INDEX

A		Ammonia (Continued)	
		reaction of acetonitrile complexes	
Acceptor, one-electron	205	with	246
Acetic acid	369	reactions of coordinated	245
Acetonitrile complexes with am-			635
monia, reaction of	246		52
Acetylacetonato complexes, cobalt	210	Ammonium salts	
	400	Analytical separations	94
(111)	460	Angular overlap model	163
Acetylacetone	580	Anion-exchange	183
Acetylene-metal complexes	501	Anion precipitation tests	229
Acid-base theory	5 8	Anisotropic complex	182
Acidic nature in coordinated ligands.	259	Anti-prism, Archimedean square	583
Acids	369	Aqua ions	165
ACQ matrix	218		412
Acs, V	180	Aquation	
AFO mothis	218	induced	412
AEQ matrix		spontaneous	412
Affinity.	49	Archimedean square anti-prism	583
and valency	90	Arene-metal complexes	508
π -Allyl-iron tricarbonyl	552	Aromatic ligands, electrophilic at-	
π -Allyl-metal complexes	493	tack on	243
Alphabetical listing of ligands 155,	157	Aromatic phenols, masking	233
Aluminum oxide, bond energy in	194		
Al(III)		Aromaticity of the cyclobutadiene	552
ammonia complexes of	638	ligand	
	638	Arsine complexes. 134, 135, 137, 139,	140
coordination numbers of		Arsine, masking of coordinated	244
trimethylamine complexes of	638	Arsines, tertiary	326
Alcohols	368	Arylalkyl ketones, halogenation of	
Aliphatic amines, complexes of		AlČl ₃ complexes	248
transition metals with poly-		Asymmetric synthesis, partially	240
dentate	565	Asymmetry	158
Alkylamine complexes of Ga(III)	639	Atomization energies	190
Alkylation of (2-aminoethylthio)		Average environmental rule	439
diethylgold	244		441
Alkyl phosphites, transition metal	211	Axial ligand field strength	
accompletes, transition metal	590	Axial ligands	623
complexes of		Azobenzene	93
Alkynes, π -complexes with	334		
Alkynyl compounds	327		
Ambidentate ligands	295	В	
Amides	369	2	
Amine coordination to boron, chelate			
effect in	633	Back-donation theory	320
Amine displacement		Bacterial inorganic chemistry	112
reactions	633	Bailar inversion	464
steric factors in	633	Base hydrolysis	415
Amines, hydride displacement by	634	cobalt(III)	459
	632		633
Amines, metal halide complexes with		Bases, displacement series of	
Amino acid copper(II) complexes	234	Bases, metal ions binding to	383
Amino acid reactions	234	Bassett, H	153
Amino acids, cyanate reaction with.	23 8	Benzcyclobutadiene-iron tricarbonyl	550
α -, β -amino acids	23 8	Benzene-chromium tricarbonyl	511
Ammonia		Benzene problem	50
complexes	7 6	Benzoylpyruvic, acid complexes	132
of Al(III)	638	Berl, Ernst	86
of Ga(III)	639	Beryllium benzoylpyruvic acid com-	- 0
nolymueleer cohelt/III)	78	nlavas	132
polynuclear cobalt(III)	10	plexes	192

