

Bibliography of Biopolymer-Related IUPAC-IUB Nomenclature Recommendations

A AMINO ACIDS AND PEPTIDES

- 1 Abbreviations and symbols for the description of the conformation of polypeptide chains (tentative rules 1969). *Arch. Biochem. Biophys.* **145**, 405-421 (1971); *Biochem. J.* **121**, 577-585 (1971); *Biochemistry* **9**, 3471-3479 (1970); *Biochim. Biophys. Acta* **229**, 1-17 (1971); *Eur. J. Biochem.* **17**, 193-201 (1970); *J. Biol. Chem.* **245**, 6489-6497 (1970); *Mol. Biol. (Moscow)* **7**, 289-303 (1973) (in Russian); *Pure Appl. Chem.* **40**, 291-308 (1974); International Union of Biochemistry, *Biochemical Nomenclature and Related Documents*, The Biochemical Society, London, 1978, pp. 94-102.
- 2 Abbreviated nomenclature of synthetic polypeptides (polymerized amino acids) (recommendations 1971), *Arch. Biochem. Biophys.* **151**, 597-602 (1972); *Biochem. J.* **127**, 753-756 (1972); *Biochemistry* **11**, 942-944 (1972); *Biochim. Biophys. Acta* **278**, 211-217 (1972); *Eur. J. Biochem.* **26**, 301-304 (1972); *J. Biol. Chem.* **247**, 323-325 (1972); *Mol. Biol. (Moscow)* **5**, 492-496 (1971) (in Russian); *Pure Appl. Chem.* **33**, 437-444 (1973); International Union of Biochemistry, *Biochemical Nomenclature and Related Documents*, The Biochemical Society, London, 1978, pp. 88-90.
- 3 Nomenclature and symbolism for amino acids and peptides (recommendations 1983), *Biochem. J.* **219**, 345-373 (1984); *Eur. J. Biochem.* **138**, 9-37 (1984); *Int. J. Pept. Protein Res.* **24**, following p. 84 (1984); *J. Biol. Chem.* **260**, 14-42 (1985); *Pure Appl. Chem.* **56**, 595-624 (1984); *Spec. Period. Rep.: Amino-Acids, Pept., Proteins* **16**, 387-410 (1985). Corrections: *Eur. J. Biochem.* **152**, 1 (1985).
- 4 Nomenclature of glycoproteins, glycopeptides and peptidoglycans (recommendations 1985), *Eur. J. Biochem.* **159**, 1-6 (1986), corrected **185**, 485 (1989); *Glycoconjugate J.* **3**, 123-134 (1986); *J. Biol. Chem.* **262**, 13-18 (1987); *Pure Appl. Chem.* **60**, 1389-1394 (1988). (Modifies document No. 8 below by giving the short form for symbolizing oligosaccharide chains.)

B NUCLEIC ACIDS AND POLYNUCLEOTIDES

- 5 Abbreviations and symbols for nucleic acids, polynucleotides and their constituents (recommendations 1970), *Arch. Biochem. Biophys.* **145**, 425-436 (1971); *Biochem. J.* **120**, 449-454 (1970); *Biochemistry* **9**, 4022-4027 (1970); *Biochim. Biophys. Acta* **247**, 1-12 (1971); *Eur. J. Biochem.* **15**, 203-208 (1970), corrected **18**, 558 (1971), **25**, 1 (1972); *Hoppe-Seyler's Z. Physiol. Chem.* **351**, 1055-1063 (1970) (in German); *J. Biol. Chem.* **245**, 5171-5176 (1970), corrected **246**, 4894 (1971); *Mol. Biol. (Moscow)* **6**, 166-174 (1972) (in Russian); *Pure Appl. Chem.* **40**, 277-290 (1974); International Union of Biochemistry, *Biochemical Nomenclature and Related Documents*, The Biochemical Society, London, 1978, pp. 116-121.
- 6 Abbreviations and symbols for the description of conformations of polynucleotide chains (recommendations 1982), *Eur. J. Biochem.* **131**, 9-15 (1983); Proceedings of the 16th Jerusalem Symposium *Nucleic Acids, the Vectors of Life* (Eds. B. Pullman and J. Jortner), Reidel, Dordrecht, 1983, pp. 559-569; *Pure Appl. Chem.* **55**, 1273-1280 (1983).
- 7 Nomenclature for incompletely specified bases in nucleic acid sequences (recommendations 1984), *Biochem. J.* **229**, 281-286 (1985); *Eur. J. Biochem.* **150**, 1-5 (1985); *Mol. Biol. Evol.* **3**, 99-108 (1986); *Nucleic Acids Res.* **13**, 3021-3030 (1985); *Proc. Nad. Acad. Sci. U.S.A.* **83**, 4-8 (1986).

