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STRUCTURAL ASPECTS OF FORMATION AND DEVELOPMENT OF CHEMICAL TERMINOLOGY

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Abstract. *Chemical terminology is the basis of the chemical language, which is a set of chemical terms. The terminology of chemistry is of particular interest as it is rightfully considered one of the most ordered and standardized terminological systems. The development and enrichment of terms of two large sections of chemistry lead to the organization of nomenclature with set rules and regulations. The following article introduces the Russian nomenclature of inorganic and organic compounds, the types of organic compounds (trivial, rational, systematic), external terminology, semiotics, and abbreviations in chemical language. Furthermore, borrowings to the Russian terminology system are stated, and supported with examples. In addition, as it is considered the basis of Uzbek chemical terminology, their Uzbek versions are also included.*

Keywords*: terminology, chemistry, nomenclature, compounds, system, language, element, names.*

СТРУКТУРНЫЕ АСПЕКТЫ ФОРМИРОВАНИЯ И РАЗВИТИЯ ХИМИЧЕСКОЙ ТЕРМИНОЛОГИИ

Аннотация. *Химическая терминология составляет основу химического языка, который представляет собой совокупность химических терминов. Особый интерес в лингвистике представляет терминология химии, которая по праву считается одной из наиболее упорядоченных и стандартизированных терминологических систем. Развитие и обогащение терминов двух крупных разделов химии привели к организации номенклатуры с установленными правилами и положениями. В статье представлена русская номенклатура неорганических и органических соединений, типы органических соединений (тривиальные, рациональные, систематические), внешняя терминология, семиотика и сокращения в химическом языке. Кроме того, включаются иностранные термины в русской терминологической системе и приводятся примеры. Поскольку русские химические термины считаются основой узбекской химической терминологии, включены и их узбекские варианты.*

Ключевые слова: *терминология, химия, номенклатура, словосочетание, система, язык, элемент, название.*

KIMYO TERMINOLOGIYASI SHAKLLANISHI VA RIVOJLANISHINING STRUKTUR ASPEKTLARI

Annotatsiya. *Kimyoviy terminologiya kimyoviy atamalar majmuasi hisoblanib, kimyo tilining asosini tashkil etadi. Kimyo terminologiyasi tilshunoslikda alohida qiziqish uyg‘otadi, chunki u terminologik tizimda eng tartibli va standartlashtirilgan deb hisoblanadi. Kimyoning ikki yirik bo‘limida atamalarning ishlab chiqilishi va boyitilishi ma’lum qoida va tartiblarni o‘z ichiga olgan nomenklaturaning tashkil etilishiga olib keldi. Quyidagi maqolada noorganik va organik birikmalarning ruscha nomenklaturasi, organik birikmalarning turlari (arzimas, ratsional, sistematik), o‘zlashgan terminologiya, kimyo tilida semiotika va kimyoviy tilda qisqartmalar keltirilgan. Bundan tashqari, rus terminologik tizimidagi xorijiy atamalar kiritilgan va misollar keltirilgan. Ruscha kimyoviy terminlar o‘zbek kimyoviy terminologiyasining asosi hisoblangani uchun ularning o‘zbekcha variantlari ham kiritilgan.*

Kalit so‘zlar: *terminologiya, kimyo, nomenklatura, birikma, tizim, til, belgi, nom.*

Introduction. Chemical terminology, being one of the most popular and rapidly developing terminology systems, needs regular analysis, selection, improvement and fixation in relevant documents and standards. It should be noted that for each large section of chemistry — inorganic and organic - there is its own nomenclature with certain rules and regulations.

The first Russian systematic nomenclature of inorganic compounds was proposed by V.M.Severigin in 1801. He introduced the concepts of "acid-making" and "water-making" substances, designations for salts,

etc. Subsequently, this nomenclature continued to develop, be supplemented, and changed by the evolution of chemical science. The nomenclature of inorganic chemistry is based on the names of chemical elements. In the inorganic chemical nomenclature, not Russian or Uzbek names of elements are used, but Latin ones: *antimon - antimonium — antimony- сурьма- surma, argent — argentum — silver- серебро- kumush, arsene — arsenicum – arsenic- мышьяк- mishyak, aurum — gold- золото- oltin, hydra — hydrogenium — hydrogen- водород- vodorod, carbon — carboneum — carbon- углерод- uglerod,* etc.

