

Volume Contents

Cyanuric Acid and Cyanuric Chloride	1	Dimethyl Ether	305
Cyclodextrins	23	Dioxane	309
Cyclododecanol, Cyclododecanone, and Laurolactam	33	Disinfectants	315
Cyclododecatriene, Cyclooctadiene, and 4-Vinylcyclohexene	37	Disperse Dyes	331
Cyclohexane	41	Disperse Systems and Dispersants	345
Cyclohexanol and Cyclohexanone	49	Disperse Systems, Characterization and Analysis	371
Cyclopentadiene and Cyclopentene	61	Display Technology	389
Dairy Products, Imitation	75	Distillation, 1. Fundamentals	425
Dense-Medium Separation	87	Distillation, 2. Equipment	455
Dental Materials	95	Distillation, 3. Processes	477
Dermatotherapeutic Agents	147	Dithiocarbamic Acid and Derivatives	495
Design of Experiments	165	Drawing and Writing Materials	523
Dextran	203	Dry Cleaning	535
Diagnostic Reagents	211	Dry Mortars	541
Dialkyl Sulfates and Alkylsulfuric Acids ..	251	Drying of Solid Materials	581
Diazo Compounds and Diazo Reactions...	265	Drying Oils and Related Products	621
Dicarboxylic Acids, Aliphatic	287	Dust Separation	637
		Dyes, General Survey	675

Cross References

Cyclooctadiene → Cyclododecatriene, Cyclooctadiene, and 4-Vinylcyclohexene 11	
Cystine, Cysteine → Amino Acids 3	
Dairy Products → Milk and Dairy Products 23	
DDT → Insect Control 19	
Decalin → Naphthalene and Hydronaphthalenes 23	
Decanol → Fatty Alcohols 14	
Defoaming Agents → Foams and Foam Control 15	
Dehydrogenation → Hydrogenation and Dehydrogenation 18	
Dentrifrices → Oral Hygiene Products 25	
Deodorants → Skin Cosmetics 33	
Depilatories → Hair Preparations 17	
Desalting of Water → Water, 3. Treatment by Ion Exchange Processes 39 ; → Water, 5. Treatment by Membrane Separation Processes 39	
Desensitization → Antiallergic Agents 3	
Desiccants: Drying → Drying of Solid Materials 11	
Desulfurization of Coal → Coal 9	
Desulfurization of Waste Gas → Sulfuric Acid and Sulfur Trioxide 35	
Detergents → Laundry Detergents 20	
Deuterium → Hydrogen 18	
Dextrose → Glucose and Glucose-Containing Syrups 17	
Diacetone Alcohol → Acetone 1	
Diacyl Peroxides → Peroxy Compounds, Organic 26	
Dialkyl Peroxides → Peroxy Compounds, Organic 26	
Diallyl Phthalates → Polyesters 28	
Diamines → Amines, Aliphatic 2	
Diaminotoluenes → Phenylene- and Toluenediamines 26	
Diaphragm Cell → Chlorine 8	
Diatomite → Silica 32	
I,2-Dibromoethane → Bromine Compounds 6	
Dichloroacetic Acid → Chloroacetic Acids 8	
Dichloroethanes → Chloroethanes and Chloroethylenes 8	
Dichloroethylene → Chloroethanes and Chloroethylenes 8	
Dichlormethane → Chloromethanes 9	
Dicyandiamide → Cyanamides 10	
Dicyanogen → Cyano Compounds, Inorganic 10	
Diesel Fuel → Automotive Fuels 4	
Diethanolamine → Ethanolamines and Propanolamines 13	
Diethyl Ether → Ethers, Aliphatic 13	
Diethyl Sulfate → Dialkyl Sulfates and Alkylsulfuric Acids 11	
Diffusion Separation Methods → Isotopes, Natural 20 ; → Separation Processes, Introduction 32	
Digital Displays → Display Technology 11	
Digitonin → Saponins 32	
Diglyme → Ethylene Glycol 13	
Diketene → Ketenes 20	
Dimer Acid → Dicarboxylic Acids, Aliphatic 11	
Dimethylamine → Methylamines 23	
Dimethylformamide → Formamides 16	
Dimethyl Sulfate → Dialkyl Sulfates and Alkylsulfuric Acids 11	
Dimethyl Sulfoxide → Sulfones and Sulfoxides 34	
Dimethylterephthalate → Terephthalic Acid, Dimethyl Terephthalate, and Isophthalic Acid 36	
Diols → Alcohols, Polyhydric 2 ; → Ethylene Glycol 13	
Diosgenin → Saponins 32	
Diphenyl → Hydrocarbons 18	
Diphenylamine → Aniline 3	
Diphenylmethane → Hydrocarbons 18	
Direct Dyes → Dyes, General Survey 11	

Disaccharide Alcohols → Sugar Alcohols **34**

Dishwasher Soap → Cleansing Agents **9**

Dithionites → Sulfites, Thiosulfates, and Dithionites **34**

Diuretics → Cardiovascular Drugs **7**

DNA → Nucleic Acids **25**

Dodecanol → Fatty Alcohols **14**

Driers → Metallic Soaps **22**

Drug Delivery Systems → Pharmaceutical Dosage Forms **26**

Dry Ice → Carbon Dioxide **6**

Drying Agents → Drying of Solid Materials **11**

Dye Carriers → Textile Auxiliaries, 5. Dyeing Auxiliaries **36**

Dyes, Reactive → Reactive Dyes **31**

Dysprosium → Rare Earth Elements **31**

Volume Contents

Ecology and Ecotoxicology,		Electronic Chemicals.....	361
Fundamentals	1	Electrophoresis.....	393
Ecology and Environmental Chemistry	5	Electrostatic Separation.....	423
Ecotoxicology	75	Elutriation	443
Electrically Generated Heat	149	Emulsions.....	457
Electrochemical and Chemical Deposition	161	Energy Management in Chemical Industry	501
Electrochemical Reactors	221	Environmental Management in the	
Electrochemistry, 1. Fundamentals	249	Chemical Industry	521
Electrochemistry, 2. Inorganic		Enzyme and Immunoassays	545
Electrochemical Processes.....	273	Enzymes, 1. General.....	573
Electrochemistry, 3. Organic		Enzymes, 2. Discovery and Production	613
Electrochemistry	315	Enzymes, 3. Food Application	665
Electroluminescent Materials and Devices	351	Enzymes, 4. Non-food Application.....	709

Cross References

Earthenware → Whitewares **39**
 Eggs → Foods, 2. Food Technology **15**; → Proteins **30**
 Einsteinium → Plutonium and other Transuranium
 Elements **28**
 Elastomeric Fibers → Fibers, 6. Polyurethane Fibers **16**;
 → Rubber, 2. Natural **31**; → Rubber, 3. Synthetic
 Rubbers, Introduction and Overview **31**
 Elastomers, Thermoplastic → Thermoplastic Elastomers **36**
 Electric Cells → Batteries **5**
 Electrochemical Machining → Electrochemical
 Reactors **12**; → Electrochemistry, 2. Inorganic
 Electrochemical Processes **12**; → Polyaspartates and
 Polysuccinimide **28**
 Electroless Plating → Electrochemical and Chemical
 Deposition **12**
 Electronic Ceramics → Ceramics, Electronic **7**

Electrophoretic Coating → Paints and Coatings,
 1. Introduction **25**; → Paints and Coatings, 2. Types
 25; → Paints and Coatings, 3. Paint Systems **26**;
 → Paints and Coatings, 6. Production Technology **26**;
 → Paints and Coatings, 7. Paint Application **26**;
 → Paints and Coatings, 8. Properties, Testing, and
 Analysis **26**; → Paints and Coatings, 9. Application **26**
 Electrophotography → Imaging Technology, 2. Copying and
 Nonimpact Printing Processes **18**
 Electrostatic Sealing → Glass, 3. Forming **17**
 Embedding → Insulation, Electric **19**
 Emulsifiers → Emulsions **12**
 Emulsion Polymerization → Polymerization Processes,
 1. Fundamentals **29**
 Enamel → Ceramics, Ceramic-Metal Systems **7**
 Engineering Plastics → Plastics, General Survey **28**;
 → Plastics, Properties and Testing **28**

Volume Contents

Enzymes, 5. Enzymes in Organic Synthesis	1	Ethanolamines and Propanolamines.....	405
Enzymes, 6. Enzymes in Therapy.....	29	Ethers, Aliphatic	433
Enzymes, 7. Enzymes in Analysis.....	49	Ethylbenzene.....	451
Enzymes, 8. Enzymes in Genetic Engineering	63	Ethylene	465
Epothilones	125	Ethylene Glycol	531
Epoxides.....	139	Ethylene Oxide	547
Epoxy Resins	155	Ethylenediaminetetraacetic Acid and Related Chelating Agents	573
Esters, Organic.....	245	2-Ethylhexanol.....	579
Estimation of Physical Properties	267	Evaporation	585
Ethanol	333	Explosives	621

Cross References

Epichlorohydrin → Epoxides **13**
 Epinephrine → Hormones, 1. Hormone Systems **18**
 Epoxidation → Epoxides **13**
 Epoxide Polymers → Polyoxymethylenes **29**
 Erbium → Rare Earth Elements **31**
 Essential Oils → Flavors and Fragrances **15**
 Estrogens → Hormones, 1. Hormone Systems **18**
 Ethane → Hydrocarbons **18**
 Ethyl Alcohol → Ethanol **13**
 Ethyl Chloride → Chloroethanes and Chloroethylenes **8**
 Ethylene Polymers → Polyethylene **29**
 Ethylene-Propene Rubber → Rubber, 5. Solution
Rubbers **31**

Ethylenimine → Aziridines **4**
 Ethyl Ether → Ethers, Aliphatic **13**
 Europium → Rare Earth Elements **31**
 Eutrophication → Laundry Detergents, 4. Ecology
and Toxicology **20**
 Evaporators → Evaporation **13**
 Exhaust Control → Automobile Exhaust Control **4**
 Expectorants → Cough Remedies **10**
 Explosive Cladding → Corrosion, 3. Corrosion Protection
and Testing **10**; → Welding and Cutting **39**
 Extraction → Liquid-Liquid Extraction **21**
 Extraction → Liquid-Solid Extraction **21**

