

DICTIONARY OF CHEMICAL TERMINOLOGY

edited by D.Kryt

IN FIVE LANGUAGES

English
German
French
Polish
Russian

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PREFACE

The Technical Terminology Division of Wydawnictwa Naukowo-Techniczne, Publishers, has been concerned for over twenty five years with the compiling and editing of bi- and multilingual dictionaries in various branches of science and technology. The present dictionary is the first multilingual terminological dictionary to cope with modern chemistry. The dictionary comprises mutually correlated terminology from the basic fields of chemistry, taking due account of its most recent areas of development, as well as the terminology from related disciplines which are entering modern chemistry in ever increasing amounts. It does not, however, include the nomenclature of chemical compounds and terms from chemical engineering and technology.

The dictionary covers the following subject fields:

Atomic and atomic nucleus structure, Chemical bond, Chemical elements, Chemical kinetics, Chemical reactions, Chemical thermodynamics, Chromatography, Colloid chemistry, Conformation, Coordination chemistry, Electrical properties of molecules, Electroanalytical methods, Electrochemistry, Electronic and steric effects of atoms and atomic groups, Fundamental particles, Gravimetric methods, Groups of elements, Isomerism, Isotopes, Macromolecular compounds, Magnetochemistry, Mechanisms of reactions, Molecular structure, Nuclear reactions, Optical methods of analysis, Periodic table, Phase changes, Phase systems, Photochemistry, Quantum mechanics, Radiation chemistry, Radioactivity, Radiochemical methods of analysis, Radiochemistry, Spectroscopy, States of matter, Statistical mechanics, Statistics and error estimation, Surface chemistry, Thermochemistry, Types of reagents, Volumetric analysis. The dictionary was compiled on the basis of the contemporary literature in chemistry and related disciplines in the relevant languages (handbooks, monographs, encyclopaedias, scientific journals, various IUPAC and ISO publications, etc.).

The symbols (a list is given on a separate page) and terminology of physicochemical quantities and units are given in this dictionary in accordance with the recommendations of IUPAC and ISO.

The dictionary has been prepared on the basis of the earlier published Polish dictionary "Słownik terminologii chemicznej", which was compiled by a team of outstanding Polish scientists headed by an Editorial Board appointed by The Polish Chemical Society.

The present dictionary is intended for scientists, researchers, engineers, students and all those who in their work are concerned with modern chemistry and scientific literature.

Any comments on the usefulness of the dictionary and on the gaps and errors noticed will be gratefully acknowledged by the publisher, serving to improve the future editions.

THE EDITOR

EXPLANATORY NOTES

The dictionary contains 3805 English entries in alphabetical order with their definitions followed by equivalents in German (D), French (F), Polish (P) and Russian (R). Efforts were made to formulate the English definitions as concisely as possible, preferably in a single sentence, but so as to explain the semantic range of the entry. Care has been taken to provide the English entries and the equivalents in the other languages as fully as possible with synonyms. English synonyms are given in parentheses, synonyms of German, French, Polish and Russian terms are separated by commas. Where there are two synonymous forms of a term, a full and an abbreviated one, the part of the composite term which can be omitted is given in parentheses, for instance the term "(ко)валентные кристаллы", contains two synonymous forms: "ковалентные кристаллы", and "валентные кристаллы", similarly the term "równowaga (promieniotwórcza) przejściowa" also has two synonymous forms: "równowaga promieniotwórcza przejściowa" and "równowaga przejściowa". A term in German, French, Polish and Russian can be easily found by using the alphabetical indexes placed at the end of the volume. The gender of nouns is indicated (only in the indexes) by the generally used abbreviations: *m* for masculine, *f* for feminine, *n* for neuter. The abbreviation *pl* stands for plural.