Berzelius, J. J	9	\mathbf{c}	
B ₂ H ₆ with alkylamines, cleavage re-	001	G. Ludium	
actions of	631	Cadmium	577
B ₂ H ₆ , dimethylsulfoxide as a ligand	699		139
with	$\begin{array}{c} 633 \\ 642 \end{array}$		133
Bidentate sulfur-donor ligands Bimolecular reaction	042	compounds, pur true - true - true	143
cobalt(III)	461		132
iron(II)	461		139
Bisacetylacetonoplatinum(II)	274		275
Bis(3-aminopropyl)methylamine	571	Cambridge, University of	120
Bisaquo groups	149	Carbonato complexes, cobalt(III)	460
Bis(benzene) chromium	509		581
Bis(2-dimethylaminoethyl)methyl-		Curry my	492
amine	569	Catacombs	5
Bisethylenediamineplatinum(II)		Catalyst	
chloride	273	dicyano-bistriphenylphosphine	100
Bivalent cobalt	77	P	106 106
Bjerrum, J	180		100
Blomstrand, L. W20), 25 19	hydridotrichlorostannato-bistri- phenylphosphine platinum	
Bodeker, C	19		105
σ-Bonded organotransition metal complexes	522	Catalysts for hydrogentation	105
Bond energies	391	Catalytic properties of zerovalent	
in bromides	199	compounds	339
in chlorides	199	Catena	154
in fluorides	197	Central atom, oxidation state of	205
in iodides	200	CEQ-matrix	206
in oxides	200	Chalcides, ionic energy in	198
in selenides	201	Charge of a coordinated anion	155
_ in sulfides	201	Charge transfer spectra	43 8
Bond energy	-04	Charge-transfer complexes of fer-	F 40
in aluminum oxide	194	rocene	540
ionic	189	Chatt-Leden triangle	297 226
in magnesium oxides	192	$(p-CH_3C_6H_4)_2SeBr_2$ $(p-CH_3C_6H_4)_2SeCl_2$	226
in molecular compounds	189 190	Chelate	150
in potassium chloridein silver bromide	191	effect	272
in titanium dioxide	193	in amine coordination to boron.	633
Bonding		ring, discovery of	273
in lanthanide complexes308,	314	opening-closing process	423
in metallocenes	532	size of	280
in olefin-metal complexes	489	Chelating agents	94
Bond multiplicity	392	polycyclic	471
Bond rupture mechanism	456	sulfur-containing	479 462
π-Bonds	158	Chemical series, cobalt spectro	150
Borate, masking reducing sugars	233	Chernyaew, I. I	226
with	189	Chirality	362
Boron-boron bonds	630	Chloramine, coordinated	245
Boron cations, optical activity of	635	Chloride-ammonia coordination	
steric factors in stability of	634	series from PtCl ₂	630
with two hydrides	637	Chlorides, bond energies in	199
Boron, chelate effect in amine coor-		1,2-Chloroammine bis(diethylene-	
dination to boron	633	diamine) cobalt(III)	75
Boron complexes, delocalization of electrons in		Chlorotrichlorostannato platinates	106
electrons in	637	$(CH_3)_2PF_3$	223
Boron, lower oxidation states of	636	(CH ₃)PF ₄	$\begin{array}{c} 223 \\ 645 \end{array}$
Bridged complexes 124 139	226 202	Chromophores inversance and dis-	0#0
Bridged complexes		Chromophores, invariance and distortions of octahedral	161
Bridging groups	180	Chromium(III), octahedral stereo-	101
Brodie, B. C.	22	chemistry of	163
Bromides, bond energies in	199	$(C_6H_5)_2TeBr_2$	226
Brown, A. Crum	18	$(CH_3)_2$ TeCl ₂	226
Butadiene-iron tricarbonyl	497	ClF ₃ 224,	22 6

Index

Configurational Circular dichroism..... 361 spectra...... 184 activity 375 412 Cis-attack...... charges cis-dichlorobisethylenediaminein octahedral complexes...... 452 in stereochemical changes 452 cobalt(III) ion..... 273 76 Conformation of ethylenediamine... 405 Cis isomerism..... 420 Conjugate base energies..... 462 Cis-trans isomerization..... Citrulline, ornithine from...... 234 Conjugated systems, formation of . . 105 Classes of ligands..... 151 Constant valency..... 86 Controversy, Werner-Jørgenson....
Couper, A. S..... Claus, Carl..... 15 17 Cleavage reactions of B₂H₆ with al-631 Covalent kylamines..... bond Cobalt 388 NMR and the coordinate.... arsine complexes....... 139 188 nonpolar heteronuclear...... complexes..... 70 hexahydrate..... 436 bonds, number of 194 pentamines.....phosphine complexes..... 573 equivalence..... 194 3-Covalent iodine complexes...... 137 145 spectrochemical series..... 462 Coordinate analysis, normal..... 406 5-Coordinate complexes......131, 144 tetramines..... 574 587 triamines...... 575 species...... 6-Coordinate complexes..... 642 complex of trimethyl phosphite... 595 8-Coordinate complexes......583, 648 5-Coordinate nickel(II)..... 600 5-coordination..... 600 Cobalt(III) 562 460 ${f acetylacetonato\ complexes.....}$ ammine complexes, polynuclear... **78** Coordinate covalence in nonmolecular solids, role of.... 459 187 base hydrolysis..... bimolecular reaction...... 461 bond, NMR and the..... 388 460 Coordinated $carbonate\ complexes.....$ 245 complex of trimethyl phosphite... 595 chloramine...... complexes..... 70 ethylenediamine complexes..... 457 hexaaquo complex.....hexamines.....oxalato complexes..... 463 ligand 630 571 hydride as a..... 460 259 253 stereomobility 457 triethylenetetramine complexes... 460 nitrate infrared and Raman modes for Color, names based on 148 593 Commission on the Nomenclature of free and..... 592 x-ray analyses of Inorganic Chemistry..... 150 olefins.....polymeric model of nonmolecular 243 Complex formation, equilibria of 557 solids......187, 198 70 244 645 569 541 5-Coordinated complexes..... 583 70 4-Coordinated monomeric complexes alkyl phosphites, transition metal..... 258 Coordinating atom, phosphorus as... 590 Coordination with amines, metal halide 632 chemistry 645 coordination number, electronic 4-coordinate monomeric..... configuration, and ionic 583charge as discrete variables 583 8-coordinate..... 203 of dimethylin(IV)..... 558 in . of group III elements..... 628 93 306 306 of the lanthanide elements..... lanthanide..... monomeric 6-coordinate..... 583 357 neutral β -ketoenolate complexes... 587 recent developments in..... 103 643 compounds, optical activity and rhenium..... transition metals with poly-Pfeiffer effect in..... 366 direct linkage of two centers of 152 565 dentate aliphatic amines 399 645 nomenclature..... 151 558 645 638 π Complexes with olefins and alkynes 334 as a discrete variable in coor-Condensation of polar molecules 188