Volume Contents

Fats and Fatty Oils.....	1	Fibers, 4. Polyamide Fibers.....	451
Fatty Acids.....	73	Fibers, 5. Polyester Fibers.....	467
Fatty Alcohols.....	117	Fibers, 6. Polyurethane Fibers.....	501
Felts.....	143	Fibers, 7. Polyolefin Fibers	509
Ferroalloys	153	Fibers, 8. Polyacrylonitrile Fibers.....	527
Ferroelectrics	157	Fibers, 9. Polyvinyl Fibers	543
Fertilizers, 1. General	171	Fibers, 10. Polytetrafluoroethylene Fibers	553
Fertilizers, 2. Types	199	Fibers, 11. Inorganic Fibers, Survey	557
Fertilizers, 3. Synthetic Soil Conditioners	247	Fibers, 12. Glass Fibers	569
Fertilizers, 4. Granulation.....	253	Fibers, 13. Refractory Fibers.....	587
Fertilizers, 5. Analysis, Transport, Application.....	273	Fibers, 14. Metal Fibers.....	599
Fertilizers, 6. Environmental Aspects	295	Fibers, 15. Carbon Fibers	607
Fibers, 1. Survey	313	Fibers, 16. Testing and Analysis.....	629
Fibers, 2. Structure	343	Films	649
Fibers, 3. General Production Technology	385	Filtration, 1. Fundamentals.....	677
		Filtration, 2. Equipment.....	711

Cross References

Fatty Amines → Amines. Aliphatic **2**
 Feeds → Foods, 1. Survey **15**
 Fermium → Plutonium and other Transuranium
 Elements **28**
 Ferrites → Magnetic Materials **22**
 Ferroboron → Boron and Boron Alloys **6**
 Ferrochromium → Chromium and Chromium Alloys **9**
 Ferromanganese → Manganese and Manganese Alloys **22**
 Ferrotitanium → Titanium, Titanium Alloys, and Titanium
 Compounds **37**
 Ferrotungsten → Tungsten, Tungsten Alloys, and Tungsten
 Compounds **37**

Ferrovanadium → Vanadium and Vanadium Compounds **38**
 Fiber Glass → Fibers, 12. Glass Fibers **14**
 Fibrinogen → Blood **6**
 Fibrinolytics → Blood **6**
 Fillers → Paints and Coatings, 1. Introduction **25**; → Paints
 and Coatings, 4. Pigments, Extenders, and Additives **26**:
 → Paper and Board **26**; → Plastics, Additives **27**
 → Rubber, 9. Chemicals and Additives **32**
 Film Deposition → Thin Films **36**
 Filters, Optical → Optical Materials **25**

Volume Contents

Fire Extinguishing Agents.....	1	Fluorine Compounds, Inorganic	397
Fixed-Bed Reactors	13	Fluorine Compounds, Organic	443
Flame Retardants	53	Fluoropolymers, Organic.....	495
Flavors and Fragrances.....	73	Fluorosulfuric Acid.....	535
Flocculants	199	Foamed Plastics	539
Floor Coverings	211	Foams and Foam Control	571
Flotation	237	Foods, 1. Survey	599
Fluid Mechanics	269	Foods, 2. Food Technology.....	633
Fluidized-Bed Reactors	319	Foods, 3. Food Additives	671
Fluorescent Dyes	367	Foods, 4. Food Packaging	693
Fluorine.....	381	Formaldehyde	735

Cross References

Fire Resistance → Flame Retardants **15**

Fireworks → Pyrotechnics **30**

Fischer-Tropsch Synthesis → Coal Liquefaction **9**

Fish Oils → Fats and Fatty Oils **14**

Fluoranthene → Hydrocarbons **18**

Fluorene → Hydrocarbons **18**

Fluorine-Containing Polymers → Fluoropolymers,
Organic **15**

Fluoroboric Acid → Boron Compounds **6**

Fluorosilicic Acid → Silicon Compounds, Inorganic **32**

Folic Acid → Vitamins, 10. Folic Acid **38**

Food Colors → Foods, 3. Food Additives **15**

Volume Contents

Formamides	1	Gas Production, 1. Introduction	403
Formic Acid.....	13	Gas Production, 2. Processes.....	423
Foundry Technology.....	35	Gas Production, 3. Gas Treating	483
Freeze-Drying	51	Gas Production, 4. Handling of Byproducts	541
Fructose.....	103	Gas Production, 5. Examples of Complex	
Fuel Cells.....	119	Gas Production Plants.....	557
Fungicides, Agricultural, 1. Fundamentals	145	Gas Production, 6. Analysis and	
Fungicides, Agricultural, 2. Individual		Quality Control	571
Fungicides	157	Gelatin.....	579
Fungicides, Agricultural, 3. Toxicology ...	231	Genetic Engineering	595
Furfural and Derivatives.....	285	Germanium and Germanium Compounds	629
Gallbladder and Liver Therapy	315	Glass, 1. Fundamentals.....	643
Gallium and Gallium Compounds	335	Glass, 2. Production.....	693
Gas Chromatography	341		

Cross References

Formazan Dyes → Metal-Complex Dyes **22**
 Fractionation → Distillation, 1. Fundamentals **11**;
 → Distillation, 2. Equipment **11**; → Distillation,
 3. Processes **11**
 Fragrances → Flavors and Fragrances **15**
 Francium → Radionuclides, 2. Radioactive Elements and
 Artificial Radionuclides **31**
 Friedel-Crafts Reaction → Acylation and Alkylation **1**
 Fruit Juices → Beverages, Nonalcoholic **5**
 Fuel → Automotive Fuels **4**; → Aviation Turbine Fuels **4**;
 → Coal **9**; → Gas Production, 1. Introduction **16**;
 → Heating Oil **17**; → Hydrogen **18**
 Fuel Gas → Gas Production **16**
 Fuel Oil → Automotive Fuels **4**; → Heating Oil **17**
 Fumaric Acid → Maleic and Fumaric Acids **22**
 Fumigants → Insect Control **19**; → Nematicides **24**

Fungicides, Pharmaceutical → Antimycotics **4**
 Furan Resins → Resins, Synthetic **31**
 Gas, Natural → Natural Gas **23**
 Gas Cleaning → Gas Production, 2. Processes **16**; → Gas
 Production, 3. Gas Treating **16**; → Natural Gas **23**
 Gasoline → Automotive Fuels **4**
 Gastrointestinal Agents → Antiulcer Drugs **4**
 Gas Turbine Fuels → Aviation Turbine Fuels **4**
 Gems → Crystal Growth **10**
 General Anesthetics → Anesthetics, General **3**
 Geriatric Drugs → Psychopharmacological Agents **30**;
 → Vitamins **38**
 Ghatti Gum → Polysaccharides **29**
 Gilsonite → Asphalt and Bitumen **4**
 Gin → Spirits **34**

Volume Contents

Glass, 3. Forming	1	Health Value Added Foods	297
Glass, 4. Uses and Economic Aspects	13	Heat Exchange	309
Glass Ceramics	19	Heat Storage Media	421
Gluconic Acid	37	Heating Oil	439
Glucose and Glucose-Containing Syrups..	45	Heterogeneous Catalysis and Solid	
Glycerol	67	Catalysts, 1. Fundamentals	457
Glyoxal.....	83	Heterogeneous Catalysis and Solid	
Glyoxylic Acid	89	Catalysts, 2. Development and	
Gold, Gold Alloys, and Gold Compounds	93	Types of Solid Catalysts	483
Good Manufacturing Practices	145	Heterogeneous Catalysis and Solid	
Gout Remedies	157	Catalysts, 3. Industrial Applications....	551
Gravity Concentration	167	Hexamethylenediamine	569
Guanidine and Derivatives	175	High-Performance Fibers	573
Hafnium and Hafnium Compounds	191	High-Pressure Technology	599
Hair Preparations	203	High-Temperature Materials	639
Handling of Particulate Solids	249	High-Throughput Screening	699
Hard Materials	283		

Cross References

Glass Fibers → Fibers, 12. Glass Fibers 14	
Glass Wool → Fibers, 12. Glass Fibers 14	
Glassy Metals → Metallic Glasses 22	
Globulins → Blood 6	
Gluie → Adhesives, 1. General 1	
Glutamate → Monosodium Glutamate 23	
Glutamic Acid → Amino Acids 3 ; → Monosodium Glutamate 23	
Glutaric Acid → Dicarboxylic Acids, Aliphatic 11	
Glycine → Amino Acids 3	
Glycolic Acid → Hydroxycarboxylic Acids, Aliphatic 18	
Glycols → Butanediols, Butenediol, and Butynediol 6 ; → Ethylene Glycol 13 ; → Propanediols 30	
Glyptals → Alkyd Resins 2	
Grignard Reaction → Magnesium Compounds 22	
Grinding → Abrasives 1 ; → Size Reduction 33	
Grouting, Chemical → Concrete 9 ; → Silicates 32	
Guanamines → Melamine and Guanamines 22	
Guar Gum → Polysaccharides 29	
Guayule Rubber → Rubber, 2. Natural 31	
Gums → Polysaccharides 29	
Gunpowders → Propellants 30	
Gypsum → Calcium Sulfate 6	
Hafnium → Plutonium and other Transuranium Elements 28	
Hardboard → Wood 39	
Hard Metals → Hard Materials 17	
Hazard Analysis → Chemical Products: Safety Regulations 8	
Heart Drugs → Cardiovascular Drugs 7	

Heat-Resistant Fibers → High-Performance Fibers 17	
Heat-Resistant Plastics → Polymers, High-Temperature 29	
Heat Stabilizers → Plastics, Additives 27	
Heat Transfer → Heat Exchange 17	
Heavy Water → Isotopes, Natural 20	
Helium → Noble Gases 24	
Hepatotherapeutic Agents → Gallbladder and Liver Therapy 16	
Heptanols → Alcohols, Aliphatic 2	
Herbicides → Weed Control, 1. Fundamentals 39 ; → Weed Control, 2. Individual Herbicides 39	
Hexachlorocyclohexane → Insect Control 19	
Hexanes → Hydrocarbons 18	
Hexanols → Alcohols, Aliphatic 2	
High-Density Polyethylene → Polyethylene 29	
High Explosives → Explosives 13	
High-Impact Polystyrene → Polystyrene and Styrene Copolymers 29	
High-Tech Ceramics → Ceramics, Advanced Structural Products 7	
High-Temperature Composites → Composite Materials 9 ; → Metal-Matrix Composites 22	
High-Temperature Fibers → High-Performance Fibers 17	
High-Temperature Plastics → Polymers, High-Temperature 29	
High-Tenacity Fibers → High-Performance Fibers 17	
Histamine Antagonists → Antiallergic Agents 3	
Histidine → Amino Acids 3	