SYMBOLS USED IN THE DICTIONARY

A — area	N_A — Avogadro constant
A — mass number	n — amount of substance
A_r — relative atomic mass	n — neutron
a — acceleration	P — power
a_B — relative activity of substance B	p — pressure
Ar — aryl	p — proton
C — capacitance	Q — heat
C — heat capacity	Q — quantity of electricity
c — concentration	R — gas constant
c — speed of light	R — organic radical
d — deuteron	R — resistance
d — diameter	r — radius
d — relative density	S — entropy
div — divergence	s — path; length of arc
E — chemical element	T — period
E — electromotive force	T — thermodynamic temperature
E — energy	t — empirical temperature
E_k — kinetic energy	t — time
E_p — potential energy	t — triton
e — base of natural logarithm	U — internal energy
e — electron	U — voltage
e — elementary charge	V — electric potential
exp — exponential of e	V — volume
F — Faraday	v — velocity
F — force	W — work
f — fission (<i>in nuclear reactions</i>)	X — halogen
G — thermodynamic potential	Z — atomic number
G — weight	z — charge number
g — acceleration of gravity	α — α -particle
H — enthalpy	Γ — Γ function
H — Hamiltonian function	γ — photon
h — height	η — viscosity
h — Planck constant	λ — wavelength
$\hbar$ — Planck constant divided by 2π	μ — reduced mass
I — electric current	μ_B — Bohr magneton
i — imaginary unit	μ_B — chemical potential of substance B
K — kelvin	ν — frequency
k — Boltzmann constant	ν — kinematic viscosity
l — length	π — 3.14...
lg — decadic logarithm	ρ — density
ln — natural logarithm	ρ — resistivity
M — metal	Σ — sum
M — molar mass	σ — wavenumber
M_r — relative molecular mass	τ — characteristic time interval; relaxation time
m — mass	ω — angular velocity
N — number of molecules	

SUPERSCRIPTS

- * — pure substance
- $\ominus$ — standard state
- $\ddagger$ — activated complex

GREEK ALPHABET

A α — alpha
B β — beta
Γ γ — gamma
Δ δ — delta
E ϵ — epsilon
Z ζ — zeta
H η — eta
Θ θ — theta
ι — iota
K κ — kappa
Λ λ — lambda
M μ — mu

N ν — nu
Ξ ξ — xi
O $\omicron$ — omicron
Π π — pi
P ρ — rho
Σ σ — sigma
T τ — tau
Υ υ — upsilon
Φ ϕ — phi
X χ — chi
Ψ ψ — psi
Ω ω — omega

Main Text

1

ABEGG RULE (octet rule).

Most stable electronic configuration in atoms is that with completely filled s and p subshells of valence shell (noble gas configuration).

D Oktettprinzip

F règle de l'octet, règle des gaz rares

P reguła oktetu, reguła gazu szlachetnego

R принцип октета, правило октета

2

ABSOLUTE ACTIVITY

(of component), λ_B

Dimensionless quantity

$$\lambda_B = \exp\left(\frac{\mu_B}{RT}\right) \quad \text{or} \quad \mu_B = RT \ln \lambda_B$$

where μ_B = chemical potential of B component, R = molar gas constant, and T = thermodynamic temperature.

D absolute Aktivität

F activité absolue, facteur de dégénérescence

P aktywność bezwzględna

R абсолютная активность

ABSOLUTE ACTIVITY MEASUREMENT.

See ABSOLUTE COUNTING.

3

ABSOLUTE CONFIGURATION.

Determination of real arrangement of atoms (or groups of atoms) around chiral centre. Absolute configuration is described according to R-S nomenclature. It has been established that absolute configuration of enantiomers of glyceraldehyde is in accordance with their arbitrarily adopted configuration.

D absolute Konfiguration

F configuration absolue

P konfiguracja absolutna, konfiguracja bezwzględna

R абсолютная конфигурация

ABSOLUTE CONSTANTS. See

UNIVERSAL CONSTANTS.

4

ABSOLUTE COUNTING

(absolute activity measurement).

Direct measurement of total rate of radioactive decay, i.e. measurement of number of disintegrations per unit time in the whole mass of preparation examined.

D absolute Aktivitätsbestimmung

F mesure absolue de l'activité

P pomiar aktywności bezwzględny

R измерение абсолютной активности

5

ABSOLUTE ELECTRODE POTENTIAL.