653

Conductivity behavior......

dination chemistry......

Coordination		Diarylthallium(III) ions	557
number (Continued)		Dibutyltin	556
of GA(III)	639	Dichloro bis-triphenylstibine pal-	100
of lanthanide complexes	309	ladium(II)	108
of phosphorus to metal ions	605	Dichroism, circular	361
in the second sphere	178	Dicyano bis-triphenylarsine palla-	100
selectivity	379	dium(II)	108
series from diborane, hydride-		Dicyano-bis-triphenylphosphine pal-	
ammonia	631	ladium(II)	108
	5, 90	as a catalyst	106
5-Coordination	623	Dielectric effect of solvent	627
cobalt(1)	600	Diene-metal complexes	496
Copenten	573	Diethylenetriaminepentaacetic acid.	292
Copper		Diethylethylenediamine	445
amines	576	Dietolen	241
arsine complexes	135	Diffusion	178
benzoylpyruvic acid complexes	132	Diiodo bis-triphenylphosphine	100
phosphine complexes	135	nickel(II)	108
triamine complexes	126	Dimethyl(2,2'-bypyridine) zinc	556
Copper(I) complex of trimethyl		Dimethylcadmium	556
phosphite	59 8	Dimethylethylenediamine	445
Copper(II)		N,N'-dimethylethylenediaminedi-	00 =
complexes, amino acid	234	acetate	285
stereochemistry of	166	Dimethylformamide	369
Cr(III) tridentate monamines	568	N,N-dimethylglycinate	285
Crystal		Dimethyl(1,10-phenanthroline)zinc.	556
field		Dimethylpiperazine	143
splitting parameter Dq	430	Dimethylsulfoxide as a ligand with	200
theory	431	$\mathrm{B}_{2}\mathrm{H}_{6}$	633
structure	114	2,5-Dimethyl-1,4,7-triazoheptane	571
of lanthanide complexes	311	1,2-Diphenylcyclobutadieneiron tri-	
Cyanate reaction with amino acids	238	carbonyl	550
Cyano compounds	327	Diphenyltin	556
Cyclam	570	Dipivaloylmethane	583
Cyclobutadienyliron carbinyl cations	537	Dipyridyl with bridged complexes,	100
Cyclobutadiene	F 40	reaction of	138
-iron tricarbonyl500	, 549	Direct bonding between centers of	150
ligand, aromaticity of	552	coordination	158
-metal complexes	500	Direction linkage of two centers of	150
π-Cycloheptatrienyl-metal complexes	512	coordination	152
π-Cyclohexadienyl-metal complexes.	498	Displacement	410
Cyclooctatetraene-metal complexes.	516	series of bases	633
Cyclopentadienyl	331	Dissociation	410
π -Cyclopentadienyl-metal complexes	502	Distorted dodecahedra	583
_		Distortions of octahedral chromo-	161
D		phores, invariance and	132
Dalton John	9	Dithiol complexes	379
Dalton, John	9	Dodecahedra, distorted	583
Delocalization of electrons in boron	637	Donor, zero-one, -and two electron.	205
Complexes	204	Double bond hypothesis	320
Delocalized π -complexing ligands	566	Double salts	73
Den	383	Dq, accuracy of	447
Depolymerization	149	Dq, accuracy of Dq , crystal field splitting parameter.	430
Designating isomers	21	Dq-cubic molecules	432
Dewar, James	556	Dq-non-cubic molecules	439
Dialkylthallium derivatives	558	Ds	441
Dialkylthallium(III) ions	55 7	Dt	441
Dialysis	179	Dtn	572
Diamine complexes	110	DTPA	292
cadmium	143	Dyes, Werner and	86
nickel	129	Lyo, Wollie alla	Ų
Diaminodiethylamine complexes,	120	E	
platinum	130	£	
Diaminodiethylsulfide complexes	126	EDTA, analogs of	292
Diarsine	139	EDTA oxidation, masking of	233

Index

Fuoss, R. M..... 180 Eigen, M...... 181 Electronegativity, equalization of . . 198 Fuskosulfat.... Electron-pair repulsions.

