

- A**
- Abietane, **3:1187**
- Absorption  
of nitroaniline-based dyes, **3:989**
- Accelerator TMTD, **2:617**
- ACCEL EZ, **2:615**
- ACCEL PX, **2:616**
- ACCEL PZ, **2:615**
- ACCEL SDD, **2:615**
- ACCEL TMT, **2:617**
- ACCEL TS, **2:616**
- Acetaldehyde (ethanal)  
glyoxal from, **2:653**
- 6-Acetamido-4-hydroxynaphthalene-2-sulfonic acid, **3:921**  
*N*-Acetyl  $\gamma$  Acid
- 7-Acetamido-4-hydroxynaphthalene-2-sulfonic acid, **3:919**  
*see also N*-Acetyl *J* acid
- Acetic acid, **2:476**,  
chlorination, **2:803**  
ketene and acetic anhydride from, **2:803**, **804**
- Acetic anhydride  
from methyl acetate, **2:804**
- Acetic chloroacetic anhydride, **2:475**
- Acetoacetalkylamide, **2:810**
- Acetoacetamide, **2:810**, **3:1017**  
toxicology, **3:1019**
- Acetoacetanilide, **2:811**
- Acetoacetylammides, **2:810**
- Acetoacetates (esters), **2:809**, **3:1017**
- Acetoacetic acid, **3:1017**, **1020**  
keto-enol forms, **3:1017**
- Acetoacetoxyethyl methacrylate, **2:811**
- Acetoacetylation, **2:807**
- $\alpha$ -Acetobutyrolactone, **1:392**
- Acetone (2-propanone) (DMK)  
ketene from, **2:804**
- Acetonedicarboxylic acid, **3:1020**  
*see also 3-Oxopentane dicarboxylic acid*  
toxicology, **3:1021**
- Acetonitrile, **3:937**
- Acetophenone, **2:832**  
*see also Methyl phenyl ketone*
- 4-Acetoxybutyraldehyde, **1:77**
- Acetylacetone, **2:805**  
*see also 2,4-Pentanedione*  
*2,4-Pentanedione*, **2:830**
- Acetylacetonitrile, **3:940**  
*see also  $\beta$ -Ketobutyronitrile*
- N*-Acetyl  $\gamma$  Acid  
*see also 6-Acetamido-4-hydroxynaphthalene-2-sulfonic acid*, **3:921**
- 4-(Acetylamino)benzenesulfonamide, **1:263**
- 4-(Acetylamino)benzenesulfonic acid, **1:263**
- 4-(Acetylamino)benzenesulfonyl chloride, **1:263**
- 5-Acetylamino-2-hydroxybenzenesulfonic acid, **1:271**
- 4-Acetylamino-5-hydroxynaphthalene-2,7-disulfonic acid, **3:923**  
*see also N*-Acetyl *H* Acid
- 3-Acetylamino-4-methoxybenzenesulfonamide, **1:270**
- 3-Acetylamino-4-methoxybenzenesulfonyl chloride, **1:270**
- 3-Acetylamino-4-methoxy-*N*-methylbenzenesulfonamide, **1:270**
- 4-(Acetylaminomethyl)benzenesulfonamide, **1:257**
- 4-(Acetylaminomethyl)benzenesulfonyl chloride, **1:257**
- 2-Acetylamino-5-nitrothiazole, **3:1008**
- Acetylation by ketene, **2:802**
- N*-Acetylcysteine **1:200**, **3:1218**
- N*-Acetyl-3,3'-dichlorobenzidine, **1:288**
- Acetylenedicarboxylic acid, **2:440**, **444**
- Acetylenediurea (Tetrahydroimidazo[4,5-*d*]imidazole-2,5-(1*H*, 3*H*)-dione)  
[496-46-8], **3:1281**
- N*-Acetyl *H* Acid, **3:923**  
*see also 4-Acetylamino-5-hydroxynaphthalene-2,7-disulfonic acid*
- N*-Acetyl *J* acid, **3:919**  
*see also 7-Acetamido-4-hydroxynaphthalene-2-sulfonic acid*
- Acetylthiophene, **3:1247**
- 2-Acetylthiophene [88-15-3], **3:1245**, **1246**  
toxicology, **3:1251**
- A** Acid, **3:874**, 7-disulfonic acid  
*see also 3,5-Dihydroxynaphthalene-2*
- B** Acid, **3:874**, 6, 8-trisulfonic acid  
*see also 1-Aminonaphthalene-4*
- C** Acid (Cassella acid), **3:874**  
*see also 2-Aminonaphthalene-4, 8-disulfonic acid*
- D** Acid, **3:874**  
*see also Dahl's Acid; 2-Aminonaphthalene-5-sulfonic acid*
- F** Acid, **3:874**  
*see also 2-Hydroxynaphthalene-7-sulfonic acid*
- G** Acid, **3:874**  
*2-Hydroxynaphthalene-6,8-disulfonic acid*
- J** Acid, **3:874**  
*see also 2-Amino-5-hydroxynaphthalene-7-sulfonic acid*
- L** Acid (Laurent's acid), **3:874**  
*see also 1-Aminonaphthalene-5-sulfonic acid*
- M** Acid, **3:874**  
*see also 1-Amino-5-hydroxynaphthalene-7-sulfonic acid*
- R** Acid, **3:874**  
*see also 2-Hydroxynaphthalene-3, 6-disulfonic acid*
- RG** Acid (Violet acid), **3:874**  
*see also 1-Hydroxynaphthalene-3, 6-disulfonic acid*
- RM** Acid, **3:874**  
*see also 2-Amino-3-hydroxynaphthalene-6-sulfonic acid*
- S** Acid, **3:874**  
*see also 1-Amino-8-hydroxynaphthalene-4-sulfonic acid*
- T** Acid, **3:874**, 6, 8-trisulfonic acid  
*see also 1-Aminonaphthalene-3*
- $\delta$  Acid, **3:874**, 8-disulfonic acid  
*see also 1-Hydroxynaphthalene-4*
- E** Acid, **3:874**, 8-disulfonic acid  
*see also 1-Hydroxynaphthalene-3*
- H** Acid (8-Amino-1-hydroxynaphthalene-3,6-disulfonic acid), **3:874**  
*see also 1-Amino-8-hydroxynaphthalene-3, 6-disulfonic acid*
- K** Acid (8-Amino-1-hydroxynaphthalene-3,5-disulfonic acid), **3:874**  
*see also 1-Amino-8-hydroxynaphthalene-4, 6-disulfonic acid*
- $\gamma$  Acid (7-Amino-1-hydroxynaphthalene-3-sulfonic acid), **3:874**  
*see also 2-Amino-8-hydroxynaphthalene-6-sulfonic acid*
- Acid Black 36, **3:905**
- Acid Black 52, C.I. 15711, **3:917**
- Acid Blue 61, **3:908**
- Acid Blue 113, C.I. 26360, **3:897**, **906**
- Acid Blue 158, **3:890**
- Acid Brown 43, **3:881**
- Acid desulfonation  
of hydroxynaphthalenedi- and trisulfonic acids, **3:888**
- Acidol, **1:201**
- Acid Orange 7, C.I. 15510, **3:883**
- Acid Orange 20, **3:881**
- Acid Red 7, **3:892**
- Acid Red 25, **3:892**, **904**
- Acid Red 26, **3:978**
- Acid Red 33, **3:922**
- Acidrine, **1:202**
- Acid Violet 90, **3:916**
- NW** Acid (Nevile and Winther acid), **3:874**  
*see also 1-Hydroxynaphthalene-4-sulfonic acid*
- Acintraazole, **3:1010**
- Aciventral, **1:201**
- Acrolein (propenal)  
hydrogenation or reduction to allyl alcohol, **1:76**
- Acrylonitrile (acrylic acid nitrile)

- reaction with amines to di- and polyamines, **1:117**
- Acthiol, **1:204**
- Acyclic diterpenes, **3:1197**
- Acyclic monoterpenes, **3:1189**
- Acyclic triterpenes, **3:1197**
- Acylovir, **3:1134**
- 2-Acyliminothiazolidines, **2:611**
- Acyloins, cyclic, **2:586**
- Acyphenols  
alkylphenols from, **3:1046**
- Adamantane, **2:574**
- Adenine, **3:1132**
- Adipic acid, **2:585**  
*see also Hexanedioic acid*  
reduction to 1,6-hexanediol, **1:45**  
sebacic acid from, **2:589**
- Adrogolide, **3:1247**
- Aerofine 3418 A, **3:1102**
- Aerofloat, **3:1121, 1122**
- Aerophine 3418 A, **3:1111**
- Agar  
nutrient, minimum inhibitory concentration (MIC) of halogenated phenol derivatives in, **3:1085**
- Agrisil, **3:1116**
- Agrochemicals  
amino acids in, **1:205**  
fine chemicals, **1:26**
- Airol, **2:721**
- Akrochem ETU-22, **3:1262**
- Aktiferrin, **1:203**
- Aktivanad, **1:202**
- D-Alanine, **1:173**
- D,L-Alanine, **1:173**
- L-Alanine, **1:167, 171, 201, 3:1015, 1016**  
production, **1:179**
- $\beta$ -Alanine, **1:173**
- Alanine as flavor enhancer, **1:195**
- Albrite, **3:1119**
- Alcohols  
amines from, **1:117**  
carboxylic acids by alkali fusion, **2:440**  
electrochemical oxidative carbonylation of, **1:415**  
ionic liquids in chlorination of, **2:751**  
long-chain alcohols via triethylaluminum, **1:100**  
oxidative carbonylation of, **1:411**  
oxidative carbonylation with NO<sub>x</sub>, **1:414**  
reaction with urea, **1:415**
- Alcohols, polyhydric, **1:37**
- Aldehydes  
aliphatic, **1:59**  
araliphatic, **1:59**  
bisphenols from, **3:1077**  
oxidation to carboxylic acids, **2:438**  
polyhydric alcohols from, **1:40**
- Aldoketenes, **2:811**
- Aldol condensation  
aldehyde production, **1:60**
- Aldomet  
*see also Methyl DOPA*, **3:961**
- Alen acid, **3:913**  
*see also 4,5-Diaminonaphthalene-2,7-sulfonic acid*
- Al-Glycin, **1:202**
- Aliette, **3:1113**
- Alkali fusion  
of benzenesulfonic acids, **1:242**  
of naphthalenesulfonic acids, **3:887**
- Alkanes  
oxidation to carboxylic acids, **2:440**
- Alkenes  
polyhydric alcohols from, **1:39**
- Alkenylphenols, **3:1066**
- Alkoxyalanates, **2:690**
- $\alpha$ -Alkoxyalkylureas, **3:1278**
- Alkylaluminum alkoxide  
from alkylaluminum compounds, **1:95**
- Alkylaluminum compounds, **1:92, 93**
- Alkylammonium halide  
preparation, **2:745**
- Alkyl aryl phosphates, **3:1118**
- Alkyl aryl phosphites, **3:1112, 1113**
- Alkylation  
with aliphatic nitro compounds, **3:957**  
of amines, **1:116**  
of phenols, **3:1042**
- Alkylbenzenesulfonates (ABS)  
alkylphenols from, **3:1046**
- Alkyl disulfides  
production of, **3:1221**
- Alkyl dithiophosphates, **3:1121**
- $\alpha,\alpha$ -Alkyleneureas, **3:1279**
- 1-Alkyl-3-ethylimidazolium trifluoromethanesulfonate salts  
preparation, **2:746**
- Alkyl-naphthalenesulfonic acids, **3:879**
- Alkylphenols, **3:1037**  
higher, transportation and classification, **3:1064**  
separation from cracking fractions, **3:1041**  
toxicology, **3:1064**
- Alkyl phosphonates, **3:1113**
- Alkyl polysulfides  
production of, **3:1221**
- Alkyl sulfides  
production of, **3:1220**
- Alkylthiophenes, **3:1249**
- Allicin, **3:1160**
- Allyl acetate, **1:76, 77, 79**  
allyl alcohol from, **1:76**  
toxicology, **1:84**
- Allyl acrylate, **1:78**  
polymers and copolymers of, **1:81**
- Allyl alcohol, **1:73**  
toxicology, **1:84**
- Allylamine, **1:82, 115**  
in 2-pyrrolidone production, **3:1138**  
toxicology, **1:85**
- Allyl bromide, **1:376**  
*see also 3-Bromo-1-propene*
- Allyl chloride, **1:67**  
dispersion of, **2:512**  
epichlorohydrin from, **2:638**  
toxicology, **1:83**
- Allyl chloroformate, **2:498**
- Allyl compounds, **1:67**
- Allyl cyanoacetate, **2:857**
- Allyl esters, **1:77**  
polymers and copolymers of, **1:80**  
toxicology, **1:84**
- Allyl ethers, **1:82**
- Allyl ethyl ether  
toxicology, **1:85**
- Allyl glycidyl ether, **1:82**  
toxicology, **1:84**
- Allyl isothiocyanate, **3:1206, 1209, 1210,**
- Allyl methacrylate, **1:78**  
polymers and copolymers of, **1:81**  
toxicology, **1:84**
- Allyl methallyl ether, **1:75**
- 5-[(Allyloxi)methyl]-5-ethyl-1,3-dioxan-2-one, **1:409**
- 4-Allylphenol, **3:1041**  
*see also Chavicol*
- Allyl vinyl ether  
toxicology, **1:85**
- Alphamin, **3:899**  
*see also 1,5-Naphthalenediamine; 1, 5-Diaminonaphthalene*
- Alphol, **3:880**  
*see also 1-Naphthyl salicylate*
- Aluminium compound, organic  
toxicology, **1:108**
- Aluminoxane, **1:102**
- Aluminum alkoxide  
by exothermic radical chain mechanism, **1:94**
- Aluminum compounds, organic, **1:91**
- Aluminum hydride (alane), **2:688**
- $\gamma$ -Aluminum oxide  
for ortho-alkylation of phenols, **3:1044**
- Aluminum phenolates  
for ortho-alkylation of phenols, **3:1043**
- Alumol, **3:894**
- Amanita phalloides, **3:1225**
- Amberlite JR-112, **3:1042**
- Amgard, **3:1116, 1118**
- Amido F acid, **3:906**  
*see also 2-Aminonaphthalene-7-sulfonic acid*
- Amine, aliphatic  
toxicology, **1:151**
- Amine boranes, **1:355**  
(C<sub>2</sub>H<sub>5</sub>)<sub>3</sub>N-BH<sub>3</sub>, **1:355**

- (CH<sub>3</sub>)<sub>2</sub>N·BH<sub>3</sub>, 1:355  
 (C<sub>2</sub>H<sub>5</sub>)<sub>2</sub>NH·BH<sub>3</sub>, 1:355  
 (CH<sub>3</sub>)<sub>2</sub>NH·BH<sub>3</sub>, 1:355  
 C<sub>6</sub>H<sub>9</sub>NH<sub>2</sub>·BH<sub>3</sub>, 1:355  
 morpholine borane, 1:355  
 pyridine borane, 1:355  
 toxicology, 1:363
- Amines**  
 acylation with carbamoyl chlorides, 3:1275  
 phosgenation, 3:1274  
 reaction with cyanates, 3:1275  
 reaction with isocyanates, 3:1275
- Amines, aliphatic**, 1:113  
*see also Alkylamines*
- Amines, aromatic**  
 phosgenation, 2:790
- 2-Aminoacetanilide**, 3:990  
**3-Aminoacetanilide**, 3:990  
**Aminoacetoneitrile**, 3:939  
*see also Cyanomethylamine*
- Amino acid**  
 imbalance, 1:214  
**Amino F Acid**, 3:874  
*see also 2-Aminonaphthalene-7-sulfonic acid*  
**Amino G Acid**, 3:874, 8-disulfonic acid  
*see also 2-Aminonaphthalene-6*  
**Amino J Acid**, 3:874, 7-disulfonic acid  
*see also 2-Aminonaphthalene-5*  
**Amino R Acid**, 3:874, 6-disulfonic acid  
*see also 2-Aminonaphthalene-3*  
**Amino ε Acid**, 3:874
- Amino acid derivatives**  
 as pesticides, 1:205  
 as therapeutic agents, 1:200
- Amino acids**, 1:165  
 biosynthesis, 1:189  
 chemical analysis, 1:210  
 in cosmetics, 1:205  
 economic significance, 1:213  
 essential, requirements of humans, 1:192  
 essential and semiessential, 1:190  
 esupplementation, 1:193  
 glucogenic, 1:190  
 ketogenic, 1:190  
 production by chemical synthesis, 1:178  
 production by extraction, 1:179  
 production by fermentation, 1:179  
 toxicology, 1:213
- 4-Amino-1,3-benzenedisulfonamide**, 1:264  
**2-Amino-1,4-benzenedisulfonic acid**, 1:264  
**4-Amino-1,3-benzenedisulfonic acid**, 1:264  
**5-Amino-1,3-benzenedisulfonic acid**, 1:263  
**5-Amino-1,3-benzenedisulfonyl chloride**, 1:263  
**2-Aminobenzenesulfonamide**, 1:262  
**3-Aminobenzenesulfonamide**, 1:262  
**4-Aminobenzenesulfonamide**, 1:263  
**2-Aminobenzenesulfonic acid**, 1:261  
**3-Aminobenzenesulfonic acid**, 1:262  
*see also Metanilic acid*  
**4-Aminobenzenesulfonic acid**, 1:262  
*see also Sulfanilic acid*  
**2-Aminobenzoic acid**, 1:305  
*see also Anthranilic acid*  
**3-Aminobenzoic acid**, 1:306  
**4-Aminobenzoic acid**, 1:306, 309  
**3-Aminobenzotrifluoride**, 3:988  
**5-Amino-*N,N*-bis(2-chloroethyl)-1,3-benzenedisulfonamide**, 1:263  
**1-α-Aminobutyric acid**, 1:173  
**γ-Aminobutyric acid (GABA)**, 1:174  
**Amino C acid**, 3:912  
*see also 3,8-Diaminonaphthalene-1,5-disulfonic acid*  
**7-aminocephalosporanic acid**, 3:1247  
**4-Amino-6-chloro-1,3-benzenedisulfonamide**, 1:272  
**4-Amino-6-chloro-1,3-benzenedisulfonic acid**, 1:272  
**4-Amino-6-chloro-1,3-benzenedisulfonyl chloride**, 1:272  
**2-Amino-5-chlorobenzenesulfonic acid**, 1:271  
**3-Amino-4-chlorobenzenesulfonic acid**, 1:272  
**3-Amino-5-chloro-2-hydroxybenzenesulfonic acid**, 1:269, 271  
**3-Amino-5-chloro-4-hydroxybenzenesulfonic acid**, 1:269, 271  
**2-Amino-4-chloro-5-methylbenzenesulfonic acid**, 1:273  
**2-Amino-5-chloro-4-methylbenzenesulfonic acid**, 1:273  
**3-Amino-5-chloro-4-methylbenzenesulfonic acid**, 1:273  
**4-Amino-5-chloro-2-methylbenzenesulfonic acid**, 1:273  
**4-Amino-5-chloro-3-methylbenzenesulfonic acid**, 1:273  
**4-Amino-6-chloro-*N,N*-dimethyl-1,3-benzene-disulfonamide**, 1:272  
**2-Amino-4-chlorophenol**, 3:1004  
**2-Amino-6-chlorotoluene-4-sulfonic acid**, 3:1002  
**4-Amino-6-chlorotoluene-3-sulfonic acid**, 3:987  
**3-Aminocrotonate esters**, 2:811  
**2-Aminocycanoacetamide**, 2:857  
**1-Amino-3-cyclohexylaminopropane**, 1:146  
**Aminocyclopentane**, 1:126  
*see Cyclopentylamine*  
**2-Amino-4,5-dichlorobenzenesulfonamide**, 1:272  
**2-Amino-4,5-dichlorobenzenesulfonic acid**, 1:272  
**4-Amino-2,5-dichlorobenzenesulfonic acid**, 1:272  
**2-Amino-4,5-dichlorobenzenesulfonyl chloride**, 1:272  
**6-Amino-2,4-dichloro-3-methylbenzenesulfonic acid**, 1:273  
**2-Amino-4,6-dichlorophenol**, 3:1003  
**1-Amino-3-diethylaminopropane**, 1:146  
**1-Amino-3-dimethylaminopropane**, 1:146  
**2-Amino-3,5-dimethylbenzenesulfonic acid**, 1:268  
**2-amino-3,4-dimethyl-3-thiophenecarboxylic acid**, 3:1250  
**2-Amino-3,5-dinitrothiophene**, 3:1010  
**Aminodithiocarbamic acid**, 2:603  
**Amino epsilon acid**, 3:874  
*see also 1-Aminonaphthalene-3, 8-disulfonic acid*  
**1-Aminoethane-1,1-diphosphonic acid**, 3:1115  
**3-Amino-6-ethoxybenzenesulfonic acid**, 1:271  
**2-Amino-3-ethoxycarbonyl-5-nitrothiophene**, 3:1010  
**1-Amino-2-ethoxynaphthalene**, 3:914, 917  
**1-Amino-2-ethoxynaphthalene-6-sulfonic acid**, 3:917  
**3-(2-Aminoethyl)-aminopropylamine**, 1:150  
**2-Amino-*N*-ethylbenzenesulfonamide**, 3:995  
***N*-(2-Aminoethyl)-1,3-diaminopropane**, 1:150  
*see 3-(2-Aminoethyl)-aminopropylamine*  
**3-(2-Aminoethyl)indole**, 2:736  
***N*-(2-Aminoethyl)morpholine**, 1:133  
***N*-(2-Aminoethyl)piperazine (AEP)**, 1:134  
**1-(2-Aminoethyl)piperazine**, 1:134, 155  
*see N-(2-Aminoethyl)piperazine (AEP)*  
 toxicology 1:155  
***N*-(2-Aminoethyl)-2-pyrrolidone**, 3:1141  
**3-Amino-4-ethylsulfonylbenzotrifluoride**, 3:988  
**Aminoguanidine [79-17-4]**, 2:663  
**5-Amino-4-hydroxy-1,3-benzenedisulfonic acid**, 1:270  
**3-Amino-4-hydroxybenzenesulfonamide**, 1:270  
**3-Amino-4-hydroxybenzenesulfonic acid**, 1:270  
**2-Amino-2-(hydroxymethyl)-1,3-propanediol**, 3:960  
*see also Tris(hydroxymethyl)aminomethane*  
**1-Amino-8-hydroxynaphthalene-2,4-disulfonic acid**, 3:874  
*see also 2S Acid*  
**1-Amino-8-hydroxynaphthalene-3,6-disulfonic acid**, 3:874, 922  
*see also H Acid*  
**1-Amino-8-hydroxynaphthalene-4,6-disulfonic acid**, 3:874, 923  
*see also K Acid*  
**1-Amino-2-hydroxynaphthalene-3,6-disulfonic acid**, 3:921  
**2-Amino-8-hydroxynaphthalene-3,6-disulfonic acid**, 3:874, 924  
*see also 2R Acid*  
**2-Amino-5-hydroxynaphthalene-1,7-disulfonic acid**, 3:923  
*see also Sulfo J Acid*  
**2-Amino-5-hydroxynaphthalene-4,8-disulfonic acid**, 3:923  
*see also Oxy C Acid*  
**Aminohydroxynaphthalenedisulfonic acids**, 3:910  
**Aminohydroxynaphthalenemonosulfonic acids**, 3:916  
**1-Amino-2-hydroxynaphthalene-4-sulfonic acid**, 3:874  
*see also Böniger acid*  
**1-Amino-5-hydroxynaphthalene-7-sulfonic acid**, 3:874  
*see also M Acid*  
**1-Amino-8-hydroxynaphthalene-4-sulfonic acid**, 3:874  
*see also S Acid*  
**1-Amino-2-hydroxynaphthalene-4-sulfonic acid**, 3:916  
*see also Böniger acid*  
**1-Amino-2-hydroxynaphthalene-6-sulfonic acid**, 3:917  
*see also Amimo-Schaeffer acid*  
**1-Amino-5-hydroxynaphthalene-6-sulfonic acid**, 3:917  
**1-Amino-5-hydroxynaphthalene-7-sulfonic acid**, 3:917  
*see also M Acid*  
**1-Amino-8-hydroxynaphthalene-4-sulfonic acid**, 3:918  
*see also S Acid*  
**1-Amino-8-hydroxynaphthalene-6-sulfonic acid**, 3:918  
**2-Amino-3-hydroxynaphthalene-6-sulfonic acid**, 3:874, 918  
*see also RM Acid*  
**2-Amino-5-hydroxynaphthalene-7-sulfonic acid**, 3:874, 918  
*see also J Acid*