Volume Contents

HIV and AIDS Therapeutics	1	Hydrogen Sulfide	429
Hormones, 1. Hormone Systems.....	23	Hydrogenation and Dehydrogenation	451
Hydraulic Fluids	67	Hydroquinone	473
Hydrazine.....	79	Hydroxycarboxylic Acids, Aliphatic.....	481
Hydrazoic Acid and Azides	97	Hydroxycarboxylic Acids, Aromatic	493
Hydrides.....	103	Hydroxylamine	503
Hydrocarbons.....	133	Hypnotics	511
Hydrochloric Acid	191	Ice Cream and Frozen Desserts.....	543
Hydrocyclones	207	Imaging Technology, 1. Introduction.....	551
Hydrogen, 1. Properties and Occurrence....	235	Imaging Technology, 2. Copying and Nonimpact Printing Processes	553
Hydrogen, 2. Production.....	249	Imaging Technology, 3. Imaging in Graphic Arts.....	603
Hydrogen, 3. Purification	309	Imidazole and Derivatives.....	637
Hydrogen, 4. Liquefaction.....	335	Immunotherapy and Vaccines	647
Hydrogen, 5. Handling	341		
Hydrogen, 6. Uses	353		
Hydrogen Peroxide	393		

Cross References

Holmium → Rare Earth Elements **31**
 Hydraulic Separation → Gravity Concentration **17**
 Hydroboranation → Boron Compounds **6**
 Hydrobromic Acid → Bromine Compounds **6**
 Hydrocarbon Oxidation → Oxidation **25**
 Hydrocarbon Resins → Resins, Synthetic **31**
 Hydroformylation → Oxo Synthesis **25**
 Hydrogen Bromide → Bromine Compounds **6**
 Hydrogen Chloride → Hydrochloric Acid **18**
 Hydrogen Cyanide → Cyano Compounds, Inorganic **10**
 Hydrogen Economy → Hydrogen **18**
 Hydrogen Fluoride → Fluorine Compounds,
Inorganic **15**
 Hydrogen Iodide → Iodine and Iodine Compounds **19**

Hydrogen Selenide → Selenium and Selenium
Compounds **32**
 Hydrogen Storage Alloys → Hydrides **18**
 Hydroxyanthraquinones → Anthraquinone Dyes and
Intermediates **3**
 Hydroxybenzaldehydes → Benzaldehyde **5**
 Hydroxyhydroquinone → Phenol Derivatives **26**
 Hypochlorous Acid → Chlorine **8**; → Chlorine Oxides and
Chlorine Oxygen Acids **8**
 Hypoglycemic Drugs → Oral Antidiabetic Drugs **25**
 Hypophosphorus Acid → Phosphorus Compounds,
Inorganic **27**
 Illites → Clays **9**
 Immunodiagnostic Reagents → Diagnostic Reagents **11**

Volume Contents

Inclusion Compounds	1	Insulation, Electric.....	327
Indicator Reagents	9	Interferons	375
Indigo and Indigo Colorants.....	55	Intermetallics	393
Indium and Indium Compounds.....	65	Inulin	425
Indole	75	Iodine and Iodine Compounds	437
Information Storage Materials, 1. Magnetic Recording	81	Ion Beam Techniques	449
Information Storage Materials, 2. Optical Recording	101	Ion Exchangers	473
Infrared and Raman Spectroscopy	177	Ionic Liquids.....	547
Inorganic Polymers.....	221	Iron, 1. Fundamentals and Principles of Reduction Processes.....	577
Insect Control	263	Iron, 2. Blast Furnace Process.....	657
		Iron, 3. Direct Reduction Processes.....	711

Cross References

Indene → Hydrocarbons **18**

Industrial Hygiene → Occupational Health and Safety **25**

Ink-Jet Printing → Imaging Technology 2., Copying and Nonimpact Printing Processes **18**

Inks → Drawing and Writing Materials **11**

Inorganic Fibers → Fibers, 11. Inorganic Fibers, Survey **14**

Insect Repellents → Insect Control **19**

Integrated Circuits → Semiconductors **32**

Ion Implantation → Thin Films **36**

Ionomers → Specialty Plastics **34**

Ion Plating → Thin Films **36**

Iridium → Platinum Group Metals and Compounds **28**

Volume Contents

Iron, 4. Smelting Reduction Processes.....	1	Laser Dyes	315
Iron, 5. Production of Pure and High-Purity Iron.....	21	Lasers	337
Iron, 6. Aspects of Environmental Protection	25	Laundry Detergents, 1. Introduction	355
Iron, 7. Economic Aspects	33	Laundry Detergents, 2. Ingredients and Products.....	393
Iron Compounds	41	Laundry Detergents, 3. Production, Testing and Economic Aspects	451
Isocyanates, Organic.....	63	Laundry Detergents, 4. Ecology and Toxicology	487
Isoprene.....	83	Laundry Detergents, 5. Washing Conditions and Washing Machines	521
Isotopes, Natural	103	Laxatives	541
Ketenes.....	171	Lead	551
Ketones	187	Lead Alloys.....	599
Laboratory Information and Management Systems (LIMS)	209	Lead Compounds	611
Lactic Acid	219	Leather	621
Lactose and Derivatives	227		
Lamps.....	237		
Laser Analytical Spectroscopy	289		

Cross References

Iron Alloys → Cast Iron and Cast Steel	7; → Ferroalloys	14;	
→ Steel, 5. Microstructures, Properties, Adjustment of Properties	34		
Iron Blue Pigments → Pigments, Inorganic, 1. General	27;		
→ Pigments, Inorganic, 3. Colored Pigments	27;		
→ Pigments, Inorganic, 7. Transparent Pigments	27		
Iron Carbonyls → Catalysis, Homogeneous	7; → Iron Compounds	20	
Isobutanol → Butanols	6		
Isobutene Polymers → Polybutenes	28		
Isobutylene → Butenes	6		
Isocyanuric Acid → Cyanuric Acid and Cyanuric Chloride	11		
Isoleucine → Amino Acids	3		
Isophorone → Ketones	20		
Isoprene Polymers → Rubber, 5. Solution Rubbers	31		
Isopropanolamine → Ethanolamines and Propanolamines	13		
Isopropyl Alcohol → Propanols	30		
Isoquinoline → Quinoline and Isoquinoline	31		
Isotopes, Radioactive → Radionuclides, 1. Introduction	31		
Isotope Separation → Isotopes, Natural	20		
Itaconic Acid → Dicarboxylic Acids, Aliphatic	11		
Jute → Cellulose	7		
Kaolin → Clays	9		
Karaya Gum → Polysaccharides	29		
Ketone Resins → Resins, Synthetic	31		
Kieselguhr → Silica	32		
Kopals → Resins, Natural	31		
Krypton → Noble Gases	24		
Krypton Compounds → Noble Gases	24		
Kurchatovium → Plutonium and other Transuranium Elements	28		
Lacquers → Paints and Coatings, 1. Introduction	25;		
→ Paints and Coatings, 2. Types	25;	→ Paints and Coatings, 3. Paint Systems	26;
→ Paints and Coatings, 6. Production Technology	26;	→ Paints and Coatings, 7. Paint Application	26;
→ Paints and Coatings, 8. Properties, Testing, and Analysis	26;	→ Paints and Coatings, 9. Application	26
Lactitol → Sugar Alcohols	34		
Lactulose → Lactose and Derivatives	20		
Laminated Glass → Glass, 4. Uses and Economic Aspects	17		
Laminated Plastics → Reinforced Plastics	31		
Laminated Wood → Wood	39		
Lanolin → Wool	39		
Lanthanides → Rare Earth Elements	31		
Lanthanum → Rare Earth Elements	31		
Lard → Fats and Fatty Oils	14		
Laser Diodes → Electroluminescent Materials and Devices	12		
Latex → Rubber, 2. Natural	31		
Latex Technology → Polymerization Processes, 1. Fundamentals	29		
Laurolactam → Cyclododecanol, Cyclododecanone, and Laurolactam	11		
Lauryl Alcohol → Fatty Alcohols	14		
Lawrencium → Plutonium and other Transuranium Elements	28		

Volume Contents

Leather Imitates	1	Loop Reactors.....	377
Lecithin	15	Lubricants, 1. Fundamentals of Lubricants	
Lignin.....	21	and Lubrication	383
Lime and Limestone.....	37	Lubricants, 2. Components.....	413
Liquefied Petroleum Gas	71	Lubricants, 3. Environmental Aspects	455
Liquid Chromatography, 1. Fundamentals, History, Instrumentation, Materials.....	85	Lubricants, 4. Lubricants for Internal Combustion Engines	461
Liquid Chromatography, 2. Methods, Programmed and Coupling Techniques	139	Lubricants, 5. Gear Lubrication Oils	479
Liquid Chromatography, 3. Supercritical Fluid Chromatography	195	Lubricants, 6. Compressor and Turbine Oils	497
Liquid Chromatography, 4. Affinity Chromatography.....	207	Lubricants, 7. Metalworking Fluids and Forming Lubricants.....	519
Liquid Crystals	215	Lubricants, 8. Lubricating Greases	547
Liquid-Liquid Extraction	249	Lubricants, 9. Solid Lubricants	573
Liquid-Solid Extraction	309	Lubricants, 10. Disposal, Recycling, and Safety Aspects.....	583
Lithium and Lithium Compounds.....	339	Luminescent Materials	591
Local Anesthetics	367		

Cross References

Leucine → Amino Acids **3**
 Levulinic Acid → Oxocarboxylic Acids **25**
 Light-Emitting Diodes → Electroluminescent Materials
 and Devices **12**
 Light-Sensitive Polymers → Imaging Technology,
 3. Imaging in Graphic Arts **18**
 Lignite → Coal **9**
 Lipsticks → Skin Cosmetics **33**
 Liquefied Natural Gas → Natural Gas **23**

Lithium Aluminum Hydride → Hydrides **18**
 Lithopones → Pigments, Inorganic, 1. General **27**;
 → Pigments, Inorganic, 2. White Pigments **27**
 Liver Therapy → Gallbladder and Liver Therapy **16**
 LNG → Natural Gas **23**
 Locust Bean Gum → Polysaccharides **29**
 Low-Density Polyethylene → Polyethylene **29**
 Lutetium → Rare Earth Elements **31**
 Lysine → Amino Acids **3**

Volume Contents

Magnesium.....	1	Membranes and Membrane Separation
Magnesium Alloys.....	27	Processes, 3. Membrane Preparation and Membrane Module Constructions 483
Magnesium Compounds	41	Membranes and Membrane Separation
Magnetic Materials.....	79	Processes, 4. Concentration Polarization and Membrane Fouling..... 513
Magnetic Separation	133	Membranes: Gas-Separation Applications 527
Maleic and Fumaric Acids	145	Membranes: Separation of Organic
Malonic Acid and Derivatives	157	Vapors from Gas Streams..... 539
Manganese and Manganese Alloys	175	Mercaptoacetic Acid and Derivatives..... 555
Manganese Compounds.....	223	Mercury, Mercury Alloys, and Mercury
Margarines and Shortenings.....	245	Compounds 559
Marine Fuels	265	Metal-Complex Dyes..... 595
Mass Spectrometry	271	Metallic Foams
Matches	321	Metallic Glasses..... 643
Meat and Meat Products.....	335	Metallic Soaps
Mechanical Properties and Testing of Metallic Materials.....	353	Metallocenes
Melamine and Guanamines	377	Metallurgical Furnaces
Membrane Reactors	393	Metal-Matrix Composites..... 737
Membranes and Membrane Separation Processes, 1. Principles.....	413	Metals, Surface Treatment
Membranes and Membrane Separation Processes, 2. Design and Operation	457	751