Electron pairs

Electronic configuration. 221 222 G 206 Ga(III), alkylamine and ammonia as a discrete variable in coordina-639 tion chemistry..... 203 Ga(III), coordination numbers of . . 639 of lanthanides......... 307 Electronic factors in masking..... 230 Geometrical isomerism.... 152 Gerhardt, K. F..... 15 83 Electronic spectra..... 167 Electrons donated, number of 205 233 Electrophilic attack on aromatic 243 ligands.. Energy in chalcides, ionic 198 Gold phosphine complexes 137, 145 Enthalpy of metal chelate..... 281 **27**8 Graham, Thomas..... Entropy, translational..... 198 Equalization of electronegativity... 628 441 Equatorial ligand field strength \dots Groups in trans positions in an equa-Equatorial plane, groups in trans positions in an....... 155Equilibria of complex formation.... 557 Equilibrium chelate effect 273 н 20 Erlenmeyer, Emil..... Et4den..... 568 Halide substitution reactions..... 632 106 Halo-nickel complexes, as catalyst... 368 Ethanolic solution..... Hantzsch, Arthur.....43, 87 Ethylthiol complexes, palladium.... 137 30 Ethylenediamine 21 complexes, cobalt(III) 457 233 405 HETA oxidation, masking of 284 587 tetraacetate......276, 285 473 383 tetraacetic acid......275, 292 91 282 1,4,7,10,13,16-Hexaazahexadecane... 571 Ethylene-metal complexes...... 488 Hofmann, A. W..... 446 14 Ethylenethiourea..... Homoatomic aggregates..... 158 240Ewens, R. V. C..... Horstman, A..... 29 153 399 Exchange isoelectric 208 Hydride negative-moving.....positive-moving..... -ammonia coordination series from 208 208 631 diborane..... as coordinated ligand 630 Extended structures..... 158 634 displacement by amines..... substitution reactions..... 632 F Hydridochlorotrichlorostannato pla-106 tinate..... Hydridotrichlorostannato bis-tri-Farther halogens 157 27 phenylphosphine platinum(II) as a catalyst..... 105 Ferricyanide as oxidant for reducing 233 Hydrogenation sugars...... 105 109 charge-transfer complexes of.... 539Ferrocenylcarbinols.... of methyl linoleate..... 106 534 61 α -Ferrocenylcarbonium ions..... 507 Hydrogen bonding..... 622 469 First row transition metal..... First sphere..... 178 Hydrophobic bonding.....ligands..... 375 Fixed valency...... 86 8 621 Fluorescence of lanthanides..... 315 Hydroxyalkylmetallocenes..... 539 Hydroxy group in ligands..... 240 Fluorides, bond energies in 197 Fownes, G..... 14 Franck-Condon principle. Frankland, E. Fronaeus, S. 447 14 181 Functionality of a multiple bridging Induced aquation..... 412 group..... Infrared spectra..... 153