By the number of elements included in the composition, simple substances (single-element), binary (two-element), and complex (multi-element) are isolated. Simple substances are divided into elements with metallic and non-metallic properties. The first of them is always included in the composition of cations, and the second – in the composition of anions. All complex substances are divided into acids, bases, salts, complexes, clusters, and clathrates.

Main part. The name of a compound is usually a phrase, and the first word means that this compound belongs to a certain genus, and the second to a certain species. "For example, in the name "sulfuric acid"(серная кислота-sulfat kislota), the essential shows that this substance belongs to acids, and the adjective explains that it is an acid formed by sulfur in the highest degree of oxidation". "In the names of compounds consisting of atoms of two elements with an ionic or polar covalent bond, the name of the more electronegative part is put in the first place," and then comes the name of the electropositive element in the genitive case [Great Soviet Encyclopedia, URL]. The first designation consists of the Latin root and the Greek suffix *–id*: NaCl — *sodium chloride- natriy xlorid- хлорид натрия*. "The degree of oxidation of the electro-positive element is indicated either by a Roman numeral in parentheses, or by applications borrowed from Greek quantitative numerals: $FeCl_2$ — *ferric (II) chloride- хлорид железа(II)- temir (II) xlorid, iron dichloride- дихлорид железа- temir dixlorid*; $FeCl_3$ — *ferric chloride (III)- хлорид железа(III)- temir (III) xlorid, trichlorideleza- трихлорид железа- temir trixlorid* ; Cu_2S — *copper sulfide (I)- сульфид меди(I)- mis(I) sulfid , copper hemisulfide- гемисульфид меди- mis gemisulfid*; CuS — *copper sulfide (II)- сульфид меди (II)- mis(II) sulfid, copper monosulfide - моносульфид меди- mis monosulfid*.

There are some differences in the international system of designations and the Russian system developed by the Commission on Nomenclature of Inorganic Compounds of the Department of General and Technical Chemistry of the USSR Academy of Sciences and enshrined in the "Draft Rules of Nomenclature of Inorganic Compounds". In the Russian nomenclature, instead of the suffix *-ид*, the suffixes *-истый* are used to indicate either a single or a lower degree of oxidation and *-ный* (sometimes -овый, -евый) for the highest degree of oxidation": NaCl - *sodium chloride-хлористый натрий (natriy xlorid)*; $FeCl_2$ - *ferric chloride- хлористое железо, ferric dichloride двухлористое железо, ferric chloride (II)- хлористое железо (II), (temir (II)-xlorid)*; $FeCl_3$ — *ferric chloride-хлорное железо, трёххлористое железо, ferric trichloride, ferric chloride (III) (temir (III)-xlorid).*

Compounds of elements with oxygen are called oxides in the international nomenclature, and окись-oxides in the Russian nomenclature. "In ascending order of the degree of oxidation of the electropositive element, oxides are either given the names nitrous закись-oxide, окись-oxide, двухокись-dioxide, трёхокись-trioxide, or indicate the degree of oxidation with a Roman numeral. Oxides that can be obtained by taking water from acids are called ангидриды-anhydrides" in the Russian nomenclature, and in the international nomenclature, there is no such name [The Great Soviet Encyclopedia, URL]. At the same time, bases in the international nomenclature are called hydroxides, and in Russian — гидроокисями-hydroxides. n"If a metal forms more than one base, the degree of oxidation of the metal is indicated either by a Roman numeral in brackets, or by a prefix - Russian or Greek: $Fe(OH)_2$ — *iron (II) hydroxide, iron dihydroxide, двугидроокись железа-dihydroxide iron (temir (II)-gidroksid)* of the same; $Fe(OH)_3$ - *iron (III) hydroxide, iron trihydroxide; iron trihydroxide (temir (III)-gidroksid)*".

"Compounds in which oxygen atoms are bound to each other and to atoms of a more electropositive element are called peroxides or peroxides. Examples: *peroxide (перекись-peroxide), barium peroxide-пероксид бария (bariy peroksid)*." Compounds of hydrogen with metals are called hydrides: LiH *lithium hydride-гидрид лития (litiy gidrid)*, CaH_2 *calcium hydride-гидрид кальция (dihydride)(kalsiy gidrid*).