NOMENCLATURE

C OLIGO- AND POLYSACCHARIDES

- 8 Abbreviated terminology of oligosaccharide chains (recommendations 1980), *Arch. Biochem. Biophys.* **220**, 325-329 (1983); *Eur. J. Biochem.* **126**, 433-437 (1982); *J. Biol. Chem.* **257**, 3347-3351 (1982); *Pure Appl. Chem.* **54**, 1517-1522 (1982). (Document No.4 above gives an extension of these recommendations.)
- 9 Polysaccharide nomenclature (recommendations 1980), *Arch. Biochem. Biophys.* **220**, 330-332 (1983); *Eur. J. Biochem.* **126**, 439-441 (1982); *J. Biol. Chem.* **257**, 3352-3354 (1982); *Pure Appl. Chem.* **54**, 1523-1526 (1982).
- 10 Symbols for specifying the conformation of polysaccharide chains (recommendations 1981), *Eur. J. Biochem.* **131**, 5-7 (1983); *Pure Appl. Chem.* **55**, 1269-1272 (1983).

Notes

1. Documents No. 1, 2 and 5 have been published by the International Union of Pure and Applied Chemistry (IUPAC) - International Union of Biochemistry (IUB), Commission on Biochemical Nomenclature (CBN).
2. Documents No. 3, 4, 6, 8, 9 and 10 have been published by the IUPAC-IUB Joint Commission on Biochemical Nomenclature (JCBN).
3. Document No. 7 has been published by the Nomenclature Committee of IUB.

Index

NB references to Chap 1 are superceded by new version

- abbreviations, for polymer names
 - introduction 9
 - lists 157–9
- acyclic carbon chains, seniority in CRU 103–5,118
- addition polymerization,
 - definition 18
- adjacent re-entry model 84
- aggregate, multilayer 82
- alpha (α) designation, for end groups 107, 128
- alphabetical order, in CRU direction 94, 105, 119, 121
- alternating copolymers
 - definition 18, 133
 - names 3, 133–4
- American Chemical Society,
 - nomenclature
 - recommendations 8, 107
- amino acids, nomenclature
 - recommendations 163
- amorphous phase 75
- angle of observation 65
- anticlined structures 43
- Archibald's method 62
- assemblies of macromolecules, terms, chain symmetry, of crystalline
 - definitions 52–7
- atactic polymers
 - definition 16, 27
 - examples 31
- Avrami equation 85
- axialite 82

- basic definitions
 - introduction 1
 - recommendations 13–24
- bead-rod model 60
- bead-spring model 61
- biopolymers, nomenclature
 - recommendations 163–4
- bipolymer, definition 18
- birefringence
 - flow 61
 - streaming 61
- block, definition 17,34
- block (co)polymers
 - definition 17, 134–5
 - names 3, 134–7
- block polymerization, definition 17
- brackets, in polymer names 93
- branch
 - long-chain 51
 - short-chain 51
- branching index 51

- bridging ligands
 - in CRU 119–29
 - designation 119
- Burgers vector 82

- carbocycles, seniority in CRU 103–5,118
- carbon-chain polymers 146,149,153
- catena-* designation, in polymer names 6, 111, 115
- central atom, seniority in CRU 116,124–5
- chain
 - continuously curved 51
 - equivalent 50
 - freely jointed 50
 - freely rotating 50
 - random-walk 50
 - worm-like 51
- chain axis 77
- chain folding 83
- chain identity period 77
- chain-orientational disorder 80
- chain repeating distance 77
- chain symmetry, of crystalline polymers 45, 79
- characteristic ratio 49
- charge number, in CRU
 - names 126, 129
- Chemical Abstracts*, structure-based
 - names in 9
- chi parameter 59
- chromatography
 - gel permeation 69
 - size-exclusion 69
- cisactic polymers, definition 33
- cistacticity, degree of, definition 46
- citation of subunits in CRU 96–8
- class of helix 79
- classes of polymers 146–8
- classification of single-strand linear polymers 146–56
- common polymers, source and systematic names 5, 107–9
- compositi~l heterogeneity 51
- condensation polymerization,
 - definition 18
- configuration
 - designation in CRU 127–8
 - relative 36–40
- configurational base units
 - definition 16, 27
 - examples 21, 27
- configurational disorder 80