Infrared studies on Werner complexes	396	King, Victor L	91 183
Innocent ligands	170	Kiss, A. v.	180
Inorganic	170	Knoevenagel condensation	239
dyes and pigments	95	Kolbe, A. W. H.	20
electronic spectroscopy	431	Kraus, C. A	180
exmbiosis	299	Maus, C. A	100
symbiosis	299	-	
Interaction of metal ions with poly-	378	L	
nucleotides	378 447	Labila actahadral complexes	165
Intermediate coupling	452	Labile octahedral complexes	180
Intermediate octahedral ligand fields	452 71	Laitenen, H. A	93
Intermetallic compounds	93	Lakes	ฮอ
Internal metallic complexes Intramolecular mechanism	421	Lanthanide complexes	315
	421	applications of	
Invariance and distortions of octa-	161	bonding in	310
hedral chromophores	161	classification of	309
Iodides, bond energies in	$\begin{array}{c} 200 \\ 137 \end{array}$	coordination number of	311
Iodine complexes, 3-covalent		crystal structure of	311
Ion-association concept	180	isomerism of	312
Ion-pairs, outer-sphere	167	stability of	310
Ions, order of	151	stereochemistry of	
Ionic bond energy	189	thermodynamic stabilities of	312
Ionic charge	206	Lanthanide contraction	308
Ionic charge as discrete variable in	000	Lanthanide elements, coordination	200
coordination chemistry	203	chemistry of	306
Ionic energy in chalcides	198	Lanthanides	207
Ionic model, limitations of	201	electronic configuration of	307
Ionization isomerism	397	laser properties of	315
Iridium phosphine complexes	145	Larsson, R	181
Iron(II) bimolecular reaction	461	Larsson's hypothesis	183
Iron group metallocenes	532	Laser properties of lanthanides	315
Isoelectric exchange	203	Lewis acid	205
Isomerism	31	Lewis acid strengths, moderation of	246
coordination	399	le Bel, J. A.	21
hydrate	399	Lesser known aspects of Alfred Wer-	4.1
ionization	397	ner's work	41
of lanthanide complexes	311	Leibig, Justus	12
linkage	295	Ligand	400
polymerization	399	with B ₂ H ₆ , dimethylsulfoxide as a	633
rates of	299	fields, intermediate octahedral	452
salt		field theory	431
stereo	400	interchange mechanism	409
Isomerization of unsymmetrical	~ 0.4	properties of phosphorous acid	004
M(A) ₃ complexes	584	diesters	604
Isomer, optically active inorganic	0=	reactions	3/8
coordination	37	reactivity, masking of	229
Isomers, designating	149	water as a	632
Isomers, structural	31	Ligands	005
Isocyanides	329	ambidentate	295
IUPAC	150	axial	623
		bidentate sulfur-donor	642
J		hydrophobic	621
T 1 (D 1)	*09	innocent	172
Jahn-Teller	583	listed alphabetically155,	
Jørgensen, C. K	182	macrocyclic	617
-Jørgensen controversy, Werner	8	N-donor	333
Jørgensen, Sophus Mads18	3, 28	phosphorus-containing	475
		reactions of coordinated	253
K		saturated nitrogen	479
77 D I	00	sulfur-containing	172
Karrer, Paul	92	types of	204
Kekulé, August	18	Limitations of ionic model	201
β-Ketoenolate complexes, neutral	587	Linear-formula notation	155
Ketones	476	Linkage isomerism	295
Kinetic aspects, masking of	248	Localized chelated ligands	204
Kinetic chelate effect	273	Locant designators	155

Index			657
I and point	222	Methanol	368
Lone pairs	18	N-methyliminodiacetate	285
Losehmidt, J Lower oxidation states of boron	636	Methyl linoleate, hydrogenation of .	106
Lunge, George	87	Methyl oleate	108
Luteo series	148	5-Methyl-1,5,9-triazanone	572
nutro series	110	Metren	569
M		Moderation of Lewis acid strength	247
Managaria limanda	617	$Mo[(HCS)_2]_3$	$\frac{227}{373}$
Macrocyclic ligands	$\begin{array}{c} 617 \\ 192 \end{array}$	Molecular compounds73,	
Magnesium oxide, bond energy in	623	bond energy in	189
Magnetic moments Mason, S. F	184	Molecular shape	218
Masking	101	Molybdenum complexes	645
aromatic phenols	233	Molybdenum(III) hydrolysis rate	465
of coordinated arsine	244	Monk, C. B	182
defined	230	Monodentate ligand	205
of EDTA oxidation	233	Monomeric 6-coordinate complexes.	583
of ferricyanide	233	Mono-olefin complexes	488
of glycine	233	Mordant dyes	3, 95
of HETA oxidation	233	Muller, Hugo	17
kinetic aspects of	248	Multicenter bond	629
of ligand oxidations	232	Multidentate	$\frac{150}{363}$
of ligand reactivity	$\begin{array}{c} 229 \\ 248 \end{array}$	ligands	303
rate lawsreducing sugars with borate	$\begin{array}{c} 248 \\ 233 \end{array}$		
steric and electronic factors in	$\frac{230}{230}$	N	
Matrix, CEQ	206		
McLeod, H.	29	Names based on color	148
Mechanism of reactions of Werner		Names, valency in	149
complexes	408	Naquet, A. J	22
Medien	569	Näsäner, R	182
Medtn		N-donor ligands	333
Meister, O	29	Nearer halogens	27
Melanochloride	80	Nebenvalenz	30
Mer Mercury	157	Negative-moving exchange	208
amines	577	"Neuere Anschauungen"	587
arsine complexes	140	Neutral β -ketoenolate complexes NH ₃ group, rotation of	405
compounds, partial resolution of	133	Nickel	100
dithiol complexes	132	amines	577
Metal		derivatives, zerovalent	318
acetylacetonates	580	dimethylglyoxime reactions	242
ammine complexes, stabilties of	284	dimethylsulfoxide	435
atom participation	532	diamine complexes	129
-carbon cleavage	$\begin{array}{c} 560 \\ 492 \end{array}$	phosphine complexes	144
carbonylscomplexes	492	triaminotriethylamine complexes.	$\frac{129}{129}$
of ammonia	284	triaminotripropylamine complexes Nickel(0) complex of trimethyl phos-	129
of ethylenediamine	284	phite	598
physiological action of	111	Nickel(II)	000
halide complexes with amines	632	acetylacetonate	582
ions	372	atoms, nonequivalent	625
binding to bases	383	complex of trimethyl phosphite	595
binding to phosphate	380	complexes, solvational control in	
coordination of phosphorus to	605	spin state variations among	616
with polynucleotides, inter-	37 8	5-coordination	600
action of β -ketoenolate stereochemistry	580	Nitrate	
Metallized azo dyes	99	coordination in complexes of tri-	
Metallocenes	50	methyl phosphite	590
bonding in	532	infrared and Raman modes for free	
iron group	532	and coordinated	593
oxidation potentials of	532	x-ray analyses of coordinated	592
protonation of	540	Nitrilotriacetate	285
α-Metallocenylcarbinyl acetates	536	Nitrilotriacetic acid	$\frac{292}{246}$
α -Metallocenyl carbonium	536	Nitrite, reduction of coordinated	410