Cross References

Magnetic Information Storage → Information Storage Materials, 1. Magnetic Recording 19	Membrane Cell → Chlorine 8
Magnetic Tape → Information Storage Materials, 1. Magnetic Recording 19	Mendelevium → Plutonium and other Transuranium Elements 28
Magnets → Magnetic Materials 22	Mesaconic Acid → Maleic and Fumaric Acids 22
Maleic Anhydride → Maleic and Fumaric Acids 22	Mesityl Oxide → Ketones 20
Malic Acid → Hydroxycarboxylic Acids, Aliphatic 18	Metal Carbonyls → Catalysis, Homogeneous 7
Malt → Spirits 34	Metaldehyde → Maleic and Fumaric Acids 22
Maltitol → Sugar Alcohols 34	Metal Effect Pigments → Ketones 20
Mandelic Acid → Hydroxycarboxylic Acids, Aromatic 18	Metal Fibers → Catalysis, Homogeneous 7
Mannitol → Sugar Alcohols 34	Metals, Cladding and Lining → Corrosion, 3. Corrosion Protection and Testing 10
Marzipan → Confectionery 10	Metaphosphates → Phosphoric Acid and Phosphates 26; → Hydrocarbons 18; → Rubber, 8. Synthesis by Polymer Modification 31
Mechanical Properties and Testing → Mechanical Properties and Testing of Metallic Materials 22	Methacrolein → Acrolein and Methacrolein 1
Mechanical Wear → Abrasion and Erosion 1	Methacrylate Polymers → Polymethacrylates 29
Medical Diagnostic Reagents → Diagnostic Reagents 11	
Melamine Resins → Amino Resins 3	

Volume Contents

Methacrylic Acid and Derivatives	1	Model Reactors and their Design	
Methane	13	Equations.....	421
Methanol	25	Molecular Dynamics Simulation.....	469
Methine Dyes and Pigments.....	49	Molecular Modeling	487
Methylamines.....	111	Molluskicides.....	501
Methyl <i>Tert</i> -Butyl Ether	119	Molybdenum and Molybdenum	
Mica	131	Compounds	521
Microalgae Reactors	145	Monoclonal Antibodies	567
Microencapsulation.....	157	Monosodium Glutamate	589
Microreactors	173	Mutagenic Agents.....	597
Microreactors – Modeling and Simulation	203	Mössbauer Spectroscopy	607
Microscopy	241	Nanostructured Materials	625
Milk and Dairy Products	315	Nanotechnology	637
Mirrors	377	Naphthalene and Hydronaphthalenes.....	661
Mixing, Introduction.....	385	Naphthalene Derivatives.....	671
Mixing of Highly Viscous Media	387	Naphthalimide Dyes and Pigments	725
Mixing of Solids	403	Naphthoquinones	733
		Natural Gas	739

Cross References

Methyl-1-Pentene(4-) Polymers → Poly(4-Methyl-1-Pentene) 28	Monochloromethane → Chloromethanes 9
Methyl-2-Pantanone(4-,3-) → Ketones 20	Morpholine → Amines, Aliphatic 2
Methyl-2-Pyrrolidone(N-) → Pyrrole 30 → 2-Pyrrolidone 30	Mortar → Concrete 9
Methylaniline (N-) → Aniline 3	Moth Control → Insect Control 19
Methyl Chloride → Chloromethanes 9	Mouthwashes → Oral Hygiene Products 25
Methylene Chloride → Chloromethanes 9	Multicomponent Polymer Systems → Polymer Blends 29
Methyl Ethyl Ketone → 2-Butanone 6	Muscle Relaxants → Skeletal Muscle Relaxants 33
Methyl Iodide → Iodine and Iodine Compounds 19	Mustard Oils → Thiocyanates and Isothiocyanates, Organic 36
Methyl Isobutyl Ketone → Ketones 20	Myristyl Alcohol → Fatty Alcohols 14
Microscopic Stains → Stains, Microscopic 34	Nacreous Pigments → Pigments, Inorganic, 1. General 27 ; → Pigments, Inorganic, 6. Luster Pigments 27
Microwave Technology → Electrically Generated Heat 12	Nail Polish → Skin Cosmetics 33
Mineral Nutrients → Foods, 1. Survey 15	Nalidixic Acid → Chemotherapeutics 8
Mineral Oils → Oil Refining 25	Naphthalene Dicarboxylic Acid → Carboxylic Acids, Aromatic 7
Mischmetal → Cerium Mischmetal, Cerium Alloys, and Cerium Compounds 8	Naphthalic Acid → Carboxylic Acids, Aromatic 7
Mixing → Mixing, Introduction 23 ; → Mixing of Highly Viscous Media 23 ; → Mixing of Solids 23 ; → Stirring 34	Naphthenic Acids → Metallic Soaps 22 ; → Oil Refining 25
Modacrylic Fibers → Fibers, 8. Polyacrylonitrile Fibers 14	Naphthol → Naphthalene Derivatives 23
Molecular Sieves → Zeolites 39	Naphthylamines → Naphthalene Derivatives 23
Monochloroethane → Chloroethanes and Chloroethylenes 8	Natural Rubber → Rubber, 2. Natural 31
	Naval Stores → Tall Oil 35 ; → Turpentines 37

Volume Contents

Nematicides	1	Nondestructive Testing, 1. General.....	471
Nickel.....	37	Nondestructive Testing, 2. Radiography...	477
Nickel Alloys.....	103	Nondestructive Testing, 3. Ultrasonics	495
Nickel Compounds	117	Nondestructive Testing, 4. Thermography	513
Niobium and Niobium Compounds	133	Nondestructive Testing, 5. Magnetic and	
Nitrates and Nitrites.....	149	Electromagnetic Engineering.....	521
Nitric Acid, Nitrous Acid, and Nitrogen Oxides	177	Nondestructive Testing, 6. Nondestructive Testing in Civil Engineering	541
Nitrides.....	227	Nondestructive Testing, 7. Other Methods	575
Nitriles	251	Nonwoven Fabrics	585
Nitrolotriacetic Acid.....	267	Nuclear Magnetic Resonance and Electron Spin Resonance Spectroscopy	609
Nitro and Nitroso Dyes	273	Nuclear Magnetic Resonance Imaging	661
Nitro Compounds, Aliphatic	291	Nuclear Technology, 1. Fundamentals.....	701
Nitro Compounds, Aromatic	301	Nuclear Technology, 2. Power	
Nitrogen	351	Reactors, Survey	717
Nitrogen Fixation.....	377	Nuclear Technology, 3. Fuel Cycle	741
Noble Gases	391	Nuclear Technology, 4. Nuclear Fusion ...	823
Noise and Vibration.....	449		

Cross References

Neodymium → Rare Earth Elements 31	
Neon → Noble Gases 24	
Neopentylglycol → Alcohols, Polyhydric 2	
Neptunium → Plutonium and Other Transuranium Elements 28	
Neuroleptanalgesics → Anesthetics, General 3	
Neuroleptics → Psychopharmacological Agents 30	
Nicotinaldehyde → Pyridine and Pyridine Derivatives 30	
Nicotinamide → Vitamins, 11. Niacin 38	
Nicotinic Acid → Pyridine and Pyridine Derivatives 30	
Nitration → Nitro Compounds, Aromatic 24	
Nitration → Nitro Compounds, Aromatic 24	
Nitrites → Nitrates and Nitrites 24	
Nitro Alcohols → Nitro Compounds, Aliphatic 24	
Nitroaniline → Nitro Compounds, Aromatic 24	

Nitrobenzene → Nitro Compounds, Aromatic 24	
Nitrocellulose → Explosives 13	
Nitroparaffins → Nitro Compounds, Aliphatic 24	
Nitrophenols → Nitro Compounds, Aromatic 24	
Nitrophosphates → Phosphate Fertilizers 26	
Nitrosamines → Nitrates and Nitrites 24	
Nitrotoluenes → Nitro Compounds, Aromatic 24	
Nitrous Acid → Nitric Acid, Nitrous Acid, and Nitrogen Oxides 24	
Nitrous Oxide → Nitric Acid, Nitrous Acid, and Nitrogen Oxides 24	
Nobelium → Plutonium and Other Transuranium Elements 28	
Novoloid Fibers → High-Performance Fibers 17	

Volume Contents

Nucleic Acids	1	Optical Materials	465
Occupational Health and Safety	39	Oral Antidiabetic Drugs	485
Octane Enhancers	101	Oral Hygiene Products	499
Oil and Gas	121	Organometallic Compounds	507
Oil Refining	207	Oxalic Acid.....	529
Oil Sands.....	263	Oxidation	543
Oil Shale	315	Oxocarboxylic Acids	601
On-Line Monitoring of Chemical Reactions	345	Oxo Synthesis	609
Ophthalmological Preparations	399	Oxygen.....	617
Optical Brighteners.....	427	Ozone	637
Optically Active Compounds	451	Paints and Coatings, 1. Introduction	647
		Paints and Coatings, 2. Types	661

Cross References

Nylon → Fibers, 4. Polyamide Fibers 14 ; → Polyamides 28		Orthoformates → Esters, Organic 13
Octanol → Alcohols, Aliphatic 2 ; → 2-Ethylhexanol 13		Orthophosphoric Acid → Phosphoric Acid and Phosphates 26
Odorants → Flavors and Fragrances 15		Osmium → Platinum Group Metals and Compounds 28
Oils, Essential → Flavors and Fragrances 15		Oxazine → Azine Dyes 4
Oils, Mineral → Natural Gas 23 ; → Oil Refining 25		Oxide Ceramics → Ceramics, Advanced Structural Products 7 ; → Superconductors 35
Olefins Polymers → Poly(4-Methyl-1-Pentene) 28 ; → Polybutenes 28 ; → Polyethylene 29 ; → Polypropylene 29		Oxirane → Ethylene Oxide 13
Olefins → Butadiene 6 ; → Butenes 6 ; → Ethylene 13 ; → Hydrocarbons 18 ; → Isoprene 20 ; → Propene 30 ; → Styrene 34 ; → Terpenes 36		Packaging Materials → Films 14 ; → Foods, 4. Food Packaging 15 ; → Paper and Board 26
Oleoresins → Resins, Natural 31		Paint and Varnish Removers → Paints and Coatings, 1. Introduction 25 ; → Paints and Coatings, 5. Paint Removal 26
Olivine → Silicates 32		
Oral Antidiabetics → Oral Antidiabetic Drugs 25		