INDEX

- configurational repeating units
definition 16, 27
examples 22
configurational sequences,
definitions 36
configurational unit,
definition 15, 26
conformation
definition 77
designation 40–1
local
definition 77
related terms 77–81
macro- 77
micro- 77
molecular, within crystals 83
conformational disorder 80
conformational repeating unit 77
connectives, in copolymer
names 2–4, 131
constitutional heterogeneity 51
constitutional repeating units
definition 16
examples 20–1, 27
identification
inorganic and coordination
112–3
organic 92
naming
inorganic and coordination
114–5
organic 93
orientation
inorganic and coordination
113–4
organic 93
simple 94–6
two or more subunits 96–105
constitutional sequences,
definitions 35
constitutional units
definition 15
examples 19–21
contour length 50
coordination centre, seniority in
CRU 116
coordination polymers,
nomenclature 6, 110–29
copolymerization, definition 19
copolymers
abbreviations for names 157–9
alternating *see* alternating
copolymers
alternative nomenclature for
141–5
block *see* block (co)polymers
classification 131
definition 18
graft *see* graft (co)polymers
introduction to nomenclature 2–4
isomorphism 80
micelles 52
nomenclature, source-based
130–45
periodic *see* periodic copolymers
random *see* random copolymers
statistical *see* statistical copolymers
co-solvency 60
cross-over concentration 57
CRU *see* constitutional repeating units
- crystal perfection 85
crystalline phase 75
crystalline polymers
chain symmetry 45
definition of terms 74–87
introduction 42–5
crystallinity 74
degree of 75
crystallization
isothermal 85
kinetics, related terms 84–5
primary 85
re- 85
secondary 85
crystals
extended-chain 84
fibrous 83
folded-chain 84
globular-chain 84
lamellar 81
lath 82
parallel-chain 84
single 76
twinned 76
- dashes, in copolymer names 136–7
definitions
assemblies of macromolecules,
terms 52–7
basic terms 13–24
crystalline polymer terms 74–87
dilute polymer solution terms
57–70
individual macromolecule terms
47–51
stercochemical 25–46
degree of
cistacticity, definition 46
crystallinity, definition 75
isotacticity, definition 45
polymerization 18, 48
average 55
in polymer names 4, 140–1
syndiotacticity, definition 45
transtacticity, definition 46
dendrite 83
depolarization of scattered light 67
derivatives, functional, in polymer
names 106
diastereoisomeric units 27–8
diffusion
rotational 61
translational 61
diisotactic polymers, definition 32
dilute polymer solutions, related
terms 57–70
disorder
chain-orientational 80
configurational 80
conformational 80
structural 79–80
dissymmetry of scattering 67
distribution, most probable 56
distribution function 55
mass- 56
number- 56
disyndiotactic polymers, definition
32
ditactic polymers, definition 32