Nitrogen ligands, saturated	479	Oxalatobisethylenediamine cobalt	
Nitrosyl compounds	330		274
NMR and the coordinate covalent		Oxalato complexes, cobalt(III)	460
bond	3 88	Oxidation	
NMR of phosphorous acid cyclic			205
esters	607		151
Nobel Prize	$\frac{37}{27}$	£ 1,5	$\frac{534}{170}$
$egin{array}{lll} { m Noelting, Emilio} & \dots & $	87 151		232
Nomenclature of Inorganic Chemis-	101		218
try, Commission on	150	Oxides, bond energies in	200
Nonaqueous solvents	3 68	Oximes	43
Nonequivalent nickel(II) atoms	625	Oxonium salts	56
Nonmolecular solids	100	_	
coordinated polymeric model of	198	P	
role of coordinate covalence in Nonoctahedral structure	$\begin{array}{c} 187 \\ 642 \end{array}$	Palladium	
Nonpolar heteronuclear covalent	012	arsine complexes	134
bond	188	partial resolution of	133
Non-transmutative variable	206	complexes	134
Normal coordinate analysis	406	derivatives, zerovalent	318
NTA, analogs of	292	diarsine complexes	139
Nucleic acids	379	ethylthiol complexes	137
Number of covalent bonds Number of electrons donated	$\frac{194}{205}$	Partial resolution of Hg, Cd, Zn, and	133
Numerical prefixes	151	Pd compounds	240
rumerical prenaes	101	Pasteur, Louis	18
		Pauli exclusion principle	222
O		1,4,7,10,13-Pentaazatridecane	568
		Periodic table	61
Octahedral		Personal recollections of Werner	1
chromophores, invariance and distortions of	161	Pfeiffer effect in coordination compounds	366
complexes		Pfeiffer, Paul	86
configuration changes	452	Pfeiffer rotation	372
labile and robust	165	$P(CF_3)Cl_4$	224
stereochemical changes	452	$\underline{\mathrm{PF}_{5}}$	223
crystal field	431	PFCL	224
ligand fields, intermediate	$\begin{array}{c} 452 \\ 163 \end{array}$	Phonylopolisdimethylogine	$\frac{224}{138}$
stereochemistry of chromium(III) Odling, William	18	Phenylenebisdimethylarsine Phenyllisophosphindoline	143
Olefins, π -complexes with	334	Phosphate, metal ions binding to	380
One-electron acceptor	205	Phosphine-arsine complexes	140
One-electron donor	205	Phosphine complexes 135, 137, 139,	
Optical activity		144,	
of boron cations	635	Phosphines, tertiary	$\frac{326}{607}$
in coordination chemistry in coordination compounds	$\begin{array}{c} 357 \\ 366 \end{array}$	Phosphite, tricyclic	007
Optical inversion	418	tertiary	326
Optical rotation183,		transition metal complexes of alkyl	590
Optical rotatory dispersion ´	361	Phosphorous acid	
Optically active		cyclic esters, NMR of	609
complexes		diesters, ligand properties of	604
inorganic coordination isomer	37	Phosphorus -31 chemical shifts	390
Order of ionsOrganometallic-chelate compounds.	$\begin{array}{c} 151 \\ 555 \end{array}$	as coordinating atom	258
reactions of	559	containing ligands	475
Organometallic		to metal ions, coordination of	605
ions	555	platinum-195 coupling	391
π -complexes	486	Phthalocyanines	471
Organotransition metal chemistry	486	Pi-bonding	156
Ornithine from citrulline	$\begin{array}{c} 234 \\ 532 \end{array}$	Pigments, inorganic dyes and Planar complexes	$\begin{array}{c} 95 \\ 358 \end{array}$
Osmocene	332 178	Platinum	000
ion-pairs	167	complexes	116
Oxalate group bridging	135	6-coordinate complexes	128