Difference of inner potentials of electrode and electrolyte; non-measurable quantity (cf. relative electrode potential).

D absolutes Elektrodenpotential,

Galvanispannung

F potentiel absolu d'électrode, tension absolue d'électrode

P potencjał elektrody bezwzględny

R электродный потенциал, потенциал электрода

6

ABSOLUTE ERROR.

Difference between result of measurement (analytical determination) and value assumed as true.

D Absolutfehler

F erreur absolue

P błąd bezwzględny, błąd absolutny

R абсолютная ошибка

ABSOLUTE IONIC MOBILITY. See IONIC MOBILITY.

7

ABSOLUTE REACTION RATE.

Reaction-rate constant of elementary reaction previously calculated on basis of properties of reacting molecules and activated complex, nowadays determined also experimentally.

D absolute Reaktionsgeschwindigkeit

F vitesse absolue de réaction

P szybkość reakcji bezwzględna

R абсолютная скорость реакции

8 ABSOLUTE REACTION RATE THEORY (activated-complex theory, transition-state theory).

Reaction rate theory based on model of elementary reaction proceeding over activated complex.

D Theorie des aktivierten Komplexes, Theorie des Übergangszustandes
F théorie des vitesses absolues, théorie du complexe activé, théorie de l'état de transition

P teoria bezwzględnej szybkości reakcji, teoria kompleksu aktywnego, teoria stanu przejściowego

R теория абсолютных скоростей реакций, теория активного комплекса, теория переходного состояния

9 ABSOLUTE REFRACTIVE INDEX.

Ratio of velocities of light in vacuum and in a given medium.

D Brechungsindex, Brechungskoeffizient, Brechzahl

F indice de réfraction absolu

P współczynnik refrakcji bezwzględny, współczynnik załamania światła bezwzględny

R абсолютный показатель преломления

ABSOLUTE TEMPERATURE. *See* THERMODYNAMIC TEMPERATURE.

ABSOLUTE ZERO OF TEMPERATURE. *See* ZERO TEMPERATURE.

10 ABSORBANCE (absorbancy, optical density).

Logarithm to base 10 of ratio of intensity of radiation passing through reference, I_0 , and through investigated sample, I , $A = \lg I_0/I$. Absorbance corresponds to loss of energy absorbed in a given medium in comparison with loss in reference. It is assumed that losses for reflection, solvent absorption, and refraction are compensated and that there is no interference due to scattered radiation.

D Extinktion

F absorbance

P absorbancja, wartość absorpcji

R поглощение, оптическая плотность, экстинкция

ABSORBANCY. *See* ABSORBANCE.

ABSORBANCY INDEX. *See* ABSORPTIVITY.

11 ABSORBED DOSE, D.

Amount of energy imported to matter by ionizing particles per unit mass

of irradiated material at place of interest. In SI system it is expressed in grays.

D Energiedosis, absorbierte Dosis

F dose absorbée

P dawka pochłonięta, dawka zaabsorbowana

R поглощённая доза

ABSORBING CENTRES *See* COLOUR CENTRES.

12 ABSORPTION.

Penetration of substance (absorbate) into body of another (absorbent).

D Absorption

F absorption

P absorpcja, sorpcja węglbna

R абсорбция

13 ABSORPTION CELL (cuvette, sample cell).

In studies of radiation absorption small vessel containing investigated sample (liquid or gaseous). Distance between the two parallel propagation windows, perpendicular to direction of radiation determines thickness of investigated sample.

D Absorptionsküvette; Küvette

F cuve absorbante

P kiuweta absorpcyjna, naczynko (pomiarowe), kuweta

R кювет(к)а

ABSORPTION COEFFICIENT. *See* ABSORPTIVITY.

14 ABSORPTION COEFFICIENT (of gas).

Coefficient describing volume of gas (reduced to normal conditions) which dissolves in unit volume of liquid at the given temperature and under normal pressure.

D Absorptionskoeffizient

F coefficient d'absorption

P współczynnik absorpcji Ostwalda

R коэффициент поглощения

15 ABSORPTION CROSS-SECTION.

Cross-section of nucleus of atom for absorption of bombarding particles.