- 2-Amino-8-hydroxynaphthalene-6-sulfonic acid, 3:874, 920  
see also *γ* Acid
- 2-Amino-1-hydroxynaphthalene-4-sulfonic acid, 3:918
- 2-Amino-6-hydroxynaphthalene-8-sulfonic acid, 3:920
- 2-Amino-8-hydroxynaphthalene-5-sulfonic acid, 3:921
- 2-Amino-8-hydroxynaphthalene-7-sulfonic acid  
Na salt, 3:921
- Aminohydroxynaphthalenesulfonic acids, 3:914  
see also *Aminonaphtholsulfonic acids*  
derivatives, 3:915
- $\alpha$ -Aminoisobutyric acid, 1:173
- 2-Aminomalonanitrile, 2:861
- 4-Amino-6-methoxy-1,3-benzenedisulfonic acid, 1:271
- 4-Amino-6-methoxy-1,3-benzenedisulfonyl chloride, 1:271
- 3-Amino-4-methoxybenzenesulfonic acid, 1:270
- 3-Amino-3-methylacrylonitrile, 3:940  
see also *Diacetonitrile*
- 1-Amino-3-methylaminopropane, 1:146
- 1-Amino-3-*N*-methyl-*N*-(3-aminopropyl)-aminopropane, 1:150  
see *N-Methyldipropylenetriamine*
- 2-Amino-*N*-methylbenzenesulfonamide, 1:262
- 2-Amino-5-methylbenzenesulfonic acid, 1:268
- 3-Amino-4-methylbenzenesulfonic acid, 1:268
- 4-Amino-2-methylbenzenesulfonic acid, 1:268
- 4-Amino-3-methylbenzenesulfonic acid, 1:268
- 5-Amino-2-methylbenzenesulfonic acid, 1:268, 3:999  
see also *p-Toluidine-2-sulfonic acid*
- 3-Amino-4-methyl-*N,N*-dimethylbenzenesulfonamide, 3:998
- 2-Amino-2-methyl-1,3-propanediol, 3:961
- 2-Amino-2-methyl-1-propanol (AMP), 3:962
- 3-Aminomethyl-3,5,5-trimethylcyclohexylamine, 1:148
- 1-Aminonaphthalene, 3:896, 897  
see also 1-Naphthylamine
- 2-Aminonaphthalene, 3:898  
see also 2-Naphthylamine
- 8-Aminonaphthalene-1-carboxylic acid, 3:905
- 1-Aminonaphthalene-2,7-disulfonic acid, 3:874  
see also *Kalle's acid*
- 1-Aminonaphthalene-3,6-disulfonic acid, 3:874  
see also *Freund's acid*
- 1-Aminonaphthalene-3,7-disulfonic acid, 3:874, 907  
see also *Freund's acid*
- 1-Aminonaphthalene-3,8-disulfonic acid, 3:874  
see also *Amino epsilon acid*
- 1-Aminonaphthalene-4,6-disulfonic acid, 3:874, 908  
see also *Dahl's Acid II*
- 1-Aminonaphthalene-4,7-disulfonic acid, 3:874, 908  
see also *Dahl's Acid III*
- 1-Aminonaphthalene-3,8-disulfonic acid  
see also *Amino epsilon acid*, 3:907
- 1-Aminonaphthalene-4,8-disulfonic acid, 3:908
- 1-Aminonaphthalene-5,7-disulfonic acid, 3:908
- 2-Aminonaphthalene-3,6-disulfonic acid, 3:874  
see also *Amino R Acid*
- 2-Aminonaphthalene-4,8-disulfonic acid, 3:874  
see also *C acid*
- 2-Aminonaphthalene-5,7-disulfonic acid, 3:874  
see also *Amino J Acid*
- 2-Aminonaphthalene-6,8-disulfonic acid, 3:874  
see also *Amino G Acid*
- 2-Aminonaphthalene-1,5-disulfonic acid, 3:909  
see also 5-Sulfo-Tobias acid
- 2-Aminonaphthalene-3,6-disulfonic acid, 3:909  
see also *Amino R Acid*
- 2-Aminonaphthalene-4,8-disulfonic acid, 3:900, 909  
see also *C acid*
- 2-Aminonaphthalene-5,7-disulfonic acid, 3:909  
see also *Amino J Acid*
- 2-Aminonaphthalene-6,8-disulfonic acid, 3:910  
see also *Amino G Acid*
- 1-Aminonaphthalene-4-sulfonic acid, 3:874  
see also *Naphthionic acid*; *Piria's acid*
- 1-Aminonaphthalene-6-sulfonic acid, 3:874  
see also 1,6-Cleve's acid
- 1-Aminonaphthalene-7-sulfonic acid, 3:874  
see also 1,7-Cleve's acid
- 1-Aminonaphthalene-2-sulfonic acid, 3:903  
see also *ortho-Naphthionic acid*
- 1-Aminonaphthalene-3-sulfonic acid, 3:903
- 1-Aminonaphthalene-3,6-sulfonic acid, 3:907
- 1-Aminonaphthalene-4-sulfonic acid, 3:903  
see also *Naphthionic acid*; *Piria's acid*
- 1-Aminonaphthalene-5-sulfonic acid (purpurin acid), 3:904  
see also *L acid*
- 1-Aminonaphthalene-6-sulfonic acid, 3:904  
see also 1,6-Cleve's acid
- 1-Aminonaphthalene-7-sulfonic acid, 3:905  
see also 1,7-Cleve's acid
- 2-Aminonaphthalene-6-sulfonic acid, 3:874  
see also *Bromner acid*
- 2-Aminonaphthalene-7-sulfonic acid, 3:874  
see also *Amido F acid*
- 2-Aminonaphthalene-1-trisulfonic acid, 3:906  
see also *Tobias acid*
- 2-Aminonaphthalene-5-sulfonic acid (Dressel acid), 3:906  
see also *D acid*
- 2-Aminonaphthalene-6-sulfonic acid, 3:906  
see also *Bromner acid*
- 2-Aminonaphthalene-7-sulfonic acid, 3:906  
see also *Amido F acid*
- 2-Aminonaphthalene-8-sulfonic acid, 3:907  
see also *Badische acid*
- 1-Aminonaphthalene-8-sulfonic acid (8-aminonaphthalene-1-sulfonic acid; peric acid), 3:905
- Aminonaphthalenesulfonic acids  
toxicology, 3:913
- Aminonaphthalenetetrasulfonic acids, 3:910
- 1-Aminonaphthalene-3,6,8-trisulfonic acid, 3:874  
see also *Koch acid*; *T Acid*
- 1-Aminonaphthalene-4,6,8-trisulfonic acid  
see also *B Acid*, 3:874, 911
- 1-Aminonaphthalene-2,4,8-trisulfonic acid, 3:910
- 1-Aminonaphthalene-3,6,8-trisulfonic acid, 3:910  
see also *Koch acid*; *T Acid*
- 2-Aminonaphthalene-1,5,7-trisulfonic acid, 3:911
- 2-Aminonaphthalene-3,6,8-trisulfonic acid, 3:911
- 1-Amino-2-naphthol, 3:914
- 4-Amino-1-naphthol, 3:913  
see also 4-Hydroxy-1-aminonaphthalene
- 5-Amino-1-naphthol, 3:913  
see also *Purpuro*
- 7-Amino-1-naphthol, 3:914  
see also 8-Hydroxy-2-aminonaphthalene
- 8-Amino-2-naphthol, 3:914  
see also *Cyanol*
- Aminonaphtholsulfonic acids, 3:914  
see also *Aminohydroxynaphthalenesulfonic acids*
- 2-Amino-3-nitro-5-acetylthiophene, 3:1010
- 7-Amino-5-nitrobenz [3,4-*c*] isothiazole, 3:1011
- 4-Amino-2-nitrobenzenesulfonic acid, 1:246
- 2-Amino-5-nitrobenzonitrile, 3:944  
see also 2-Cyano-4-nitroaniline
- 2-Amino-6-nitrobenzothiazole, 3:1011
- 4'-Amino-4-nitrodiphenylamine-2-sulfonic acid, 3:1000
- 2-Amino-5-nitrothiazole, 3:1010  
see also 5-Nitro-2-thiazolamine
- 2-Amino-4-nitrotoluene, 3:977
- 4-Amino-2-nitrotoluene, 3:977
- 2-Aminophenol, 3:1003
- 3-Aminophenol, 3:1004
- 4-Aminophenol, 3:1004  
see also *Rodinal*
- 2-Aminophenol-4-sulfonamide, 3:1001
- 2-Aminophenol-4-sulfonic acid, 3:1000
- N*-(4-Aminophenyl)benzenesulfonamide, 1:254
- 3-Aminophenyl-2-hydroxyethylsulfone, 3:996
- 2-Amino-*N*-(phenylsulfonyl)benzenesulfonamide, 1:262
- 2-Amino-1,3-propanediol, 3:960
- 3-Aminopropanenitrile, 3:939  
see also 3-Aminopropionitrile
- 2-Amino-1-propene-1,1,3-tricarbonitrile, 1, 3:940  
see also 2-Amino-1, 3-tricyano-1-propene
- 3-Aminopropionitrile, 3:939  
see also 3-Aminopropanenitrile
- 1-(3-Aminopropyl)imidazole, 2:727
- 4-Aminopyridine, 3:1008
- 4-Aminoquinoline, 3:1009
- 5-Aminoquinoline, 3:1009
- 8-Aminoquinoline, 3:1009
- N*-Aminorhodanine, 2:610
- 4-Aminosalicylic acid, 3:1004
- Amino-Schaeffer acid, 3:917  
see also 1-Amino-2-hydroxynaphthalene-6-sulfonic acid
- 2-Amino-4-sulfobenzoic acid, 1:268

- 2-Amino-5-sulfobenzoic acid, 1:269  
 2-Aminothiazole nitrate, 3:1010  
 2-Aminothiazol-4-yl acetates, 2:811  
 2-Aminothiophenol, 3:995  
 3-Amino-2-thioxotetrahydro-1,3-thiazin-4-ones, 2:611  
 4-Aminotoluene-2-sulfonanilide, 3:999  
 3-Amino-1,2,4-triazole [61-82-5], 2:664  
 2-Amino-1,1,3-tricyano-1-propene, 1, 3:940  
*see also 2-Amino-1-propene-1, 3-tricarbonitrile*  
 Amixyl, 3:1264  
 Ammelide, 2:551  
 Ammeline, 2:551  
 Ammonia  
   acetylation by ketene, 2:802  
   acylation with carbamoyl chlorides, 3:1275  
   reaction with isocyanates, 3:1275  
 Ammonium dithiocarbamate, 2:602  
 Ammonium fluoroborate, 1:350  
 Amobam, 2:618  
 Amoco process  
   for terephthalic acid, 2:455  
*tert*-Amyl alcohol  
*see also 2-Methyl-2-butanol*, 3:1024  
*α*-Amylcinnamaldehyde, 1:60  
 Amyl ethyl ketone, 2:825  
*see also 5-Methyl-3-heptanone*  
 Amyl Ledate, 2:615  
 Amyl Zimate, 2:615  
 Anavenol, 3:882  
 Anazolone sodium, 3:906  
 Anesthesin, 1:306  
 Anetil, 1:201  
 Angelica lactone, 3:1020  
 Aniline  
   from nitrobenzene, 3:971  
 Aniline-2,5-disulfonic acid, 3:1000  
*m*-Anisidine, 3:1004  
*o*-Anisidine, 3:1003  
*p*-Anisidine, 3:1004–1006  
 Anisole  
*see also Phenyl methyl ether*, 3:1082  
 Anobial  
*see also 5,3', 3:1091, 4'-Trichlorosalicylanilide*  
 Ansar 160, 1:228  
 Antage NBC, 2:615  
 Anthelmintic praziquantel, 3:1147  
 Anthranilic acid, 1:305  
*see also 2-Aminobenzoic acid*  
 Antiblaze, 3:1116  
 Antigene NBC, 2:615  
 Antimony, 1:223  
 Antimony fluoroborate, 1:351  
 Antimycotics  
   dithiocarbamic acid derivatives, 2:614  
 Antioxidants  
   amino acids as, in foodstuffs, 1:195  
 Anti-rheuma, 1:202  
 Antor, 1:208  
 Antracol, 2:618  
 ANTU, 3:898  
*see also 1-Naphthalenethiourea*  
 Aralkylphenols, 3:1065  
 Arasan, 2:618  
 Arazate, 2:616  
 Ardesyl, 1:204  
 Arenesulfonyl isocyanates  
   by phosgenation of ureas, 2:791  
 Argiceto, 1:201  
 Argihepar, 1:201  
 L-Arginine, 1:167, 171, 201  
   L-aspartate, 1:201  
   as drug, 1:201  
   L-glutamate, 1:201  
   hydrochloride, 1:201  
   2-oxoglutarate, 1:201  
   production, 1:180  
   L-pyroglutamate, 1:201  
 Argivene, 1:201  
 Armstrong Acid, 3:877  
*see also Naphthalene-1,5-disulfonic acid*  
*Naphthalene-1,5-disulfonic acid*, 3:874  
 Aromatic hydrocarbons  
   ionic liquids in extraction of, 2:753  
 Arosolvan process, 2:447  
 Arsanilic acid, 1:228  
 Arsenal, 1:207  
 Arsenic compounds, organic, 1:227  
 Arsenobenzenes, 1:229  
 Arsinic acids, 1:228  
 Arsinous acids, 1:228  
 Arsonic acids, 1:228  
 Arsonium salts, 1:227  
 Arsonous acids, 1:227  
 Arsoranes, 1:228  
 Aryl dithiophosphates, 3:1121  
 Arylphosphines  
   tertiary phosphines from, 3:1102  
 Asaprol, 3:891  
 Aslos-C, 1:204  
 L-Asparagine, 1:201  
   as drug, 1:201  
   monohydrate, 1:201  
 L-Asparagine, 1:171  
   production, 1:181  
*α*-Aspartame, 1:195  
 D,L-Aspartic acid, 1:174, 201  
   as drug, 1:201  
   1:201:magnesium salt, tetrahydrate, 1:201  
   potassium salt, semihydrate, 1:201  
   sodium salt, monohydrate, 1:201  
 L-Aspartic acid, 1:171, 201  
   as drug, 1:201  
   ferrous salt, tetrahydrate, 1:201  
   magnesium salt, dihydrate, 1:201  
   potassium salt, semihydrate, 1:201  
   production, 1:180  
   sodium salt, monohydrate, 1:201  
 Asphalt emulsification  
   by fatty amine salts, 1:141  
 Aspisol, 1:202  
 Assert, 1:207  
 Athens, 1:202  
 A-1 Thiocarbamilid, 3:1262  
 Atirozidina, 3:1263  
 Atisane, 3:1187  
 Auranofin, 3:1103  
 Aviglycine, 1:210  
 AZ-100, 2:616  
 Azacycloheptane, 1:131  
*see Hexamethyleneimine*  
 8-Azaisatoic anhydride, 2:492  
 Azelaic acid, 2:592, 585, 586,  
*see also Nonanedioic acid*  
 L-Azetidine-2-carboxylic acid, 1:174  
 Aziridine, 1:233  
 1-Aziridine ethanol, 1:235  
 Aziridines, 1:233  
   toxicology, 1:238  
 Azlactones, 1:170  
 Azobenzene  
   from nitrobenzene, 3:971  
 Azoguard, 3:878  
 Azosemide, 3:1246  
 Azoxybenzene  
   from nitrobenzene, 3:971  
 AZT, 1:14  
 Azurol, 3:883  
*see also 1,5-Naphthalenediol; 1, 5-Dihydroxynaphthalene*
- B**  
 Badional, 3:1263  
 Badische Acid, 3:874  
*see also 2-Aminonaphthalene-8-sulfonic acid*  
 Baking process  
   for production of aminobenzenesulfonic acid, 1:245  
 Bamifylline, 3:1134  
 Banlate, 2:619  
 Barbier reaction, 2:847  
 Barium hydride, 2:676  
 Basamid, 2:619  
 BASIL (Biphasic Acid Scavenging utilizing Ionic Liquids) process,  
   2:750  
 Basolest, 3:1263  
 Basonate, 2:797  
 Basta, 1:206  
 Baum's acid, 3:889  
*see also 1-Hydroxynaphthalene-2-sulfonic acid*

- Baygon, **3:1071**  
 Bayhibit AM, **3:1115**  
 Bayhydur, **2:797**  
 Beckmann rearrangement  
   of triacetylbenzene trioxime, **3:1074**  
 Belacide, **3:1106**  
 Belclene **1:350, 3:1106**  
 Benalaxyl, **1:209**  
 Benthialicarb, **1:208**  
 Benzal chloride, **1:302**  
 Benzaldehyde  
   from benzyl alcohol, **1:318, 3:20**  
   byproduct of toluene oxidation to benzoic acid, **1:299**  
 Benzaldehyde cyanohydrin, **3:943**  
   *see also* *D,L-Mandelonitrile*  
 4-Benzamido-5-hydroxynaphthalene-1,7-disulfonic acid, **3:923**  
   *see also* *N-Benzoyl K Acid*  
 4-Benzamido-5-hydroxynaphthalene-2,7-disulfonic acid, **3:923**  
   *see also* *N-Benzoyl H Acid*  
 Benzenecarboxylic acid, **2:450**  
   *see also* *Benzoic acid*  
 1,3-Benzenedisulfonamide, **1:255**  
 1,2-Benzenedisulfonic acid, **1:245**  
 1,3-Benzenedisulfonic acid, **1:254**  
 1,4-Benzenedisulfonic acid, **1:254**  
 1,3-Benzenedisulfonohydrazide, **1:255**  
 1,3-Benzenedisulfonyl chloride, **1:255**  
 Benzenhexacarboxylic acid, **2:450**  
   *see also* *Mellitic acid*  
 Benzenepentacarboxylic acid, **2:450**  
 Benzenesulfonamide, **1:253**  
 Benzenesulfonic acid, **1:241, 251**  
   anhydrides, **1:243**  
   desulfonation, **1:241**  
 Benzenesulfonohydrazide, **1:251, 254**  
 Benzenesulfonyl chloride, **1:247, 248, 253**  
 1,2,3,4-Benzenetetracarboxylic acid, **2:450**  
   *see also* *Mellophanic acid*  
 1,2,3,5-Benzenetetracarboxylic acid, **2:450**  
   *see also* *Prehnitic acid*  
 1,2,4,5-Benzenetetracarboxylic acid, **2:450**  
   *see also* *Pyromellitic acid*  
 Benzenethiophosphonic acid dichloride, **3:1116**  
 1,2,3-Benzenetricarboxylic acid, **2:450**  
   *see also* *Hemimellitic acid*  
 1,2,4-Benzenetricarboxylic acid, **2:450**  
   *see also* *Trimellitic acid*  
 1,3,5-Benzenetricarboxylic acid, **2:450, 457**  
   *see also* *Trimesic acid*  
 Benzidine, **1:279**  
   determination in urine, **1:286**  
   dihydrochloride, **1:286**  
   disulfate, **1:286**  
   monohydrochloride, **1:286**  
   from nitrobenzene, **3:971**  
   safety precautions, **1:283**  
   sulfate, **1:286**  
   toxicology, **1:292**  
 Benzidine-2,2'-dicarboxylic acid, **1:290**  
 Benzidine-3,3'-dicarboxylic acid, **1:290**  
 Benzidine-2,2'-disulfonic acid, **1:290, 3:996**  
 Benzidine-3,3'-disulfonic acid, **1:291**  
 Benzidine rearrangement, **1:282**  
 Benzidinesulfone, **1:290**  
 Benzidinesulfone-disulfonic acid, **1:291**  
 Benzidine yellow, **1:289**  
 Benzo-15-crown-5, **2:535**  
 1,3-Benzodioxole, **3:1083**  
 Benzoguanamine, **1:303**  
 Benzoic acid **1:297, 2:450, 2:715**  
   *see also* *Benzenecarboxylic acid; Benzoates (esters)*  
   esters, **1:301**  
   salts, **1:301**  
 Benzoin, **2:834**  
   *see also* *2-Hydroxy-1, 2-diphenylethanone*  
 Benzoisothiazole  
   nitramino derivatives, **3:1011**  
 Benzonitrile, **1:303**  
   toxicology, **1:309**  
 Benzophenone, **2:833**  
   *see also* *Diphenyl ketone*  
 Benzophenone-2-carboxylic acid, **1:304**  
 1,2-benzoquinone [*106-51-4*], **1:311**
- 1,4-benzoquinone [*106-51-4*], **1:311**  
 Benzothiazole  
   nitramino derivatives, **3:1011**  
 Benzothiazole-2-thiol, **3:1226**  
 Benzothiazolyl-2-acetonitrile, **3:944**  
   *see also* *2-Cyanomethylbenzothiazole*  
 Benzothiazolyl dithiocarbamates, **2:610**  
 Benzotrithloride, **1:302**  
 2-Benzoylbenzoic acid, **1:304**  
 Benzoyl chloride, **1:302**  
   toxicology, **1:309**  
 Benzoyl cyanide, **3:943**  
   *see also* *Phenylglyoxalonitrile*  
*N-Benzoyl H Acid*, **3:923**  
   *see also* *4-Benzamido-5-hydroxynaphthalene-2,7-disulfonic acid*  
*N-Benzoyl K Acid*, **3:923**  
   *see also* *4-Benzamido-5-hydroxynaphthalene-1,7-disulfonic acid*  
 Benzoyl peroxide, **1:303**  
 Benzoylprop, **1:207**  
 Benzyl acetate, **1:323**  
 Benzyl alcohol, **1:317**  
   toxicology, **1:323**  
 Benzylamine, **1:303**  
 Benzyl benzoate, **1:302, 323**  
 Benzyl chloride, **1:302**  
   benzyl alcohol from, **1:319**  
 4-Benzyl-2-chloro-6-methylphenol, **3:1088**  
   toxicology, **3:1088**  
 2-Benzyl-4-chlorophenol, **3:1086**  
   *see also* *Chlorophene*  
   toxicology, **3:1086**  
 Benzyl cinnamates, **2:530**  
 Benzyl cyanide, **3:943**  
   *see also* *Phenylacetoneitrile*  
 Benzyl 4-hydroxybenzoate, **2:718**  
 Benzyl methyl ketone, **2:833**  
   *see also* *1-Phenyl-2-propanone*  
 2-Benzylphenol, **3:1066**  
 4-Benzylphenol, **3:1066**  
 Benzyl salicylate, **1:323**  
 Beryllium hydride, **2:679**  
 Betaine, **1:174, 201**  
   citrate, **1:201**  
   as drug, **1:201**  
   hydrochloride, **1:201**  
   monohydrate, **1:201**  
 Bialofos, **1:206**  
 Bicyclic monoterpenes, **3:1193**  
 Bicyclic sesquiterpenes, **3:1196**  
 Biguanide [*56-03-1*], **2:659, 668**  
 Bilamafos, **1:206**  
 1,1'-Binaphthyl-8,8'-dicarboxylic acid, **3:905**  
 Binotal, **2:500**  
 Biobor JF, **1:362**  
 Biocatalysis  
   ionic liquids for, **2:748**  
 Bioprotein-Holzinger, **1:202**  
 Bio-Tal, **3:1264**  
 Biotechnology, red, **1:14**  
 Biotechnology, white, **1:11**  
 Bio-Tel, **3:1264**  
 Bisabolane, **3:1187**  
 $\alpha$ -Bisabolene, **3:1196**  
 $\beta$ -Bisabolene, **3:1196**  
 $\gamma$ -Bisabolene, **3:1196**  
 Bisabolol  
   isomers, **3:1196**  
 Bis( $\eta^3$ -allyl)nickel, **3:930**  
 2,2-Bis(4-aminocyclohexyl)-propane, **1:129**  
 Bis(2-aminoethyl)amine, **1:148**  
   *see* *Diethylenetriamine*  
*N,N'*-Bis(2-aminoethyl)ethylenediamine, **1:149**  
   *see* *Triethylenetriamine*  
*N,N'*-Bis(3-aminopropyl)-1,2-diaminoethane, **1:150**  
 Bis(aminothiocarbonyl)disulfanes, **2:604**  
 Bis(aminothiocarbonyl)trisulfanes, **2:606**  
 Bischler-Napieralski reaction, **3:1016**  
 Bis(chloroacetic)anhydride, **2:475**  
 1,2-Bis-(cyanomethyl)benzene, **3:943**  
   *see also* *1,2-Phenylenediacetonitrile*  
 Bis(1,5-cyclooctadiene)nickel, **3:930**  
 Bis( $\eta^5$ -cyclopentadienyl)nickel(II), **3:930**  
   *see also* *Nickelocene*