- effective unit cell 77
 element sequence table, for seniority
 in inorganic CRU 116
 elution volume 69
 enantiometric units 27–8
 enantiomorphous structures 43
 end groups
 in copolymer names 144
 ionic, in coordination
 polymers 129
 in single-strand
 polymers 107, 128–9
 end-to-end distance 49
 root-mean-square 49
 end-to-end vector 49
 equilibrium sedimentation
 method 62
 equivalence postulate 78
 equivalent chain 50
 equivalent sphere
 hydrodynamically 60
 thermodynamically 48
 erythro structures 36–9
 Ewens-Bassett number *see* charge number
 excess scattering 66
 excluded volume of a macromolecule
 58
 excluded volume of a segment 58
 expansion factor 59
 extended-chain crystal 84
 extraction fractionation 68
- fibrous crystal 83
 Flory constant 64
 Flory distribution 56
 Flory-Huggins theory 59
 flow birefringence 61
 fold 83
 domain 83
 plane 83
 surface 83
 folded chain 83
 folded-chain crystal 84
 fractionation 68
 extraction 68
 precipitation 68
 free valences, minimization
 in CRU 93, 95
 freely draining macromolecule 61
 frictional coefficient 60
 fringed-micelle model 84
 functional derivatives, in polymer
 names 106
- gel-permeation chromatography 69
 geometrical equivalence 77
 globular-chain crystal 84
 graft (co)polymers
 definition 17, 137
 names 3, 137–9
 graft polymerization, definition 18
 groups of polymers 149–56
 Guinier plot 67
- helix 78
 helix class 78
 helix residue 79
- hetero atoms, seniority in organic
 CRU 101–3
 heterochain polymers 147–8, 154–6
 seniority of elements 147
 heterocycles, seniority in CRU
 99–101, 118
 heterogeneity
 compositional 51
 constitutional 51
 heterogeneous nucleation 84
 history of IUPAC Commission ix–x
 homochain polymers 146–8, 153–4
 homogeneous nucleation 84
 homopolymerization, definition 19
 homopolymers
 abbreviations for names 157–8
 definition 18
 isomorphism 80
 Huggins coefficient 64
 Huggins equation 63
 hydrodynamic volume 60
 hydrodynamically equivalent
 sphere 60
- identity period, chain 77
 infixes, in copolymer names 2–4, 131
 inherent viscosity 63
 inorganic polymers, nomenclature
 6, 110–23, 126–9
 interaction
 intramolecular *see* intramolecular
 interaction
 long-range 48
 short-range 48
 International Organization for
 Standardization *see* ISO
 International Union of Biochemistry
 see IUB
 International Union of Pure and
 Applied Chemistry *see* IUPAC
 intramolecular interaction
 long-range 48
 short-range 48
 intrinsic viscosity 63
 introduction to macromolecular
 nomenclature 1–10
 ionic end groups 129
 irregular polymers, definition 15
 ISO abbreviations, for polymer
 names, 9, 157–9
 isoclined structures 43
 isodimorphism 80
 isomorphism 80
 isomorphous structures 43
 isopolymorphism 80
 isopycnic components 60
 isorefractive components 68
 isotactic polymers
 definition 16, 27
 di-, definition 32
 examples 30–4
 isotacticity, degree of, definition 45
 isothermal crystallization 85
 IUPAC Commission on
 Macromolecular
 Nomenclature

INDEX

- Continued*
- History ix-x
 - membership xi-xii
 - publications 9–10
- junction units, in block copolymers 136–7, 139, 142, 144
- Kratky plot 67
- Kuhn–Mark–Houwink–Sakurada Equation 64
- lamellar crystal 81
- lateral order, definition 46
- lath crystal 82
- lattice distortion 80
- ligands, bridging
 - in CRU 119–29
 - designation 119
- line repetition groups 44, 79
- local conformation
 - definition 77
 - related terms 77–81
- locant numbers, in CRU orientation 94–6
- logarithmic normal distribution 57
- logarithmic viscosity number 63
- long spacing between crystals 82
- longitudinal order, definition 46
- macroconformation 77
- macromolecular isomorphism 80
- macromolecules
 - assemblies, terms 52–7
 - freely draining 61
 - individual, terms 47–52
 - non-draining 61
 - partially draining 61
 - see also* polymers
- Mark–Houwink equation 64
- mass-distribution function 56
- mass fraction, in copolymer names 4, 140–1
- membership of IUPAC Commission xi–xii
- meso structures 37–40
- microconfiguration 77
- microgel 52
- Mie scattering 68
- molar mass 47
 - apparent 55
 - mass-average 54
 - number-average 53
 - in polymer names 4, 140–1
 - viscosity-average 54
 - z-average 54
 - (z+l)-average 54
- molar-mass average 53
- molar-mass exclusion limit 69
- mole fraction, in polymer names 4, 140–1
- molecular mass
 - number-average 53
 - relative *see* relative molecular mass
- molecular-mass average, relative 53
- molecular nucleation 84
- molecular weight 47
 - apparent 55
 - viscosity-average 54
 - weight-average 54
 - z-average 54
 - (z+l)-average 54
- molecular-weight average 53
- molecular-weight exclusion limit 69
- monodisperse polymer 51
- mononuclear coordination centre *see*
 - central atom
- monomer, definition 15
- monomeric unit, definition 18
- morphology, related terms 81–3
- mu (**m**) designation
 - for bridging ligands 119
 - for junction units 144
- multilayer aggregate 82
- natural polymers, abbreviations for names 158
- network 51
- nomenclature
 - copolymers, source-based 130–45
 - macromolecular, introduction 1–10
 - quasi-single-strand coordination polymers 110–9, 123–7
 - replacement, in organic CRU 95, 98, 103
 - single-strand inorganic and coordination polymers 110–23, 126–9
 - single-strand organic polymers 91–109
- non-draining macromolecule 61
- non-uniform polymer 53
- notations, stereochemical 25–46
- nucleation 84
 - heterogeneous 84
 - homogeneous 84
 - molecular 84
 - primary 84
 - secondary 84
 - self- 84
 - surface 84
- nucleic acids, nomenclature
 - recommendations 163
- number-distribution function 56
- oligomer, definition 15
- oligomerization, definition 15
- oligosaccharides, nomenclature
 - recommendations 164
- omega (**w**) designation, for end groups 107, 128
- onium compounds, of polymers in CRU naming 106
- organic polymers, nomenclature 5–6, 91–109
- oxidation number, in CRU names 126–7
- parallel-chain crystal 84
- parentheses, in polymer names 1, 93