However, it should be noted that today, due to the increased number and significance of English-language publications on chemistry in the Russian chemical discourse, preference is given to the international system of chemical designations, which ensures the unambiguity of terminological units and understanding between specialists in the course of interlanguage communication.

There are several different types of compound nomenclatures in organic chemistry. Firstly, the trivial or historical nomenclature is "the first nomenclature that arose at the beginning of the development of organic chemistry, when there was no classification and theory of the structure of organic compounds". At first, organic compounds were named according to the source of production (*oxalic acid-щавелевая*

кислота (shavel kislotasi), malic acid-яблочная кислота (olma kislotasi), vanillin-ванилин (vanilin)), color or smell (aromatic compounds), chemical properties (paraffins-парафины (parafinlar)). Many such names are often used to this day: *urea-мочевина (mochevina), toluene-толуол (toluol), xylene-ксилол (ksilol), indigo-индиго (indigo), acetic acidуксусная кислота (sirka kislotasi), butyric acid-масляная кислота (moy kislotasi), valerian acid-валериановая кислота (valerian kislota), glycol-гликоль (glikol), alanine-аланин (alanin)* and many others.

Secondly, rational nomenclature, when the name of an organic compound is based on the name of the simplest member of a given homologous series. The remaining compounds "are considered as derivatives of this compound formed by the substitution of hydrogen atoms in it with hydrocarbon or other radicals, for example: *trimethylacetic aldehyde-триметилуксусный альдегид (trimetilsirka aldegid), methylamine-метиламин (metilamin), chloroacetic acid-хлоуксусная кислота (xlorsirka kislota), methyl alcohol-метиловый спирт (metil spirti)*".

Thirdly, the systematic nomenclature (in particular, the IUPAC nomenclature) is a single international chemical nomenclature. "The systematic nomenclature is based on the modern theory of the structure and classification of organic compounds and tries to solve the main problem of nomenclature: the name of each organic compound should contain the correct names of functions (substituents) and the main skeleton of the hydrocarbon and should be such that the only correct structural formula can be written by the name". The international systematic nomenclature is based on the following systems: substitutive, radical-functional, additive (connective), and replacement nomenclature.

- Substitutive nomenclature: one carbohydrate fragment serves as the basis of the name, while others are considered as hydrogen substituents (for example, (C6H5)3CH – triphenylmethane-трифенилметан (trifenilmetan)).

- Radical-functional nomenclature: the name is based on the name of the functional group defining the chemical class of the compound to which the name of the organic radical is attached, for example, C2H5OH - ethyl alcohol-этиловый спирт (etil spirti); C2H5Cl - ethyl chloride-фенил хлорид (fenil xlorid); CH3–O–C2H5 — methyl ethyl ether-метилэтиловый эфир (metil etil efir).

- Connective nomenclature: the name consists of several equal parts (for example, C6H5- C6H5 biphenyl-дифенил (difenil)) or includes the designations of attached atoms (for example, 1,2,3,4–tetrahydronaphthalene-1,2,3,4–тетрагидронафталин (1,2,3,4–tetragidronaftalin), гидрокоричная кислота-hydrocinnamic acid (gidrotsinamik kislota), ethylene oxide-этиленоксид (etilenoksid), styrene dichloride-стиролдихлорид (stiroldixlorid)).

- Replacement nomenclature: a number of Latin names of non-carbon atoms (heteroatoms) with the ending “a” (a-nomenclature) are added to the name of the entire structure: CH3–O–CH2–CH2–NH–CH2–CH2–S– CH3 — 2-oxa-8-tia-5-azanonan (2-oksa-8-tia-5-azanonan)).

All organic compounds are divided into acyclic-ациклический (asiklik) (or aliphatic-алифаический (alifatik), or fatty-жирный (moy) compounds) and cyclic-циклический (siklik) (with a замкнутый в кольцо-ring-closed chain (yopiq zanjir) of atoms). Acyclic compounds include предельные-marginal (насыщенные-saturated(to‘yingan)) and непредельные-unsaturated (ненасыщенные-unsaturated(to‘yinmagan)) углеводороды-hydrocarbons (uglevodorodlar).