- Bis(dimethylglyoximate) nickel(II), 3:929  
*see also Nickel(II) dimethylglyoximate*
- Bis(2-ethylhexyl) phosphate, 3:1119
- Bis(2-ethylhexyl)phosphinic acid, 3:1111
- Bis(2-ethylhexyl)phosphonate, 3:1119
- Bis(glycinato) copper(II) hydrate, 1:169
- Bis(2-hydroxy-3-cyclohexyl-5-methylphenyl)methane, 3:1076
- 2,2-Bis(4-hydroxycyclohexyl)propane, 1:46
- Bis(4-hydroxy-3,5-di-*tert*-butylphenyl)methane, 3:1076
- N,N*-Bis(2-hydroxyethyl)glycine, 2:652
- 1,4-Bis(hydroxymethyl)cyclohexane, 1:47  
*see also 1,4-Cyclohexanedimethanol; 1, 4-Dimethylolcyclohexane, toxicology, 1:55*
- 2,2-Bis(4-hydroxy-3-methylphenyl)propane, 3:1076
- Bis(hydroxymethyl)phosphinic acid, 3:1110
- Bis(4-hydroxyphenyl)alkanes  
 alkylphenols from, 3:1046
- $\alpha,\alpha'$ -Bis(4-hydroxyphenyl)-*p*-diisopropylbenzene, 3:1076
- Bis(4-hydroxyphenyl)methane, 3:1076
- 4,4-Bis(4-hydroxyphenyl)valeric acid, 3:1076
- 1,3-Bis(isocyanatomethyl)benzene (XDI), 2:785
- Bis(isocyanatomethyl)-bicyclo[2.2.1]heptane, (NBDI), 2:785
- 1,3-Bis(isocyanatomethyl)cyclohexane (H<sub>6</sub>XDI)<sup>+</sup>, 2:786
- 1,3-Bis(1-isocyanato-1-methylethyl)benzene (*m*-TMXDI), 2:785
- Bismate, 2:615
- Bis(3-methylbutyl)amine, 1:115
- D,L*-Bis(1-methyl)propylamine, 1:115
- Bis(2-methylpropyl)dithiophosphinic acid  
 sodium salt, 3:1111
- [Bis(methylthio)methylene]malononitrile, 2:861
- 1,1-Bis(methylthio)-2-nitroethene  
 from aliphatic nitro compounds, 3:957
- Bismuth diethyldithiocarbamate, 2:605
- N,N'*-Bis(4-nitrophenyl)urea, 3:991
- 1,2-Bis(pentabromophenoxy)ethane, 1:379
- Bisphenol A (2,2-bis(4-hydroxyphenyl)propane), 3:1075  
 4-(alken-2-yl)phenols from, 3:1067  
 hydrogenation, 1:46  
 production, 3:1077  
 toxicology, 3:1079
- Bisphenol A, oligocarbonate cyclic *n* = 1, 1:409
- Bisphenols, 3:1075
- Bisphenol Z (2,2-bis(4-hydroxyphenyl)cyclohexane), 3:1076
- 2,2-Bis-1,3-propanediol, 1:54  
*see Triptaerythritol*
- 1,2-Bis(tetrabromophthalimido)ethane, 1:379
- 1,2-Bis(2,4,6-tribromophenoxy)ethane, 1:379
- Bis(tributyltin) oxide (TBTO), 3:1271
- Bis(trichloromethyl) carbonate  
 in isocyanate production, 2:792
- Bis(trifluoromethyl)phosphine, 3:1100
- Bis(2,4,4-trimethylpentyl)dithiophosphinic acid, 3:1111
- Bis(2,4,4-trimethylpentyl)phosphinic acid, 3:1111
- Bithionol, 3:1091  
*see also 2,2'-Thiobis(4, 6-dichlorophenol)*  
 toxicology, 3:1091
- Biuret, 2:551
- Biuret [108-19-0], 3:1273
- Böniger acid, 3:916  
*see also 1-Amino-2-hydroxynaphthalene-4-sulfonic acid*  
 1-Amino-2-hydroxynaphthalene-4-sulfonic acid, 3:874
- BON acid, 3:874  
*see also 3-Hydroxy-2-naphthoic acid*
- Boranes, 1:352  
 B<sub>2</sub>H<sub>6</sub>, 1:353  
 B<sub>4</sub>H<sub>10</sub>, 1:353  
 B<sub>2</sub>H<sub>9</sub>, 1:353  
 B<sub>10</sub>H<sub>14</sub>, 1:353  
 (CH<sub>3</sub>)<sub>2</sub>S·BH<sub>3</sub>, 1:354
- closo*-Boranes, 1:354, 356
- Borazine, 1:359
- Boric acid esters, 1:360
- Borinic acids, 1:359
- Borohydrides, 1:355  
*see also Boranes*  
 toxicology, 1:363
- Boron compounds, 1:345  
 toxicology, 1:362
- Boron fuels, 1:352
- Boronic acids, 1:359
- Boron nitride  
 films of, on steel, glass etc., 1:360
- Boron sulfide, 1:351
- Boron tetrachloride, 1:351
- Boron tetrafluoride, 1:351
- Boron tribromide, 1:345
- Boron trichloride, 1:345
- Boron trifluoride, 1:345  
 as catalyst for alkylation of phenol, 3:1061  
 diethyl etherate, 1:347
- Boron triiodide, 1:345
- Boroxines, 1:359
- Brassylic acid, 2:585, 593  
*see also Tridecanedioic acid*
- Brestan, 3:1271
- Briphos, 3:1119
- Briquest, 3:1115
- Bromine compounds, organic, 1:367
- Bromoacetic acid, 1:374  
 toxicology, 1:383
- Bromoacetyl bromide, 1:375
- Bromoacetyl chloride, 1:375
- 4-Bromoanisole, 1:369
- Bromobenzene, 1:369
- 1-Bromobutane, 1:369
- 2-Bromobutane, 1:369
- 1-Bromo-4-chlorobenzene, 1:369
- Bromochlorodifluoromethane, 1:369, 377
- 1-Bromo-3-chloro-5,5-dimethylhydantoin, 2:494  
 toxicology, 2:495
- Bromochloromethane, 1:376, 383  
 toxicology, 1:384
- 2-Bromo-6-chloro-4-nitroaniline, 3:994
- Bromochlorophene, 3:1090  
*see also 2,2'-Methylenebis(6-bromo-4-chlorophenol)*  
 toxicology, 3:1090
- 1-Bromo-3-chloropropane, 1:373  
 toxicology, 1:382
- 1-Bromodecane, 1:369
- 4-Bromo-2,6-dimethylphenol, 3:1088  
 toxicology, 3:1088
- 6-Bromo-2,4-dinitroaniline, 3:992
- 1-Bromododecane, 1:369, 372
- 4-(2-Bromoethyl)benzenesulfonamide, 1:258
- 4-(2-Bromoethyl)benzenesulfonic acid, 1:258
- 4-(2-Bromoethyl)benzenesulfonyl chloride, 1:258
- Bromoethylene, 1:372, 383
- 1-Bromo-4-fluorobenzene, 1:369
- 1-Bromohexadecane, 1:369
- 1-Bromohexane, 1:369
- 1-Bromo-4-iodobenzene, 1:369
- Bromomalonalonitrile, 2:860
- Bromomethane, 1:369, 375  
*see also Methyl bromide*  
 toxicology, 1:383
- 1-(Bromomethyl)-3-phenoxybenzene, 1:374  
 toxicology, 1:382
- 1-Bromonaphthalene, 1:369
- $\alpha$ -Bromo-4-nitroacetophenone, 3:1008
- 2-Bromo-4-nitroaniline, 3:991
- (2-Bromo-2-nitroethyl)benzene, 3:960
- 2-Bromo-2-nitropropane-1,3-diol, 3:960
- 1-Bromooctadecane, 1:369
- 1-Bromooctane, 1:369
- 1-Bromopentane, 1:369
- 4-Bromophenol, 1:369
- 1-Bromo-2-phenylethane, 1:373  
 toxicology, 1:382
- 1-Bromopropane, 1:369
- 2-Bromopropane, 1:369
- 3-Bromo-1-propene, 1:369, 376  
*see also Allyl bromide*  
 toxicology, 1:383
- $\beta$ -Bromostyrene, 2:530
- 1-Bromotetradecane, 1:369
- 2-Bromothiophene, 3:1248  
 toxicology, 3:1251
- 2-Bromothiophene [1003-09-4], 3:1245
- 3-Bromothiophene, 3:1248
- 3-bromothiophene, 3:1243
- 2-Bromotoluene, 1:369
- 4-Bromotoluene, 1:369
- Bromotrifluoromethane, 1:369, 377, 383, 384
- Bronner acid, 3:874  
*see also 2-Aminonaphthalene-6-sulfonic acid*
- Bronopol, 3:960

- Brotizolam, 3:1251  
 Bucherer reaction, 3:879, 897  
   amination of hydroxynaphthalenesulfonic acids, 3:901  
 Bucindolol, 3:962  
 Bufomedil, 3:940  
 Bunte salt, 3:870  
 Busan, 3:1205  
 Busan 30, 3:1205  
 Busan 110, 3:1205  
 Butanedioic acid, 2:585  
   *see also Succinic acid*  
 1,2-Butanediol  
   toxicology, 1:55  
 1,3-Butanediol  
   toxicology, 1:55  
 1,4-Butanediol, 1:40  
   dehydrogenation to butyrolactone, 1:392  
   toxicology, 1:55  
 2,3-Butanedione, 2:831  
   *see also Diacetyl*  
 1,4-Butanedisulfonic acid, 3:1153  
*n*-Butanoic acid, 2:436  
   *see also n-Butyric acid*  
 Butasan, 2:615  
 Butazate, 2:615  
 Butene chlorohydrins, 2:507, 513  
*cis*-Butenedioic acid, 2:595  
   *see also Maleic acid*  
*trans*-Butenedioic acid, 2:595  
   *see also Fumaric acid*  
 1-Butene oxide  
   toxicology, 2:642  
 3-Butenoic acid, 1:75  
 3-Buten-2-one, 2:827  
   *see also Methyl vinyl ketone*  
   toxicology, 2:834  
 Butylamine, 1:115, 124  
*N*-Butyl-benzenesulfonamide, 1:254  
 Butyl benzoate, 1:301  
 4-*tert*-Butylbenzoic acid, 1:304  
*tert*-Butyl chloroacetate [107-59-5]  
   chloroacetic acids from, 2:475  
*tert*-Butylurea [1118-12-3], 3:1276  
 Butyl carbamate, 1:400  
 4-*tert*-Butylcatechol, 3:1071  
 Butyl chloroformate, 2:498  
   toxicology, 2:502  
*n*-Butyl cyanoacetate, 2:857  
*cis,trans*-4-*tert*-Butylcyclohexanol, 3:1058  
*cis*-2-*tert*-Butylcyclohexanol, 3:1057  
   acetate, 3:1058  
 4-*tert*-Butylcyclohexanone, 3:1058  
 4-*tert*-Butylcyclohexyl chloroformate  
   *cis*-, 2:498  
   *trans*-, 2:498  
 6-*tert*-Butyl-2-cyclohexyl-4-methylphenol, 3:1065  
 4-Butyl-2,6-di-*tert*-butylphenol, 3:1057  
 4-*tert*-Butyl-2,6-dimethylbenzenesulfonic acid, 1:259  
 2-*tert*-Butyl-4,5-dimethylphenol, 3:1054  
 4-*tert*-Butyl-2,5-dimethylphenol, 3:1054, 1057  
 4-*tert*-Butyl-2,6-dimethylphenol, 3:1054, 1059  
 6-*tert*-Butyl-2,4-dimethylphenol, 3:1054, 1057  
 2-*sec*-Butyl-4,6-dinitrophenol, 3:1006  
   *see also Dinoseb*  
 2-*tert*-Butyl-4,6-dinitrophenol, 3:1006  
   *see also Dimoterb*  
 Butyl ethyl ketone, 2:825  
   *see also 3-Heptanone*  
 2-*tert*-Butyl-4-ethylphenol, 3:1059  
 2-Butyl-2-ethyl-1,3-propanediol (BEPD), 1:43  
 Butyl glycolate, 2:705, 710  
*tert*-Butyl hydroperoxide (TBHP)  
   for epoxidation of olefins, 2:635  
 Butyl 4-hydroxybenzoate, 2:718  
 2-(3-*tert*-Butyl-2-hydroxyphenyl-5-methyl)-2-*H*-5-chlorobenzotriazole, 3:1059  
 1-Butylimidazole  
   toxicology, 2:729  
*n*-Butyl isocyanate (*n*-BI), 2:782  
 Butyllithium, 2:839  
*sec*-Butyllithium, 2:841  
*tert*-Butyllithium, 2:842  
 1-Butyl-3-methylimidazolium tetrafluoroborate  
   thermal stability of ionic liquid, 2:744  
 1-Butyl-3-methylimidazolium hexafluorophosphate  
   preparation, 2:747  
*tert*-Butyl methyl ketone, 2:821  
   *see also 3,3-Dimethyl-2-butanone*  
 2-*tert*-Butyl-4-methylphenol, 3:1054, 1056  
 2-*tert*-Butyl-5-methylphenol, 3:1054, 1056, 1059  
 4-*tert*-Butyl-2-methylphenol, 3:1054, 1056  
 4-*tert*-Butyl-3-methylphenol, 3:1054, 1056  
 5-*tert*-Butyl-3-methylphenol, 3:1054, 1057, 1059  
 6-*tert*-Butyl-2-methylphenol, 3:1054  
 6-*tert*-Butyl-3-methylphenol, 3:1056  
 2-*sec*-Butyl-2-methyl-1,3-propanediol, 1:44  
*tert*-Butyl peroxybenzoate, 1:303  
 2-*sec*-Butylphenol, 3:1053, 1054, 1057  
 3-*tert*-Butylphenol, 3:1054, 1058  
 4-*sec*-Butylphenol, 3:1053  
 4-*tert*-Butylphenol, 3:1054, 1058  
 Butylphenols  
   classification, 3:1060  
*tert*-Butylphenols  
   toxicology, 3:1059  
*sec*-Butyl phenyl ether, 3:1053  
*tert*-Butyl phenyl ether, 3:1053  
 3-(4-*tert*-Butylphenyl)-2-methylpropanal, 1:60, 63  
   *see also Lilial*  
 Butylphosphine, 3:1101  
*tert*-Butylphosphine, 3:1102  
 5-*tert*-Butylsalicylic acid, 3:1058  
 Butyl Tuads, 2:617  
 Butyl Zimate, 2:615  
 Butyl Ziram, 2:615  
 Butyric acid 2:436, 441, 442,  
   *see also n-Butanoic acid*  
   byproduct of naphtha oxidation, 2:440  
 $\gamma$ -Butyrolactam, 3:1137  
   *see also 2-Pyrrolidone*  
 $\beta$ -Butyrolactone, 2:811  
 $\gamma$ -Butyrolactone (BLO), 1:391, 2:705, 3:1138  
   toxicology, 2:713  
 Butyronitrile, 3:937  
   *see also Propyl cyanide*
- C**  
 Cabagin, 1:204  
 Cacodylic acid, 1:228  
 Cadinane, 3:1187  
 Cadmium fluoroborate, 1:351  
 Cadmium pyridylthiocarbamate, 2:605, 615  
 Cadre, 1:207  
 Cafedrine, 3:1134  
 Caffeine, 3:1132  
 Calcium hydride, 2:680  
 Calixarenes  
   e.g., [117397-61-2], 3:1058  
 Calmosensine, 1:205  
 Camphene, 3:1195  
 Camphene oxide, 3:1195  
 Camphenilone, 3:1195  
 Campholene aldehyde, 2:639  
 Camphor, 3:1187  
 Cannizzaro disproportionation, 1:317  
 Capillary isotachopheresis, 1:212  
 Capric acid, 2:436  
   *see also n-Decanoic acid*  
 Caproic acid, 2:436  
   *see also n-Hexanoic acid*  
 Caprolactam  
   from toluene via hexahydrobenzoic acid, 1:307  
 Caprylic acid, 2:436  
   *see also n-Octanoic acid*  
 Captopril, 3:1219  
 Caradate, 2:797  
 Carane, 3:1187  
 Carbaboranes, 1:356  
   toxicology, 1:363  
 Carbamates (salts), 1:399  
 Carbamates (urethanes), 1:399  
 Carbamic acids, 1:399  
   aminolysis of esters of, 3:1275  
 Carbamoyl chlorides, 1:401  
   toxicology, 1:404  
 Carbanions  
   deprotonation with sodium hydride, 2:678



- Carbaryl, 3:880  
*see also 1-Naphthyl-N-methylcarbamate*
- Carbazochrome, 3:1071  
 sodium sulfonate, 3:1071
- Carboalumination reaction  
 of olefins, 1:94
- Carbocysteine, 1:203
- Carbofuran, 1:403, 3:1071
- Carbonic acids  
 aminolysis of esters of, 3:1275
- Carbonic esters, 1:407  
 cyclic, 1:419  
 from oxalic esters, 1:415  
 toxicology, 1:419  
 transesterification, 1:417
- Carbonylation  
 of allyl alcohol, 1:75
- 5,5'-(Carbonyl bis-(oxymethylene))-bis[5-ethyl-1,3-dioxan-2-one], 1:409
- Carbonylhydrido-tris(triphenylphosphine)rhodium(I), 2:698
- Carbonyl iron powder, 2:774
- Carboxamides, 1:114
- Carboxylic acid anhydrides, 2:446
- Carboxylic acids  
 aliphatic, 2:435  
 aromatic, 2:449  
 ketonization, 2:818  
 reduction to alcohols with LiAlH<sub>4</sub>, 2:681
- N-Carboxymethylaminomethanephosphonic acid, 3:1115  
 isopropylammonium salt, 3:1115
- S-Carboxymethyl-L-cysteine, 1:203
- Carboxythiazolidine-2-thione, 2:611
- Cardanol, 3:1041, 1067
- Cardura E, 2:445
- 3-Carene, 3:1193
- Carisoprodol, 1:43
- L-Carnitine, 1:174
- Carticaine, 3:1250
- Carvacrol (5-isopropyl-2-methylphenol), 3:1041, 1050  
 production, 3:1052
- Caryophyllene, 3:1196
- Caryophyllene oxide  
 toxicology, 2:642
- Castor oil  
 sebacic acid from, 2:587
- Catalysis  
 ionic liquids for, 2:748
- Catechol, 3:1068  
*see also Pyrocatechol*  
 toxicology, 3:1071
- Catiofast, 1:234
- Cefamandol, 3:1209
- Cefoxitin, 3:1247
- CeKanoic acids, 2:440
- Celanol, 3:1119
- Cellulose acetate butyrate (CAB), 2:442
- Cephaloridine, 3:1247
- Cephalosporin  
 as pharmaceuticals, 3:1229
- Cephalothin, 3:1247
- Cercobin M, 3:1265
- Cesium hydride, 2:676
- Cetiedil, 3:1249, 1250
- Cetyl chloroformate, 2:498  
 toxicology, 2:501
- Charcoal  
 as catalyst in thiol production, 3:1223
- Chavicol, 3:1041  
*see also 4-Allylphenol*
- Cheihepar, 1:201
- Chelating agents, 2:645  
*see also Complexing agents; Sequestering agents*
- Chemitite PZ, 1:235
- Chiral compounds, 1:167
- Chloral  
*see also Trichloroacetaldehyde*  
 hydrate, 2:467
- Chloramine-B, 2:495
- Chloramine T, 2:492, 494
- Chloroacetaldehyde, 2:461  
 diethyl acetal, 2:463  
 dimethyl acetal, 2:463  
 general formula, 2:461  
 hemihydrate, 2:462  
 toxicology, 2:469
- Chloroacetaldehyde dimethyl acetal, 2:464
- Chloroacetaldehydeuses of, 2:464
- Chloroacetamide, 2:475, 480
- Chloroacetic acid, 2:473  
 toxicology, 2:486
- Chloroacetic acid (chloroethanoic acid, monochloroacetic acid) [79-11-8], 2:473
- Chloroacetic acid esters, 2:479
- 2-Chloroacetoacetate, 2:810
- 4-Chloroacetoacetate, 2:810
- 4-Chloroacetoacetyl chloride, 2:810
- Chloroacetonitrile, 3:938  
*see also Chloromethanenitrile*
- Chloroacetyl chloride, 2:475, 479, 805
- Chloroalanes, 2:689
- Chloroamines, 2:491  
 mono-, 2:491
- 4-Chloro-2-aminodiphenyl ether, 3:986
- 2-Chloroaniline, 3:982
- 3-Chloroaniline, 3:983
- 4-Chloroaniline, 3:983
- 2-Chloroaniline-5-sulfonic acid, 3:1000
- 4-Chloro-*o*-anisidine, 3:1004
- N-Chlorobenzenesulfonamide, 2:495
- 4-Chlorobenzenesulfonamide, 1:260
- 4-Chlorobenzenesulfonic acid, 1:260
- 4-Chlorobenzenesulfonyl chloride, 1:260
- 2,2'-Chlorobenzidine, 1:288
- 2-Chlorobenzoic acid, 1:304
- 3-Chlorobenzoic acid, 1:305
- 4-Chlorobenzoic acid, 1:305
- 2-Chlorobenzonitrile, 3:944  
*see also 2-Chloro-1-cyanobenzene*
- 4-Chlorobenzonitrile, 3:944  
*see also 4-Chloro-1-cyanobenzene*
- 4-Chlorobenzyl-N,N-diethylcarbamoil sulfoxide, 3:1176
- (*o*-Chloro-benzylidene)malononitrile, 2:864
- 4-Chlorobutanenitrile, 3:940  
*see also 4-Chlorobutyronitrile*
- 3-Chlorobutanoic acid, 2:447
- 1-Chloro-2-butanol, 2:507
- 2-Chloro-1-butanol, 2:507
- 3-Chloro-1-butanol, 2:507
- 3-Chloro-2-butanol, 2:507
- 4-Chloro-1-butanol, 2:507
- 4-Chloro-2-butanol, 2:507
- 4-Chlorobutyronitrile, 3:940  
*see also 4-Chlorobutanenitrile*
- Chlorocarboxylic acids, 2:447
- 1-Chloro-2-chloromethyl-2-propanol, 2:507
- 4-Chloro-N-[(4-chlorophenyl)sulfonyl] benzenesulfonamide, 1:260
- p*-Chloro-*m*-cresol (PCMC)  
*see also 4-Chloro-3-methylphenol*, 3:1086
- 2-Chloro-1-cyanobenzene, 3:944  
*see also 2-Chlorobenzonitrile*
- 4-Chloro-1-cyanobenzene, 3:944  
*see also 4-Chlorobenzonitrile*
- 1-Chloro-2-cyano-4-nitrobenzene, 3:944  
*see also 2-Chloro-5-nitrobenzonitrile*
- 1-Chloro-4-cyano-3-nitrobenzene, 3:944  
*see also 4-Chloro-2-nitrobenzonitrile*
- 2-Chloro-1-cyano-4-nitrobenzene, 3:944  
*see also 2-Chloro-4-nitrobenzonitrile*
- 4-Chloro-2-cyclopentylphenol, 3:1086  
 toxicology, 3:1087
- 5-Chloro-2-(2,4-dichloro)-phenoxyphenol, 3:1089  
*see also Triclosan*
- 4-Chloro-2,5-dimethoxyaniline, 3:1005
- 5-Chloro-2,4-dimethoxyaniline, 3:986
- 4-Chloro-2,5-dimethoxynitrobenzene, 3:1005
- 3-Chloro-4,4-dimethyl-2-oxazolidinone, 2:494
- 4-Chloro-3,5-dimethylphenol  
 toxicology, 3:1087
- 3-Chloro-2,2-dimethylpropanoic acid, 2:447
- 1-Chloro-2,4-dinitrobenzene, 3:984
- 2-Chloro-1,3-dinitrobenzene, 3:992
- 2-Chloro-3,5-dinitrobenzenesulfonic acid, 3:1001
- 4-Chloro-3,5-dinitrobenzenesulfonic acid, 3:992, 1001
- 4-Chloro-3,5-dinitrobenzotrifluoride, 3:988
- 2-Chloroethanesulfonic acid, 3:1158
- Chloroethanoic acid Chloroacetic acid (chloroethanoic acid, monochloroacetic acid) [79-11-8], 2:473