D Absorptionsquerschnitt

F section efficace d'absorption

P przekrój czynny na absorpcję, przekrój czynny absorpcji

R сечение поглощения

16 ABSORPTION CURVE.

Dependence of absorption or of any of its functions on wavelength, wavenumber or frequency of electromagnetic radiation.

D Absorptionskurve
F courbe d'absorption
P krzywa absorpcji, krzywa spektrofotometryczna
R спектральная кривая

17
ABSORPTION CURVE (absorption signal).
 In magnetic resonance, curve representing dependence of energy absorbed by a given substance from alternating high-frequency magnetic field on strength of static magnetic field (at fixed frequency) or on frequency of field (at constant strength of static magnetic field). It represents changes of imaginary part χ'' of magnetic susceptibility.

D Absorptionskurve, Absorptionssignal
F courbe d'absorption, signal d'absorption
P krzywa absorpcji, sygnał absorpcji
R кривая (резонансного), поглощения, сигнал поглощения

18
ABSORPTION FILTER (colour filter).
 Optical filter absorbing radiation in some region of frequencies.

D Absorptionsfilter
F filtre coloré
P filtr absorpcyjny
R абсорбционный светофильтр

19
ABSORPTION OF IONIZING RADIATION.

Whole of processes occurring when ionizing radiation passes through matter; in result intensity of radiation is reduced and its composition changed.

D Absorption ionisierender Strahlen
F absorption de rayonnement ionisant
P absorpcja promieniowania jonizującego
R поглощение ионизирующего излучения

20
ABSORPTION OF LIGHT.

Transformation of light energy passing through matter into energy of different type.

D Absorption des Lichtes, Lichtabsorption
F absorption de la lumière, absorption lumineuse
P absorpcja światła, pochłanianie światła
R поглощение света

ABSORPTION SIGNAL. See
ABSORPTION CURVE.

21
ABSORPTION SPECTROANALYSIS.
 Spectroanalysis based on investigation of absorption spectra.

D Absorptionsspektralanalyse
F analyse par spectrophotométrie d'absorption, spectranalyse d'absorption
P analiza spektralna absorpcyjna
R абсорбционный спектральный анализ

22
ABSORPTION SPECTROPHOTOMETRY (absorption spectroscopy).
 Branch of spectrophotometry dealing with spectra of electromagnetic radiation absorbed by matter.

D Absorptionsspektrophotometrie, Absorptionsspektroskopie
F spectrophotométrie d'absorption, absorptiométrie
P spektrofotometria absorpcyjna
R абсорбционная спектрофотометрия

23
ABSORPTION SPECTROSCOPY.
 Branch of spectroscopy comprising methods of determination of composition and structure of chemicals by study of absorption spectra.

D Absorptionsspektroskopie
F spectroscopie d'absorption
P spektroskopia absorpcyjna
R абсорбционная спектроскопия

ABSORPTION SPECTROSCOPY. See
ABSORPTION SPECTROPHOTOMETRY.

24
ABSORPTION SPECTRUM.
 Spectrum arising as result of propagation of electromagnetic radiation through absorbing medium.

D Absorptionsspektrum
F spectre d'absorption
P widmo absorpcyjne
R спектр поглощения

25
ABSORPTIVITY (absorption coefficient, specific absorbance, absorbancy index), α .
 Proportionality constant in Lambert-Beer law equation, equal numerically to absorbance of solution of unit concentration and unit path length.

D Absorptionskoeffizient, spezieller dekadischer Extinktionskoeffizient, Extinktionsmodul
F pouvoir absorbant spécifique, coefficient d'absorption
P współczynnik absorpcji, absorpcyjność, współczynnik absorbancji, absorbowalność
R коэффициент ослабления, коэффициент поглощения, коэффициент погашения

26

ABUNDANCE (abundance ratio).
Content of particular isotope in given sample of the natural element, expressed as percentage, e.g. 99.76% of ^{16}O in natural oxygen.