Index

560 Platinum (Continued) derivatives, zerovalent...... 318 Redox reactions..... 427 diaminodiethylamine complexes.. 130 Reducing sugars with borate, masking..... 233 427 122 ferricvanide as oxidant for..... 233 triamine complexes...... 246 128 Reduction of coordinated nitrite triaminotriethylamine complexes. 218 Platinum(II) d-orbital splitting.... 394 Reduction/oxidation..... 218 Platinum(IV) Reiset, J..... 246 13 amines with bromine, reaction of. 29 catalysis..... 461 Remsen, Ira..... 218 Point of attachment..... 151 227 369 $\text{Re}[S_2C_2(C_6H_5)_2]_3...$ Polarimetric measurements..... Polar molecules, condensation of . . . Resolutions.... 45 188 643 Polarographic investigations..... 180 Rhodium phosphine complexes..... 145 Polycyclic chelating agents..... 471 Rhodium(III), hydrolysis..... 461 Polydentate aliphatic amines, com-425 plexes of transition metals with. 565 Rhombic twist..... 379 Polymeric complexes..... 584 Robust octahedral complexes..... 165 Polymerization Role of coordinate covalence in nonnumbers, variable..... 399 187 587 molecular solids..... Polynuclear cobalt(III) ammine complexes..... 405 Rotation of NH₃ group..... Ruthenium(III) hydrolysis..... 465 78 Polynucleotides, interaction of metal 532378 104 Polyunsaturated systems..... S 471 182 Positive moving exchange..... 208 Saturated nitrogen ligands..... 479 190 Potassium chloride, bond energy in. 229 $SbBr_6^{3-}$ 225Precipitation tests, anion..... 264 Preponderant configuration..... 170 Primary valencies..... 275 28 641 28 178 Protonation of metallocenes..... 540 Second sphere, coordination in the... 556 Selenides, bond energies in 201 Pseudo-metal ion concept 94 Sequestering agents..... Pseudomonas aeruginosa action of 112 222 473 488 Sigma-bonding..... 156 Pyridine-sulfur trixoide adduct..... 247 633 Silver arsine complexes..... 135 Q Silver bromide, bond energy in 191 244 Quaternization reactions...... Silver(I) complex of trimethyl phos-598 473 Quinoline heterocycles Silver phosphine complexes..... 137, 145 8-Quinolinolato (triphenyl) tin(IV). 562 6178-Quinilino derivatives..... 556 Singlet-triplet equilibrium..... Size of chelate ring.....Solvational control in spin state 280 R variations among nickel(II) complexes..... 616 Solvent activity..... 619 299 104 Reaction Soybean oil, hydrogenation of..... mechanisms.....of platinum(IV) ammines with bromine..... 116360 Spatial formulas 373 Specific rotation..... Spectrochemical series..... 449 246Spectroscopy, inorganic electronic... of coordinated 431 245 Spin-free 462 253 activation energy..... of organometallic-chelate compounds....types of...... intermediate..... 461 559 Spin-orbit coupling 437208 Spin state variations among nickel 229(II) complexes, solvational con-616 Recent developments in coordina-Spontaneous aquation...... 103 412Square planar complexes......427, 469 Recollections of Werner, personal...