- 2-Chloro-1-ethanol, **2:506**  
*see also Ethylene chlorohydrin*
- 2-Chloroethyl benzenesulfonate, **1:253**
- 2-Chloroethyl chloroacetate, **2:463**
- 2-Chloroethylphosphonic acid  
 sodium salt, **3:1115**
- Chloroformic esters, **2:497**  
 toxicology, **2:500**
- N*-Chloroglycolurils, **2:494**
- $\alpha$ -Chlorohydrin, **2:506**  
 toxicology, **2:515**
- $\beta$ -Chlorohydrin, **2:506**
- Chlorohydrins, **2:505**  
 toxicology, **2:514**
- 3-Chloro-4-hydroxybenzenesulfonic acid, **1:269**
- 5-Chloro-2-hydroxybenzenesulfonic acid, **1:269**
- 5-Chloro-2-hydroxybiphenyl, **3:1087**  
*see also Monochloro-*o*-phenylphenol*  
 toxicology, **3:1087**
- 3-Chloro-4-hydroxy-5-nitrobenzenesulfonic acid, **1:269**
- 1-Chloro-3-hydroxypropane, **2:506**
- 5-Chloroindole, **2:737**
- N*-Chloroisocyanuric acids, **2:493**  
 toxicology, **2:495**
- 4-Chloro-6-isopropyl-3-methylphenol, **3:1087**  
 toxicology, **3:1087**
- N*-Chloro-*N*-metallocarbamidates, **2:492**
- Chloromethanenitrile, **3:938**  
*see also Chloroacetoneitrile*
- Chloromethanesulfinyl chloride, **3:1157**
- 3-Chloro-4-methylbenzenesulfonamide, **1:267**
- 3-Chloro-4-methylbenzenesulfonic acid, **1:267**
- 4-(Chloromethyl)benzenesulfonic acid, **1:257**
- 5-Chloro-2-methylbenzenesulfonic acid, **1:267**
- 3-Chloro-4-methylbenzenesulfonyl chloride, **1:267**
- 4-(Chloromethyl)benzenesulfonyl chloride, **1:257**
- 1-Chloromethyl-4-nitrobenzene, **3:987**  
*see also 4-Nitrobenzyl chloride*
- 3-Chloro-2-methyl-5-nitrobenzenesulfonic acid, **3:1002**  
*see also 6-Chloro-4-nitrotoluene-2-sulfonic acid*
- 3-Chloro-4-methyl-5-nitrobenzenesulfonic acid, **3:1002**  
*see also 6-Chloro-2-nitrotoluene-4-sulfonic acid*
- 4-Chloro-3-methylphenol  
 toxicology, **3:1086**
- 2-Chloro-2-methyl-1-propanol, **2:507**
- 2-Chloro-1-methyl-1-pyrrolidinium chloride, **3:1139**
- 2-chloromethylthiophene, **3:1249**
- 2-Chloro-4-nitroaniline, **3:994**
- 4-Chloro-2-nitroaniline, **3:994**
- 2-Chloronitrobenzene (OCNB), **3:982**  
*see also 2-Nitrochlorobenzene*
- 3-Chloronitrobenzene, **3:982**  
*see also 3-Nitrochlorobenzene*
- 4-Chloronitrobenzene (PCNB), **3:983**  
*see also 4-Nitrochlorobenzene*
- 4-Chloro-2-nitrobenzenesulfonamide, **3:1000**
- 4-Chloro-3-nitrobenzenesulfonamide, **3:1001**
- 2-Chloro-5-nitrobenzenesulfonic acid, **3:999**
- 4-Chloro-2-nitrobenzenesulfonic acid, **3:1000**
- 4-Chloro-3-nitrobenzenesulfonic acid, **3:982, 1000**
- 5-Chloro-2-nitrobenzenesulfonic acid, **3:1001**
- 6-Chloro-3-nitrobenzenesulfonic acid, **3:983**
- 2-Chloro-5-nitrobenzenesulfonyl chloride, **3:1000**
- 4-Chloro-2-nitrobenzenesulfonyl chloride, **3:1000**
- 4-Chloro-3-nitrobenzenesulfonyl chloride, **3:1001, 1002**
- 4-Chloro-3-nitrobenzoic acid, **1:307**
- 2-Chloro-4-nitrobenzonitrile, **3:944**  
*see also 2-Chloro-1-cyano-4-nitrobenzene*
- 2-Chloro-5-nitrobenzonitrile, **3:944**  
*see also 1-Chloro-2-cyano-4-nitrobenzene*
- 4-Chloro-2-nitrobenzonitrile, **3:944**  
*see also 1-Chloro-4-cyano-3-nitrobenzene*
- 2-Chloro-5-nitrobenzotrifluoride, **3:988**
- 4-Chloro-3-nitrobenzotrifluoride, **3:988**
- 4-Chloro-2-nitrodiphenyl ether, **3:986**
- 4-Chloro-2-nitro-1-methoxybenzene, **1:290**
- 4-Chloro-2-nitrophenol, **3:1003**
- N*-(2-Chloro-4-nitrophenyl)-5-chlorosalicylanilide (niclosamid), **3:994**
- 2-Chloro-4-nitrotoluene, **3:987**  
*see also 4-Nitro-2-chloro-1-methylbenzene*
- 2-Chloro-6-nitrotoluene, **3:987**  
*see also 2-Nitro-6-chloro-1-methylbenzene*
- 4-Chloro-2-nitrotoluene, **3:986**  
*see also 2-Nitro-4-chloro-1-methylbenzene*
- 4-Chloro-3-nitrotoluene, **3:986**
- Chloronitrotoluenes, **3:986**  
 toxicity, **3:987**
- 6-Chloro-2-nitrotoluene-4-sulfonic acid, **3:1002**  
*see also 3-Chloro-4-methyl-5-nitrobenzenesulfonic acid*
- 6-Chloro-4-nitrotoluene-2-sulfonic acid, **3:1002**  
*see also 3-Chloro-2-methyl-5-nitrobenzenesulfonic acid*
- Chlorophene, **3:1086**  
*see also 2-Benzyl-4-chlorophenol*
- 2-Chlorophenol  
 catechol from, **3:1069**
- Chlorophenols, **2:520**  
*see also Phenols, chlorinated*
- Chlorophenoxyalkanoic acids  
 environmental aspects, **2:525**  
 toxicology, **2:523**
- 4-Chlorophenyl benzenesulfonate, **1:253**
- 3-Chlorophenyl isocyanate (m-CPI), **2:782**
- 4-Chlorophenyl isocyanate (p-CPI), **2:782**
- Chloropicrin, **3:960**  
*see also Trichloronitromethane*
- Chloropivalic acid, **2:447**
- 2-Chloro-1,3-propanediol, **2:506**
- 3-Chloro-1,2-propanediol, **2:506**
- 3-Chloropropanenitrile, **3:939**  
*see also 3-Chloropropionitrile*
- 1-Chloro-2-propanol, **2:506**  
 toxicology, **2:515**
- 2-Chloro-1-propanol, **2:506, 511**  
*see also 2-Propylene chlorohydrin*
- 3-Chloro-1-propanol, **2:506**
- 3-Chloropropene, **1:67**  
*see Allyl chloride*
- 3-Chloropropionic acid, **2:447**
- 3-Chloropropionitrile, **3:939**  
*see also 3-Chloropropanenitrile*
- N*-Chloro-2,3-pyridinedicarboximide, **2:492**
- 1-Chloro-2,5-pyrrolidinedione, **2:494**
- N*-Chlorosuccinimide, **2:492, 494**  
 toxicology, **2:495**
- N*-Chlorosulfamic acid, **2:492**
- 6-Chloro-7-sulfamoyl-1,2,4-benzothiadiazine-1,1-dioxide, **1:272**
- Chlorosulfonation, **3:982**
- 5-(Chlorosulfonyl)-2-hydroxybenzoic acid, **1:269**
- Chlorosulfuric acid  
 as sulfonating agent, **1:243**  
 as sulfonation agent, **1:243**
- 8-Chlorotheophylline, **3:1134**
- 5-Chlorothiadiazole, **2:463**
- 2-Chlorotoluene, **1:242**
- 4-Chlorotoluene, **1:305**
- 2-Chloro-4-toluidine, **3:987**
- 4-Chloro-2-toluidine, **3:986**
- 6-Chloro-2-toluidine, **3:987**
- 3-Chloro-4-tolyl isocyanate (3-Cl-4-TI), **2:782**
- (4-Chloro-*o*-tolylloxy)acetic acid (MCPA), **2:520**
- 4-(4-Chloro-*o*-tolylloxy)butyric acid (MCPB), **2:520**
- 2-(4-Chloro-*o*-tolylloxy)propionic acid, **2:520**  
*see also Mecaprop*
- 4-Chloro-2-trifluoromethylaniline, **3:988**
- 4-Chloro-3-(trifluoromethyl)benzenesulfonyl chloride, **1:267**
- 4-Chloro-1,3-xylene  
 separation, from its isomers, **1:242**
- 4-Chloro-3,5-xyleneol, **3:1087**  
*see also 4-Chloro-3,5-dimethylphenol*
- Chlorphonium, **3:1106**
- Choldestal, **1:201**
- Chromotropic acid, **3:896**  
*see also 1,8-Dihydroxynaphthalene-3,6-disulfonic acid*  
*1,8-Dihydroxynaphthalene-3,6-disulfonic acid*, **3:874**
- Cicatrex, **1:201, 202**
- Cimetidine  
 from methyl isothiocyanate, **3:1209**
- 1,8-Cineole, **3:1192**
- Cinnamaldehyde, **1:60, 64, 2:530**  
*see also 3-Phenyl-2-propenal*
- Cinnamic acid, **2:529**  
*cis*, **2:529**  
*trans*, **2:529**  
 toxicology, **2:531**

- Cinnamic acid esters, 2:531  
 Cinnamoyl chloride, 2:529  
 Cinnamyl cinnamate, 2:530  
 Circular dichroism (CD), 1:168  
 cis-Cyclooctene [931-87-3], 2:566  
 Citraconic acid, 2:595  
   *see also 2-Methyl-cis-butenedioic acid*  
 Citric acid, 2:705, 3:1020  
 Citrulline, 1:201  
 D-Citrulline, 1:174  
 L-Citrulline, 1:174  
 Claisen condensation, 2:530, 3:1160  
   retro-Claisen condensation, 3:1018  
 Claisen rearrangement  
   of allyl aryl ethers, 3:1046  
 Claisen solution, 3:1039  
 Cleanal, 1:203  
 Clenbuterol, 3:1008  
 1,6-Cleve's acid, 3:874  
   *see also 1-Aminonaphthalene-6-sulfonic acid*  
 1,7-Cleve's acid, 3:874  
   *see also 1-Aminonaphthalene-7-sulfonic acid*  
 Climbazole, 2:728  
 Clopidogrel, 3:1248  
 CLT acid, 1:273  
 Coal  
   bituminous, alkylphenols from, 3:1041  
 Coating  
   electroless deposition of metals by NaBH<sub>4</sub>, 2:687  
   of Ti on ceramics from titanium hydride, 2:696  
 Cobalt fluoroborate, 1:351  
 Coco amine, 1:137  
 Copper dithiocarbamates, 2:605, 615  
 Copper fluoroborate, 1:351  
 Corial Härter AZ, 1:235  
 Coronands, 2:533  
 Coronate, 2:797  
 Corrosion inhibitors  
   fatty amine salts, 1:141  
 Corroverlan, 1:201  
 Corynebacterium glutamicum  
   in tyrosine production, 1:189  
 Cosmetics  
   amino acids in, 1:205  
 Cosmonate, 2:797  
 Cotane, 3:1081  
 Cotton effect, 1:168  
 Creatine, 1:174  
 Creatine [57-00-1], 2:665  
 p-Cresidine, 3:986  
 Cresol  
   isopropylphenols from, 3:1051  
 Cresotic acids  
   m-, 2:719  
   o-, 2:719  
   p-, 2:719  
 Crestor, 1:12  
 Crocein acid (Bayer acid), 3:874  
   *see also 2-Hydroxynaphthalene-8-sulfonic acid*  
 Crosslinker CX 100, 1:235  
 12-Crown-4, 2:535  
 15-Crown-5, 2:535  
 18-Crown-6, 2:535  
 21-Crown-7, 2:535  
 Crown ethers, 2:533  
   complexes, 2:536  
 CR 39 polymer, 1:80  
 Crystallization  
   chloroacetic acid, 2:476  
 CS-gas, 2:864  
   *see (o-Chloro-benzylidene)malononitrile*  
 p-Cumenol (4-isopropylphenol), 3:1041, 1050  
 4-Cumylphenol (4-( $\alpha,\alpha$ -dimethylbenzyl)phenol), 3:1066  
 Cuprimine, 1:205  
 Cure-rite 1:18, 2:616, 617  
 Cyanex, 3:1108, 1111  
 Cyanex 272, 3:1102, 1111  
 Cyanoacetaldehyde, 3:940  
   *see also 3,3-Dimethoxypropanenitrile*  
 Cyanoacetamide, 2:857  
 Cyanoacetates, 2:857  
   synthetic routes, 2:852  
 Cyanoacetic acid, 2:475, 857  
   toxicology, 2:864  
 1-Cyano-2,6-dichlorobenzene, 3:944  
   *see also 2,6-Dichlorobenzonitrile*  
 1-Cyano-2,6-difluorobenzene, 3:944  
   *see also 2,6-Difluorobenzonitrile*  
 4-Cyano-2,2-dimethylbutanal, 2:588  
 2-Cyano-4,6-dinitroaniline, 3:994  
 Cyanogen chloride  
   cyanuric chloride via, 2:555  
 1-Cyano-4-hydroxybenzene, 3:945  
   *see also 4-Hydroxybenzonitrile*  
 Cyanol, 3:914  
   *see also 8-Amino-2-naphthol*  
   8-Amino-2-naphthol, 3:874  
 Cyanomethylamine, 3:939  
   *see also Aminoacetoneitrile*  
 Cyanomethylation  
   of ethylenediamine, 2:647  
 2-Cyanomethylbenzothiazole, 3:944  
   *see also Benzothiazoyl-2-acetonitrile*  
 1-Cyanonaphthalene, 3:945  
   *see also 1-Naphthoic acid nitrile*  
 2-Cyanonaphthalene, 3:945  
   *see also 2-Naphthoic acid nitrile*  
 6-Cyano- $\beta$ -naphthol, 3:945  
   *see also 6-Hydroxy-2-naphthoic acid nitrile*  
 2-Cyano-4-nitroaniline 3:944, 994, 1011,  
   *see also 2-Amino-5-nitrobenzonitrile*  
 Cyanonitroanilines, 3:994  
 Cyanuric acid [108-80-5], 2:543, 3:1273  
 Cyanuric chloride, 2:543, 552  
 Cyclamenaldehyde, 1:60, 63  
   *see also 3-(4-Isopropylphenyl)-2-methylpropanal*  
 Cyclandelate, 2:721  
 Cycloalkyleneureas, 3:1275  
 Cycloalkylphenols, 3:1064  
   1,3-Cyclobutanedione, 2:806  
 Cyclodecanone, 2:827  
 Cyclododecane [294-62-2], 2:566  
 Cyclododecanone, 2:827  
 1,5,9-Cyclododecatriene  
   cis,cis,cis- [4736-48-5], 2:566  
   cis,cis,trans- [2765-29-9], 2:566  
   cis,trans,trans- [706-31-0], 2:566  
   trans,trans,trans- [676-22-1], 2:566  
 (Cyclododeca-1,5,9-triene)nickel, 3:929  
 Cyclododecatrienes, 2:565  
 Cyclododecene [1501-82-2], 2:565  
 Cyclododecylamine, 1:129  
 Cycloheptanone, 2:826  
 Cyclohexanecarboxylic acid, 1:307  
   *see also Hexahydrobenzoic acid*  
 Cyclohexanethiol, 3:1217  
 Cyclohexene oxide  
   toxicology, 2:642  
 3-Cyclohexenylmethyl-3'-cyclohexene carboxylate, 2:640  
 D-Cyclohexylalanine, 1:174  
 Cyclohexylamine, 1:126  
   toxicology, 1:155  
 Cyclohexyl chloroformate, 2:498  
 Cyclohexyldimethylamine, 1:127  
   *see N,N-Dimethylcyclohexylamine*  
 Cyclohexyl isocyanate (c-HI), 2:782  
 2-Cyclohexyl-4-methylphenol, 3:1065  
 2-Cyclohexyl-6-methylphenol, 3:1065  
 2-Cyclohexylphenol, 3:1065  
 4-Cyclohexylphenol, 3:1065  
 Cyclohexylphosphine, 3:1100  
 3-Cyclohexylpropionic acid, 2:530  
 N-Cyclohexylpropylene-1,3-diamine, 1:146  
   *see 1-Amino-3-cyclohexylaminopropane*  
 Cyclooctadiene, 2:566, 567  
 1,5-Cyclooctadiene (111-78-4)  
 1,5-Cyclooctadiene (COD)  
   Ni(COD)<sub>2</sub>, 3:930, 2:566  
 Cyclooctanone, 2:827  
 Cyclooctylamine, 1:129  
 Cyclopentadiene, 2:569  
   toxicology, 2:577  
 Cyclopentanone, 2:826  
   toxicology, 2:834  
 Cyclopentene, 2:569, 574

- toxicology, 2:578  
 Cyclopentylamine, 1:126  
 2-Cyclopentylphenol, 3:1065  
 4-Cyclopentylphenol, 3:1065  
 Cyclotetradecanone, 2:827  
 Cytosin, 3:1210, 1265  
 Cypure, 3:1102  
 L-Cysteine, 1:167, 171, 201, 3:1222  
   as drug, 1:201  
   hydrochloride, 1:201  
   hydrochloride monohydrate, 1:201  
 Cysteine as flavor enhancer, 1:194  
 Cystin "Brunner", 1:201
- D**  
 2,4-D, 2:519  
   *see also* (2,4-Dichlorophenoxy)acetic acid  
   tolerances for residues, 2:525  
   toxicology, 2:523  
 δδ Acid, 3:874  
   *see also* 1-Hydroxynaphthalene-4, 8-disulfonic acid  
 Dactin, 2:494  
 Dahl's Acid II, 3:874, 6-disulfonic acid  
   *see also* 1-Aminonaphthalene-4  
 Dahl's Acid III, 3:874, 7-disulfonic acid  
   *see also* 1-Aminonaphthalene-4  
 Dakin oxidation, 3:1073  
 Dalapon, 2:447  
 Dapral, 3:1119  
 Dapsone, 3:983  
   *see also* 4,4'-Diaminodiphenyl sulfone  
 Darzens glycidic ester synthesis, 1:61  
 Darzens reaction, 2:636  
 Dazomet, 2:619  
 2,4-DB, 2:521  
 DCC-Na  
   toxicology, 2:495  
 DDQ [8*a*-5*b*-2], 1:311  
 Dealkylation  
   of tertiary amines, 1:117  
 Decaborane, 1:353  
   toxicology, 1:362  
 Decabromobiphenyl oxide, 1:379  
   toxicology, 1:385  
 (3*S*,4*aS*,8*aS*)-Decahydroisooquinolinecarboxylic acid, 1:174  
 Decanedioic acid, 2:585  
   *see also* Sebacic acid  
 1,10-Decanediol, 1:46  
 Decanoic acid, 2:436, 445  
   *see also* Capric acid  
 Decylamine, 1:115, 137  
 1-Decylimidazole  
   toxicology, 2:729  
 Dehydroacetic acid, 2:810  
 Delgesic, 1:202  
 Deltamin, 3:900  
   *see also* 1,8-Diaminonaphthalene; 1, 8-Naphthalenediamine  
 Depen, 1:205  
 Depsides, 2:715  
 Depsidone, 2:715  
 Dequest, 3:1115  
 Dequest 2010/2016, 3:1115  
 Dermatol, 2:721  
 Designer solvents, 2:742  
 Desmodur, 2:797  
 Desulfonation  
   of benzenesulfonic acids, 1:241  
 Devrinol, 3:880  
 Dexsil, 1:356  
 Dextril 300 GC, 1:357  
 Diacetone, 3:940  
   *see also* 3-Amino-3-methylacrylonitrile  
 Diacetyl, 2:831  
   *see also* 2,3-Butanedione  
 N,N'-Diacylbenzidine, 1:286  
 N,N'-Diacyl-3,3'-dichlorobenzidine, 1:288  
 Dialkyl alkyl phosphonates, 3:1116  
 O,O'-Dialkyl dithiophosphates  
   (CH<sub>2</sub>CH(C<sub>2</sub>H<sub>5</sub>)(CH<sub>2</sub>)<sub>3</sub>CH<sub>3</sub>O)<sub>2</sub>P(S)SH, 3:1121  
   (CH<sub>2</sub>CH(CH<sub>3</sub>)<sub>2</sub>O)<sub>2</sub>P(S)SH, 3:1121  
   (CH(CH<sub>3</sub>)C<sub>2</sub>H<sub>5</sub>O)<sub>2</sub>P(S)SH, 3:1121  
   (CH(CH<sub>3</sub>)<sub>2</sub>O)<sub>2</sub>P(S)SH, 3:1121  
   (C<sub>2</sub>H<sub>5</sub>O)<sub>2</sub>P(S)SH, 3:1121  
   (CH<sub>3</sub>O)<sub>2</sub>P(S)SH, 3:1121  
 1,3-Dialkylimidazolium alkyl sulfate  
   preparation, 2:746  
 Dialkylmagnesium compounds, 2:680  
 Dialkyl phosphates, 3:1119  
 Dialkyl phosphonates  
   (CH<sub>2</sub>C(C<sub>2</sub>H<sub>5</sub>)H(CH<sub>2</sub>)<sub>3</sub>CH<sub>3</sub>O)<sub>2</sub>P(O)H, 3:1113  
   (C<sub>2</sub>H<sub>5</sub>O)<sub>2</sub>P(O)H, 3:1113  
   (CH<sub>3</sub>O)<sub>2</sub>P(O)H, 3:1113  
   (C<sub>4</sub>H<sub>9</sub>O)<sub>2</sub>P(O)H, 3:1113  
   (C<sub>12</sub>H<sub>25</sub>O)<sub>2</sub>P(O)H, 3:1113  
 Diallyl adipate, 1:78  
 Diallylamine, 1:82, 85, 115  
 Diallyl carbonate, 1:408  
 Diallyl ether, 1:75  
   toxicology, 1:84  
 Diallyl fumarate, 1:78  
   copolymers of, 1:81  
 Diallyl isophthalate, 1:78  
   polymers of, 1:80  
 Diallyl maleate  
   copolymers of, 1:81  
   toxicology, 1:84  
 Diallyl phthalate, 1:78, 79  
   polymers and copolymers of, 1:80  
   toxicology, 1:84  
 Diallyl sebacate, 1:78, 79  
 Diallyl succinate, 1:78  
 2,4-Diaminoacetanilide, 3:992  
 2,4-Diaminoanisole, 3:1005  
 2,5-Diamino-1,4-benzenedisulfonic acid, 1:264  
 4,6-Diamino-1,3-benzenedisulfonic acid, 1:264  
 2,4-Diaminobenzenesulfonic acid, 1:264, 3:997  
 2,5-Diaminobenzenesulfonic acid, 3:999  
 4,4'-Diaminobiphenyl-2,2'-dicarboxylic acid, 1:290  
 4,4'-Diaminobiphenyl-3,3'-dicarboxylic acid, 1:290  
 4,4'-Diaminobiphenyl-2,2'-disulfonic acid, 1:290  
 4,4'-Diaminobiphenyl-3,3'-disulfonic acid, 1:291  
 1,3-Diaminobutane, 1:147  
 1,4-Diaminobutane, 1:147  
 2,3-Diamino-2-butenedinitrile, 3:940  
   *see also* Diaminomaleonitrile  
 1,10-Diaminododecane, 1:147  
 3,7-Diaminodibenzothioephene-5,5-dioxide, 1:291  
 4,4'-Diaminodicyclohexylmethane, 1:129  
   toxicology, 1:155  
 4,4'-Diamino-5,5-dimethylbiphenyl-2,2'-disulfonic acid, 1:291  
 4,4'-Diaminodiphenylamine-2-sulfonic acid, 3:1000  
 4,4'-Diaminodiphenyl sulfone, 3:983  
   *see also* Dapsone  
 1,12-Diaminododecane, 1:147  
 1,2-Diaminoethane, 1:143  
   *see also* Ethylenediamine  
 Diaminomaleonitrile (DAMN), 3:940  
   *see also* 2,3-Diamino-2-butenedinitrile  
 1,5-Diaminonaphthalene, 3:899  
   *see also* Alphanin; 1, 5-Naphthalenediamine  
 1,8-Diaminonaphthalene, 3:900  
   *see also* 1,8-Naphthalenediamine; Deltamin  
 3,8-Diaminonaphthalene-1,5-disulfonic acid, 3:912  
   *see also* Amino C acid  
 4,8-Diaminonaphthalene-2,6-disulfonic acid, 3:912  
 1,3-Diaminonaphthalene-8-sulfonic acid, 3:907  
 1,4-Diaminonaphthalene-2-sulfonic acid, 3:912  
 4,5-Diaminonaphthalene-1-sulfonic acid, 3:912  
 4,5-Diaminonaphthalene-2,7-sulfonic acid, 3:913  
   *see also* Alen acid  
 5,6-Diaminonaphthalene-1-sulfonic acid, 3:912  
 6,8-Diaminonaphthalene-1-sulfonic acid, 3:912  
 3,4-Diaminonitrobenzene, 3:992  
 1,8-Diaminooctane, 1:147  
 1,5-Diaminopentane, 1:147  
 1,2-Diaminopropane, 1:145  
 1,3-Diaminopropane, 1:145  
 1,2,3-Diaminopropionic acid, 1:174  
 4,4'-Diaminostilbene-2,2'-disulfonic acid (DAS), 3:998  
 2,4-Diaminotoluene, 3:976, 977  
 2,6-Diaminotoluene-4-sulfonic acid, 3:999  
 3,5-Diamino-2,4,6-trimethylbenzenesulfonic acid, 3:980  
 6,8-Dianilinonaphthalene-1-sulfonic acid, 3:907, 912  
   *see also* Diphenyl epsilon acid  
*o*-Dianisidine, 1:289, 3:1003  
   dihydrochloride, 1:289