Volume Contents

Paints and Coatings, 3. Paint Systems	1	Peroxo Compounds, Inorganic	293
Paints and Coatings, 4. Pigments, Extenders, and Additives	31	Peroxo Compounds, Organic.....	325
Paints and Coatings, 5. Paint Removal	53	Petroleum Coke	361
Paints and Coatings, 6. Production Technology	57	pH Measurement and Control	377
Paints and Coatings, 7. Paint Application	71	Pharmaceutical Coatings	407
Paints and Coatings, 8. Properties, Testing, and Analysis	87	Pharmaceutical Dosage Forms	419
Paints and Coatings, 9. Application	105	Pharmaceuticals, General Survey	453
Paper and Board	123	Phase-Transfer Catalysis	495
Parasympatholytics and Parasympathomimetics	205	Phenol	503
Parkinsonism Treatment	207	Phenol Derivatives.....	521
Patents	231	Phenolic Resins.....	583
Pentanols	245	Phenothiazine and Derivatives	601
Peptide Synthesis	259	Phenylene- and Toluenediamines.....	617
Perfumes	287	Phosgene	623
		Phosphate Fertilizers.....	633
		Phosphoric Acid and Phosphates	679
		Phosphorus.....	725

Cross References

Palladium → Platinum Group Metals and Compounds	28	Pet Food → Foods, 1. Survey	15
Palm Oil → Fats and Fatty Oils	14	Petrol → Automotive Fuels	4
Pantothenic Acid → Vitamins, 8. Pantothenic Acid	38	Petroleum → Oil Refining	25
Paraformaldehyde → Formaldehyde	15	Petroleum Refining → Oil Refining	25
Paraldehyde → Acetaldehyde	1	Petroleum Resins → Resins, Synthetic	31
Parasite Infections → Anthelmintics	3;	Petroleum Sulfonates → Sulfonic Acids, Aliphatic	35
→ Chemotherapeutics 8; → Veterinary Drugs	38	Phenanthrene → Hydrocarbons	18
Particle Board → Wood	39	Phenethyl Alcohol → Flavors and Fragrances	15
Parting Agents → Release Agents	31	Phenolsulfonic Acids → Benzenesulfonic Acids and Their Derivatives	5
Peanut Oil → Fats and Fatty Oils	14	Phenylalanine → Amino Acids	3
Pectin → Polysaccharides	29	Phenyl Hydrazine → Hydrazine	18
Pencils → Drawing and Writing Materials	11	Pheromones → Insect Control	19
Penicillin → Antibiotics, 1. General	3	Phloroglucinol → Phenol Derivatives	26
2,4-Pentanedione → Ketones	20	Phosphanes → Phosphorus Compounds, Inorganic	27
Pentanes → Hydrocarbons	18	Phosphates, Organic → Phosphorus Compounds, Organic	27
Peptic Ulcer Treatment → Antiulcer Drugs	4	Phosphazenes → Inorganic Polymers	19;
Perchloric Acid → Chlorine Oxides and Chlorine Oxygen Acids	8	→ Phosphorus Compounds, Inorganic	27
Perline → Silicates	32	Phosphines → Phosphorus Compounds, Organic	27
Peroxides → Peroxo Compounds, Inorganic	26	Phosphonium Compounds → Phosphorus Compounds, Organic	27
Peroxycarboxylic Acids → Peroxy Compounds, Organic	26	Phosphorous Acid → Phosphorus Compounds, Inorganic	27
Pest Control → Acaricides	1;	Phosphors → Luminescent Materials	21
→ Insect Control	19;		
→ Molluskicides	23;		
→ Nematicides	24;		
→ Rodenticides	31		

Volume Contents

Phosphorus Compounds, Inorganic	1	Pigments, Inorganic, 5. Anticorrosive Pigments.....	343
Phosphorus Compounds, Organic	19	Pigments, Inorganic, 6. Luster Pigments ..	359
Photochemistry	51	Pigments, Inorganic, 7. Transparent Pigments.....	375
Photoelectricity	79	Pigments, Organic	379
Photovoltaic Cells	89	Pilot Plants	425
Phthalic Acid and Derivatives.....	131	Pinch Technology	435
Phthalocyanines	181	Plant and Process Safety	449
Pigging Technology	215	Plant Growth Regulators	573
Pigments, Inorganic, 1. General	225	Plasma Reactions	587
Pigments, Inorganic, 2. White Pigments...	257	Plasticizers	599
Pigments, Inorganic, 3. Colored Pigments	293	Plastics, Additives	619
Pigments, Inorganic, 4. Magnetic Pigments	337		

Cross References

Phosphorus Oxides → Phosphorus Compounds, Inorganic 27	Pine Oil → Tall Oil 35 ; → Turpentines 37
Phosphorus Oxychloride → Phosphorus Compounds, Inorganic 27	Pipelines → Natural Gas 23
Phosphorus Pentasulfide → Phosphorus Compounds, Inorganic 27	Piperazine → Amines, Aliphatic 2
Phosphorus Pentoxide → Phosphorus Compounds, Inorganic 27	Piperidine → Amines, Aliphatic 2
Photocells → Photovoltaic Cells 27	Piping Systems → Chemical Plant Design and Construction 8
Photoconductive Polymers → Plastics, General Survey 28	Pivalic Acid → Carboxylic Acids, Aliphatic 7
Photodetectors → Photoelectricity 27	Plant Design → Chemical Plant Design and Construction 8
Phototubes → Photoelectricity 27	Plant Protection → Acaricides 1 ; → Fungicides, Agricultural, 1. Fundamental 16 ; → Fungicides, Agricultural, 2. Individual Fungicides 16 ; → Insect Control 19 ; → Molluskicides 23 ; → Nematicides 24 ; → Weed Control, 1. Fundamentals 39 ; → Weed Control, 2. Individual Herbicides 39
Phthalic Anhydride → Phthalic Acid and Derivatives 27	Plasma (Blood) Substitutes → Blood 6
Physical Properties, Estimation of → Estimation of Physical Properties 13	Plasma Chemical Vapor Deposition → Thin Films 36
Piezoelectric Materials → Ceramics, Electronic 7	Plasma Sputtering → Ceramics, Ceramic–Metal Systems 7
Pimelic Acid → Dicarboxylic Acids, Aliphatic 11	Plaster → Calcium Sulfate 6
Pinacolone → Ketones 20	

Volume Contents

Plastics, Analysis	1	Poly(Phenylene Oxides)	431
Plastics, General Survey	35	Poly(Vinyl Chloride)	441
Plastics Processing, 1. Processing of Thermoplastics.....	155	Poly(Vinyl Esters)	469
Plastics, Processing, 2. Processing of Thermosets	195	Poly(Vinyl Ethers)	481
Plastics Processing, 3. Machining, Bonding, Surface Treatment.....	227	Poly(Vinylidene Chloride)	487
Plastics, Properties and Testing.....	259	Polyacrylamides and Poly(Acrylic Acids)	501
Platinum Group Metals and Compounds..	317	Polyacrylates	515
Plutonium and Other Transuranium Elements.....	389	Polyamides	537
Poly(4-Methyl-1-Pentene)	417	Polyaspartates and Polysuccinimide	573
		Polybutenes	587
		Polycarbonates	603
		Polyester Resins, Unsaturated	613
		Polyesters	623

Cross References

Plastics, Reinforced → Reinforced Plastics **31**
 Plastics Technology → Polymerization Processes,
 1. Fundamentals **29**
 Plywood → Wood **39**
 Polonium → Radionuclides, 2. Radioactive Elements
 and Artificial Radionuclides **31**
 Poly(Acrylic Acids) → Polyacrylamides and
 Poly(Acrylic Acids) **28**
 Poly(Akylene Glycols) → Polyoxyalkylenes **29**
 Poly(Butylene Terephthalate) → Polyesters **28**;
 → Polyoxyalkylenes **29**
 Poly(Ethylene Oxide) → Polyoxyalkylenes **29**
 Poly(Ethylene Terephthalate) → Polyesters **28**
 Poly(Phenylene Ethers) → Poly(Phenylene Oxides) **28**
 Poly(Vinyl Acetals) → Polyvinyl Compounds, Others **29**
 Poly(Vinyl Acetate) → Poly(Vinyl Esters) **28**
 Poly(Vinyl Alcohol) → Polyvinyl Compounds, Others **29**
 Poly(Vinyl Fluoride) → Fluoropolymers, Organic **15**

Poly(Vinylidene Fluoride) → Fluoropolymers, Organic **15**
 Poly(Vinylpyrrolidone) → Polyvinyl Compounds,
 Others **29**
 Polyacetals → Polyoxymethylenes **29**
 Polyacetylenes → Polymers, Electrically Conducting **29**
 Polyacrylic Fibers → Fibers, 8. Polyacrylonitrile Fibers **14**
 Polyalkenamers → Rubber, 6. Synthesis by Radical and Other
 Mechanisms **31**
 Polyamide Fibers → Fibers, 4. Polyamide Fibers **14**
 Polyblends → Polymer Blends **29**
 Polybutadiene → Rubber, 4. Emulsion Rubbers **31**;
 → Rubber, 5. Solution Rubbers **31**
 Polybutylenes → Polybutenes **28**
 Polychlorotrifluoroethylene → Fluoropolymers, Organic **15**
 Polyester Fibers → Fibers, 5. Polyester Fibers **14**
 Polyetherimides → Polymers, High-Temperature **29**
 Polyethers → Polyoxyalkylenes **29**; → Polyoxymethylenes **29**;
 → Poly(Phenylene Oxides) **28**

Volume Contents

Polyethylene.....	1	Polymethacrylates.....	341
Polyimides	39	Polyoxyalkylenes	355
Polymer Blends.....	59	Polyoxymethylenes	367
Polymerase Chain Reaction.....	93	Polypropylene	381
Polymerization Processes, 1. Fundamentals	129	Polysaccharides.....	417
Polymerization Processes, 2. Modeling of Processes and Reactors	173	Polystyrene and Styrene Copolymers	475
Polymers, Biodegradable.....	265	Polyureas.....	523
Polymers, Electrically Conducting.....	295	Polyurethanes.....	545
Polymers, High-Temperature	315	Polyvinyl Compounds, Others.....	605
		Potassium and Potassium Alloys.....	623
		Potassium Compounds.....	639