- partially draining macromolecule 61
 particle
 large 65
 small 65
 particle scattering factor 66
 particle scattering function 66
 peptides, nomenclature
 recommendations 163
 periodic copolymers
 definition 133
 names 3, 134, 143
 persistence length 51
 perturbed dimensions 48
 plate height in chromatography 70
 plate number in chromatography 70
 Poisson distribution 56
 polyalkenylenes 149, 152
 polyalkylenes 149, 152–3
 polyarylenes 149, 153
 polycondensation, definition 18
 polycycloalkenylenes 149
 polycycloalkylenes 149, 153
 polydisperse polymer 53
 polymer crystal 76
 polymer crystallite 76
 polymer-poor phase 68
 polymer-rich phase 68
 polymer-solvent interaction 57
 polymerization
 addition, definition 18
 block, definition 17
 co-, definition 19
 condensation, definition 18
 definition 15
 degree of *see* degree of
 polymerization
 graft, definition 18
 stereoselective, definition 19
 stereospecific, definition 19, 32
 polymers
 abbreviations for names 157–9
 atactic *see* atactic polymers
 block *see* block (co)polymers
 classification 146
 co- *see* copolymers
 by condensation polymerization
 139–40
 coordination, nomenclature
 6, 110–29
 crystalline *see* crystalline polymers
 definition 13
 dilute solutions, related terms
 57–70
 graft *see* graft (co)polymers
 inorganic, nomenclature 6,
 110–23, 126–9
 irregular 15
 isotactic *see* isotactic polymers
 monodisperse 53
 non-uniform 53
 organic 5–6, 91–109
 polydisperse 51
 quasi-single-strand *see*
 quasi-single-strand polymers
 regular, definition 15, 93, 110
 single-strand *see* single-strand
 polymers
 stereoregular, definition 16, 27
 syndiotactic *see* syndiotactic
- polymers
 tactic *see* tactic polymers
 uniform 51
 see also macromolecules
 polymolecularity correction 57
 polynuclear coordination centre,
 seniority in CRU 116, 126–9
 polynucleotides, nomenclature
 recommendations 163
 polysaccharides, nomenclature
 recommendations 164
 Porod-Kratky chain 51
 precipitation fractionation 68
 preferred constitutional repeating unit
 selection
 inorganic and coordination 115
 organic 91
 prefixes
 in alternative copolymer names
 2–4, 141
 in chain-length designation 93
 primitive unit cell 77
 probability density function 55
 process-based definitions 14
 publications
 of IUB/IUPAC Commission
 163–4
 of IUPAC Commission 9–10
 pyramidal shape of lamellae 82
- quasi-single-strand polymers
 classification 146–56
 nomenclature 110–9, 123–7
 quaterpolymer, definition 18
- racemo structures 37–40
 radius of gyration 48
 random coil 50
 random copolymers
 definition 18, 132
 names 3, 133, 143
 Rayleigh ratio 65
 excess 66
 recommendations
 of IUB/IUPAC Commission
 163–4
 of IUPAC Commission 9–10
 recrystallization 85
 reduced viscosity 63
 refractive index increment 65
 molal 65
 specific 65
 regular polymer, definition 15,
 93, 110
 relative configurations 36–40
 relative molecular mass 47
 apparent 55
 mass-average 53
 number-average 53
 in polymer names 4, 141
 viscosity-average 54
 z-average 54
 (z+l)-average 54
 relative molecular-mass average 53
 relative viscosity 62
 relative viscosity increment 63