- The names of the first four marginal hydrocarbons are trivial — *метан-methane (metan), этан-ethane (etan), пропан-propane (propan), бутан-butane (butan)*; but starting from the fifth, the names are formed by Greek numerals corresponding to the number of carbon atoms in the molecule, with the addition of the suffix **-ANE**: *pentane-пентан (pentan), hexane-гексан (geksan), heptane-гептан (geptan), octane-октан (oktan), nonane-нонан (nonan), decane-декан (dekan).*

- In the names of monovalent radicals formed from saturated non-branched marginal hydrocarbons, the suffix *–ane* is replaced by the suffix **–YL**: *methyl-метил (metil), ethyl-этил (etil), propyl-пропил (propil), butyl-бутил (butil), hexyl-гексил (geksil), octyl-октил (oktil)*, etc.

- In the names of unsaturated, unbranched hydrocarbons with one double bond, the suffix –an is replaced by the suffix **–ENE**: *hexene-гексен (geksen), heptene-гептен (gepten), ethene-этен (eten), propene-пропен (propen), butene-бутен (buten).*

- Unsaturated unbranched hydrocarbons with one triple bond have the suffix **–INE** in their name: *pentine-пентин (pentin), heptine-гептин (geptin).*

- If there are two or more multiple bonds in a hydrocarbon, then the carbon-dorod receives the suffix **–ADIENE**, **–ADIINE, –ATRIENE**, etc.: *hexadiene-гексадиен (geksadiyen), nonadiine-нонадиин (nonadiin), decatriene-декатриен (dekatriyen).*

Cyclic compounds include carbocyclic-карбоциклические (isocyclic-изоциклические) – aliphatic-алифатические (alifatik) and aromatic-ароматические (aromatik)– and heterocyclic-гетероциклические (geterosiklik).

- For the name of cyclic aliphatic compounds, **CYCLO-**: *cyclobutane-циклобутан (siklobutan), cyclopentene-циклопентен (siklopenten), cyclohexine-циклогексин (siklogeksin)* is added to the name of the corresponding hydrocarbon-углеводород (uglevodorod) of a non-cyclic-ациклическое (asiklik) structure.

- For aromatic hydrocarbons-ароматические углеводороды with one aromatic core-ароматическое ядро, trivial-тривиальные names of benzene-бензол homologues – toluene-толуол, xylene-ксилол, styrene-стирол – and their derivatives are usually used, for example: *methylbenzene-метилбензол (metilbenzol) (toluene-толуол (toluol)), ethylbenzene-этилбензол (etilbenzol), isopropylbenzene-изопропилбензол (izopropilbenzol) (cumene-кумол (kumol)), vinylbenzene-винилбензол (vinilbenzol) or phenylethene-фенилэтен (fenileten) (styrene-стирол (stirol))*.

- The names of heterocycles use prefixes denoting the genus of the heteroatom [**oxa**- (O), **tia**-(S), **aza**- (N)], roots denoting the size of the cycle [**-ir-** (3), **-et-** (4), **-on-** (5), **-in-** (6)], and suffixes showing the difference between limit and unsaturated heterocycles: for limit non-nitrogen **–ANE**, limit nitrogen **–IDINE**, and for non-limit trinomial cycles **–INE** (with nitrogen) or **–ENE** (without nitrogen). For example: *oxairan-оксаиран (oksairan), aziridine-азиридин (aziridin), azain-азаин (azain), azine-азин (azin) (pyridine-пиридин (piridin)), oxyran-оксиран (oksiran)*.

- Alcohols are considered as derivatives of hydrocarbons, therefore, to compose the name of the limiting monatomic alcohols in the name of the corresponding hydrocarbon, the suffix -an is replaced by the suffix **–OL**: *methanol-метанол (metanol), ethanol-этанол (etanol), butanol-бутанол (butanol), propanol-пропанол (propanol), pentanol-пентанол (pentanol)*, etc.

Thus, the terminology and nomenclature of chemical sciences are distinguished by "external consistency". A systematic approach to the formation of terms and nominees is manifested not only in terms of content but also in terms of expression, "that is, in the form of the term, its structure". The "external consistency" is when composing chemical terminology and nomenclature, standard Latin and Greek formants are used, for which a certain meaning is assigned. The use of standardized terms makes it easier to understand international communication among specialists. Moreover, in the conditions of the dynamic development of science, the corpus of terminological vocabulary is constantly being updated. At the same time, "chemical terminology occupies an exceptional place among other terminological systems, being the most international and one of the most significant in terms of volume".