Cross References

Polyethyleneimine → Aziridines 4			
Polyformaldehyde → Polyoxymethylenes 29			
Polyhydroxybenzenes → Phenol Derivatives 26			
Polyisobutene → Polybutenes 28			
Polyisobutylene → Polybutenes 28			
Polymer Alloys → Polymer Blends 29			
Polymerization Technology → Polymerization Processes, 1. Fundamentals 29 ; → Polymerization Processes, 2. Modeling of Processes and Reactors 29			
Polymethacrylamide → Polyacrylamides and Poly(Acrylic Acids) 28			
Polymethine Dyes → Methine Dyes and Pigments 23			
Polymethylbenzenes → Hydrocarbons 18 ; → Xylenes 39			
Polynorbornene → Rubber, 6. Synthesis by Radical and other Mechanisms 31			
Polyoctenamers → Rubber, 6. Synthesis by Radical and other Mechanisms 31			
Polysulfides, Inorganic → Sulfides, Polysulfides, and Sulfanes 34			
		Polysulfides, Organic → Rubber, 8. Synthesis by Polymer Modification 31 ; → Sealing Materials 32	
		Polysulfones → Polymers, High-Temperature 29	
		Polytetrafluoroethylene → Fluoropolymers, Organic 15	
		Polytetrahydrofuran → Polyoxymethylenes 29	
		Polyxylanes → Specialty Plastics 34	
		Porcelain → Whitewares 39	
		Porcelain Enamel → Ceramics, Ceramic-Metal Systems 7	
		Poromeric → Leather Imitates 21	
		Positive Inotropic Agents → Cardiovascular Drugs 7	
		Potash → Potassium Compounds 29	
		Potassium Nitrate → Nitrates and Nitrites 24	
		Pottery → Whitewares 39	
		Powder Coatings → Paints and Coatings, 1. Introduction 25 ; → Paints and Coatings. 2. Types 25 ; → Paints and Coatings, 3. Paint Systems 26 ; → Paints and Coatings, 6. Production Technology 26 ; → Paints and Coatings, 7. Paint Application 26 ; → Paints and Coatings, 8. Properties, Testing, and Analysis 26 ; → Paints and Coatings, 9. Application 26	

Volume Contents

Powder Metallurgy and Sintered Materials	1	Propylene Oxide	313
Principles of Chemical Reaction		Propyne	337
Engineering	41	Prostaglandins	341
Printing Inks.....	121	Protective Gases	365
Process Development, 1. Fundamentals and Standard Course	137	Proteins	379
Process Development, 2. Evaluation.....	161	Psychopharmacological Agents.....	431
Process-Scale Chromatography.....	181	Pulp	477
Propanal	227	Purine Derivatives	541
Propanediols.....	233	Pyrazolone Derivatives.....	547
Propanols.....	243	Pyridine and Pyridine Derivatives	557
Propellants	255	Pyrimidine and Pyrimidine Derivatives	591
Propene	281	Pyrotechnics.....	597
Propionic Acid and Derivatives	295	Pyrrole	615
		2-Pyrrolidone	619
		Quasicrystals	627

Cross References

Praseodymium → Rare Earth Elements **31**
 Primary Cells → Batteries **5**
 Primary Explosives → Explosives **13**
 Proline → Amino Acids **3**
 Promethium → Radionuclides, 2. Radioactive Elements
and Artificial Radionuclides **31**
 Propane → Hydrocarbons **18**
 Propanolamines → Ethanolamines and Propanolamines **13**
 Propargyl Alcohol → Alcohols, Aliphatic **2**
 Propiolactone → Hydroxycarboxylic Acids, Aliphatic **18**
 Propiolic Acid → Carboxylic Acids, Aliphatic **7**
 Propionaldehyde → Propanal **30**; → Propionic Acid and
Derivatives **30**
 Propiophenone → Ketones **20**
 Propylene → Propene **30**
 Propylene Chlorohydrin → Chlorohydrins **9**
 Propylene Glycol → Propanediols **30**
 Propylene Polymers → Polypropylene **29**
 Prosthesis → Surgical Materials **35**
 Protactinium → Radionuclides, 2. Radioactive Elements
and Artificial Radionuclides **31**

Protozoal Infections → Chemotherapeutics **8**;
→ Veterinary Drugs **38**
 Pumice → Silicates **32**
 Pumps → High-Pressure Technology **17**;
→ Vacuum Technology **38**
 Pyranthrone → Anthraquinone Dyes and Intermediates **3**
 Pyrene → Hydrocarbons **18**
 Pyrethroids → Insect Control **19**
 Pyridoxine → Vitamins, 6. B Vitamins **38**; → Pyrimidine
and Pyrimidine Derivatives **30**
 Pyrocatechol → Phenol Derivatives **26**
 Pyrogallol → Phenol Derivatives **26**
 Pyromellitic Acid → Carboxylic Acids, Aromatic **7**
 Pyrophosphates → Phosphoric Acid and Phosphates **26**
 Pyrophyllite → Talc **35**
 Pyrrolidine → Amines, Aliphatic **2**
 Pyruvic Acid → Oxocarboxylic Acids **25**
 Quartz Glass → Glass, 1. Fundamentals **16**; → Glass,
4. Uses and Economic Aspects **17**
 Quinacridone Pigments → Pigments, Organic **27**

Volume Contents

Quinoline and Isoquinoline	1	Refrigeration Technology	411
Radial-Flow Packed-Bed Reactors.....	7	Reinforced Plastics	453
Radiation Chemistry	21	Release Agents	471
Radiation Heating	51	Resins, Natural.....	477
Radionuclides, 1. Introduction	55	Resins, Synthetic	495
Radionuclides, 2. Radioactive Elements and Artificial Radionuclides.....	89	Resorcinol	521
Radionuclides, 3. Detection of Ionizing Radiation and Radionuclides	119	Rhenium and Rhenium Compounds	527
Radionuclides, 4. Uses	133	Rheometry.....	539
Radionuclides, 5. Synthesis of Radiolabeled Compounds	153	Rodenticides.....	569
Radionuclides in Analytical Chemistry ..	161	Rubber, 1. Survey	579
Rare Earth Elements.....	183	Rubber, 2. Natural	583
Reaction Columns.....	229	Rubber, 3. Synthetic Rubbers, Introduction and Overview	597
Reaction Engineering in Metallurgical Processing	237	Rubber, 4. Emulsion Rubbers	623
Reactive Distillation	263	Rubber, 5. Solution Rubbers	649
Reactive Dyes	277	Rubber, 6. Synthesis by Radical and Other Mechanisms.....	681
Reactor Types and Their Industrial Applications	293	Rubber, 7. Synthesis by Polyaddition, Polycondensation, and Other Mechanisms	699
Reduction.....	329	Rubber, 8. Synthesis by Polymer Modification	711
Refractory Ceramics	363		

Cross References

Quinone Diazides → Diazo Compounds and Diazo Reactions 11	
Quinones → Benzoquinone 5	
Quinophthalone Dyes → Methine Dyes and Pigments 23	
Radioactive Labeling → Radionuclides, 4. Uses 31 ; → Radionuclides, 5. Synthesis of Radiolabeled Compounds 31	
Radioactivity → Radionuclides, 1. Introduction 31	
Radio-Immuno Assay → Diagnostic Reagents 11	
Radiopharmaceuticals → Diagnostic Reagents 11	
Radium → Radionuclides, 2. Radioactive Elements and Artificial Radionuclides 31	
Radon → Radionuclides, 2. Radioactive Elements and Artificial Radionuclides 31	
Rapeseed Oil → Fats and Fatty Oils 14	
Rare Gases → Noble Gases 24	
Rat Control → Rodenticides 31	
Rayon → Cellulose 7	
Reactor Engineering → Reactor Types and Their Industrial Applications 31	
β2-Receptor Blocking Agents → Cardiovascular Drugs 7	
Recording Media → Information Storage Materials, 1. Magnetic Recording 19 ; → Information Storage Materials, 2. Optical Recording 19	

Refinery Technology → Oil Refining 25	
Refractories → Refractory Ceramics 31	
Refractory Coatings → Ceramics, Ceramic-Metal Systems 7	
Refractory Fibers → Fibers, 13. Refractory Fibers 14	
Reprography → Imaging Technology, 3. Imaging in Graphic Arts 18	
Rhodanides → Thiocyanates, Inorganic 36	
Rhodium → Platinum Group Metals and Compounds 28	
Riboflavin → Vitamins, 6. B Vitamins 38	
Risk Assessment → Chemical Products: Safety Regulations 8	
Road Construction Materials → Asphalt and Bitumen 4	
Rocket Propellants → Propellants 30	
Roll Bonding → Corrosion, 3. Corrosion Protection and Testing 10	
Roofing Materials → Asphalt and Bitumen 4	
Roof Tiles → Construction Ceramics 10	
Rosin → Resins, Natural 31	
Rosin Oil → Turpentines 37	
Rotenoids → Insect Control 19	

Volume Contents

Rubber, 9. Chemicals and Additives.....	1	Sedimentation	277
Rubber, 10. Technology	67	Selenium and Selenium Compounds	343
Rubber, 11. Testing	111	Semiconductors.....	357
Rubidium and Rubidium Compounds.....	123	Sensor-Based Sorting.....	395
Salicylic Acid	127	Separation Processes, Introduction.....	405
Sample Preparation for Trace Analysis	135	Shoe Polishes	413
Sampling	171	Silica	421
Saponins.....	177	Silicates	509
Scale-Up in Chemical Engineering.....	193	Silicon	573
Screening	225	Silicon Carbide	603
Sealing Materials	251	Silicon Compounds, Inorganic	615
Seasonings.....	267	Silicon Compounds, Organic	637
Sedatives	271	Silicones.....	675

Cross References

Rum → Spirits **34**
 Ruthenium → Platinum Group Metals and Compounds **28**
 Rutherfordium → Plutonium and other Transuranium Elements **28**
 Saccharin → Sweeteners **35**
 Salicylaldehyde → Benzaldehyde **5**
 Salpeter → Nitrates and Nitrites **24**
 Samarium → Rare Earth Elements **31**
 SAN → Polystyrene and Styrene Copolymers **29**
 Sanding → Abrasives **1**
 Scandium → Rare Earth Elements **31**
 Scouring Agents → Cleansing Agents **9**
 Sebacic Acid → Dicarboxylic Acids, Aliphatic **11**
 Secondary Cells → Batteries **5**

Semiconductor Lasers → Electroluminescent Materials and Devices **12**
 Sensors → Chemical and Biochemical Sensors **8**
 Sera → Immunotherapy and Vaccines **18**
 Serine → Amino Acids **3**
 Sewer Pipes → Construction Ceramics **10**
 Sex Hormones → Hormones, 1. Hormone Systems **18**
 Shampoos → Hair Preparations **17**
 Shaving Preparations → Hair Preparations **17**
 Shellac → Resins, Natural **31**
 Shielding Gas → Protective Gases **30**
 Shortenings → Margarines and Shortenings **22**
 Silanes → Silicon Compounds, Inorganic **32**