- safety precautions, 1:284  
toxicology, 1:293
- Diaryl phosphonates  
(C<sub>6</sub>H<sub>5</sub>O)<sub>2</sub>P(O)H, 3:1113
- Diaza-15-crown-5, 2:535  
Diaza-18-crown-6, 2:535  
Diaza-21-crown-7, 2:535  
Diazo-1,2,4-acid, 3:916
- Diazo compounds  
conversion to sulfonic acids, 1:245
- 3-Diazo-3,4-dihydro-4-oxonaphthalene-1-sulfonic acid, 3:918
- Dibenzensulfonfylamines, 1:250
- Dibenzo-18-crown-6, 2:535  
Dibenzo-24-crown-8, 2:535  
Dibenzo-18-crown-6-polyether, 3:1069  
Dibenzo [*d,f*]-[1,3] dioxepin-6-one, 1:409  
Dibenzopyridino-18-crown-6, 2:535  
Dibenzyl ether, 1:322  
byproduct of benzyl chloride hydrolysis, 1:319
- Diborane, 1:352, 2:685  
toxicology, 1:362
- Dibromoacetic acid, 1:375  
1,2-Dibromobenzene, 1:369  
1,3-Dibromobenzene, 1:369  
1,4-Dibromobenzene, 1:369  
4,4'-Dibromo-1,1'-biphenyl, 1:369  
*trans*-1,4-Dibromo-2-butene, 1:369  
1,2-Dibromo-3-chloropropane (DBCP), 1:372  
1,2-Dibromomethane (EDB), 1:369, 371  
see also *Ethylene dibromide*  
toxicology, 1:382
- cis*-1,2-Dibromoethene, 1:369  
1,1-Dibromoethene, 1:369  
1-Dibromoethyl-3,4-dibromocyclohexane, 1:379  
Dibromomalononitrile, 2:860  
Dibromomethane, 1:369, 376  
see also *Methylene bromide*  
toxicology, 1:384
- 1-(Dibromomethyl)-3-phenoxybenzene, 1:374
- Dibromopentyl glycol, 1:379
- 2,3-Dibromo-3-phenylpropionic acid, 2:530  
1,2-Dibromopropane, 1:369  
1,3-Dibromopropane, 1:369  
2,3-Dibromo-1-propene, 1:369  
5,4'-Dibromosalicylanilide (DBS), 3:1091  
see also *Disanyl*
- 3,5-Dibromosalicylic acid, 1:369
- Di-*n*-butene  
as alkylating agent for phenols, 3:1062
- Dibutylamine, 1:115
- Di-*tert*-butylberyllium diethyl etherate, 2:679
- 2,6-Di-*tert*-butyl-4-dimethylaminomethylphenol, 3:1057
- Dibutylthiocarbamic acid  
metal salts, 2:605
- 2,6-Di-*tert*-butyl-4-ethylphenol, 3:1057  
3,5-Di-*tert*-butyl-4-hydroxybenzoic acid, 3:1058  
3,5-Di-*tert*-butyl-4-hydroxybenzyl alcohol, 3:1058  
3,5-Di-*tert*-butyl-4-hydroxybenzyl chloride, 3:1058
- Dibutylketene, 2:812  
Di-*tert*-butylketene, 2:812  
2,6-Di-*tert*-butyl-4-methoxyphenol, 3:1059  
2,6-Di-*tert*-butyl-4-methylphenol (BHT), 3:1054, 1057, 1059  
4,6-Di-*tert*-butyl-2-methylphenol, 3:1054, 1056  
4,6-Di-*tert*-butyl-3-methylphenol, 3:1054  
2,4-Di-*tert*-butylphenol, 3:1053, 1054  
triphosphate, 3:1058  
2,6-Di-*tert*-butylphenol, 3:1054, 1055, 1058  
3,5-Di-*tert*-butylphenol, 3:1054, 1055
- Dibutylphosphine [1732-72-5], 3:1101
- Dibutyltin bis(isooctylmaleate), 3:1271
- Dibutyltin bis(thioacetic acid isooctyl ester), 3:1271
- Dibutyltin chloride, 3:1271
- Dibutyltin dilaurate (DBTL), 3:1271
- Dibutyltin maleate, 3:1271
- Dibutyltin oxide, 3:1271
- Di-*tert*-butyl tricarbonate  
in isocyanate production, 2:792
- 1,2-Dicarba-*closo*-dodecaborane, 1:356
- Dicarbamic acids  
derivatives used in agriculture, 2:618
- Dicarboxylic acids, aliphatic, 2:583  
C<sub>19</sub> dicarboxylic acids, 2:593
- Dichloramine T, 2:492
- Dichloroacetaldehyde, 2:466  
monohydrate, 2:466  
toxicology, 2:470
- Dichloroacetic acid, 2:480  
toxicology, 2:487
- 2,4-Dichloroacetates, 2:810  
2,4-Dichloroacetacetyl chloride, 2:810
- Dichloroacetyl chloride, 2:481
- Dichloroamine, 2:492
- Dichloroamine-B, 2:495
- 2,5-Dichloroaniline, 3:985
- 2,5-Dichloroaniline-4-sulfonic acid, 3:985
- 1,3-Dichlorobenzene  
separation from its isomers, 1:242  
*N*-Dichlorobenzenesulfonamide, 2:495  
3,4-Dichlorobenzenesulfonamide, 1:261  
2,5-Dichlorobenzenesulfonic acid, 1:260  
3,4-Dichlorobenzenesulfonic acid, 1:260  
2,5-Dichlorobenzenesulfonyl chloride, 1:260  
3,4-Dichlorobenzenesulfonyl chloride, 1:261  
3,3'-Dichlorobenzidine, 1:288, 3:982  
dihydrochloride, 1:288  
safety precautions, 1:283  
toxicology, 1:292
- 2,4-Dichlorobenzoic acid, 1:305  
2,5-Dichlorobenzoic acid, 1:305  
2,6-Dichlorobenzonitrile, 3:944  
see also *1-Cyano-2, 6-dichlorobenzene*
- N,N*-Dichlorocarbamates, 2:492
- Dichlorocarbene, 2:484
- Dichlorodanisidine, 1:290
- 1,3-Dichloro-5,5-dimethylhydantoin, 2:491, 494  
toxicology, 2:495
- 2,4-Dichloro-3,5-dimethylphenol, 3:1088  
see also *Dichloro-*m*-xylenol*  
toxicology, 3:1088
- 6,6'-Dichloro-4,4'-dinitro-2,2'-stilbene disulfonic acid, 3:1002
- 4,4'-Dichloro-1,1-diphenyl-2,2-dichloroethane, 2:466
- 1,1'-(2,2-Dichloroethylidene)bis(4-chlorobenzene) (DDD), 2:466
- Dichlorohydrins, 2:506
- 3,5-Dichloro-2-hydroxybenzenesulfonamide, 1:270  
3,5-Dichloro-2-hydroxybenzenesulfonic acid, 1:269  
2,4-Dichloro-6-isocyanodichloro-5-triazine, 2:555  
3,5-Dichloro-4-methylbenzenesulfonic acid, 1:267  
3,5-Dichloro-4-methylbenzenesulfonyl chloride, 1:267  
1,2-Dichloro-2-methyl-3-propanol, 2:507  
2,6-Dichloro-4-nitroaniline, 3:991, 994  
1,2-Dichloro-3-nitrobenzene, 3:985  
see also *3-Nitro-1, 2-dichlorobenzene*
- 1,2-Dichloro-4-nitrobenzene (DCNB), 3:985  
1,3-Dichloro-4-nitrobenzene, 3:985,  
1,4-Dichloro-2-nitrobenzene, 3:985,  
see also *2-Nitro-1, 4-dichlorobenzene*
- 3,4-Dichloronitrobenzene, 3:983  
2,4-Dichloro-6-nitrophenol, 3:1003  
2,6-Dichloro-4-nitrotoluene, 3:987
- Dichlorophene, 3:1089  
see also *2,2'-Methylenebis(4-chlorophenol)*  
toxicology, 3:1089
- 2,6-Dichlorophenol, 1:242  
(2,4-Dichlorophenoxy)acetic acid, 2:520  
see also *2,4-D*
- 4-(2,4-Dichlorophenoxy)butyric acid, 2:520  
2-(2,4-Dichlorophenoxy)propionic acid, 2:520  
2,4-Dichlorophenyl benzenesulfonate, 1:253  
2,4-Dichlorophenyl isocyanate (2,4-DCPI), 2:782  
3,4-Dichlorophenyl isocyanate (3,4-DCPI), 2:782  
3,5-Dichlorophenyl isocyanate (3,5-DCPI), 2:782
- 1,2-Dichloropropane  
allyl chloride from, 1:71
- 1,3-Dichloro-2-propanol (DCH 1), 2:506, 512  
toxicology, 2:516
- 2,3-Dichloro-1-propanol (DCH 2), 2:507, 512, 513  
toxicology, 2:516
- 2,2-Dichloropropionic acid, 2:447  
5,2'-Dichlorosalicylanilide, 3:1091  
*N,N*-Dichlorosulfamic acid, 2:492  
2,5-Dichlorothiophenol, 3:1223
- Dichlorotoluenes, 1:242  
2,6-Dichloro-*p*-toluidine, 3:987  
2,4-Dichloro- $\alpha,\alpha,\alpha$ -trifluorotoluene, 1:267
- Dichloro-*m*-xylenol (DCMX), 3:1088  
see also *2,4-Dichloro-3,5-dimethylphenol*

- Dichlorprop, 2:520
- Dicresyl dithiophosphate, 3:1121
- 2,4-Dicyano-1-butene, 3:938  
*see also 2-Methyleneglutaronitrile*
- Dicyanoethane, 3:938  
*see also Succinonitrile*
- 1,4-Dicyanonaphthalene, 3:945  
*see also Naphthalene-1, 4-dicarboxylic acid dinitrile*
- 2,6-Dicyanonaphthalene, 3:945  
*see also Naphthalene-2, 6-dicarboxylic acid dinitrile*
- 2,6-Dicyano-4-nitroaniline, 3:994
- Dicyclohexano-18-crown-6, 2:535
- Dicyclohexano-24-crown-8, 2:535
- Dicyclohexylamine, 1:128
- N,N*-Dicyclohexyl-2-benzo-1,3-thiazolesulfonic acid amide, 3:1160
- 4,8-Dicyclohexyl-2,10-dimethyl-12*H*-dibenzo [*d,g*] [1,3]dioxocin-6-one, 1:409
- Dicyclohexylphosphine [829-84-5], 3:1101
- Dicyclopentadiene, 2:569  
 cyclopentene from, 2:576  
 toxicology, 2:578
- Dicyclopentadienyliirconium hydride chloride, 2:698
- 2,6-Dicyclopentyl-4-methylphenol, 3:1065
- Didodeylamine, 1:137
- Dieckmann reaction, 2:586
- Diepoxides, 2:640  
 toxicology, 2:642
- 1,3-Diepoxybutane  
 toxicology, 2:642
- 1,6-Diepoxyhexane  
 toxicology, 2:642
- 1,7-Diepoxyoctane  
 toxicology, 2:642
- Dietetic products  
 amino acids in, 1:194
- Diethylal, 1:208
- 2,5-Diethoxyaniline, 3:1006
- O,O*-Diethoxythiophosphoryl chloride, 3:1120
- 2,5-Diethoxynitrobenzene, 3:1005  
*see also 2-Nitrohydroquinone diethyl ether*
- Diethoxyphenylphosphine  
 synthesis, 2:750
- Diethylaluminum bromide, 1:93
- Diethylaluminum chloride (DEAC), 1:93  
 in catalysts, 1:101  
 production, 1:98
- Diethylaluminum cyanide, 1:94
- Diethylaluminum dimethylamide, 1:94
- Diethylaluminum ethoxide, 1:94
- Diethylaluminum fluoride, 1:93, 100
- Diethylaluminum hydride, 1:93
- Diethylaluminum iodide, 1:93, 100
- Diethylaluminum thioethoxide, 1:94
- Diethylamine, 1:115  
 toxicology, 1:154
- Diethylamine borane, 1:355
- 1-Diethylamino-4-aminopentane, 1:148
- 2-(Diethylamino)ethylamine, 1:148
- Diethylcarbamoyl chloride  
 toxicology, 1:404
- Diethyl carbonate, 1:408
- N,N*-Diethyl-2-chlorethylamine, 1:115
- 4,4'-Diethyl-1,1-diphenyl-2,2-dichloroethane, 2:466
- Diethylidithiocarbamic acid  
 metal salts, 2:605
- Diethylidithiocarbamic acid esters, 2:607
- Diethylene glycol bis(allyl carbonate), 1:78, 408  
 polymers and copolymers of, 1:80
- Diethylene glycol bischloroformate, 2:498
- Diethylene glycol dibenzoate, 1:302
- Diethylenetriamine (DETA), 1:148  
 toxicology, 1:156
- Diethylenetriaminepentaacetic acid (DTPA), 2:646
- Diethylenetriaminepentakis(methylenephosphonic acid), 3:1115
- Diethylenetriurea, 3:1276
- Diethyl ethoxycarbonylmethylphosphonate, 3:1116
- N,N*-Diethylethylenediamine, 1:148  
*see 2-(Diethylamino)ethylamine*
- Diethylketene, 2:812
- Diethyl ketone (DEK), 2:823  
*see also 3-Pentanone*  
 2,3,6-trimethylphenol from, 3:1047
- Diethyl malonate, 2:852
- Diethyl (ethoxymethylene)malonate, 2:853
- Diethyl methylmalonate, 2:852
- Diethyl oxalate, 3:1021
- 2,4-Diethyl-1,5-pentane (DEPD), DEP, 1:50
- N,N*-Diethyl-1,4-pentanediamine, 1:148  
*see 1-Diethylamino-4-aminopentane*
- 2,4-Diethylphenol, 3:1048
- 2,6-Diethylphenol, 3:1048, 1049
- 3,5-Diethylphenol, 3:1048
- Diethylphosphine [627-49-6], 3:1101
- N,N*-Diethyl-1,3-propanediamine, 1:146  
*see 1-Amino-3-diethylaminopropane*
- Diethylxanthic anhydride, 2:500
- Diethylxanthogen formate, 2:500
- Diets, elemental, 1:200
- Difasol technology, 2:752
- 2,6-Difluorobenzonitrile, 3:944  
*see also 1-Cyano-2, 6-difluorobenzene*
- Difluorobromochloromethane, 1:369, 377
- Difluorobromomethane  
 toxicology, 1:384
- m*-Digallic acid, 2:715
- Diglycol terephthalate, 2:452
- Di-Grignard reagents, 2:847
- Di-Halo, 2:494
- 1,1-Dihalo nitro compounds  
 from aliphatic nitro compounds, 3:957
- Dihydrocinamaldehyde, 1:60, 62  
*see also 3-Phenylpropanal*
- Dihydrocinamoyl chloride  
 aldehydes from, 1:62
- 2,5-Dihydrofuran  
 ionic liquids in production of, 2:750
- 2,3-Dihydro-1*H*-indene-5-sulfonamide, 1:259
- 2,3-Dihydro-1*H*-indene-5-sulfonic acid, 1:259
- 2,3-Dihydro-1*H*-indene-5-sulfonyl chloride, 1:259
- 2,3-Dihydroindole, 2:736
- 1,2-Dihydro-7-methylcyclopent[*cd*]phenalen-5-one, 2:458
- 4,5-Dihydroxy-1,3-benzenedisulfonic acid, 1:266
- 2,4-Dihydroxybenzenesulfonic acid, 1:266
- 3,4-Dihydroxybenzenesulfonic acid, 1:266
- Dihydroxybenzoic acids,  
 3,4-, 2:719  
 2,3-, 2:719  
 2,4-, 2:719  
 2,5-, 2:719  
 2,6-, 2:719  
 3,5-, 2:719
- 2,2'-Dihydroxybiphenyl, 3:1080
- 4,4'-Dihydroxybiphenyl, 3:1080
- 4,4'-Dihydroxydiphenyl, 3:1058
- 2,5-Dihydroxy-1,4-dithiane, 2:464
- 4,5-Dihydroxy-2-imidazolidinone, 2:653
- 1,5-Dihydroxynaphthalene, 3:883  
*see also 1,5-Naphthalenediol; Azuro*
- 1,8-Dihydroxynaphthalene-3,6-disulfonic acid, 3:874, 896  
*see also Chromotropic acid*
- 3,5-Dihydroxynaphthalene-2,7-disulfonic acid, 3:874  
*see also A acid*
- 3,6-Dihydroxynaphthalene-2,7-disulfonic acid, 3:896
- 3,5-Dihydroxynaphthalene-2,7-sulfonic acid, 3:896
- 4,5-Dihydroxynaphthalene-1-sulfonic acid, 3:895  
*see also Dioxo Chicago acid*
- 4,6-Dihydroxynaphthalene-2-sulfonic acid, 3:895  
*see also Dioxo G acid*
- 4,7-Dihydroxynaphthalene-2-sulfonic acid, 3:896  
*see also Dioxo J acid*
- 6,7-Dihydroxynaphthalene-2-sulfonic acid, 3:896  
*see also Dioxo R acid*
- 3,5-Dihydroxy-2-naphthoic acid, 3:886
- 1-3,4-Dihydroxyphenylalanine (L-DOPA), 1:174, 203
- Diisobutylaluminum chloride, 1:93
- Diisobutylaluminum hydride
- Diisobutylaluminum hydride (DIBAH), 1:93, 96, 2:689  
 by slow thermolysis of TIBA, 1:99
- Diisobutylamine, 1:115
- Diisobutyl ketone (DIBK), 2:824  
*see also 2,6-Dimethyl-4-heptanone*
- Diisobutylphosphine, 3:1100
- 1,4-Diisocyanatocyclohexane (*trans*-CHDI), 2:786
- 1,6-Diisocyanato-2,2,4-trimethyl-hexane (TMDI), 2:786
- 1,6-Diisocyanato-2,4,4-trimethyl-hexane, 2:786
- Diisopropylamine (DIPA), 1:115

- Diisopropyl ketone (DIPK), 2:824  
*see also 2,4-Dimethyl-3-pentanone*
- Diisopropyl malonate, 2:852
- 2,4-Diisopropylphenol, 3:1050
- 2,6-Diisopropylphenol, 3:1050  
 production, 3:1051
- 3,5-Diisopropylphenol, 3:1050
- 2,6-Diisopropylphenyl isocyanate (DIPPI), 2:783
- Diketene, 2:806  
 ketene from, 2:804  
 polymers from, 2:808  
 for production of acetoacetic esters and amides, 3:1018  
 toxicology, 2:813
- Diketene-acetone adduct, 2:808, 810
- 2,5-Diketopiperazines, 1:170
- Dilthiazem, 1:13
- Dimedone, 2:853
- Dimenhydrinate, 3:1134
- Dimer acids, 2:596
- 2,3-Dimercaptopropane-1-sulfonic acid, 3:1215
- 2,3-Dimercapto-1-propanol, 3:1215
- Dimercaptosuccinic acid, 3:1215
- Dimethamid-P, 3:1252
- 2,5-Dimethoxyaniline, 3:1005
- 2,2'-Dimethoxyhydrazobenzene, 1:289
- O,O*-Dimethoxythiophosphoryl chloride, 3:1120
- 2,5-Dimethoxynitrobenzene, 3:1005  
*see also 2-Nitrohydroquinone dimethyl ether*
- 3,3-Dimethoxypropanenitrile, 3:940  
*see also Cyanoacetaldehyde*
- Dimethylacrylic acid, 2:436  
*see also Dimethylpropenoic acid*  
 from acetone and ketene, 2:440
- Dimethylaluminum chloride, 1:93
- Dimethylamine borane, 1:355
- N,N*-Dimethyl-3-aminobenzoic acid, 1:306
- 3-(Dimethylaminomethyl)indole, 2:736
- 5-Dimethylamino-1-naphthalenesulfonyl chloride (dansyl chloride), 3:902
- 3-Dimethylamino-1-propylamine, 1:146  
*see 1-Amino-3-dimethylaminopropane*  
 toxicology, 1:156
- 3-(dimethylamino)-1-(2-thienyl)-1-propanone, 3:1247
- 2,4-Dimethylaniline, 3:978  
*see also 2,4-Xylidine*
- 2,5-Dimethylaniline, 3:978
- 2,6-Dimethylaniline, 3:978  
*see also 2,6-Xylidine*
- 3,4-Dimethylaniline, 3:978  
*see also 3,4-Xylidine*
- Dimethylarsinic acid, 1:228
- 2,4-Dimethylbenzenesulfonamide, 1:258
- 2,5-Dimethylbenzenesulfonamide, 1:258
- 2,4-Dimethylbenzenesulfonic acid, 1:258
- 2,5-Dimethylbenzenesulfonic acid, 1:258
- Dimethylbenzenesulfonic acids, 1:255
- 2,4-Dimethylbenzenesulfonyl chloride, 1:258
- 2,5-Dimethylbenzenesulfonyl chloride, 1:258
- 3,3'-Dimethylbiphenyl-4,4'-diyl diisocyanate (TODI), 2:784
- 2,3-Dimethyl-2,3-butanediol, 1:49  
*see also Pinacol*
- 3,3-Dimethyl-2-butanone, 2:821  
*see also tert-Butyl methyl ketone*
- 2,3-Dimethyl-2-butene, 2:821
- Dimethylcarbamoyl chloride  
 toxicology, 1:404
- Dimethyl carbonate, 1:408
- N,N*-Dimethyl-2-chloroethylamine, 1:115
- N,N*-Dimethylcyclohexylamine, 1:127
- 5,5-Dimethyl-1,3-dioxan-2-one, 1:409
- Dimethyldiphenylthiuram tetrasulfide, 2:606
- Dimethyldithiocarbamic acid  
 metal salts, 2:605
- Dimethyldithiocarbamic acid 3-chloro-2-butenyl ester, 2:608
- Dimethyldithiocarbamic acid esters, 2:608
- O,O*-Dimethyl dithiophosphate, 3:1121
- N,N*-Dimethylethylamine, 1:125
- N,N*-Dimethylethylamine, 1:115
- 1,1-Dimethylethylamine, 1:115
- 2,2-Dimethylglutaric acid 2:585, 588, 591  
*see also 2,2-Dimethylpentanedioic acid*
- 3,3-Dimethylglutaric acid, 2:591
- 2,6-Dimethyl-4-heptanone  
*see also Diisobutyl ketone*, 2:824
- toxicology, 2:834
- 3,4-Dimethyl-2-hexanone, 2:825
- 2,5-Dimethyl-3-hexyne-2,5-diol, 1:46
- Dimethyl 3-hydroxymethylamino-3-oxopropanephosphonate, 3:1116
- 1,2-Dimethylimidazole  
 toxicology, 2:729
- N,N*-Dimethylisopropylamine, 1:125
- Dimethylketene, 2:811, 812
- Dimethyl malonate, 2:852
- Dimethyl malonoimidate dihydrochloride, 2:861
- 2,4-Dimethyl-6-(1-methylcyclohexyl)phenol, 3:1065
- Dimethyl methyl-malonate, 2:855
- 1,2-Dimethyl-3-nitrobenzene, 3:978
- 1,2-Dimethyl-4-nitrobenzene, 3:978
- 1,3-Dimethyl-2-nitrobenzene, 3:978
- 1,3-Dimethyl-4-nitrobenzene, 3:978
- 1,4-Dimethyl-2-nitrobenzene, 3:978
- 1,2-Dimethyl-5-nitroimidazole, 2:726  
 toxicology, 2:731
- 2,6-Dimethyloctane, 3:1187
- 1,4-Dimethylolcyclohexane, 1:47  
*see also 1,4-Bis(hydroxymethyl)cyclohexane; 1,4-Cyclohexanedimethanol*
- 2,2-Dimethylpentanedioic acid, 2:585  
*see also 2,2-Dimethylglutaric acid*
- 2,4-Dimethyl-3-pentanone, 2:824  
*see also Diisopropyl ketone*
- Dimethylphosphine [676-59-5], 3:1101
- N,N*-Dimethylpiperazine, 1:134
- 1,4-Dimethylpiperazine  
*see N, 1:134, N'-Dimethylpiperazine*
- 2,2-Dimethyl-1,3-propanediol  
*see also Neopentyl glycol*, 1:40
- 2,2-Dimethylpropanoic acid, 2:436  
*see also Pivalic acid*
- 2,2-Dimethyl-1-propanol  
*see also Neopentyl alcohol*, 3:1024
- 2,2-Dimethylpropanoic acid, 2:436  
*see also Dimethylacrylic acid*
- 1,2-Dimethyl-3-propylimidazolium bis(trifluorosulfonyl)imide  
 thermal stability of ionic liquid, 2:744
- Dimethyl sulfide, 3:1220  
 as (CH<sub>3</sub>)<sub>2</sub>S·BH<sub>3</sub>, 3:1222
- Dimethyl sulfoxide (DMSO), 3:1180  
 toxicology, 3:1181
- Dimethyl terephthalate (DMT)  
 4-aminobenzoic acid from, 1:306  
 reduction to 1,4-bis(hydroxymethyl)cyclohexane, 1:47  
 from *p*-xylene, 2:454
- 3,5-Dimethyltetrahydro-2*H*-1,3,5-thiadiazine-2-thione, 2:612
- Dimethyltin dichloride, 3:1271
- Dimetilan, 1:403
- Dimetridazole, 2:728  
 toxicology, 2:731
- Dimorpholythiuram tetrasulfide, 2:606
- 2,4-Dinitroaniline (2,4 DNA), 3:991
- 2,6-Dinitroaniline (2,6 DNA), 3:992
- 2,4-Dinitroanisole, 3:1005  
*see also 1-Methoxy-2,4-dinitrobenzene*
- 1,3-Dinitrobenzene, 3:972  
 toxicity, 3:973
- 1,3-Dinitro-4-benzenesulfonic acid, 1:246
- 2,4-Dinitrobenzenesulfonic acid, 3:997  
 sodium salt, 3:997
- 2,4-Dinitrobenzenesulfonyl chloride, 3:997
- 2,4-Dinitrobenzoic acid, 3:977
- 2,4-Dinitrochlorobenzene (DNCB), 3:983, 984  
*see also 1-Chloro-2,4-dinitrobenzene*
- 2,6-Dinitro-*p*-cresol, 3:1008  
*see also 4-Hydroxy-1-methyl-3,5-dinitrobenzene*
- 4,6-Dinitro-*o*-cresol (DNOC), 3:1006  
*see also 2-Hydroxy-1-methyl-3,5-dinitrobenzene*
- 4,4'-Dinitrodibenzyl-2,2'-disulfonic acid, 3:998
- 2,2'-Dinitrodiphenyl disulfide, 3:982, 995
- 4,4'-Dinitrodiphenyl disulfide, 3:997
- 3,3'-Dinitrodiphenylsulfone, 3:996
- 2,4-Dinitrofluorobenzene, 3:987
- 3,5-Dinitro-4-methylbenzenesulfonic acid, 3:999  
*see also 2,6-Dinitrotoluene-4-sulfonic acid*
- 1,5-Dinitronaphthalene, 3:978, 979
- 1,8-Dinitronaphthalene, 3:978, 980
- 2,4-Dinitrophenetole, 3:1005
- 2,4-Dinitrophenol, 3:1005
- 2,4-Dinitrophenylhydrazine, 3:984