What is the language of chemistry? It is believed that the chemical language, being a special semiotic system, does not have its own sound and writing stock, and therefore borrows them together with grammatical elements from the natural language. Thus, the language of chemistry can be considered as a separate subsystem within the framework of natural language, which includes non-finite morphemes and morphemic complexes formed according to given rules. So, the language of chemistry is a semiotic system that includes names, symbols, and numbers. At the same time, the names can be trivial, semi-trivial, and systematic. Trivial-тривиальные names are not motivated by the structure of the compound, but often consist of words of a general literary language and reflect the special qualities or origin of the substance, for example: *benzene-бензол (benzol), slaked lime-гашенная известь (so'ndirilgan ohak), white magnesia-белая магнезия (oq magneziya), ammonia-нашатырь (nashatir), drinking soda-питьевая сода (ichimlik sodasi), rock salt-каменная соль (tosh tuzi), heavy spar-тяжёлый шпат (og'ir shpat), wine alcohol-винный спирт (vino spirti), formic acid-муравьиная кислота (chumoli kislotasi)*, etc. Semi-trivial names include such designations, which partly have a traditional origin, and partly are formed according to a systematic principle. Thus, "all names of methane homologs, starting with C5, are systematic", since they are formed from Greek numerals (*pentane, heptane, hexane*, etc.) and have a common suffix *-an*, however, the names of the first four homologs – methane, ethane, propane, butane - are trivial, since they have no naming system. Systematic names include designations consisting of certain morphemes, each of which correlates with a fragment of their structure. Consequently, systematic names reflect the structure of the compound.

In addition, the language of chemistry includes many general scientific terms, in particular verbs, which provide a link between specialized terms: for example, *stimulate-стимулировать, inhibit-ингибировать, optimize-оптимизировать, activate-активировать*, etc. A separate group in the composition of the language of chemistry is represented by terms-eponyms formed from the names of inventors and discoverers. For example, *koeist-коэист* (L.Koes), *lavsonite-лавсонит* (E.Lawson), *bakelite-бакелит* (L.Bakeland), *berthollide-бертоллид* (K.L.Berthollet), *Wood alloy-сплав Вуда, method R. Beider-метод Р.Бейдера, Van der Waals interactions-Ван-дер-ваальсовые взаимодействия, the Yapp-Klingemann reaction-реакция Яппа-Клингеманна, the Mulliken population-заселённости по Малликену,*

the Kucherov reaction-реакция Кучерова, the Zelinsky reaction-реакция Зеленского, the Wurtz reaction-реакция Вюрца, etc. As L.Y. Buyanova notes, such terminological units "forever imprinted with their producing base (proper name) the personality and soul of a scientist, a subject of science, have a powerful information-epistemological charge and potential, act as a mobile means of accumulation, transfer of scientific knowledge, its functioning". They are an indicator of continuity in science and reflect certain milestones in its development.

Chemical terms can be conditionally divided into several conceptual and thematic groups: material, substance, compound; processes, effects; instrument, method; characteristic, property, state; quantities, and structure. Within each group, all terms are combined into word-formation nests. At the same time, terminological units are grouped both based on a common root morpheme and common formants (suffixes, prefixes) that have a fixed meaning. For example, the word "hydrolysis-гидролиз (gidroliz)" consists of two parts "hydro" and "liz", which in Greek means "water" and "decomposition", respectively. The presence of these affixoids determines the motivation of the term (decomposition of a substance in contact with water). Thus, this term can be attributed to the word-formation nest with the root "hydro", and to the group of words containing the affixoid "liz": *thermolysis-термолиз (termoliz), aminolysis-аминолиз (aminoliz), pyrolysis-пиролиз (piroliz), radiolysis-радиолиз (radioliz), catalysis-катализ (kataliz), electrolysis-электролиз (elektroliz)*, etc.

Deciphering such terms, formed by adding Greek formats, allows you to formulate and understand their meaning. For example, the word "*amorphous-аморфный*" consists of the prefix "*a*", meaning negation, and the root "*morph*", meaning form, kind; therefore, it means something that has no form or structure. While the word "*isomorphic-изоморфный (izomorfik)*" stands for "having the same shape". The term "azeotropic-азеотропный" consists of three parts: "*a*" (negation), "*zeo*" (boiling) and "*trope*" (change). "This term characterizes mixtures of substances, during the distillation of which their separation does not occur and a condensate of the same composition as the initial solution is formed".

