difficult than the ones we read last week.
6. An ordinary solution such as one of salt in water, is homogeneous.
7. An elementary substance is the one which consists of only one kind of atoms.
8. Hot solutions filter more rapidly than cold ones.
9. Aluminium is one of the lightest metals.
10. There is one mistake in your exercise; one mustn't make such mistakes.

12. Functions of “That - Those”

<i>Функция</i>	<i>Примечание</i>	<i>Примеры</i>
Указательное местоимение: 1. подлежащее	Стоит перед сказуемым и переводится словом «это»	This is a red solution, and <u>that</u> is a colourless one. Those are chemical substances.
2. определение	Определяет существительное и переводится: «этот, эта, эти» и т. д.	The boiling point of <u>that</u> liquid is 25 °C.
3. для замены ранее упомянутого существительного	Переводится словом, которое заменяет	Some properties of air are similar to <u>those</u> of water.
Союз: 1. подлежащее	Стоит перед подлежащим придаточного предложения и переводится словами «то, что»	<u>That</u> oxygen can be liquefied only under high pressure was proved by experiments.
2. сказуемое	Всегда после глагола-связки и переводится «состоит в том, чтобы; заключается в том, чтобы»	The characteristic property of water is <u>that</u> it is a good solvent.
3. дополнение	Всегда после сказуемого главного предложения и переводится союзом «что»	One can show <u>that</u> hydrogen doesn't support burning.
4. определение	После определяемого слова и переводится словом «который»	A barometer is an instrument <u>that</u> measures air pressure.

5. обстоятельство	Сочетается со словами “so that”, “in order that” и переводится словами «чтобы», «так что», «для того чтобы»	Alcohol boils at 78°C, water – at 100°C, <u>so that</u> the alcohol boils away first and is first collected in the condenser.
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Exercise 1

Translate into Russian:

1. This metal is stronger and harder than that one.
2. The law of conservation of matter states that matter can neither be created nor destroyed.
3. That the conductivity of a solution is due to the ions it contains was first realized by Kohlrausch.
4. This dye is identical with that produced as described above.
5. It is by means of the calcium salt that this separation can be effected.
6. We may see that there are certain groups that have very similar chemical properties.
7. Priestly showed that there were several gases differing from atmospheric air in their properties.
8. The fact that bodies may be arranged in such groups is the fundamental law of chemistry.
9. Changes of the first class are called physical changes; those of the second class, chemical changes.
10. The vapour pressures of solids are usually smaller than those of liquids.
11. The only result which may be deduced directly is that a molecule of carbon dioxide contains a molecule of oxygen.
12. This salt that contains one of the hydrogen atoms of the sulphuric acid has a strongly acid reaction in solution.
13. It is this energy that is defined as the ability to do work.
14. The extent of this effect was much smaller than that obtained with thiobenzoic acid.
15. It is known that radium is only one of a number of highly active substances that can be separated from uranium minerals.

13. IF-clauses

Main clause	Subordinate clause	примеры
Future Indefinite	Present Indefinite	I will go for a walk if the weather is fine.
Future Indefinite in the Past	Past Indefinite	I would go for a walk if the weather were fine.
Future Perfect in the Past	Past Perfect	I would have gone for a walk if the weather had been fine.

Exercise 1

Translate into Russian:

1. If a solid body or liquid is heated, it will usually expand.
2. The motor-car can move very quickly, provided it has a powerful motor.
3. If the atmospheric conditions had been better, we should have used long radio waves.
4. If platinum had not been so scarce in nature, it would have found much larger use in industry.
5. Had silver been less cost, it would have been widely used as conductor, its conductivity being very high.
6. Were I there, I would give them my considerations about the capacity of that machine.
7. If you do not know the rules of operating this particular machine tool, I shall explain them to you.
8. Had he taken into account the properties of the substance under investigation, he would have been careful when working with it.
9. If one knew the dimensions of the body, one would easily calculate its volume.
10. Were the temperature raised, the evaporation would be accelerated.