Stabilities of metal ammine com-	20.4		142
t ·	284	Thallium (III) ions, dialkyl and	c = 7
Stability of		career y z	557
[634	Timolo, coordinates	244
	312		178
Stereochemical changes in octahedral			205
	452	Tin complexes, stereoisomerism of	-00
Stereochemistry			562
of chromium(III), octahedral	163	I'm phonyr clouruge	560
of $copper(II) \dots \dots$	166	Titanium dioxide, bond energy in	193
of lanthanide complexes	310		292
metal β -ketoenolate	580	Titals accepted to the control of th	412
of Werner complexes	408	trans-Dichlorobisethylenediamine-	
Stereoisomerism	400	cobalt(III) ion	273
of 6-coordinate tin complexes	562	Trans isomerism	7 6
Stereomobility		Transition	
$\operatorname{cobalt}(\operatorname{III})$	457		435
substitution reaction	452	metal complexes of alkyl phos-	
	360	phites	604
Steric effects, on chelate ring	288	metals	
Steric factors		first row	469
in ammine displacement	633	with polydentate aliphatic	
in masking	230	amines, complexes of	565
in stability of boron cations	634	d-Transition series	308
Stockhardt, J	15	Trans-labilizing activity	391
Stock numbers for zerovalent num-		Translation entropy	278
bers	152	Transmutative variable	206
Structural isomers	31	Trans positions in an equatorial	
Structure and coordination	195	plane, groups in154,	155
Structuring of water	621	Treadwell, Frederic P	87
Substitution reaction		TREN	289
hydride and halide	632	Triamine complexes, platinum122,	126
stereomobility	452	Triaminopropane	121
Sulfides, bond energies in	201	1,2,3-Triaminopropane	566
Sulfur-containing		Triaminotriethylamine	289
chelating agents	479	complexes	127
ligands	172	nickel	129
Sulfur trioxide adduct, pyridine	247	β, β', β'' -Triaminotriethylamine	290
Symbiosis, inorganic	299	2,2',2"-Triaminotriethylamine	566
by morous, morgamo		Triaminotripropylamine complexes,	
T		nickel	129
1		Triangle, Chatt-Leden	297
Tassaert	9	1,4,7-Triazaheptane	566
Taube, Henry	182	1,5,9-Triazanonane	572
$TeBr_6^{2-}$	$2\overline{25}$		106
TeCl ₆ ²⁻	225	Trichlorogermano ligand	
Template hypothesis	257	Trichloroplumbo ligand	106
Tertiary		Trichlorostannato ligand	105
amines	143	Tricyclic phosphite	607
arsines	326	Trien289,	567
phosphines	326	Triethylenetetraamine	289
phosphites	326	complexes, cobalt(III)	460
1,4,7,10-Tetraazadecane	567	hexaacetic acid	292
1,4,8,11-Tetraazocyclotetradecane	570	Trigonal	
Tetracarbonylnickel	318	bipyramidal molecules	223
Tetraen	568	-prismatic	
1,1,7,7-Tetraethyldiethylenetri-		coordination	641
amine	568	structure	583
Tetraethylenepentamine	568	twist	425
heptacetic acid	292	Trimethylamine complexes of Al	
Tetragonal complexes	439	(III)	638
Tetragonally distorted nickel(II)	444	Trimethyl phosphite, nitrate coor-	
Tetrahedral complexes358,		dination in complexes of	590
Tetramethyldiborane and ammonia.	635	Tris(2-dimethylaminoethyl) amine.	569
Tetramethylcyclobutadiene-iron tri-	-	Trisethylenediamine cobalt(III) ion,	
carbonyl	550	resolution of by bacteria	111

Index			661
Trivalent		Werner, Alfred	28
cobalt	77	biography	3
nitrogen compounds	41	complexes	70
TTHA	292	mechanisms of reactions of	408
Tungsten complexes	645	stereochemistry of	408
Two-electron donor	205	concepts in boron hydrides	629
Types of	_00	conceptual contributions	629
ligands	204	dream	90
reactions	208	and dyes	86
Teacorons	200	-Jørgensen controversy	8
		nomenclature	148
U .		Work, lesser known aspects of Alfred	
•		Werner's	4
Uramil-7,7'-diacetic acid, complexes		Wurtz, A	$1\overline{4}$
of	558	W u1 02, 21	
01	000	X	
***		X T	222
V		XeF ₆	226
** 1		XeF, ⁻	226
Valence	3, 49	XeF ₈ ²⁻	$\frac{220}{224}$
Valency		Xenon hexafluoride	224
constant or fixed	86	X-ray	700
in names	149	analyses of coordinated nitrate	592
variable	90	crystallography	82
Vanadium complexes	645		
van't Hoff, J. H	21	${f Z}$	
Variable			400
polymerization numbers	587	Zeise's salt	488
valency	90	Zero-electron donor	205
Vicinal dioximes	241	compounds, stock numbers for	152
		nickel derivatives	318
		palladium derivatives	318
\mathbf{w}		platinum derivatives	318
		Zine	
Water		amines	577
as a ligand	632	benzoylpyruvic acid complexes	132
structuring of	621	compounds, partial resolutions of.	133
Weltzien C	17	dithiol complexes	132