- N*-(2,6-Dinitrophenyl)phthalimide, 3:992  
 (2,4-Dinitrophenyl)pyridinium chloride, 3:984  
 4,4'-Dinitroso-2,2'-stilbenedisulfonic acid, 3:998  
 4,4'-Dinitrostilbene-2,2'-disulfonic acid, 3:998  
 2,4-Dinitrotoluene (DNT), 3:976  
 2,6-Dinitrotoluene, 3:977  
 2,6-Dinitrotoluene-4-sulfonic acid, 3:999  
   *see also* 3,5-Dinitro-4-methylbenzenesulfonic acid  
 2,6-Dinitrotoluene-4-sulfonyl chloride, 3:999  
 Dinocap, 3:1006  
 2,4-Dinonylphenol, 3:1062  
 Dinoterb, 3:1006  
   *see also* 2-*tert*-Butyl-4, 6-dinitrophenol  
 Dioctadecylamine, 1:137  
 Dioctylamine, 1:137  
 Dioctyltin bis(isooctyl thioglycolate), 3:871  
 Dioctyltin dichloride, 3:1271  
 1,4-Dioxo-10,13-dithia-7,16-diazacyclooctadecane, 2:535  
 1,4-Dioxane-2,5-diones, 2:705  
 1,3-Dioxan-2-one, 1:409  
 1,3-Dioxolane, 2:631  
 1,3-Dioxolan-2-one, 1:407  
   *see Ethylene carbonate*  
 4,5-Dioxo-2-methyltetrahydrofuran-2-carboxylic acid  
   from pyruvic acid, 3:1016  
 Dioxy Chicago acid (Dioxy S acid), 3:895  
   *see also* 4,5-Dihydroxynaphthalene-1-sulfonic acid  
 Dioxy G acid, 3:895  
   *see also* 4,6-Dihydroxynaphthalene-2-sulfonic acid  
 Dioxy J acid, 3:896  
   *see also* 4,7-Dihydroxynaphthalene-2-sulfonic acid  
 Dioxy R acid, 3:896  
   *see also* 6,7-Dihydroxynaphthalene-2-sulfonic acid  
 Dipentaerythritol, 1:54  
 Dipentahexaacrylate (DPHA), 1:54  
 Dipentamethylene thiuram tetrasulfide (DPTT), 2:617  
 Dipentylamine, 1:115  
 Dipentylidithiocarbamic acid  
   metal salts, 2:605  
 2,4-Di-*tert*-pentylphenol, 3:1060, 1061  
 2,6-Di-*tert*-pentylphenol, 3:1061  
 Dipeptides, 1:166  
*o*-Diphenetidine, 1:289  
 Diphenhydramine, 3:1134  
 4,4'-Diphenoxybenzophenone, 2:833  
   *see also* 4,4'-Diphenoxydiphenyl ketone  
   polymers from  
 4,4'-Diphenoxydiphenyl ketone, 2:833  
   *see also* 4,4'-Diphenoxybenzophenone  
   toxicology, 2:834  
 Diphenylamine  
   from nitrobenzene, 3:970  
 Diphenyl bases, 1:279  
 Diphenylboronic acid-ethanolamine complex, 1:359  
 Diphenylcarbamoyl chloride  
   toxicology, 1:405  
 Diphenyl carbonate, 1:408  
 Diphenyl epsilon acid, 3:907, 912  
   *see also* 6,8-Dianilinonaphthalene-1-sulfonic acid  
 Diphenyl ether, 3:1082  
 Diphenylene, 1:282  
 Diphenylketene, 2:812  
 Diphenyl ketone, 2:833  
   *see also* Benzophenone  
   toxicology, 2:834  
 4,4'-Diphenylmethane diisocyanate (MDI), 2:781  
 Diphenylphosphine [829-85-6], 3:1101  
 Diphenyl sulfone, 1:251  
   byproduct in sulfonation of benzene, 1:252  
 Diphenyl tetramine, 1:287  
 Diphosphonous acid, 3:1109  
 Dipofene, 3:1265  
 Diprophylline, 3:1134  
 Dipropylacetic acid, 2:436, 441  
   *see also* 2-Propylpentanoic acid  
 Dipropylamine, 1:115  
   toxicology, 1:154  
 Dipropylidithiocarbamic acid  
   metal salts, 2:605  
 Dipropylentriamine, 1:149  
 Dipropylentiurea, 3:1276  
 Dipyriddythiuram tetrasulfide, 2:606  
 Diram, 2:618  
 Direct Black 19, 3:991  
 Direct Black 80, 3:920  
 Direct Blue 1, 3:922  
 Direct Blue 71, 3:919  
 Direct Blue 76, 3:922  
 Direct Blue 84, 3:896  
 Direct Green 23, C.I. 31985, 3:917  
 Direct Green 33, C.I. 34270, 3:917  
 Direct Red 47, 3:893  
 Disanyl, 3:1091  
   *see also* 5,4'-Dibromosalicylanilide  
 Disflamoll, 3:1118  
 Disilane, 2:677  
 Disoxyl, 3:1264  
 Disperse Blue 79, 3:992  
 Disperse Blue 106, 3:1012  
 Disperse Blue 183, 3:994  
 Disperse Brown 1, 3:991  
 Disperse Green 9, 3:1010  
 Disperse Orange 25, 3:991  
 Disperse Red 65, 3:994  
 Disperse Red 73, 3:994  
 Disperse Violet 12, 3:992  
 Disperse Yellow 10, 3:990  
 Disperse Yellow 42, 3:1001  
 Dispersol Orange 7, 3:978  
 Disponil, 3:1119  
 Dissolvine A, 3:951  
 Distamine, 1:205  
 Distillation  
   ionic liquids in, 2:752  
 Disulfides  
   uses, 3:1229  
 Disulfides, heterocyclic, 3:1228  
 Disulfiram, 2:619  
 Disulfur dichloride, 3:1120  
 Dithane D-14, 2:618  
 Dithane M-22, 2:618  
 Dithane M-45, 2:618  
 Dithane Z-78, 2:618  
 Dithia-18-crown-6, 2:535  
 Dithiadiaza-18-crown-6, 2:535  
 1,2,4-Dithiazole-3-thione, 2:604  
 Dithiocarbamates (esters), 1:116, 2:607  
 Dithiocarbamic acid derivatives, 2:601  
   alkyl-, aryl-, and piperidyl-, metal salts of, 2:605  
   ammonium salts of, 2:603  
   derivatives used in agriculture, 2:618  
   formyl- and thioformyl-, metal salts of, 2:605  
   imide of *N*-monosubstituted, 2:602  
   metal salts as vulcanization accelerators, 2:615  
   other derivatives used as vulcanization accelerators, 2:616  
   toxicology, 2:620  
 Dithiocarbazic acid, 2:603  
 Dithiodiglycolic acid, 3:869  
 Dithiolanylium salts, 2:612  
 Dithiophosphates, 3:1120  
 Di-Trapex, 3:1209  
 Ditrimethylolpropane, 1:52  
 Docosylamine, 1:137  
 Doctor test, 3:1214  
 Dodecahydrodiphenylamine, 1:128  
   *see* Dicyclohexylamine  
 1,12-Dodecanedicarboxylic acid, 2:585, 587  
 1,12-Dodecanediol, 1:46  
 1-Dodecanesulfonic acid, 3:1154  
 1-Dodecanethiol, 3:1217  
 Dodecanoic acid, 2:436  
   *see also* Lauric acid  
 Dodecylamine, 1:137  
*p*-Dodecylbenzenesulfonic acid, 3:1154  
 Dodecyl bromide, 1:372  
 1-Dodecylimidazole  
   toxicology, 2:729  
*tert*-Dodecyl mercaptan, 3:1217  
 Dodecylphenol, branched, 3:1062, 1063  
*N*-Dodecyl-2-pyrrolidone, 3:1141  
 Doverphos, 3:1112  
 Dowicide, 3:1081  
 Drozine, 2:619  
 DSE, 2:618  
 Dulcin, 3:1005  
   *see also* 4-Ethoxyphenylurea



- Du Pont Fungicide 328, 2:619  
 Duraphos, 3:1119  
 Du-Ter, 3:1271  
 Dyes  
 acetoacetamides in, 3:1019  
 Dyfonate, 3:1116
- E**  
 ee Acid, 3:874  
*see also 1-Hydroxynaphthalene-3, 8-disulfonic acid*  
 Edetic acid, 2:645  
 Egallic acid, 2:720  
 Eglinazine, 1:208  
 EHD process, 3:936, 937  
 Eicosylamine, 1:137  
 Eikonogen, 3:917  
 Ekaland CDBC, 2:615  
 Ekaland CDMC, 2:615  
 Ekaland NBC, 2:615  
 Ekaland TE DEC, 2:615  
 Ekaland TSPM, 2:617  
 Electron-capture negative-ionization mass spectrometry  
 in amino acid analysis, 1:212  
 Electrophilic substitution  
 of alkylphenols, 3:1040  
 Electrophoresis  
 of amino acids, 1:212  
 Electroplating  
 ionic liquids in, 2:753  
 Enanthic acid, 2:436  
*see also Heptanoic acid*  
 Enantiomer, 1:167  
 Enheptin, 3:1010  
*see also 2-Amino-5-nitrothiazole*  
 Enimont, 2:797  
 Entramin, 3:1010  
*see also 2-Amino-5-nitrothiazole*  
 Enzymatic analysis  
 of amino acids, 1:212  
 Epectan, 1:204  
 Epichlorohydrin, 2:637  
 epoxidation with, 2:637  
 toxicology, 2:638  
 EPN, 3:1104, 1116  
 Epomin, 1:234  
 Epoxides  
 polyhydric alcohols from, 1:40  
 Epoxides (oxiranes), 2:629  
*see also Ethylene oxide (oxirane)*  
 toxicology, 2:641  
 Epoxy-carboxylic acids  
 esters of, preparation, 2:636  
 3,4-Epoxy-cyclohexylmethyl-3',4'-epoxycyclohexane  
 carboxylate, 2:640  
 1,2-Epoxydodecane, 2:638  
 2,3-Epoxy-2-methylbutane, 2:639  
 2,3-Epoxy-pinane, 2:639  
 2,3-Epoxypropyloxy chloroformate, 2:637  
 2,3-Epoxypropyl urethanes, 2:637  
*cis*-Epoxy-succinic acid, 2:634  
 3,4-Epoxytetrahydrobenzyl-3',4'-epoxytetrahydrobenzoate, 2:640  
 Eprosartan, 3:1246  
 Eptam, 1:403  
 Erbotan, 3:1209  
 Erwinia herbicola  
 in tyrosine production, 1:189  
 ESBO, 2:640, 642  
 Essence of mirbane, 3:965  
 Esterification  
 of pentanols, 3:1025  
 of phenols, 3:1039  
 Estolide formation, 2:706  
 Ethambutol, 3:961  
 Ethanediolic acid, 2:585  
*see also Oxalic acid*  
 Ethanedisulfonic acid, 3:1154  
 Ethanethiol, 3:1217  
 Ethasan, 2:615  
 Ethazate, 2:615  
 Ethenetetra-carbonitrile, 3:938  
*see also Tetracyanoethylene*  
 1-Ethenyl-2-pyrrolidinone *N*-Vinyl-2-pyrrolidone (NVP) [88-12-0], 3:1140  
 Ethepon, 3:1115  
 Etherification, 3:1039  
*see of phenols*  
 Ethers  
 ionic liquids in cleavage of, 2:751  
 2-Ethoxybenzoyl  
 dithiocarbamic acid, 2:601  
 2-Ethoxybenzoyl disulfide, 2:604  
 2-Ethoxyethyl cyanoacetate, 2:857  
 2-Ethoxynaphthalene, 3:882  
*see also Nerolin "new"*  
 2-Ethoxynitrobenzene, 3:1003  
 4-Ethoxynitrobenzene, 3:1005  
*see also 4-Nitrophenyl ethyl ether*  
 2-Ethoxyphenol, 3:1083  
*N*-(4-Ethoxyphenyl)urea, 3:1005  
*see also Dulcin*  
 4-Ethoxyphenylurea [150-69-6], 3:1276  
 Ethylac, 2:616  
 Ethyl acetoacetate, 2:809  
 Ethylaluminum dichloride, 1:94  
 Ethylaluminum dichloride (EADC)  
 from trialkylaluminiums, 1:99  
 Ethylaluminum sesquibromide, 1:93  
 Ethylaluminum sesquichloride, 1:93  
 production, 1:98  
 Ethylaluminum sesquichloride (EASC)  
 from trialkylaluminiums, 1:99  
 Ethylamine, 1:115  
 toxicology, 1:154  
 uses, 1:123  
 Ethyl 4-aminobenzoate, 1:306  
 Ethylammonium nitrate  
 production, 2:745  
*N*-Ethyl-benzenesulfonamide, 1:253  
 Ethyl benzenesulfonate, 1:253  
 4-Ethylbenzenesulfonic acid, 1:258  
 2-Ethylbutanoic acid, 2:436, 441  
*see also 2-Ethylbutyric acid*  
*N*-Ethylbutylamine, 1:115  
 2-Ethylbutyric acid, 2:436, 441  
*see also 2-Ethylbutanoic acid*  
 Ethyl Cadmate, 2:615  
 $\alpha$ -Ethylcaproic acid, 2:436  
*see also 2-Ethylhexanoic acid*  
 Ethyl carbamate, 1:400  
 toxicology, 1:404  
 Ethyl chloroacetate, 2:475  
 Ethyl chloroformate, 2:498  
 toxicology, 2:501  
 Ethyl cyanoacetate, 2:857  
*N*-Ethylcyclohexylamine, 1:128  
 Ethyl dichloroacetate, 2:482  
*N*-Ethyl-diisopropylamine, 1:125  
 Ethyl *N,N*-dimethyl carbamate, 1:400  
 Ethylene bis(dithiocarbamic acids)  
 metal salts of, 2:604  
 Ethylene carbonate, 1:407, 408  
 Ethylene chlorohydrin, 2:506, 510  
*see also 2-Chloro-1-ethanol*  
 toxicology, 2:514  
 Ethylene cyanohydrin, 3:939  
*see also 3-Hydroxypropionitrile*  
 Ethylenediamine, 1:143  
*see also 1,2-Diaminoethane*  
 from glyoxal, 2:652  
 toxicology, 1:156  
 Ethylenediaminetetraacetic acid (EDTA), 2:645  
 metal chelates of, 2:646  
 Na<sub>2</sub>EDTA, 2:646  
 Na<sub>4</sub>EDTA, 2:646  
 Ethylenediaminetetrakis(methylenephosphonic acid), 3:1115  
 Ethylene dibromide, 1:372  
*see also 1,2-Dibromoethane*  
 (Ethylenedinitrilo)tetracetoneitrile, 2:647  
 3,4-ethylenedioxythiophene, 3:1250  
 1,2-Ethylenediurea, 3:1276  
 Ethylene glycol (ethanediol), 3:1016  
 glyoxal from, 2:653  
 Ethylene glycol diallyl ether, 1:82  
 toxicology, 1:85  
 Ethylene oxide  
 for cyclic carbonate production, 1:415  
 Ethylene thiourea (ETU), 2:613

- Ethyleneurea (2-imidazolidinone) [120-93-4], 3:1276
- Ethylenimine, 1:233  
toxicology, 1:238
- Ethyl glycolate, 2:710
- 2-Ethylhexanoic acid 2:436, 441, 443  
*see also*  $\alpha$ -Ethylcaproic acid
- 2-Ethylhexylamine, 1:115, 125
- 2-Ethylhexyl chloroformate, 2:498  
toxicology, 2:501
- 2-Ethylhexyl cyanoacetate, 2:857
- 2-Ethylhexylphosphonic acid mono(2-ethylhexyl)ester  
PC88A, 3:1116
- 5-Ethyl-5-(hydroxymethyl)-1,3-dioxan-2-one, 1:409
- Ethyl 4-hydroxybenzoate, 2:718
- 2-Ethyl-2-hydroxymethyl-1,3-propanediol, 1:50  
*see* *Trimethylolpropane*
- Ethylidenenorbornene, 2:573
- 1-Ethylimidazole  
toxicology, 2:729
- 2-Ethylimidazole, 2:726  
toxicology, 2:729
- Ethylketene, 2:812
- Ethyl 4-methylbenzenesulfonate, 1:257
- 2-Ethyl-1(5)-methylimidazole, 2:726
- 2-Ethyl-4(5)-methylimidazole  
toxicology, 2:729
- 1-Ethyl-3-methylimidazolium tetrafluoroborate  
thermal stability of ionic liquid, 2:744
- 2-Ethyl-4-methylphenol, 3:1048
- 3-Ethyl-2-methylphenol, 3:1048
- 3-Ethyl-4-methylphenol, 3:1048
- 4-Ethyl-2-methylphenol, 3:1048
- 4-Ethyl-3-methylphenol, 3:1048
- 5-Ethyl-3-methylphenol, 3:1048
- 6-Ethyl-2-methylphenol, 3:1048
- 6-Ethyl-3-methylphenol, 3:1048
- N*-Ethylmorpholine, 1:133
- 2-Ethylphenol, 3:1048, 1049
- 3-Ethylphenol, 3:1048, 1050
- 4-Ethylphenol, 3:1048, 1050
- Ethylphenylketene, 2:812
- Ethyl phenyl ketone, 2:832  
*see also* *Propiophenone*
- Ethylphosphine, 3:1100
- N*-Ethylpiperazine, 1:134  
*see* *1-ethylpiperazine*
- 1-Ethylpiperazine  
*see* *N-Ethylpiperazine*
- N*-Ethylpiperidine, 1:131
- N*-Ethyl-2-pyrrolidone, 3:1140, 1141
- Ethyl Selenac, 2:615
- Ethyl Tellurac, 2:615
- Ethyl Telluram, 2:615
- Ethyl thiocyanate, 3:1204
- Ethylthiophosphonic acid dichloride, 3:1114
- Ethylthiurad, 2:617
- Ethyl trichloroacetate, 2:483
- Ethyl 4,4,4-trichloroacetate, 2:805
- Ethyl Tuads, 2:617
- Ethyl Tuex, 2:617
- Ethylvanillin (3-ethoxy-4-hydroxybenzaldehyde), 3:1070
- Ethyl Zimate, 2:615
- Etiurac, 2:617
- Etofylline, 3:1134
- Etridiazole, 3:938
- Eucol, 1:201
- Eugenol (2-methoxy-4-allylphenol), 3:1070
- European Core Inventory (ECOIN), 3:914, 966
- Evaite P, 2:616
- Evaite L, 2:615
- Evaite MST, 2:616
- Evaite 4 MT, 2:617
- Evaite T, 2:617
- Evaite Z, 2:615
- F**
- Fabric softeners  
fatty quaternary ammonium compounds, 1:141
- Famotidine, 3:939
- Farmotal, 3:1264
- Farnesane, 3:1187
- $\alpha$ -Farnesene, 3:1195
- $\beta$ -Farnesene, 3:1195
- Farnesyl diphosphate, 3:1188
- Fast Bordeaux GP base, 3:1005
- Fast Golden Orange GR Base, 3:988
- Fast Orange GR Base, 3:990
- Fast Orange RD Base, 3:988
- Fast Red B base, 3:1003
- Fast Red FR base, 3:985
- Fast Red GG Base, 3:991
- Fast Red KB Base, 3:975, 986
- Fast Scarlet GG Base, 3:985
- Fast Scarlet TR Base, 3:975, 987
- Fast Yellow G Base, 3:982
- Fatty acids, unsaturated  
chlorohydrins of, 2:513
- Fatty Amine, 1:136
- Fatty amines  
toxicology, 1:157
- Feeds  
formulation of feed mixes, 1:197
- Felacomp, 1:201, 202
- Fenetylline, 3:1134
- Fenitrothion, 3:1006  
*see also* *Metathion*
- Fenoprop, 2:520  
toxicology, 2:523
- Fenoxycarb, 3:938
- Fenticlor, 3:1090  
*see also* *2,2'-Thiobis(4-chlorophenol)*  
toxicology, 3:1090
- Fermate, 2:618
- Fermentation  
dicarboxylic acids by, 2:588
- Fezatione, 2:619
- Fibers, synthetic organic  
high temperature- and flame-resistant fibers, from 3,3',4,4'-tetraaminodiphenyl, 1:287
- Fine chemicals, 1:1  
antibody-drug conjugates, 1:8  
companies, 1:3  
contract research and manufacturing organizations, 1:6  
contract research organizations, 1:5  
costs, 1:32  
definition, 1:2  
laboratory chemical suppliers, 1:7  
oligonucleotides, 1:8  
peptides and proteins, 1:8  
profitability, 1:34  
safety and occupational hygiene, 1:30  
small molecules, 1:7  
waste elimination, 1:31
- Firemaster, 3:1118
- Fischer projection, 1:167
- Fischer-Tropsch synthesis  
of amines, 1:121
- Flacar, 1:201
- Flame retardant  
brominated, 1:378
- Flampropisopropyl, 3:988
- Flamprop-M, 1:207
- Flavianic acid, 3:890
- Flavors and fragrances  
amino acids as flavor and taste enhancers, 1:194
- Flopropione, 3:937
- Flotation  
with fatty amine salts, 1:141
- Fluonilid, 3:1263
- Fluorescence  
of naphthalene derivatives, 3:902
- Fluorescent reagents  
for analysis of amino acids, 1:211
- Fluorination  
ionic liquids in, 2:752
- Fluoroborates, 1:349  
toxicology, 1:351
- Fluoroboric acid, 1:350
- Fluorocarboxylic acids, 2:447
- Fluorochloridone, 3:1141
- Fluorodifen, 3:1004
- Fluoroimide, 3:988
- 2-Fluoronitrobenzene, 3:987
- 4-Fluoronitrobenzene, 3:987
- Fluoronitrofor, 3:983
- Fluoronitrotoluenes, 3:987