14. General Revision

Exercise 1

Translate into Russian:

1. At the same temperature in ethylalcoholic solutions, the reaction velocity is about 540 times as fast.
2. Because of enormous surface exposed this catalyst was thought to be a very active one, but when tested was found to be inactive.
3. Oxidation of the formaldehyde decomposition products was assumed to be according to the following reaction.
4. These temperature fluctuations are supposed to be due to the transition of iron from one allotropic modification to another.
5. When treating blende in this way, the sulphide formed can be extracted by magnetic means.
6. A more concentrated solution is more convenient, if available, but is hard to keep owing to its action on glass bottles.
7. Columns 2 and 3 contain the experimental values of the energy of activation and effective mean frequency.
8. When the residue in heated test tube appears to undergo no further decomposition, allow the apparatus to cool.
9. After being allowed to stand overnight the mixture is filtered and the acid is washed thoroughly with water.
10. Instead of separating the substance to be estimated by chemical methods, electrochemical means may be used in a restricted number of cases.
11. These scientists showed that the route over which a reaction could be made to occur depended upon the presence of certain catalysts.
12. Natural gas may contain up to 10 even 30 per cent of hydrogen, the remainder being mainly methane and ethane.
13. It is easy to put a smooth plate on the copper alloy, but it is more likely to corrode in salt solutions and when exposed to moist atmosphere.
14. The commercial nickel-steels are of some interest from the standpoint of resistance to corrosion.
15. The addition of 100 cc. of alcohol to 200 cc. of acid failed to accomplish complete solution of the dinitrophenol.

16. Occasionally it was necessary to discard the first portion distilled, especially if the apparatus in question had been standing idle for a while.
17. Iron resistors have been tried out and found to be satisfactory up to temperature 1 200°C.
18. Sodium chloride was added in considerable amount during each run, both to increase the volume of the bath and render it more fluid.
19. The formation of barium ferrite resulting from the heating of a mixture of barium carbonate and ferric oxide was studied at 720°C.
20. By grinding the mass and heating it again at the same temperature the reaction is made to continue, but extremely slowly.
21. Thanks to the methods of thermal analysis developed by Hedvall and Tamman reactions between solid phase have been studied in some detail.
22. The electroplates of H. C. Cocks, which were only one half as thick as those reported on in this paper, resisted a sea salt water for about one year.
23. The deposits obtained, whether on copper, mercury, brass or silver, were crystalline, non-adherent and usually black.
24. Potassium nitrate showed a tendency to increase the crystallinity of the deposits, whether in agitated or in unagitated solutions.
25. The literature examined failed to reveal any reference to the use of fluoborate solutions for silver deposition.
26. With certain important improvements the aluminium rectifier has met the requirements admirably.
27. Unlike the platinum, the graphite electrodes give results in air always as good and frequently better than in hydrogen.
28. A set of experiments with 19 cells was run to study the influence of the halogen ion on the discharge of the cell.
29. Fluorine will react with almost any organic substance, whether the latter conducts electricity or not.
30. Unlike the majority of radio-active bodies, potassium apparently emits only rays penetrating power about equal to those of uranium.
31. In order to get the additives to adhere to the salt crystals, thorough mixing is required.
32. The natural mineral chlorate is thus about five times as active as the artificial one.

33. The analytical form of equation /I/ demonstrated for lithium perchlorate was assumed to hold in these cases as well.
34. Use of the nitrate rather than the sulphate results in a catalyst of great activity.
35. Care was taken in trying to prevent breaking up crystals in making the paste.
36. The temperature gradually rose, and when it reached 17°C, the readings for the potential drops were taken.
37. The voltage and current waves shown in Fig. 1 and 2 were found to be in good agreement with those obtained experimentally.