INDEX

- reorganization in crystal structure 85
repeating distance, chain 77
replacement nomenclature, in organic CRU 95, 98, 103
retention volume 69
root-mean-square end-to-end distance 49
rotational diffusion 61
- salts of polymers, in CRU naming 106
scattered light, depolarization of 67
scattering angle 65
scattering of radiation
dissymmetry of 67
excess 66
Mie 68
related terms 64–8
scattering vector 65
length of 65
Schulz-Flory distribution 56
Schulz-Zimm distribution 56
sedimentation coefficient 62
sedimentation equilibrium 62
sedimentation velocity method 62
segregation from growing crystals 85
self-nucleation 84
semisystematic names
common polymers 5, 107–9
inCRUnaming 105, 107–9
seniority
in acyclic carbon chains 103–5
of carbocycles 103–5
of central atom 116
of coordination centre 116
of elements in heterochain classes 147
of elements in inorganic CRU 116
of hetero atoms in organic CRU 101–3
of heterocycles 99–101
of polynuclear coordination centre 116
separation, related terms 68–70
shish-kebab structure 83
shortest path, in CRU direction 96–8, 117–9
side groups 148
single crystals 76
single-strand polymers
classification 146–56
coordination, nomenclature 6, 110–29
inorganic, nomenclature 6, 110–23, 126–9
organic, nomenclature 5–6, 91–109
size-exclusion chromatography 69
solubility parameter 60
solutions
dilute 57
dilute polymer, related terms 57–70
solvent
quality of 57
selective 59
thermodynamic quality of 57
theta 58
- solvent-polymer interaction 57
sorption
preferential 59
selective 59
source-based nomenclature
introduction 1–4
recommendations 130–45
spacing, long, between crystals 82
spherulite 83
spreading function 69
square brackets, in polymer names 93
statistical coil 50
statistical copolymers
definition 132
names 3, 132, 136–7, 143
statistical segment 50
Staudinger index 63
stem 83
stereoblock
definition 17, 34
examples 8, 35
stereochemical configuration *see* configuration
stereochemical definitions and notations
introduction 6–8
recommendations 25–46
stereochemical formulae 25–6, 28, 30–5, 38–9
stereoregular polymer, definition 16, 27
stereorepeating units
definition 16, 27
examples 21
stereosequences, definitions 35–6
steric factor 50
Stock number *see* oxidation number
streaming birefringence 61
structural disorder 79–80
structure-based definitions 14
structure-based nomenclature, introduction 4–6
subclasses of polymers 147–50, 153–6
substituents
in CRU direction 94, 105, 118
in CRU naming 105–7
surface nucleation 84
switchboard model 84
symmetry elements 44, 79
syndiotactic polymers
definition 16, 27
di-, definition 32
examples 30–3
syndiotacticity, degree of, definition 45
- tactic polymers
a- *see* atactic polymers
cis-, definition 33
definition 16, 29
di-, definition 32
examples 30–4
iso- *see* isotactic polymers
syndio- *see* syndiotactic polymers
trans-, definition 33
tri-, definition 32

INDEX

- tacticity
 cis-, degree of, definition 46
 definition 16, 27
 iso-, degree of, definition 45
 syndio-, degree of, definition 45
 trans-, degree of, definition 46
terpolymer, definition 18
thermodynamic quality of solvent 57
thermodynamic terms, dilute polymer
 solutions 57–60
thermodynamically equivalent
 sphere 48
theta solvent 58
theta state 57
theta temperature 58
threo structures 36–9
tie molecule 83
trade names 9
translational diffusion 61
transport properties, dilute polymer
 solutions 60–4
transtactic polymers, definition 33
transtacticity, degree of, definition 46
tritactic polymers, definition 32
trivial names
 common polymers 5, 107–9
 in CRU naming 105, 107–9
Tung distribution 56
turbidimetric titration 67
turbidity 66
twinned crystals 76
two-phase model (crystalline and
 amorphous) 75
uniform polymer 51
unit cell of polymer crystals 76
unperturbed dimensions 48
valences, free, minimization in CRU
 93, 95
virial coefficients 58
 of chemical potential 58
viscosity
 inherent 63
 intrinsic 63
 reduced 63
 relative 62
viscosity function 64
viscosity increment, relative 63
viscosity number 63
 limiting 63
 logarithmic 63
viscosity ratio 62
weight-distribution function 56
Zimm plot 66