Volume Contents

Silk	1	Soil, 1. Definition, Function, and Utilization of Soil	399
Silver, Silver Compounds, and Silver Alloys	15	Soil, 2. Damage and Soil Pollution.....	421
Sintered Steel and Iron	95	Soil, 3. Measurement and Evaluation of Soil Pollution	483
Size Enlargement.....	121	Soil, 4. Remediation of Soil and Land	499
Size Reduction	159	Soil, 5. Legal Aspects and Soil Protection	519
Skeletal Muscle Relaxants.....	199	Solar Technology.....	527
Skin Cosmetics	209	Soldering and Brazing	577
Soaps	241	Solid-Liquid Separation, Introduction.....	589
Sodium Amide	263	Solid-Solid Separation, Introduction	597
Sodium and Sodium Alloys.....	275	Solids Process Technology	605
Sodium Carbonates	299	Solvents.....	619
Sodium Chloride	319	Sonochemistry	689
Sodium Compounds, Organic	367	Sorbic Acid	715
Sodium Hydroxide.....	371		
Sodium Sulfates	383		

Cross References

Sillimanite → Silicates 32	Sodium Bromide → Bromine Compounds 6
Siloxanes → Silicon Compounds, Organic 32	Sodium Iodide → Iodine and Iodine Compounds 19
Single Crystal Growth → Crystal Growth 10	Sodium Nitrate → Nitrates and Nitrites 24
Sintered Materials → Powder Metallurgy and Sintered Materials 30	Sodium Permanganate → Manganese Compounds 22
Sisal → Cellulose 7	Sodium Peroxide → Peroxo Compounds, Inorganic 26
Smectites → Clays 9	Sodium Sulfide → Sulfides, Polysulfides, and Sulfanes 34
Snail Control → Molluskicides 23	Solar Cells → Photovoltaic Cells 27
SNG → Gas Production, 1. Introduction 16	Sorbitol → Sugar Alcohols 34
Soda → Sodium Carbonates 33	Soybean Oil → Fats and Fatty Oils 14
Sodium Borohydride → Hydrides 18	Spandex → Fibers, 6. Polyurethane Fibers 14

Volume Contents

Spasmolytics	1	Steroids	403
Specialty Plastics	17	Stirred Tank Reactors	415
Spirits	39	Stirring	433
Spray Forming of Metals.....	55	Strontium and Strontium Compounds.....	473
Spraying and Atomizing of Liquids.....	79	Structure Analysis by Diffraction	481
Stains, Microscopic	99	Styrene	529
Starch	113	Sublimation.....	545
Steel, 1. Introduction and History	143	Sugar	557
Steel, 2. Crude Steel Production	157	Sugar Alcohols.....	629
Steel, 3. Forming	215	Sulfamic Acid	655
Steel, 4. Surface Coating	257	Sulfides, Polysulfides, and Sulfanes	659
Steel, 5. Microstructures, Properties, and Adjustment of Properties	271	Sulfinic Acids and Derivatives	677
Steel, 6. Uses	335	Sulfites, Thiosulfates, and Dithionites	695
Steel, 7. Environmental Protection	381	Sulfones and Sulfoxides	705
Steel, 8. Economic Aspects	395		

Cross References

Spices → Flavors and Fragrances 15; → Seasonings 32
 Spirit of Turpentine → Turpentine 37
 Spunbonded Fabrics → Nonwoven Fabrics 24
 Sputtering → Thin Films 36
 Stains → Wood, Surface Treatment 39
 Starch Syrups → Glucose and Glucose-Containing
 Syrups 17
 Stearyl Alcohol → Fatty Alcohols 14
 Stilbene Dyes → Optical Brighteners 25
 Stimulants → Psychopharmacological Agents 30
 Stoneware → Construction Ceramics 10; → Whitewares 39
 Styrene–Butadiene Rubber → Rubber, 4. Emulsion
 Rubbers 31; → Rubber, 5. Solution Rubbers 31

Styrene Copolymers → Polystyrene and Styrene
 Copolymers 29
 Styrene Polymers → Polystyrene and Styrene
 Copolymers 29
 Suberic Acid → Dicarboxylic Acids, Aliphatic 11
 Substitute Natural Gas → Gas Production, 1. Introduction 16
 Succinic Acid → Dicarboxylic Acids, Aliphatic 11
 Sulfanes → Sulfides, Polysulfides, and Sulfanes 34
 Sulfation → Sulfonic Acids, Aliphatic 35
 Sulfochlorination → Sulfonic Acids, Aliphatic 35;
 → Surfactants 35
 Sulfolane → Sulfones and Sulfoxides 34
 Sulfonamides → Chemotherapeutics 8
 Sulfonation → Sulfonic Acids, Aliphatic 35

Volume Contents

Sulfonic Acids, Aliphatic	1	Surface and Thin-Film Analysis,	
Sulfur.....	5	5. Scanning Probe Microscopy	419
Sulfur Dioxide	73	Surfactants	431
Sulfur Dyes	119	Surgical Materials.....	507
Sulfur Halides	129	Sustainability and the Chemical	
Sulfuric Acid and Sulfur Trioxide	141	Industry – Ethical Aspects	
Superabsorbents	213	and Approaches.....	529
Superconductors.....	233	Sweeteners	543
Surface and Thin-Film Analysis,		Sympatholytics and Sympathomimetics ...	565
1. General.....	277	Talc	567
Surface and Thin-Film Analysis,		Tall Oil.....	583
2. Electron Detection	287	Tantalum and Tantalum Compounds	597
Surface and Thin-Film Analysis,		Tapes, Adhesive.....	611
3. Ion Detection	327	Tar and Pitch	633
Surface and Thin-Film Analysis,		Tartaric Acid.....	671
4. Photon Detection	387	Tea	679
		Tellurium and Tellurium Compounds.....	685

Cross References

Sulfoxidation → Sulfonic Acids, Aliphatic 35	Supercritical Extraction → Liquid–Solid Extraction 21
Sulfoxides → Sulfones and Sulfoxides 34	Superoxides → Peroxo Compounds, Inorganic 26
Sulfur-Containing Polymers → Polymers, Electrically Conducting 29	Superphosphate → Phosphate Fertilizers 26
Sulfur-Containing Polymers → Polymers, High-Temperature 29 ; → Sulfides, Polysulfides, and Sulfanes 34	Supraconductors → Superconductors 35
Sulfur Hexafluoride → Fluorine Compounds, Inorganic 15	Suspension Polymerization → Polymerization Processes, 1. Fundamentals 29
Sunflower Oil → Fats and Fatty Oils 14	Sutures → Surgical Materials 35
Sunscreens → Skin Cosmetics 33	Synthesis Gas → Gas Production, 1. Introduction 16
Suntan Preparations → Skin Cosmetics 33	Tallow → Fats and Fatty Oils 14
Superalloys → Cobalt and Cobalt Compounds 9 ; → High-Temperature Materials 17 ; → Nickel Alloys 24	Tara Gum → Polysaccharides 29
	Tar Sands → Oil Sands 25
	Technetium → Radionuclides, 2. Radioactive Elements and Artificial Radionuclides 31
	Telomerization → Catalysis, Homogeneous 7

Volume Contents

Temperature Measurement.....	1	Textile Printing	333
Teratogenic Agents.....	13	Thallium and Thallium Compounds	401
Terephthalic Acid, Dimethyl Terephthalate, and Isophthalic Acid	17	Thermal Analysis and Calorimetry	415
Terpenes.....	29	Thermoelectricity.....	441
Tetrahydrofuran	47	Thermoplastic Elastomers	453
Textile Auxiliaries, 1. Introduction	53	Thermosets.....	493
Textile Auxiliaries, 2. Auxiliaries for Fiber Production and Processing	65	Thin-Film Reactors.....	509
Textile Auxiliaries, 3. Sizing Agents	75	Thin Films.....	519
Textile Auxiliaries, 4. Pretreatment Auxiliaries	87	Thin Layer Chromatography	589
Textile Auxiliaries, 5. Dyeing Auxiliaries	103	Thiocyanates and Isothiocyanates, Organic	609
Textile Auxiliaries, 6. Printing Auxiliaries	133	Thiocyanates, Inorganic.....	619
Textile Auxiliaries, 7. Finishing Agents...	143	Thiols and Organic Sulfides	629
Textile Auxiliaries, 8. Auxiliaries for Technical Textiles.....	161	Thiophene	657
Textile Dyeing	189	Thiourea and Thiourea Derivatives.....	671
		Thorium and Thorium Compounds.....	685
		Three-Phase Trickle-Bed Reactors.....	723
		Thyrotherapeutic Agents	737

Cross References

Tequila → Spirits **34**
 Terbium → Rare Earth Elements **31**
 Terpene Resins → Resins, Synthetic **31**
 Terphenyls → Hydrocarbons **18**
 Tetrachloroethanes → Chloroethanes and Chloroethylenes **8**
 Tetrachloroethylene → Chloroethanes and
Chloroethylenes **8**
 Tetracycline → Antibiotics, 1. General **3**
 Tetraethyllead → Lead Compounds **20**
 Tetrafluoroethylene Copolymers → Fluoropolymers,
Organic **15**
 Tetralin → Naphthalene and Hydronaphthalenes **23**
 Tetramethyllead → Lead Compounds **20**
 Thermite Process → Welding and Cutting **39**
 Thermography → Nondestructive Testing,
4. Thermography **24**

Thiamine → Vitamins, 6. B Vitamins **38**
 Thioethers → Thiols and Organic Sulfides **36**
 Thioglycolic Acid → Mercaptoacetic Acid
and Derivatives **22**
 Thioindigo → Indigo and Indigo Colorants **19**
 Thionyl Chloride → Sulfur Halides **35**
 Thiophenol → Thiols and Organic Sulfides **36**
 Thiophosphates → Phosphorus Compounds, Organic **27**
 Thiosulfates → Sulfites, Thiosulfates, and Dithionites **34**
 Thomas Phosphate → Phosphate Fertilizers **26**
 Threonine → Amino Acids **3**
 Thulium → Rare Earth Elements **31**
 Tiles (Roof) → Construction Ceramics **10**
 Tiles (Wall) → Whitewares **39**