- Fluowet PP, **3:1104**  
tau-Fluvalinate, **1:209**  
Foaming agent  
sodium borohydride as, **2:687**  
Folic acid, **1:306**  
Fongarid, **1:209**  
Fonofos, **3:1116**  
Fontamide, **3:1263**  
Food  
addition of amino acids, **1:192**  
amino acid content of some foodstuffs, **1:192**  
daily protein requirement, **1:191**  
protein quality of food and min. requirements, **1:193**  
Food Orange 2, **3:891**  
Food Red 3, C.I. 14720, **3:889, 904**  
Food Red 7, C.I. 16255, **3:894, 904**  
Food Red 9, C.I. 16185, **3:894, 904**  
Formaldehyde  
glycolic acid from, **2:709**  
Formaldehyde cyanohydrin (hydroxyacetoneitrile), **3:939**  
*see also Glycolonitrile*  
Formamidinesulfonic acid, **3:1162**  
Forminitrazole, **3:1010**  
Formivirisen, **1:8**  
4-Formyl-1,3-benzenedisulfonic acid, **1:260**  
2-Formylbenzenesulfonic acid, **1:259**  
4-Formylbenzenesulfonic acid, **1:259**  
Formylthiocarbamic acid, **2:601**  
Formylthiocarbamic acid esters, **2:608**  
1-Formyl-1-methylethanesulfinyl chloride, **3:1158**  
*N*-Formylmorpholine, **1:133**  
2-Formyl-5-nitrofiran, **3:1009**  
*see also 5-Nitro-2-furaldehyde*  
Foscarnet, **3:1115**  
Fosetyl-Aluminum, **3:1113**  
Freund's acid (1,3,6), **3:874**  
*see also 1-Aminonaphthalene-3, 6-disulfonic acid*  
Freund's acid (1,3,7), **3:874**  
*see also 1-Aminonaphthalene-3, 7-disulfonic acid*  
Friedel–Crafts catalysts, **3:1042, 1043**  
Friedel–Crafts reaction, **3:1042, 1043**  
halophosphines by, **3:1103**  
*D*-Fructose, **3:1020**  
Fudosteine, **1:203**  
Fuklasin, **2:618**  
Fumaric acid, **2:595**  
*see also trans-Butenedioic acid*  
Fungicides  
dithiocarbamic acid derivatives, **2:614**  
Furadan, **3:1071**  
Furalaxyl, **1:209**  
Furan (Furfuran)  
nitro derivatives, **3:1009**  
Furazolidone, **3:1009**  
Furolydthiocarbamic acid, **2:601**  
Fyrol, **3:1116, 1118**
- G**  
*g*<sup>γ</sup> Acid (7-Amino-1-hydroxynaphthalene-3-sulfonic acid), **3:874**  
*see also 2-Amino-8-hydroxynaphthalene-6-sulfonic acid*  
Gafac, **3:1119**  
Galben, **1:209**  
Gallic acid, **2:720**  
pyrogallol from, **3:1072**  
Garbexif, **3:1112**  
Gas  
drying with calcium hydride, **2:680**  
Gas chromatographic methods  
in amino acid analysis, **1:212**  
Gas oil  
alkylphenols from, **3:1041**  
Gas storage  
ionic liquids in, **2:755**  
Gastripan-K, **1:202**  
Gattermann–Adams reaction, **3:1040**  
GB ester, **2:710**  
Genomoll, **3:1118**  
Geranyl diphosphate, **3:1188**  
Geranylgeranyl diphosphate, **3:1188**  
Germacrane, **3:1187**  
Gerontamin, **1:201**  
Gewald reaction, **2:860, 3:1250**  
Gewald synthesis, **3:1010**
- Gibbane, **3:1187**  
Glucaric acid, **2:708**  
Glucocapparin, **3:1206**  
Gluconic acid, **2:708**  
Glucose  
raw material for the preparation of quinones, **1:313**  
*D*-Glucose (dextrose), **3:1020**  
Glufosinate, **1:206**  
Gluphosinate, **3:1104, 1110**  
*D*-Glutamic acid, **1:175**  
*L*-Glutamic acid, **1:167, 171**  
calcium salt, dihydrate, **1:202**  
as drug, **1:202**  
hydrochloride, **1:202**  
magnesium salt, tetrahydrate, **1:202**  
monosodium salt, monohydrate, **1:202**  
potassium salt, monohydrate, **1:202**  
production, **1:181**  
Glutamine  
production, **1:183**  
*L*-Glutamine, **1:167, 171, 202**  
Glutaric acid **2:585, 588, 590**  
*see also Pentanedioic acid*  
Glutergen, **1:202**  
Glyceric acid, **2:705, 708**  
Glycerol chlorohydrins, **2:512**  
Glycerol dichlorohydrins, **2:506, 512**  
Glycerol monothio glycolate, **3:870**  
Glycide, **2:640**  
Glycidol, **2:634, 640**  
from allyl alcohol, **1:75**  
epoxidation with, **2:637**  
Glycidyl urethanes, **2:637**  
Glycine, **1:167, 172**  
*see also Aminoacetic acid*  
Glycine as flavor enhancer, **1:194**  
Glycolic acid, **2:478, 705, 709**  
toxicology, **2:713**  
Glycolonitrile, **3:939**  
*see also Formaldehyde cyanohydrin*  
Glyconic acid, **2:708**  
Glyoxal, **2:651**  
toxicology, **2:654**  
Glyoxal acetals and thioacetals, **2:652**  
Glyoxal bisacrylamide, **2:654**  
Glyoxal tetraallylacetal, **2:653**  
Glyoxylic acid, **3:1015**  
Glyphosate, **1:206, 3:1115, 1122**  
*see also N-(Phosphonomethyl)glycine*  
derivatives, **1:210**  
Glyphosine, **1:210**  
Grace process, **3:958**  
Grignard reaction  
phosphine oxides by, **3:1107**  
Grignard reagent, **2:846**  
Guaiacol (2-methoxyphenol), **3:1070, 1083**  
Guaiacol glyceryl ether [3-(2-methoxyphenoxy)-1,2-propanediol], **3:1070**  
Guaiane, **3:1187**  
Guanethidine, **3:938**  
Guanidine [113-00-8], **2:657**  
Guanidine hydrochloride  
biotechnological Applications, **2:662**  
Guanidine nitrate, **2:662**  
Guanidinium compounds, **2:658**  
Guanine, **3:1132**  
Gynaflex, **3:1263**
- H**  
Hair preparation  
amino acids in, **1:205**  
Halane, **2:494**  
Halogenonitroanilines, **3:993**  
Halophosphines, **3:1103**  
CH<sub>3</sub>PCl<sub>2</sub>, **3:1103**  
C<sub>6</sub>H<sub>5</sub>PCl<sub>2</sub>, **3:1103**  
(C<sub>6</sub>H<sub>5</sub>)<sub>2</sub>PCl, **3:1103**  
Cl<sub>2</sub>PC<sub>6</sub>H<sub>4</sub>C<sub>6</sub>H<sub>4</sub>PCl<sub>2</sub>, **3:1103**  
toxicology, **3:1122**  
Halothiophenes, **3:1248**  
Harmony, **3:1250**  
Hell–Volhard–Zelinski reaction, **1:374**  
Hemimellitic acid, **2:450**  
*see also 1,2,3-Benzenetricarboxylic acid*

- Hemimellitic anhydride, 2:456  
Henderson–Hasselbalch equation, 1:168  
Henkel reaction, 2:453  
Henry reaction, 3:955  
Hepaderichol, 1:201  
Hepa-Loges, 1:201  
Hepa-Merz, 1:203  
Heptanedioic acid, 2:585  
  *see also* *Pimelic acid*  
Heptanoic acid, 2:436, 445  
  *see also* *Enanthic acid*  
2-Heptanone, 2:822  
  *see also* *Methyl pentyl ketone*  
  toxicology, 2:834  
3-Heptanone, 2:825  
  *see also* *Butyl ethyl ketone*  
1,4,7,10,13,16,19-Heptaoxacycloheicosane, 2:535  
2-Heptyl-3,4-bis(9-isocyanatononyl)-1-pentyl-cyclohexane (DDI), 2:785  
Herbicides  
  chlorophenoxyalkanoic acids, 2:519  
  dithiocarbamic acid derivatives, 2:618  
Hermat FEDK, 2:616  
Hexabromobenzene, 1:379  
Hexabromocyclododecane [3194-55-6], 1:379, 381, 2:565  
  toxicology, 1:385  
Hexachlorocyclopentadiene, 2:573  
Hexachloroparaldehyde, 2:467  
Hexachlorophene, 3:1090,  
  *see also* 2,2'-Methylenebis(3,4,6-trichlorophenol),  
  toxicology, 3:1090  
Hexadecylamine, 1:137  
Hexadecyl isocyanate, 2:782  
2,4-Hexadienedioic acid, 2:595  
  *see also* *Muconic acid*  
Hexafluoropropylene oxide, 2:635  
Hexahydrobenzoic acid, 1:307  
  *see also* *Cyclohexanecarboxylic acid*  
Hexahydropyridine, 1:130  
  *see* *Piperidine*  
Hexahydroxyanthraquinone, 2:720  
Hexamethylene diisocyanate (HDI), 2:781, 785  
Hexamethylenediurea [2188-09-2], 3:1276  
Hexamethylene glycol, 1:45  
  *see also* 1,6-Hexanediol  
Hexamethyleneimine, 1:131  
  toxicology, 1:156  
Hexamethylenetetramine, 1:135  
  mandelate, 2:721  
  toxicology, 1:156  
Hexanedioic acid, 2:585  
  *see also* *Adipic acid*  
1,2-Hexanediol, 1:49, 55  
1,6-Hexanediol, 1:45  
  *see also* *Hexamethylene glycol*  
  toxicology, 1:55  
2,5-Hexanediol  
  toxicology, 1:55  
2,3-Hexanedione, 2:831  
Hexanoic acid, 2:436, 445  
  *see also* *Caproic acid*  
1,4,7,10,13,16-Hexaoxacyclooctadecane, 2:535  
Hexydaline, 2:721  
Hexylamine, 1:115  
Hexyl carbamate, 1:400  
 $\alpha$ -Hexylcinnamaldehyde, 1:60  
Hexyllithium, 2:842  
3-Hexyne-2,5-diol, 1:46  
High-pressure thin layer chromatography  
  of amino acids, 1:211  
Hinsberg, 3:1250  
Hinsberg method, 1:250  
Hinsberg synthesis, 3:1244  
Hinsberg test, 1:114  
L-Histidine, 1:167, 172, 202  
  hydrochloride monohydrate, 1:202  
  production, 1:183  
Hünig's base, 1:125  
  *see* *N-Ethyl-diisopropylamine*  
Hock synthesis, 1:119  
Hofmann degradation, 1:305, 2:492  
Hofmann rearrangement  
  of benzene-1,3,5-tricarboxylic acid triamide, 3:1074  
L-Homocysteine, 1:175  
Hostaflo, 3:1121  
Hostanox, 3:1112  
Hostaphat, 3:1119  
Hostarex, 3:1108  
HPN, 1:42  
Humulane, 3:1187  
Hydantoins, 1:170  
Hydracrylic acid, 2:705, 710  
  *see also*  $\beta$ -Hydroxypropionic acid  
  toxicology, 2:713  
Hydratropic aldehyde, 1:60, 62  
  *see also* 2-Phenylpropanal  
Hydratropic aldehyde 2-Phenylpropanal, 1:62  
Hydrazobenzene, 1:279, 3:971  
  *see from* *nitrobenzene*  
Hydrazobenzene-2,2'-dicarboxylic acid, 1:290  
Hydrides, 2:673  
  toxicology, 2:699  
Hydrijet process, 2:680  
Hydroalumination  
  of olefins, 1:94  
Hydroborates, 1:356  
  *see also* *Borohydrides*  
Hydroboration, 1:353, 354, 358  
Hydrocarboxylic acids, aliphatic, 2:703  
Hydrocarboxylic acids, aromatic, 2:715  
Hydrocinnamyl cinnamate, 2:530  
Hydrocyanic acid  
  cyanuric chloride from, 2:555  
Hydroformylation  
  of alkenes by low pressure process, 2:698  
  of allyl acetate, 1:77  
  of allyl alcohol, 1:75  
  of butenes to pentanols, 3:1026  
  4-methylbenzylhalide, 1:62  
  rhodium-catalyzed, 2:697  
  of styrene, 1:60  
  tetracarbonylcobalt hydride as catalyst, 2:697  
Hydrogen  
  intermetallic hydrides for hydrogen absorption, 2:697  
  lithium hydride as hydrogen source, 2:677  
Hydrogenation  
  of phenols, 3:1039  
Hydrogen peroxide  
  reaction with nitriles to peroxyimide acids, 2:635  
Hydrogenphosphonates, 3:1111  
Hydrolysis  
  of aminonaphthalenesulfonic acids, 3:888  
Hydroquinone  
  from nitrobenzene, 3:970  
Hydrosilylation  
  ionic liquids in, 2:752  
1-Hydroxyacetone, 2:831  
 $\alpha$ -Hydroxyalkylureas, 3:1277  
4-Hydroxy-1-aminonaphthalene, 3:913  
  *see also* 4-Amino-1-naphthol  
8-Hydroxy-2-aminonaphthalene, 3:914  
  *see also* 7-Amino-1-naphthol  
4-Hydroxy-1,3-benzenedisulfonic acid, 1:266  
4-Hydroxy-1,3-benzenedisulfonyl chloride, 1:266  
2-Hydroxybenzenesulfonic acid, 1:265  
3-Hydroxybenzenesulfonic acid, 1:246, 265  
4-Hydroxybenzenesulfonic acid, 1:265  
2-Hydroxybenzoic acid, 2:715  
3-Hydroxybenzoic acid, 2:717  
  toxicology, 2:721  
4-Hydroxybenzoic acid, 2:715, 717  
  toxicology, 2:721  
4-Hydroxybenzoic acid esters  
  bacteriostatic properties, 2:718  
  benzyl, 2:718  
  butyl, 2:718  
  ethyl, 2:718  
  methyl, 2:718  
  propyl, 2:718  
4-Hydroxybenzotrile, 3:945  
  *see also* 1-Cyano-4-hydroxybenzene  
2-Hydroxybiphenyl, 3:1080, 1081  
  *see also* 2-Phenylphenol  
  toxicology, 3:1081  
4-Hydroxybiphenyl, 3:1080, 1081  
  *see also* 4-Phenylphenol  
4-Hydroxybutyraldehyde, 1:75

- $\alpha$ -Hydroxybutyric acid, 2:705, 711  
 $\beta$ -Hydroxybutyric acid, 2:705, 711  
 $\gamma$ -Hydroxybutyric acid, 2:705, 712  
 4-Hydroxycycloalkyleneureas, 3:1279  
 4-Hydroxy-3,5-dimethoxybenzoic acid, 2:720  
 2-Hydroxy-1,2-diphenylethanone, 2:834  
*see also Benzoïn*  
 toxicology, 2:834  
 1-Hydroxyethane-1,1-diphosphonic acid, 3:1115  
 2-(Hydroxyethyl)allylthiourea, 3:1210  
 Hydroxyethylethylenediaminetriacetic acid (HEEDTA), 2:646  
   Na<sub>3</sub>HEEDTA, 2:646  
 1-(2-Hydroxyethyl)ethylenimine, 1:235  
 3-(2-Hydroxyethyl)indole, 2:736  
 1-(2-Hydroxyethyl)-2-methyl-5-nitroimidazole, 2:726, 727  
*N*-(2-Hydroxyethyl)morpholine, 1:133  
 4-(2-Hydroxyethyl)morpholine, 1:133  
*see N*-(2-Hydroxyethyl)morpholine  
*N*-(2-Hydroxyethyl)piperazine (HEP), 1:135  
 1-(2-Hydroxyethyl)piperazine, 1:135  
*see N*-(2-Hydroxyethyl)piperazine (HEP)  
*N*-(2-Hydroxyethyl)-2-pyrrolidone, 3:1141  
 Hydroxyhydroquinone, 3:1072  
 toxicology, 3:1073  
 4-Hydroxy-3-methoxybenzoic acid, 2:719  
*see also Vanillic acid*  
 toxicology, 2:722  
 4-Hydroxy-6-methylaminonaphthalene-2-sulfonic acid, 3:921  
 4-Hydroxy-7-methylaminonaphthalene-2-sulfonic acid, 3:919  
*see also N Methyl J acid*  
 2-Hydroxy-5-methylbenzoic acid, 2:719  
*see also Cresotic acid*  
 2-Hydroxy-1-methyl-3,5-dinitrobenzene, 3:1006  
*see also 4,6-Dinitro-*o*-cresol*  
 4-Hydroxy-1-methyl-3,5-dinitrobenzene, 3:1007  
*see also 2,6-Dinitro-*p*-cresol*  
 Hydroxymethylimidazoles, 2:727  
 1-(2-Hydroxymethyl)-2-methyl-5-nitroimidazole  
 toxicology, 2:731  
 2-Hydroxymethyl-2-methyl-1,3-propanediol, 1:51  
*see Trimethylolthane*  
 1-Hydroxy-3-methyl-4-nitrobenzene, 3:1006  
*see also 4-Nitro-*m*-cresol*  
 1-Hydroxy-4-methyl-2-nitrobenzene, 3:1006  
 2-(Hydroxymethyl)-2-nitro-1,3-propanediol, 3:960  
*see also Tris(hydroxymethyl)nitromethane*,  
 4-Hydroxy-3-methylpentan-2-one, 2:821  
 1-Hydroxynaphthalene-3,6-disulfonic acid, 3:874, 892  
*see also RG acid*  
 1-Hydroxynaphthalene-3,8-disulfonic acid, 3:874, 892  
*see also E Acid*  
 1-Hydroxynaphthalene-4,8-disulfonic acid, 3:874, 893  
*see also  $\delta$  Acid; Oxy Chicago acid*  
 1-Hydroxynaphthalene-2,4-disulfonic acid, 3:887  
 1-Hydroxynaphthalene-4,7-disulfonic acid, 3:893  
 2-Hydroxynaphthalene-3,6-disulfonic acid, 3:874, 893  
*see also R Acid*  
 2-Hydroxynaphthalene-6,8-disulfonic acid, 3:874, 894  
*see also G Acid*  
 2-Hydroxynaphthalene-1,6-disulfonic acid, 3:887  
 2-Hydroxynaphthalene-3,7-disulfonic acid, 3:894  
 2-Hydroxynaphthalene-5,7-disulfonic acid, 3:894  
 1-Hydroxynaphthalene-4-sulfonic acid, 3:874, 889  
*see also NW acid*  
 1-Hydroxynaphthalene-5-sulfonic acid, 3:874, 889  
*see also Oxy L acid*  
 1-Hydroxynaphthalene-2-sulfonic acid, 3:887, 889  
*see also Baum's acid*  
 1-Hydroxynaphthalene-3-sulfonic acid, 3:889  
 1-Hydroxynaphthalene-7-sulfonic acid, 3:890  
 1-Hydroxynaphthalene-8-sulfonic acid, 3:890  
 2-Hydroxynaphthalene-1-sulfonic acid, 3:874, 890  
*see also Oxy Tobias acid*  
 2-Hydroxynaphthalene-6-sulfonic acid, 3:874, 891  
*see also Schaeffer acid*  
 2-Hydroxynaphthalene-7-sulfonic acid, 3:874, 891  
*see also F Acid*  
 2-Hydroxynaphthalene-8-sulfonic acid, 3:874, 892  
*see also Crocein acid*  
 2-Hydroxynaphthalene-4-sulfonic acid, 3:891  
 Hydroxynaphthalenesulfonic acids  
 dissociation constants for hydroxyl groups, 3:888  
 1-Hydroxynaphthalene-3,6,8-trisulfonic acid, 3:874, 895  
*see also Oxy Koch acid*  
 1-Hydroxynaphthalene-2,4,7-trisulfonic acid, 3:887  
 2-Hydroxynaphthalene-3,6,8-trisulfonic acid, 3:887, 893, 895  
 1-Hydroxy-2-naphthoic acid, 3:885  
 2-Hydroxy-1-naphthoic acid, 3:885  
 3-Hydroxy-1-naphthoic acid, 3:885  
 3-Hydroxy-2-naphthoic acid, 3:885  
*see also BON acid*  
 4-Hydroxy-1-naphthoic acid, 3:885  
 4-Hydroxy-2-naphthoic acid, 3:886  
 5-Hydroxy-1-naphthoic acid, 3:885  
 5-Hydroxy-2-naphthoic acid, 3:886  
 6-Hydroxy-1-naphthoic acid, 3:885  
 6-Hydroxy-2-naphthoic acid, 3:886  
 7-Hydroxy-1-naphthoic acid, 3:885  
 7-Hydroxy-2-naphthoic acid, 3:886  
 8-Hydroxy-1-naphthoic acid, 3:885  
 8-Hydroxy-2-naphthoic acid, 3:886  
 6-Hydroxy-2-naphthoic acid nitrile, 3:945  
*see also 6-Cyano- $\beta$ -naphthol*  
 4-Hydroxy-7-phenylaminonaphthalene-2-sulfonic acid, 3:919  
*see also N-Phenyl J acid*  
 Hydroxypivaldehyde  
   hydroxypivalic acid neopentyl glycol ester from, 1:43  
   neopentyl glycol from, 1:41  
 Hydroxypivalic acid  
   neopentyl glycol ester, 1:42  
 1-Hydroxyproline, 1:167, 172  
   production, 1:183  
 $\alpha$ -Hydroxypropionitrile, 3:939  
*see also Lactonitrile*  
 3-Hydroxypropionitrile, 3:939  
*see also Ethylene cyanohydrin*  
 2-Hydroxypropylene-1,3-diurea, 3:1276  
 5-Hydroxypropyleneurea 2-Oxo-5-hydroxyhexahydropyrimidine,  
   3:1276  
 2-Hydroxy-5-sulfobenzoic acid, 1:269  
 2-Hydroxy-3-toluic acid, 2:719  
*see Cresotic acid*  
 2-Hydroxy-4-toluic acid, 2:719  
*see also Cresotic acid*  
 (S)-5-Hydroxytryptophan, 1:204  
 L-5-Hydroxytryptophan, 1:175  
 Hydrozirconation  
   of carbon-carbon double and triple bonds, 2:697  
 Hypochlorous acid (hypochloric acid)  
   from chloramines, 2:491  
 Hypoxanthine, 3:1132
- I**  
 Imazalil, 2:728  
 Imazamethabenz, 1:207  
 Imamazox, 1:207  
 Imazapic, 1:207  
 Imazapyr, 1:207  
 Imazaquin, 1:206  
 Imazethaphyr, 1:207  
 Imidazole, 2:725  
   nitro derivatives, 3:1009  
   toxicology, 2:728  
 Imidazole-2-thiol, 3:1226  
 2-Imidazolidinone Ethyleneurea, 3:1276  
 Imidazolines, 2:727  
 Imidazolium salts, 2:743  
 7,7'-Iminobis(4-hydroxynaphthalene-2-sulfonic acid), 3:919  
*see also J Acid imide*  
 $\alpha$ -Iminocarboxylic acids, 1:169  
 $\beta$ -Iminonitriles, 3:940  
 Imiprophin, 1:210  
 Indan (hydrindene), 3:1067  
 5-Indanol, 3:1067  
 Indanthren Bordeaux RR, 2:458  
 Indanthren Brilliant Orange GR, 2:458  
 Inderal, 3:880  
*see also 1-Isopropylamino-3-(1-naphthoxy)-2-propanol*  
 Indium fluoroborate, 1:351  
 Indole, 2:735  
   toxicology, 2:737  
 Indole-3-acetic acid, 2:736, 737  
 Indole-3-aldehyde, 2:736  
 Indole-3-butanoic acid, 2:736  
 Indoline, 2:736