In addition to the Greek elements, Latin roots are also used, often to denote the processes: *adsorption-адсорбция– absorption; adhesion-адгезия – attachment; association-ассоциация – connection; dissociation-диссоциация – separation; diffusion-диффузия – spreading; sedimentation-седиментация - precipitation, precipitation; solubilization-солюбизация – dissolution; desorption-десорбция – release of adsorbent; chemisorption-хемосорбция – absorption*, accompanying caused by the appearance of chemical compounds, etc. When forming new terms, other word-forming morphemes of the Latin language are also used, such as: prefixes "**ko**" / "**con**" (compound): coaxial-коаксиальный, condensation-конденсация, coordination-координация, concentration-концентрирование, conformation-конформация, etc. – and "**de**" (separation): *deformation-деформация, destruction-деструкция, dehydration-дегидратация, dehydrogenation-дегидрирования, depolymerization-деполимеризация, decarboxy-lation-декарбоксилирование, deacylation-деацилирование*, etc.

There are several sources of replenishment of chemical terminology. Firstly, a significant resource is the general literary language, from which words are borrowed, which, within the framework of the terminology system, acquire new meanings based on metonymic transfer: *bridging bonds-мостиковые связи (ko‘prik bog‘lar), fluoride bridge-фторидный мостик (ftorid ko‘prik), packing of molecules-упаковка молекул (molekula jamlanmasi), crystal cell-кристаллическая решётка (kristall panjara), inert gas-инертный газ (inert gaz), exhaust air cabinet-вытяжной шкаф (mo‘rili shkaf), turnbull blue-турнбулева синь (turnbull ko‘ki), prussian blue-берлинская лазурь (berlin lazuri), saturated solution-насыщенный раствор (to‘yingan eritma), strong acid-сильная кислота (kuchli kislota)*, etc. Secondly, the lexical corpus of other sciences, such as physics, mathematics, biology, cybernetics and computer science, etc., for example: *coefficient-коэффициент (koeffitsiyent), index-индексировать (indeks), resonance-резонанс (rezonans), equationy-уравнение (tenglama),functional-функционал(funksional),normal-нормаль(normal), dodecahedron-додекаэдрон (dodekaedron), multiplicity of signals-мультиплетность сигналов, bifurcate connections-бифуркатные связи (bifurkat bog‘lar), strongly correlated electronic systems-сильно коррелированные электронные системы, interface plane-интерфейсная плоскость (interfeys tekisligi), equatorial atom-экваториальный атом (ekvatorial atom)*, etc. It is necessary to separate the section of chemistry that studies chemical phenomena using physical methods - physical chemistry. "The term "physical chemistry" belongs to M.V. Lomonosov, who in 1752 for the first time read a course of physical chemistry to students of St. Petersburg University. Physical chemistry is the main theoretical foundation of modern chemistry, based on such important branches of physics as quantum mechanics, statistical physics and thermodynamics, nonlinear dynamics, field theory, etc."

Accordingly, the terminology of physical chemistry is a mixture of various chemical and physical terms.

The third source is the abbreviation of various types, such as, for example, abbreviations in capital letters: OVR-ОВР (OQR), TED-ТЭД (EDN), DNA-ДНК (DNK), RNA-РНК, ETAAS-ЭТААС (ETAAS), etc. In addition, "there are often designations consisting of a noun in its full form as a nuclear (definable) component and an acronym as a determinant," for example, *NMR spectroscopy-ЯМР-спектроскопия, IR spectroscopy-ИК-спектроскопия, FC spectroscopy-ФК-спектроскопия, the mechanism of PTT – механизм ПЖТ.*

Conclusion. Finally, borrowing is a very important source of replenishment of chemical terminology. The borrowing of terms takes place on the basis of the language most common at a certain point in time. In the Russian chemical language there are many borrowings from French (*Gauche conformation- Гош конформация, mineral-минерал, realgar-реальгар*, etc.) and German (nickel, tungsten, bismuth, zinc, flask, etc.). Today, the language of international communication in various fields of science, including chemistry, is English. Therefore, it is this language that has become the main "provider" of new terms in the Russian-language chemical terminology at the present stage of its development.

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