D Isotopenhäufigkeit

F teneur isotopique, abondance isotopique

P rozpowszechnienie izotopu, obfitość izotopu

R относительная распространенность изотопа

ABUNDANCE RATIO. See **ABUNDANCE**.

27

ACCELERATED ELECTRONS.

Electrons whose kinetic energy is increased in an electric potential.

D beschleunigte Elektronen

F électrons accélérés

P elektrony przyspieszone

R ускоренные электроны

ACCELERATOR. See **CHARGED PARTICLE ACCELERATOR**.

28

ACCEPTOR (in induced reaction).

Substance which reacts with actor in system of coupled reactions.

D Akzeptor (der induzierten Reaktion)

F ...

P akceptor (reakcji sprzężonej)

R акцептор (сопряжённой реакции)

ACCEPTOR. See **ACCEPTOR CENTRE**.

29

ACCEPTOR CENTRE (acceptor, acceptor impurity).

Atom of valency lower than normal constituent of crystal (e.g. admixture of boron in germanium crystal), the presence of which gives rise to new energy band not occupied by electron and located just above ground state (in range of forbidden energy band).

D Akzeptor, Akzeptor-Zentrum

F accepteur

P centrum akceptorowe, akceptor

R акцептор

ACCEPTOR IMPURITY. See **ACCEPTOR CENTRE**.

30

ACCEPTOR LEVEL (acceptor state in band model of solid state).

Local, allowed, unoccupied energy level situated in area of forbidden band, connected with presence of acceptor centre in crystal.

D Akzeptorniveau, Akzeptorenterm

F niveau accepteur

P poziom akceptorowy, stan akceptorowy

R уровень акцептора, акцепторный уровень

ACCEPTOR STATE. See **ACCEPTOR LEVEL**.

ACCIDENTAL ERROR. See **RANDOM ERROR**.

31

ACCUMULATOR (secondary cell, storage cell).

Cell in which processes occurring during its work (discharge of accumulator), can be carried out in reverse direction by electrolysis (charging of accumulator).

D Akkumulator, Sammler, Sekundärelement

F accumulateur, élément secondaire

P akumulator, ogniwo galwaniczne wtórne

R аккумулятор, вторичный элемент

32

ACCURACY.

Measure of agreement between result of measurement (determination) or mean in series of measurements and value of measured quantity assumed as true.

D Richtigkeit, Genauigkeit

F justesse

P dokładność

R точность, правильность

33

ACCURACY OF METHOD.

Quantitative (absolute or relative) measure of agreement of mean value of measurement results obtained by a given method and value of measured property assumed as true.

D Richtigkeit, Genauigkeit (der Methode)

F justesse d'une méthode

P dokładność metody

R точность метода

34

ACETOLYSIS.

Metathesis between organic compound and acetic acid, the latter acting additionally as solvent, e.g.



D Acetolyse

F acétolyse

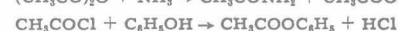
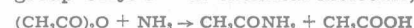
P acetoliza

R ацетолиз

35

ACETYLATION.

Substitution of hydrogen atom by acetyl group $\text{CH}_3\text{CO}-$ in chemical molecule, e.g.



D Acetylierung

F acétylation

P acetylowanie
R ацетилирование

36

ACETYLENIC BOND.

Triple bond between two carbon atoms.

D Acetylenbindung
F liaison acétylénique
P wiązanie acetylenowe
R ацетиленовая связь

37

ACHIRALITY.

Lack of chirality; identity of configuration of molecule with its mirror image, caused by presence of plane of symmetry, or centre of symmetry, or four-fold inversion (symmetry) axis in molecule.

D Achiralität, Unchiralität
F achiralité
P achiralność
R ахиральность

38

ACID.

Substance which exhibits characteristic properties predicted by acid-base theories from which following are the most important: ability to neutralize base, displacement of weaker acids from their compounds, definite influence on colour of acid-base indicators, catalytic properties.

D Säure
F acide
P kwas
R кислота

39

ACID-BASE CATALYSIS.

Catalysis due to substances of acid or base type. In this type of catalysis, reaction of catalyst with substrate consists in proton transfer.