Exercise 2

Translate into Russian:

1. This means that the pH corresponding to the minimum velocity has a negative temperature coefficient, which is nearly the same for all hydrolytic reactions.
2. In manufacturing alcohol by means of the process, which has just been described it was found that the yield depended upon the exclusion of oxygen, water, and acetic acid.
3. This holds true whether friction is or not involved.
4. Of course, this would not be expected to hold true for substituents, which can strongly conjugate with the furan nucleus.
5. Drying this solvent by means of calcium chloride, as was done in this experiment is not sufficient to secure its purity for kinetic work.
6. If this was due to coordination of the solvent, the latter would be expected to be present in the precipitate only.
7. Another difficulty is that of bringing about so rapid a sedimentation as to make the diffusion negligible.
8. The second patent describes the conversion of ethylene into ethylene ozonide followed by the immediate decomposition of the latter into formaldehyde.
9. A solution of commercial chromium sulfate of the green form, which has a greater degree of hydrolysis than the former is the most suitable for the deposition of bright metallic chromium.
10. When a volatile solvent is used this evaporates readily on exposure to the air leaving the product which has to be washed with water only to remove the electrolyte.

Exercise 3

Translate into Russian, analysing all grammar constructions:

1. This process is the one to be associated with reaction in alkaline solution.
2. It is important to observe that each electronic state can be associated with a large number of vibrational and rotational states.
3. It was not until 1962 that chemists succeeded in obtaining this compound.
4. Vinyl acetylene under pressure is readily polymerized to form viscous drying oils.
5. The higher the energy of the bombarding electrons, the greater the number of secondary electrons to be emitted.
6. To solve this problem one needs new methods.
7. If the reaction should proceed smoothly the end product might increase.
8. The problem was recognized to be of great importance.
9. This substance is oxidized by silver oxide to lose one hydrogen atom.
10. X-ray data indicated the crystal lattice to be highly uniform.
11. He is against carrying out a set of experiments.
12. It is seen that the method of geometric means leads to more satisfactory results than that of arithmetic means.
13. A new technique having been worked out, the yields rose.
14. They determined the density of the substance to be between 2.554 and 2.559.
15. If we raise the temperature the film will expand, allowing more hydroxyl groups to enter the water.
16. The reactions were concluded to be similar in their behaviour.
17. The rates and molecular weights are affected by lowering the temperature, the former being decreased and the latter increased.
18. The product tended to turn white on drying.
19. It is these scientists who have discovered a new procedure to synthesize propylene.
20. We can also write the heat energy absorbed in such a process to be as follows.
21. The data have been admitted to be incorrect.
22. The method to be described in the next section is very effective.
23. If we had not studied English we should not have known it.

VOCABULARY

A

able	способный
absorb	впитывать
abundant	обильный, богатый
accuracy	точность
acentanilit	ацентанилит
acetate	ацетат
acetic acid	уксусная кислота
achieve	достичь
adsorb	адсорбировать
aggregate	агрегат, совокупность
agitation	перемешивание
alcohol	этиловый спирт
aldehyde	альдегид
aliphatic	алифатический
aliquot	определенное кол-во; кратный
alkali	щелочь
alkaline	щелочной
allotropic	аллотропический, аллотропный
altitude	высота
alum	квасцы
alumina	окись алюминия, глинозем
aluminate	алюминат
aluminium	алюминий
amalgame	амальгама, смесь
amide	амид
amine	амин
ammonia	аммиак
ammonium	аммоний
amphoteric	амфотерный
anhydrous	безводный
anilide	анилид
anthracene	антрацен
aqua regia	царская водка
ascertain	установить, выяснить

В

barium	барий
barometer	барометр
beaker	мензурка
benzene	бензол
benzine	бензин
benzoin	бензоин
berillium	бериллий
binary	двойной, бинарный
bismuth	самородный висмут
blowpipe	паяльная лампа
boric acid	борная кислота
boron	бор
brass	латунь
brine	рапа, соляной раствор; морская вода, рассол
bromine	бром
bromide	бромид
bromination	бромирование
butane	бутан

С

caesium	цезий
cadmium	кадмий
calcite	кальцит
calcium	кальций
carbide	карбид
carbon	копировальная бумага; углерод
carbon disulphide	дисульфид углерода
carbonate	карбонат
carbonyl	карбонил
casehardening	цементирование
casting	литье, отливка
cathode	катод
cation	катион
cement	цемент

centrifugal
centrifuge
cerium
chalcocite
chlorate
chloride
chlorine
chromium
chloroform
cobalt
collision
combustible
combustion
copper
crucible
cryohydrate
cupric iodide
cyanide