Volume Contents

Tin, Tin Alloys, and Tin Compounds	1	Transport Phenomena, 3. Transport in Multicomponent Systems.....	389
Tires	35	Transport Phenomena, 4. Macroscopic Systems	413
Titanium, Titanium Alloys, and Titanium Compounds	51	Triarylmethane and Diarylmethane Dyes .	425
Tobacco.....	83	Tubular Reactors.....	479
Toluene	109	Tungsten, Tungsten Alloys, and Tungsten Compounds	497
Tolidines	119	Turpentines	537
Toxicology, 1. Fundamentals	127	Ultraviolet and Visible Spectroscopy.....	551
Toxicology, 2. Assessment Methods.....	213	Uranium, Uranium Alloys, and Uranium Compounds	601
Toxicology, 3. Evaluation of Toxic Effects	255	Urea.....	657
Trace Analysis	277		
Transport Phenomena, 1. Foundations.....	323		
Transport Phenomena, 2. Transport in Compositionally Uniform Systems.....	343		

Cross References

Titanium Dioxide → Pigments, Inorganic, 1. General	27;	Trichloroethylene → Chloroethanes and Chloroethylenes	8
→ Pigments, Inorganic, 2. White Pigments	27	Trimellitic Acid → Carboxylic Acids, Aromatic	7
Toluidinesulfonic Acids → Benzidine and Benzidine Derivatives	5	Trimethylamine → Methylamines	23
Tomography → Visualization Techniques in Process Engineering	38	Trioxan → Formaldehyde	15
Toothpaste → Oral Hygiene Products	25	Triple Superphosphate → Phosphate Fertilizers	26
Tragacanth Gum → Polysaccharides	29	Tritium → Hydrogen	18
Tranquilizers → Psychopharmacological Agents	30	Tryptophan → Amino Acids	3
Transactinides → Plutonium and other Transuranium Elements	28	Turbine Fuels → Aviation Turbine Fuels → Heating Oil	17
Transformer Fluids → Insulation, Electric	19	Type Metal → Lead Alloys	20
Trichloroacetic Acid → Chloroacetic Acids	8	Tyrosine → Amino Acids	3
Trichloroethanes → Chloroethanes and Chloroethylenes	8	Ulcer Therapy → Antiulcer Drugs	4
		Ultramarine Pigments → Pigments, Inorganic, 1. General	
		27; → Pigments, Inorganic, 3. Colored Pigments	27
		Unsaturated Polyesters → Polyester Resins, Unsaturated	28

Volume Contents

Urea Derivatives	1	Vitamins, 10. Folic Acid	321
Vacuum Technology.....	13	Vitamins, 11. Niacin (Nicotinic Acid, Nicotinamide).....	331
Vanadium and Vanadium Compounds	49	Waste, 1. Introduction and Legal Aspects	339
Veterinary Drugs	71	Waste, 2. Life-Cycle Assessment.....	365
Vinegar.....	89	Waste, 3. Waste Management in the Chemical Industry.....	385
Vinyl Esters	107	Waste, 4. Prevention.....	399
Vinyl Ethers.....	125	Waste, 5. Recycling	415
Visualization Techniques in Process Engineering	133	Waste, 6. Treatment.....	481
Vitamins, 1. Introduction.....	155	Waste, 7. Deposition	541
Vitamins, 2. Vitamin A (Retinoids)	163	Wastewater, 1. Introduction	563
Vitamins, 3. Vitamin D	185	Wastewater, 2. Aerobic Biological Treatment	567
Vitamins, 4. Vitamin E (Tocopherols, Tocotrienols)	197	Wastewater, 3. Anaerobic Biological Treatment	639
Vitamins, 5. Vitamin K	211	Wastewater, 4. Chemical Treatment.....	667
Vitamins, 6. B Vitamins	233	Wastewater, 5. Physical Treatment.....	685
Vitamins, 7. Vitamin C (L-Ascorbic Acid)	283	Wastewater, 6. Incineration.....	711
Vitamins, 8. Pantothenic Acid	299		
Vitamins, 9. Biotin	309		

Cross References

Urea Resins → Amino Resins **3**
 Vaccines → Immunotherapy and Vaccines **18**
 Vacuum Coating → Thin Films **36**
 Valeric Acid → Carboxylic Acids, Aliphatic **7**
 Valine → Amino Acids **3**
 Vanillin → Flavors and Fragrances **15**
 Vapor Deposition → Thin Films **36**
 Varnishes → Paints and Coatings. 1. Introduction **25**;
 → Paints and Coatings, 2. Types **25**; → Paints and
 Coatings, 3. Paint Systems **26**; → Paints and Coatings,
 6. Production Technology **26**; → Paints and Coatings,
 7. Paint Application **26**; → Paints and Coatings,
 8. Properties, Testing, and Analysis **26**; → Paints and
 Coatings, 9. Application **26**
 Vasodilators → Cardiovascular Drugs **7**
 Vat Dyes → Anthraquinone Dyes and Intermediates **3**
 Veneer → Wood **39**
 Vermiculite → Silicates **32**
 Vinyl Acetate → Vinyl Esters **38**
 Vinyl Chloride → Chloroethanes and Chloroethylenes **8**

Vinylidene Chloride → Chloroethanes and
 Chloroethylenes **8**
 Vinylidene Polymers → Poly(Vinylidene Chloride) **28**
 Vinyl Polymers → Fluoropolymers, Organic **15**;
 → Poly(Vinyl Chloride) **28**; → Poly(Vinyl Esters)
 28; → Poly(Vinyl Ethers) **28**; → Polyvinyl
 Compounds, Others **29**
 Vinylpyridine → Pyridine and Pyridine Derivatives **30**
 N-Vinylpyrrolidone → 2-Pyrrolidone **30**
 Violanthrone → Anthraquinone Dyes and Intermediates **3**
 Viral Infections → Chemotherapeutics **8**;
 → Veterinary Drugs **38**
 Viscose Fiber → Cellulose **7**
 Vodka → Spirits **34**
 Vulcanization → Rubber, 9. Chemicals and Additives **32**;
 → Rubber, 10. Technology **32**
 Washing Agents → Laundry Detergents **20**
 Waste Gas Desulfurization → Sulfuric Acid and
 Sulfur Trioxide **35**

Volume Contents

Water, 1. Properties, Analysis and Hydrological Cycle	1	Whiskers	421
Water, 2. Treatment by Adsorption Processes	41	Whitewares	435
Water, 3. Treatment by Ion Exchange Processes	51	Wood.....	453
Water, 4. Treatment by Flocculation and Filtration	65	Wood, Preservation	507
Water, 5. Treatment by Membrane Separation Processes	83	Wood, Surface Treatment.....	537
Water, 6. Treatment by Oxidation Processes	101	Wool.....	547
Waxes.....	111	X-Ray Contrast Media.....	577
Weed Control, 1. Fundamentals.....	173	X-Ray Fluorescence Spectrometry.....	595
Weed Control, 2. Individual Herbicides ...	209	Xanthates	633
Weighing	387	Xylenes	643
Welding and Cutting	395	Xylidines.....	665
		Yeasts	671
		Zeolites.....	687
		Zinc	717
		Zinc Alloys	741
		Zinc Compounds.....	747
		Zirconium and Zirconium Compounds....	753

Cross References

Weed Killers → Weed Control, 1. Fundamentals **39**;
 → Weed Control, 2. Individual Herbicides **39**
 Weld Cladding → Corrosion, 3. Corrosion Protection and Testing **10**
 Whey → Cheese, Processed Cheese, and Whey **8**
 Whisky → Spirits **34**
 Wollastonite → Silicates **32**
 Wood Gasification → Gas Production, 2. Processes **16**
 Wood Pulp → Pulp **30**
 Xanthan Gum → Polysaccharides **29**
 Xanthene Dyes → Triarylmethane and Diarylmethane Dyes **37**
 Xenon → Noble Gases **24**
 Xenon Fluorides → Noble Gases **24**

Xenon Oxides → Noble Gases **24**
 X-Ray Diffraction → Structure Analysis by Diffraction **34**
 Xylenols → Cresols and Xylenols **10**
 Xylidenesulfonic Acids → Benzenesulfonic Acids and Their Derivatives **5**
 Xylitol → Sugar Alcohols **34**
 Ytterbium → Rare Earth Elements **31**
 Yttrium → Rare Earth Elements **31**
 Ziegler–Natta Catalysts → Polybutenes **28**;
 → Polyethylene **29**; → Polypropylene **29**
 Zinc White → Pigments, Inorganic, 1. General **27**;
 → Pigments, Inorganic, 2. White Pigments **27**
 Zone Melting → Crystal Growth **10**

Contents of Volumes 1 to 39

Volume 1

Abrasion and Erosion	1	Acrolein and Methacrolein	329
Abrasives	27	Acrylic Acid and Derivatives	347
Absorption, 1. Fundamentals	47	Acrylonitrile	365
Absorption, 2. Design of Systems and Equipment	73	Activation Analysis	373
Acaricides	91	Acylation and Alkylation	393
Acetaldehyde	191	Adhesives, 1. General	439
Acetic Acid.....	209	Adhesives, 2. Applications.....	483
Acetic Anhydride and Mixed Fatty Acid Anhydrides.....	239	Adipic Acid	537
Acetone.....	257	Adsorption	549
Acetylene.....	277	Aerogels.....	621
Acridine	327	Agrochemical Products	647
		Air, 1. Emissions and Atmosphere	667

Volume 2

Air, 2. Effects of Air Pollutants.....	1	Alkaloids.....	325
Air, 3. Laws and Technical Regulations .	29	Alkyd Resins	429
Air, 4. Pollution Monitoring	47	Allyl Compounds	447
Air, 5. Emission Measurements.....	83	Aluminothermic Processes	471
Air, 6. Photochemical Degradation	127	Aluminum	483
Air, 7. Waste Gases, Separation and Purification	147	Aluminum Alloys	521
Air Classifying	215	Aluminum Compounds, Inorganic	569
Alcohols, Aliphatic	235	Aluminum Compounds, Organic	585
Alcohols, Polyhydric	263	Aluminum Oxide	607
Aldehydes, Aliphatic	285	Amines, Aliphatic	647
Aldehydes, Araliphatic	317	Amines, Aromatic	699

Volume 3

Amino Acids	1	Analytical Voltammetry and Polarography	409
Aminophenols.....	59	Anesthetics, General	451
Amino Resins	79	Aniline	465
Ammonia, 1. Introduction	107	Anthelmintics	479
Ammonia, 2. Production Processes	139	Anthracene.....	497
Ammonia, 3. Production Plants	227	Anthraquinone	503
Ammonium Compounds	263	Anthraquinone Dyes and Intermediates...	513
Analeptics	289	Anti-inflammatory–Antirheumatic Drugs	579
Analgesics and Antipyretics, 1. Introduction	291	Antiallergic Agents	605
Analgesics and Antipyretics, 2. Non- steroidal Anti-inflammatory Drugs.....	295	Antiasthmatic Agents	639
Analgesics, Centrally Acting	339	Antibiotics, 1. General	677
Analytical Chemistry: Purpose and Procedures	387	Antibiotics, 2. Production	715
		Antiemetics	733
		Antiepileptics.....	737