D Säure-Base-Katalyse
F catalyse acido-basique
P kataliza kwasowo-zasadowa
R кислотно-основный катализ

40

ACID-BASE INDICATOR.

Weak acid or organic base which on reacting with water gives conjugated acid-base system. Acid-base indicators are used for measurement of pH of solution and determination of end-point of acid-base titration by visual method.

D pH-Indikator, Säure-Basen-Indikator
F indicateur de pH, indicateur coloré, indicateur acido-basique
P wskaźnik pH, wskaźnik alkacymetryczny, wskaźnik kwasowo-zasadowy

R pH-индикатор, кислотно-основный индикатор, кислотно-щелочной индикатор

41

ACID-BASE TITRATION.

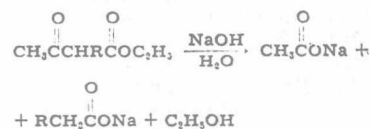
Common name for acidimetry and alkalimetry.

D Säure-Base-Titration, Neutralisationstiteration, Neutralisationsanalyse
F acido-alkalimétrie
P alkacymetria, miareczkowanie alkacymetryczne
R алкалиметрия и ацидиметрия, метод кислотно-основного титрования, метод нейтрализации

42

ACID HYDROLYSIS.

Decomposition of β -ketoacid ester by concentrated base, leading to formation of corresponding carboxylic acid salts and an alcohol, e.g.



D Säurespaltung
F hydrolyse acide
P rozpad kwasowy
R кислотное расщепление

43

ACIDIC GROUP.

Part of chelating agent containing hydrogen ion which can be replaced by metal ion, e.g. hydroxyl group —OH, carboxyl group —COOH, oxime group =NOH, thiol group —SH, arsonium group —AsO(OH)₂.

D saure Gruppe
F groupement acide
P grupa kwasowa, grupa solotwórcza
R солеобразующая группа

ACIDIC SOLVENT. See PROTOGENIC SOLVENT.**ACIDIMETRIC TITRATION. See ACIDIMETRY.**

44

ACIDIMETRY (acidimetric titration).

Determination of substance by acid titration.

Remark: Some authors use in this case incorrectly the term alkalimetry.

D Acidimetrie
F acidimétrie
P acydymetria, miareczkowanie acydymetryczne
R ацидиметрия, титрование кислотами

structure of actinoids is not accurately established as yet. These elements are transition elements and form second series of inner transition elements starting with thorium (Seaborg) or neptunium (Dawson) filling of subshell 5f.

D Actin(o)ide, Aktinide
F actinides, série de l'actinium
P aktynowce
R актин(о)иды, семейство актинидов

55
ACTINON (actinium emanation), An.
 Isotope of radon. Atomic number 86. Mass number 219.

D Actinon, Actinium-Emanation, Aktinon, Aktinium-Emanation
F actinon
P aktynon, emanacja aktynowa
R актинон, эманация актиния

56
ACTINO-URANIUM, AcU.
 Isotope of uranium. Atomic number 92. Mass number 235.

D Actinouran, Aktinouran
F actino-uranium
P aktynouran
R актиноуран

57
ACTIVATED ADSORPTION.
 Chemisorption characterized by fairly high energy of activation.

D aktivierte Adsorption
F adsorption activée
P chemisorpcja powolna, adsorpcja aktywowana
R активированная адсорбция

58
ACTIVATED COMPLEX (transition state, transition complex, critical complex).
 Unstable configuration of reactant atoms to which corresponds maximum of potential energy in reaction path.

D aktiv(iert)er Komplex, Übergangszustand, aktiver Zwischenzustand, kritischer Komplex
F complexe activé, état de transition
P kompleks aktywny, stan przejściowy, stan pośredni, zespół aktywny
R актив(ирован)ный комплекс, переходное состояние

ACTIVATED-COMPLEX THEORY. See ABSOLUTE REACTION RATE THEORY.