центробежный
центрифуга
церий
хальколит
хлорат
хлорид
хлор
хром
хлороформ
кобальт
столкновение
горючий, воспламеняемый
горение, сгорание
медь
тигель
криогидрат
йодид меди
соль цианисто-водородной
кислоты, цианистой кислоты,
цианид

D

decantation
decomposition
degas
degreasing
dehydrate
density
deoxidation
deposit

design
detergent
deteriorate
device
diamond
diazonium
diffusion

фильтрация
разложение
дегазирующий
обезжиривание
обезвоживать
плотность
раскисление, восстановление
месторождение, осадок, отстой;
осаждать
чертеж
детергент
ухудшиться
устройство
алмаз
диазоний
рассеивание

dilute	разбавленный
dioxide	двуокись
discard	отбрасывать, отвергать
dish	посуда
displace	переместить, вытеснить
dissociate	отделить
distill	дистиллировать
distillate	дистиллят
distinguish	отличать, выделять
divisible	делимый
domain	домен, область, среда
drying agent	высушивающее вещество
dull red heat	темно-красный накал
dye	краситель

Е

electrolysis	электролиз
electroplating	гальванопокрытие
elevated	повышенный
eliminate	устранить, исключить
emit	испустить
emulsion	эмульсия
enclose	включить
engine	двигатель
enolate	производное металла энольного соединения
equation	уравнение
equilibrium	равновесие
equimolar	равномолярный
ester	сложный эфир
ethane	этан
ethanol	этанол, этиловый спирт
ether	эфир
ethyl	этил
ethylene	этилен
evaporate	испаряться
excess	избыток, излишек

F

fall into	распадаться
fast	прочный, крепкий, твердый
ferric	железный (трехвалентный)
ferrous	железистый (двухвалентный)
ferrous sulphate	сульфат железа
fertilize	удобрять
fibre	стекловолокно, волокно
flask	фляга, колба
flint	камень, кремневая галька
flock	легкие осадки
fluorescence	свечение
fluorine	фтор
formamide	формамид
fuel	топливо
funnel	воронка
furnace	печь
fuse	плавиться; предохранитель

G

gaseous	газообразный
generalization	обобщение
glow	накал
glycol	гликоль
gold	золото
gradual	постепенный
granite	гранит
graphite	графит
gravimetric	гравиметрический
gravity	сила тяжести

H

halogen	галогид (галоген)
helium	гелий
heterocyclic	гетероциклический
heterogenous	гетерогенный

homogenous	гомогенный, однородный
homologous	гомологический
hydrate	гидрат
hydride	гидрид
hydrion	ион водорода
hydrocarbon	углеводород
hydrochloric acid	соляная кислота
hydrofluoric acid	фтористоводородная кислота
hydrogenation	гидрирование
hydrolysis	гидролиз
hydroxide	гидроокись
hydroxyl	гидроксил
hydroscopic	гидроскопический
hypothesis	гипотеза

I

ignite	гореть, зажигать, прокалывать
immerse	поглотить, погружать, окутать
impinge	сталкиваться, ударяться (о поверхность чего-л.)
indium	индий
inert	инертный
insoluble	нерастворимый
instantaneous	мгновенный
iodate	йодат
iodide	йодид
iodine	йод
iodometric	йодометрический
isolate	выделять (из смеси), отделять, изолировать
isomerization	изомеризация
isotope	изотоп

J

jet	струя
join	соединяться, вступать в

К

keep (kept)	держать, хранить
kerosene	керосин
kinetic	кинетический

Л

labile	неустойчивый
lattice	решетка
law	закон
layer	слой, пласт
lead	свинец
length	длина
liberate	выделять
ligand	лиганд
lime	известь
limestone	известняк
linkage	связь
liquefaction	сжижение
liquefy	сжижать
liquid	жидкость
litre	литр
lithium	литий
lustrous	блестящий