59
ACTIVATED MOLECULE (active molecule).
 Molecule which is able to react as result of activation.

D aktiv(iert)es Molekül
F molécule activée
P cząsteczka aktyw(owa)na
R актив(ирован)ная молекула

60
ACTIVATION (radioactivation).
 Process of inducing radioactivity by irradiation with neutrons, charged particles or photons.

D Aktivierung, Radioaktivierung
F (radio)activation
P (radio)aktywacja
R активация

61
ACTIVATION ANALYSIS (radioactivation analysis).
 Method of chemical analysis based on identification and measurement of characteristic radiation from radioactive nuclides formed in a sample by irradiation.

D Aktivierungsanalyse, Radioaktivierungsanalyse
F analyse par (radio)activation
P analiza aktywacyjna
R активационный анализ

62
ACTIVATION CROSS-SECTION.
 Measure of probability of formation of specified radioactive product in nuclear reaction.

D Aktivierungsquerschnitt
F section efficace d'activation
P przekrój czynny na aktywację, przekrój czynny aktywacji
R сечение активации

63
ACTIVATION ENERGY.
 Excess energy over non-reacting state which must be acquired by atomic system in order that a particular process may occur.

D Aktivierungsenergie
F énergie d'activation
P energia aktywacji
R энергия активации

ACTIVATION ENTROPY. See ENTROPY OF ACTIVATION.

64
ACTIVATION INDUCED BY ELECTRONS.
 Activation by electrons with energy of at least 15 MeV.

D Aktivierung mit Elektronen
F activation par les électrons
P aktywacja elektronowa
R активация (произведенная) быстрыми электронами

65

ACTIVATION OF MOLECULE.

Uptake of activation energy by molecule.

D Aktivierung des Moleküls**F** activation de la molécule**P** aktywacja cząsteczki**R** активация молекулы

66

ACTIVATION POLARIZATION

(in electrochemistry).

Sum of transition and reaction polarizations. Activation polarization is expressed by activation overvoltage.

D Aktivierungspolarisation**F** polarisation d'activation**P** polaryzacja aktywacyjna**R** активационная поляризация

67

ACTIVE CENTRES (active sites).

Active sites on surface of solid catalyst where catalytic reaction may proceed due to concentrated adsorption.

D aktive Zentren, aktive Stellen**F** centres actifs, centres d'activité**P** centra aktywne**R** активные центры

68

ACTIVE DEPOSIT *(in radiochemistry).*

Any deposit containing radioactive substances.

D aktiver Niederschlag**F** dépôt actif**P** osad aktywny**R** активный осадокACTIVE MOLECULE. *See* ACTIVATED MOLECULE.ACTIVE SITES. *See* ACTIVE CENTRES.

69

ACTIVE SURFACE OF ADSORBENT

Surface area at which various unbalanced forces act, resulting in adsorption of adsorbate by adsorbent.

D ...**F** ...**P** powierzchnia aktywna (adsorbenta)**R** активная поверхность (адсорбента)

70

ACTIVITY (nuclear activity).

Number of disintegrations of radioactive nuclei of a given quantity of a substance, per unit time.

D Aktivität**F** activité (nucléaire)**P** aktywność (promieniotwórcza)**R** активность

71

ACTIVITY (thermodynamic activity of component), a_B .

Effective concentration of a given component in two- or multi-component system, defined by

$$\mu_B = \mu_B^\ominus + RT \ln a_B$$

where $\mu_B = B$ component's chemical potential in mixture, $\mu_B^\ominus = B$ component's chemical potential in standard state, $R =$ molar gas constant and $T =$ thermodynamic temperature; concentration is usually given in mole fractions, molalities or as molar concentration.

D Aktivität**F** activité**P** aktywność (stężeniowa), aktywność termodynamiczna**R** (термодинамическая) активность

72

ACTIVITY COEFFICIENT, f_B .

Measure of deviation of thermodynamic properties of constituent in a given solution from its properties in ideal solution, defined by ratio

$$f_B = \frac{a_B}{x_B}$$

where $a_B =$ activity of solution constituent B , $x_B =$ mole fraction of this constituent; activity coefficient depends on pressure, temperature and other components of solution.