М

magnesium	магний
magnetism	магнетизм
magnetize	намагничивать
manganese	марганец
marble	мрамор
measure	мерить, измерять
mechanism	механизм, аппарат
medium	среда
melt	сплавить, плавиться
mercuric	ртутный
mercury	ртуть
methane	метан

methanol	метиловый спирт
methyl chloride	хлористый метил
moderate	умеренный
moist	влажный
moisture	влага
mole	грамм-молекула
molecular	молекулярный
molten	литой, расплавленный
molybdenum	молибден
monatomic	одноатомный
monomer	мономер
monoxide	одноокись
mould	формовать

N

naphthalene	нафталин
neon	неон
neutral	нейтральный
neutron	нейтрон
nickel	никель
niobium	ниобий
nitrate	нитрат, соль азотной кислоты
nitration	азотирование
nitric acid	азотная кислота
nitric oxide	окись азота
nitride	нитрид
nitrogen	азот
nitroso-sulfuric acid	нитрозилсерная кислота
nitrous anhydride	азотистый ангидрид
non-ferrous	цветной (о металле)
nucleus	ядро
nucleophilic	нуклеофильный

O

object-glass	объектив
obsolete	устаревший
odour	запах

oil	нефть, масло; смазывать
opaque	светонепроницаемый
ore	руда
oxalic acid	щавелевая кислота
oxidation	окисление
oxide	окись
oxidize	окислять
oxidizing agent	окислитель
oxygen	кислород
ozone	озон

P

palladium	палладий
particle	частица
pentane	пентан
perchlorate	соль хлорной кислоты
permanganate	перманганат
peroxide	перекись
persulphate	персульфат
phase	фаза, стадия
phenol	фенол
phosphate	фосфат
phosphine	фосфин
phosphorescence	свечение
phosphorus	фосфор
pitchblende	уранит
plasticity	гибкость
platinum	платина
polyazoporphine	полиазопорфин
polymer	полимер
polysterene	полистерол
porcelain	фарфор, фарфоровый
potassium	калий
potassium chlorate	хлорат калия
pressure	давление
prism	призма
propane	пропан
proton	протон

pyridine

пиридин

Q

quantum
quartz

доля, квант
кварц

R

radium
reagent
residue
restriction
retort
rust

радий
реактив
осадок
ограничение
реторта
ржавчина, окалина

S

samarium
saturate
scale
selenium
shell
side reaction
silica
silicon
silicate
silver
sodium
sol
solid
solvent
specific gravity
stannous
starch
steel
strontium
sulphate
sulphide
sulphonate

самарий
насыщать
шкала
селен
оболочка
побочная реакция
двуокись кремния
кремний
силикат
серебро
натрий
золь
твердое вещество
растворитель
удельный вес
двухвалентное олово
крахмал
сталь
стронций
сульфат
сульфид
сульфонат

sulphonic acid
sulphur
sulphuric acid
suspension
synthesis

сульфо кислота
сера
серная кислота
взвесь, суспензия
синтез

T

tarnish
technique
tellurium
terbium
test-tube
thallium
thorium
tin
tinstone
tint
tire
tissue
titanium
titration
toluene
tracer
trioxide
triphenylmethyl
tungsten

тускнеть
техника
теллур
тербий
пробирка
таллий
торий
олово
касситерит
тон, оттенок
шина
ткань
титан
титрование
толуол
индикатор, меченый атом
трехокись
трифенилметил
вольфрам

U

unit
univalent
unreacted
unstable
uranium
uranyl

единица
одновалентный
непрореагировавший
неустойчивый
уран
уранил

V

vacuum

вакуум, пустота

vacuum-tube	вакуумная лампа
valence	валентность
vanadium	ванадий
vehicle	растворитель, связующее
velocity	скорость
vessel	сосуд
viscose	вискоза
volatile	летучий
volcanic	вулканический
volt	эл. вольт
voltage	напряжение

W

wax	воск
welding	сварка
wetting agent	увлажнитель
white spirit	растворитель
wire	проволока, провод

X

xenon	ксенон
xylane	ксилол

Y

ytterbium	иттербий
yttrium	иттрий

Z

zink	цинк
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Составители:

Кузьмина Римма Владимировна

Смирнова Анна Николаевна

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