D Aktivitätskoeffizient**F** coefficient d'activité**P** współczynnik aktywności**R** коэффициент активности

73

ACTIVITY COEFFICIENT OF SINGLE ION, f_+ or f_- .

Quantity defined by formula

$$f_+ = \frac{a_+}{c_+} \quad \text{or} \quad f_- = \frac{a_-}{c_-}$$

where a_+ and $a_- =$ ion activities and c_+ and $c_- =$ their concentrations; this quantity is not measurable.

D Ionenaktivitätskoeffizient**F** coefficient d'activité ionique**P** współczynnik aktywności jonu**R** коэффициент активности иона

ACTIVITY SOLUBILITY PRODUCT.

See SOLUBILITY PRODUCT.

74

ACTOR *(in coupled reactions).*

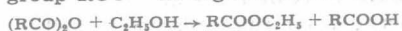
Substance which is common substrate of both primary and secondary reactions in system of coupled reactions.

D Akteur (der induzierten Reaktionen)**F** ...**P** aktor (reakcji sprzężonych)**R** актор (сопряжённых реакций)

75

ACYLATION.

Substitution of hydrogen atom by acyl group RCO— in organic molecule, e.g.



D Acylierung

F acylation

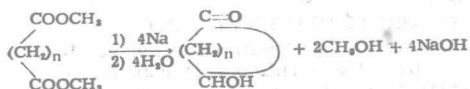
P acylowanie

R ацилирование

76

ACYLOIN CONDENSATION.

Linking together of two molecules of carboxylic ester under action of sodium; also intramolecular reaction of dicarboxylic acid ester, resulting in formation of acyloin, e.g.



D Acyloinkondensation

F condensation des acyloïnes

P kondensacja acyloinowa

R ацилоиновая конденсация

77

ADDITION, A.

Reaction of chemical compounds involving decrease of unsaturation of molecule. The following types of addition are known (depending on reaction mechanism): electrophilic, nucleophilic and free-radical, e.g. electrophilic addition to double bond



D Addition

F addition

P przyłączenie, addycja

R присоединение

78

ADDITION COMPOUNDS (molecular compounds).

Compounds formed by linking of molecules of substances capable of independent existence.

D Molekülverbindungen, Verbindungen höherer Ordnung

F combinaisons moléculaires

P związki addycyjne, związki cząsteczkowe, związki wyższego rzędu

R координационные соединения

79

ADDITION POLYMER.

Polymer obtained from addition polymerization.

D Additionspolymere

F polymère d'addition

P polimer addycyjny

R полимеризационный полимер

80

ADDITION POLYMERIZATION.

Polymerization by repeated addition process.

D Additionspolymerisation, Polyaddition

F polymérisation par addition

P polimeryzacja addycyjna, poliaddycja

R полимеризация

81

ADDITIVE PROPERTIES.

Properties which, for a given system, are sum of corresponding properties of constituents.

D additive Eigenschaften

F propriétés additives

P własności addytywne

R аддитивные свойства

82

ADDITIVITY (additivity law).

Law according to which some definite property of a given set of elements is sum of corresponding properties of constituent elements, e.g. molecular mass is sum of all masses of constituent atoms.

D Additivität

F additivité

P addytywność, prawo addytywności

R аддитивность

ADDITIVITY LAW. See ADDITIVITY.

83

ADHESION.

Bonding occurring between surface layers of two different adhering bodies or liquids due to mutual intermolecular interactions.

D Adhäsion, Haftvermögen

F adhésion, adhérence

P adhezja, przyleganie, przyczepność

R адгезия, прилипание

84

ADIABATIC (reversible adiabatic).

Set of thermodynamic equilibrium states of the same system with identical entropy.

D Adiabate

F adiabatique (réversible)

P adiabatą, izentropa

R (обратимая) адиабата

85

ADIABATIC CALORIMETER.

Type of calorimeter in which heat exchange between calorimeter vessel and its outer jacket is practically negligible.

D adiatisches Kalorimeter

F calorimètre adiabatique

P kalorymetr adiabatyczny

R адиабатический калориметр