- Indophenol, 3:881  
 Infusion solutions, 1:200  
 Inosinic acid  
   for purine derivatives production, 3:1132  
 Intraval, 3:1264  
 Iodogen, 2:494  
 Ionac Pfaz, 1:235  
 Ion-exchange chromatography  
   of amino acids, 1:211  
 Ionic compressor, 2:755  
 Ionic liquids, 2:741  
   anion metathesis, 2:745  
   of 1-butyl-3-methylimidazolium type, 2:743  
   characteristics, 2:742  
   chloride-free, 2:746  
   corrosion, 2:757  
   definition, 2:742  
   electrochemical window, 2:744  
   of 1-ethyl-3-methylimidazolium type, 2:743  
   gas separations, 2:749  
   Lewis acid-based, 2:745  
   liquid separations, 2:749  
   as performance chemicals, 2:754  
   preparation with microwaves, 2:747  
   solvents for synthesis and catalysis, 2:747  
   typical synthesis path, 2:745  
 Ionquest 801, 3:1116  
 Iopamidol, 3:960  
 IPC, 2:500  
 IPPD, 3:984  
 Iprodione, 1:209  
 Iprnidazole, 2:728  
   toxicology, 2:731  
 Iprovalicarb, 1:208  
 Irgafos, 3:1112  
 Irgafos P-EPQ, 3:1109  
 Irganox 1093, 3:1116  
 Irganox 1222, 3:1116  
 Irgastab, 3:1112  
 Iron  
   carbonyl iron powder, 2:774  
   reduction with Fe and NaOH, 1:280  
 Iron carbonyl hydride, 2:772  
 Iron chromium oxide, 2:775  
 Iron compounds, 2:771  
 Iron dimethyldithiocarbamate, 2:605, 615, 618  
 Iron fluoroborate, 1:351  
 Iron oxide, red  
   from pentacarbonyl iron, 2:775  
 Iron whiskers  
   from pentacarbonyl iron, 2:775  
 Irradian, 1:201  
 Isoamyl alcohol, 3:1024  
   see also 3-Methyl-1-butanol  
 sec-Isoamyl alcohol, 3:1024  
   see also 3-Methyl-2-butanol  
 Isoamylamine, 1:125  
 Isoamylene oxide, 2:639  
 Isoamyl ester phosphinate, 3:1110  
 Isobutylaluminumoxane (IBAO), 1:102  
 Isobutylaluminum dichloride, 1:94  
 Isobutylamine, 1:115  
 2-Isobutylamino-5-sulfobenzoic acid, 1:269  
 Isobutyl carbamate, 1:400  
 Isobutylidenediurea, 3:1279  
 Isobutyl methylphosphinate, 3:1110  
 2-(4-Isobutylphenyl)propanal [51407-46-6], 1:62  
 2-(4-Isobutylphenyl)-propanal, 1:60, 62  
 Isobutyraldehyde  
   TMPD glycol from, 1:48  
 Isobutyric acid 2:436, 441, 442  
   see also 2-Methylpropanoic acid  
 Isobutyronitrile, 3:937  
   see also 2-Methylpropanenitrile  
 N-Isobutyrylcysteine, 3:1218  
 Isobutyryl fluoride, 2:446  
 Isocamphane, 3:1195  
 Isocaproic acid, 2:436, 441  
   see also 2-Methylpentanoic acid  
 Isocyanates, aliphatic  
   from amines and COCl<sub>2</sub>, 1:116  
 Isocyanates, organic, 2:781  
   toxicology, 2:796  
   3-Isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate (IPDI), 2:785  
 Isodecanoic acid, 2:444, 445  
 4-Isododecylphenol, 3:1062  
 D,L-Isoleucine, 1:175  
 L-Isoleucine, 1:167, 172, 1:202  
   production, 1:183  
 Isomerization  
   of phenylated oxiranes, 1:60  
 Isonate, 2:797  
 Isonitrile  
   from primary amines, 1:117  
 Isononanoic acid, 2:436, 444  
 Isooctanoic acid, 2:436, 441, 443, 445  
 Isooctyl mercaptoacetate, 3:870  
 Isooctylphenol, 3:1062  
 Isopentenyl diphosphate, 3:1188  
 Isophorone (IP), 2:829  
   see also 3,5,5-Trimethyl-2-cyclohexen-1-one  
 Isophorone diamine, 1:148, 2:829  
   see 3-Aminomethyl-3, 5, 5-trimethylcyclohexylamine  
 Isophorone diamine dihydrochloride  
   phosgenation of, 2:791  
 Isophorone diisocyanate (IPDI), 2:781, 829  
 Isophthalic acid, 2:450  
 Isoprene  
   from cyclopentadiene, 2:576  
 Isopropenyl acetate, 2:805, 830  
 4-Isopropenylphenol, 3:1067  
   oligomers, 3:1067  
 2-Isopropoxyphenol, 3:1083  
 Isopropyl amine, 1:115  
 Isopropylamine  
   toxicology, 1:154  
 1-Isopropylamino-3-(1-naphthoxy)-2-propanol, 3:880  
   see also Inderal  
 Isopropyl carbamate, 1:400  
 Isopropyl chloroformate, 2:498  
   toxicology, 2:501  
 Isopropyl cyanoacetate, 2:857  
 2-Isopropylimidazole, 2:726  
   toxicology, 2:729  
 Isopropyl isocyanate (i-PrI), 2:782  
 2-isopropyl-5-methyl-1,4-benzoquinone [490-91-5], 1:312  
 2-Isopropyl-3-methyl-phenol, 3:1050  
 2-Isopropyl-4-methylphenol  
   production, 3:1051  
 2-Isopropyl-4-methyl-phenol, 3:1050  
 4-Isopropyl-3-methylphenol  
   production, 3:1052  
 4-Isopropyl-3-methyl-phenol, 3:1050  
 5-Isopropyl-3-methyl-phenol, 3:1050  
 5-Isopropyl-3-methylphenol (isothymol)  
   production, 3:1052  
 6-Isopropyl-2-methylphenol  
   production, 3:1052  
 6-Isopropyl-2-methyl-phenol, 3:1050  
 2-Isopropyl-4(5)-nitroimidazole, 2:726  
 2-Isopropylphenol, 3:1050  
   production, 3:1050  
 3-Isopropylphenol, 3:1050  
   production, 3:1051  
 Isopropyl phenyl ether, 3:1051  
 p-Isopropylphenyl isocyanate (p-IPPI), 2:783  
 3-(4-Isopropylphenyl)-2-methylpropanal, 1:60, 63  
   see also Cyclamenaldehyde  
 4-Isopropyltoluene, 3:1192  
 Isoquinoline, 3:1147  
   toxicology, 3:1148  
 Isoquinoline red, 3:1148  
 Isosebacic acid, 2:592  
 Isothiocyanates  
   physical and chemical properties, 3:1206  
 Isothiocyanates, organic  
   toxicology, 3:1210  
   uses, 3:1205  
 Isothiourea, 3:1255  
 Isotridecanoic acid, 2:436, 441  
 Isovaleric acid 2:436, 441, 443  
   see also 3-Methylpentanoic acid  
 Isoxyl, 3:1264  
 Itaconic acid, 2:594, 595  
   see also 2-Methylenebutanedioic acid  
 Itaconic acid

## J

- J Acid imide, **3:919**  
*see also 7,7'-Aminobis(4-hydroxynaphthalene-2-sulfonic acid*  
 J Acid urea, **3:920**  
*see also 7,7'-Urylenebis(4-hydroxynaphthalene-2-sulfonic acid*  
 Jaypol, **3:1115**  
 Jaypol 210, **3:1115**  
 Jestrosem, **1:202**

## K

- Kalle's acid, **3:874**  
*see also 1-Aminonaphthalene-2,7-disulfonic acid*  
 Kalma, **1:203**  
 Ketene, **2:801**  
   chiral lactones from, **2:805**  
   diketene from, **2:804**  
   polymerization, **2:803**  
   toxicology, **2:812**  
   trimer, **2:806**  
 Ketene insertion, **2:803**  
 Ketenes, **2:801**  
   higher ketenes, **2:811**  
   higher ketenes, toxicology, **2:813**  
 β-Ketobutyronitrile, **3:940**  
*see also Acetylacetonitrile*  
 Ketoglutaric acid, **3:1016**  
 Ketoketenes, **2:811**  
 Ketone, **2:817**  
   bisphenols from, **3:1077**  
 β-Ketonitriles, **3:940**  
 Ketonization  
   of carboxylic acids, **2:818**  
 Ketoprofen, **3:937**  
 Ketotifen fumarate, **3:1247**  
 Kevlar, **2:452**  
*see also Poly(p-phenylene terephthalamide)*  
 Kharasch effect, **1:68**  
 Kinnear-Perren reaction, **3:1104**  
 Klartan, **1:209**  
 Knapsack phosphate esters, **3:1119**  
 Knoevenagel condensation, **3:1173**  
 Koch acid, **3:874**  
*see also 1-Aminonaphthalene-3,6, 8-trisulfonic acid*  
 Kolbe nitrile synthesis, **2:707**  
 Kolbe-Schmitt reaction, **2:453, 716, 3:1040**  
   Marasse modification, **3:884**  
   for production of 3-hydroxy-2-naphthoic acid, **3:885**  
 Kronitex, **3:1118**  
 K-Selectride, **2:679**  
 KUMAC SDD, **2:615**  
 Kwashiorkor, **1:214**  
 Kynamro, **1:8**

## L

- Labdane, **3:1187**  
 Lactams, **2:446**  
 Lactic acid, **2:705, 3:1015**  
 Lactide, **2:705**  
 Lactobacillus arabinosus, **1:212**  
 Lactones, **2:706**  
 Lactonitrile, **3:939**  
*see also 2-Hydroxypropanenitrile; α-Hydroxypropionitrile*  
 Laevil, **1:201**  
 Lake Red C, **1:273**  
 Lanostane, **3:1187**  
 Laristine, **1:202**  
 Latamoxef, **3:1209**  
 Lauric acid, **2:436, 445**  
*see also Dodecanoic acid*  
 Lauryl bromide, **1:372**  
 Lawesson's reagent, **3:1216**  
 Lead dithiocarbamates, **2:605, 615**  
 Lead fluoroborate, **1:351**  
 Leberam, **1:201**  
 Leomin, **3:1119**  
 Leopental, **3:1264**  
 Lethane 60, **3:1205**  
 Lethane 384, **3:1204, 1205**  
 Letter acid, **3:874**  
*see also Acid*  
 Leuchs anhydrides, **1:170**  
 D,L-Leucine, **1:175**

- L-Leucine, **1:167, 172**  
   production, **1:184**  
 L-tert-Leucine, **1:175**  
 Leuckart-Wallach  
   amine synthesis, **1:119**  
 Leuconostoc mesenteroides, **1:212**  
 Levodopa, **1:203**  
 Levothym, **1:204**  
 Levulinic acid, **3:1019**  
*see also 4-Oxopentanoic acid*  
   toxicology, **3:1020**  
 Lewatit S100, **3:1042**  
 Lilial, **1:60, 63**  
*see also 3-(4-tert-Butylphenyl)-2-methylpropanal,*  
 Liming-out process, **3:874**  
 Limone, **3:1187**  
 Limonene dioxide  
   toxicology, **2:642**  
 Linalool, **2:573**  
 Linuron, **1:403**  
 Lipitor, **1:11**  
 Lipoic acid, **3:1222**  
 Lithium, **2:839**  
 Lithium alkyls, **2:839**  
 Lithium aluminum deuteride, **2:691**  
 Lithium bis(trimethylsilyl)amide, **2:843**  
 Lithium borohydride, **2:682**  
*see also Lithium tetrahydridoborate*  
 Lithium tert-butoxide, **2:843**  
 Lithium compounds, organic, **2:839**  
 Lithium deuteride, **2:677**  
 Lithium diisopropylamide (LDA), **2:843**  
 Lithium hexamethyldisilazide (LHMDS), **2:843**  
*see Lithium bis(trimethylsilyl)amide*  
 Lithium hydride, **2:676**  
 Lithium (tri-tert-butoxy)hydroaluminat, **2:691**  
 Lithium methoxide, **2:843**  
 Lithium tetrahydroaluminat (lithium alanate), **2:689**  
*see also Lithium aluminum hydride*  
 Lithium tetrahydridoborate (lithium boranate), **2:682**  
*see also Lithium borohydride*  
 Lithium triethylborohydride (lithium triethylhydridoborate),  
   **2:682**  
 Lobarthrose, **1:204**  
 Lonacol, **2:618**  
 Longifolene, **3:1197**  
 Lornoxicam, **3:1251**  
 Lubricants  
   ionic liquids as, **2:750**  
 Lupasol, **1:234**  
 Lupranat/e, **2:797**  
 Luxate, **2:797**  
 Lévonine, **1:204**  
 D,L-Lysine  
   acetylsalicylate, **1:202**  
   as drug, **1:202**  
   monohydrochloride, **1:202**  
 L-Lysine, **1:172, 202**  
   acetate, **1:202**  
   L-aspartate, **1:202**  
   as drug, **1:202**  
   L-glutamate, **1:202**  
   L-malate, **1:202**  
   monohydrate, **1:202**  
   monohydrochloride, **1:202**  
   production, **1:184**  
 D,L-Lysine hydrochloride, **1:175**

## M

- Madelung synthesis, **2:735**  
 Magic acid, **3:1177**  
 Magnesiocard, **1:201**  
 Magnesium compounds, **2:845**  
 Magnesium hydride, **2:679**  
 Magnesium Verla, **1:201, 202**  
 Magnetic liquid, **2:776**  
 Maillard reaction  
   flavors by, **1:195**  
 Malathion, **3:1121**  
 Maleic acid, **2:595**  
*see also cis-Butenedioic acid*  
 Maleic anhydride  
   hydrogenation to butyrolactone, **1:393**

- Malic acid, 2:705, 712  
 (R)-(+)-malic acid, 2:712  
 (S)-(–)-malic acid, 2:712
- Malonates (esters), 2:853
- Malonic acid, 2:585, 851  
*see also Propanedioic acid*  
 toxicology, 2:864
- Malononitrile, 2:860  
 dipotassium salt, 2:861  
 disodium salt, 2:861  
 synthetic routes, 2:852
- Mancozeb, 2:618
- Mandelamine, 2:721
- Mandelic acid, 2:705, 721
- Mandelic acid tropine ester, 2:721
- D,L-Mandelonitrile, 2:721, 3:943  
*see also Benzaldehyde cyanohydrin*
- Mandropine, 2:721
- Maneb, 2:618
- Maneb Wetttable Powder, 2:618
- Manganese ethylenebis(dithiocarbamate), 2:604, 618
- Mannich base, 3:1040
- Mannich reaction, 2:827  
 quasi-Mannich reaction, 3:1114
- Manzate, 2:618
- Marasmus, 1:214
- Marassé carboxylation, 2:716
- Marley's reagent, 1:212
- Marlophor, 3:1119
- Masquel NTA, 3:951
- Mataven L, 1:207
- Matrixyl, 1:205
- Mavrik, 1:209
- McCormack reaction, 3:1105
- Mebutamate, 1:44
- Mecoprop, 2:520  
 toxicology, 2:523
- Mecysteine hydrochloride, 1:204
- Melamine, 2:550
- Melamine [108-78-1], 3:1274
- Meldrum's acid, 2:852
- Mellitic acid, 2:450  
*see also Benzenehexacarboxylic acid*
- Mellitic trianhydride, 2:456
- Mellophanic acid, 2:450  
*see also 1,2,3,4-Benzenetetracarboxylic acid*
- Mellophanic dianhydride, 2:456
- p-Menthane, 3:1187, 1191  
 isomers, 3:1191
- 1-p-Menthene-8-thiol, 3:1217
- Meprobamate, 1:43
- Mercaptoacetaldehyde, 2:463
- Mercaptoacetic acid (Thioglycolic acid), 2:475, 478, 3:869  
 toxicology, 3:870
- Mercaptobenzimidazole, 3:1227
- 2-Mercaptobenzothiazole (MBT)  
 as corrosion-inhibitor, 3:1230
- 2-Mercapto-1,3-benzothiazole, 3:1227
- 2-Mercaptobenzoxazoles  
 as pharmaceuticals, 3:1229
- Mercaptoethanol, 3:1217
- 2-Mercaptopyridine, 3:1226
- 6-Mercaptopurine, 3:1132
- 2-Mercapto-4[3H]-quinazolinone, 3:1226
- 2-Mercaptothiazoles, 2:610
- 2-mercaptothiophene, 3:1248
- 2-Mercapto-4,4,6-trimethyl-4H-1,3-thiazine, 2:612
- 3-Mercapto-D-valine, 1:204
- Mesaconic acid, 2:595  
*see also 2-Methyl-trans-butenedioic acid*
- Mesidine, 3:980  
*see also 2,4,6-Trimethylaniline*
- Mesityl oxide, 2:828, 853  
*see also 4-Methyl-4-penten-2-one*  
 toxicology, 2:835
- Mesoxalic acid, 2:708
- Metal acetylacetonates, 2:830, 831
- Metalaxyl, 1:209
- Metalcapase, 1:205
- Metal chelates  
 of EDTA, 2:646  
 of nitrilotriacetic acid, 3:950
- Metalocene  
 aluminoxanes in, 1:103
- Metal powder  
 production from metal hydrides, 2:695  
 by reduction of metal salts with NaH, 2:678
- Metals, cleaning  
 descaling with sodium hydroxide, 2:678
- Metanilic acid, 1:262  
*see also 3-Aminobenzenesulfonic acid*
- Metathesis  
 in ionic liquid synthesis, 2:745
- Metathion, 3:1006  
*see also Fenitrothion*
- Methacrylonitrile, 3:938  
*see also 2-Methyl-2-propenenitrile*
- Methallyl acetate, 1:79
- Methallyl alcohol, 1:77
- Methallylamine, 1:83
- Methanearsonic acid, 1:228
- Methanesulfonyl chloride, 3:1157
- Methanethiol, 3:1216
- Methaphenylene, 3:1245
- Methapyrlylene, 3:1245
- Methazate, 2:615
- Methiacil, 3:1263
- Methiocil, 3:1263
- D,L-Methionine, 1:175, 202  
 production, 1:185
- L-Methionine, 1:167, 172  
 production, 1:185
- Methiosulfonium chloride, 1:204
- Methiosulfonium iodide, 1:204
- 4-Methoxybenzenesulfonic acid, 1:266
- Methoxycarbonyl isothiocyanate, 3:1206
- 1-Methoxy-2,4-dinitrobenzene, 3:1005  
*see also 2,4-Dinitroanisole*
- 2-Methoxyethanol, 2:692
- 2-Methoxyethyl cyanoacetate, 2:857
- α-Methoxymethyl-2-nitroimidazole-1-ethanol  
 toxicology, 2:731
- 2-Methoxynaphthalene, 3:882  
*see also Nerolin*
- 4-Methoxynitrobenzene, 3:1004  
*see also 4-Nitroanisole*
- Methyl acetate  
 acetic anhydride from, 2:804
- Methyl acetoacetate, 2:809
- Methyl alkyl ketones, higher, 2:823
- Methylaluminum (MAO), 1:102
- Methylaluminum dichloride, 1:93
- Methylaluminum sesquichloride, 1:93
- Methyl 3-aminocrotonate, 2:811
- Methyl 3-amino-4-methylthiophene 2-carboxylate, 3:1250
- 5-Methyl-2-aminothiophene-3-carbonitrile, 3:1251
- Methyl 3-aminothiophene 2-carboxylate, 3:1250
- Methyl amyl ketone (MAK), 2:822  
*see also 2-Heptanone*
- 4-Methylanisole, 3:1083
- Methylarsine bis(dimethylthiocarbamate), 1:228
- Methylarsine sulfide, 1:228
- 2-Methylaziridine, 1:233
- 4-Methyl-1,3-benzenedisulfonamide, 1:258
- 4-Methyl-1,3-benzenedisulfonic acid, 1:257
- 4-Methyl-1,3-benzenedisulfonyl chloride, 1:258
- N-Methyl-benzenesulfonamide, 1:253
- 2-Methylbenzenesulfonamide, 1:256
- 3-Methylbenzenesulfonamide, 1:256
- 4-Methylbenzenesulfonamide, 1:257
- Methyl benzenesulfonate, 1:253
- 2-Methylbenzenesulfonic acid, 1:256
- 3-Methylbenzenesulfonic acid, 1:256
- 4-Methylbenzenesulfonic acid, 1:256
- Methylbenzenesulfonic acids, 1:255  
*see also Toluenesulfonic acids*
- 2-Methylbenzenesulfonyl chloride, 1:256
- 3-Methylbenzenesulfonyl chloride, 1:256
- 4-Methylbenzenesulfonyl chloride, 1:257  
*see also Tosyl chloride*
- Methyl benzoate, 1:301  
 hydrogenation to benzyl alcohol, 1:321
- 2-Methylbenzoic acid, 1:303
- 3-Methylbenzoic acid, 1:303
- 4-Methylbenzoic acid, 1:304
- 2-Methyl-1,4-benzoquinone [553-97-9], 1:311



- $\alpha$ -(Methylbenzyl)phenols (styrenated phenols), 3:1066  
Methyl bromide, 1:375  
  *see also Bromomethane*  
2-Methylbutanoic acid, 2:436  
  *see also 2-Methylbutyric acid*  
3-Methylbutanoic acid, 2:436  
  *see also Isovaleric acid*  
2-Methyl-1-butanol, 3:1028  
  optically active, 3:1024  
2-Methyl-2-butanol, 3:1024, 1029  
  *see also tert-Amyl alcohol*  
3-Methyl-1-butanol, 3:1024, 1028  
  *see also Isoamyl alcohol*  
3-Methyl-2-butanol, 3:1024, 1025 3:1029  
  *see also sec-Isoamyl alcohol*  
  optically active, 3:1025  
3-Methyl-2-butanone, 2:818  
  *see also Methyl isopropyl ketone*  
  toxicology, 2:834  
2-Methyl-*cis*-butenedioic acid, 2:595  
  *see also Citraconic acid*  
2-Methyl-*trans*-butenedioic acid, 2:595  
  *see also Mesaconic acid*  
2-Methyl-2-butene oxide, 2:639  
3-Methyl-3-buten-2-one, 2:828  
  *see also Methyl isopropenyl ketone*  
*N*-Methylbutylamine, 1:115  
3-Methylbutylamine, 1:115  
Methyl *sec*-butyl ketone, 2:820  
  *see also 3-Methyl-2-pentanone*  
2-Methylbutyric acid, 2:436, 443  
  *see also 2-Methylbutanoic acid*  
Methyl carbamate, 1:400  
3-Methyl-5-carboxymethyltetrahydro-2*H*-1,3,5-thiadiazine-2-thione, 2:612  
Methyl chloroacetate, 2:475, 480  
Methyl chloroformate, 2:498  
  toxicology, 2:501  
Methyl 4-(chloromethyl)benzenesulfonate, 1:257  
 $\alpha$ -Methylcinnamaldehyde, 1:60, 64  
Methyl cinnamate, 2:530  
Methyl cinnamates, 2:530  
Methyl cumate, 2:615  
Methyl cyanoacetate, 2:857  
*N*-Methylcyclohexylamine, 1:127  
Methyl *L*-cysteine hydrochloride, 1:204  
Methyl-3-(3,5-di-*tert*-butyl-4-hydroxyphenyl)-propionate, 3:1058  
Methyl dichloroacetate, 2:481  
*N*-Methyldicyclohexylamine, 1:129  
2-Methyl-1,3-diepoxybutane  
  toxicology, 2:642  
3-Methyl-3,4-dihydro-4-oxo-2-thioxo-2*H*-1,3-thiazine, 2:611  
Methyl *N,N*-dimethyl carbamate, 1:400  
4-Methyl-1,3-dioxolan-2-one, 1:407  
  *see Propylene carbonate*  
2-Methyl-2,5-dioxo-1,2-oxaphospholane, 3:1111  
*N*-Methyldipropylentriamine, 1:150  
Methyl DOPA, 3:961  
  *see also Aldomet*  
2,2'-Methylenebis(6-bromo-4-chlorophenol), 3:1090  
  *see also Bromochlorophene*  
2,2'-Methylene bis(6-*tert*-butyl-3-methylphenol), 3:1076  
2,2'-Methylenebis(6-*tert*-butyl-4-methylphenol) (BPH), 3:1059  
4,4'-Methylenebis(6-*tert*-butyl-3-methylphenol), 3:1059  
2,2'-Methylenebis(4-chlorophenol), 3:1089  
  *see also Dichlorophene*  
Methylene bis(4,4'-cyclohexylamine), bis(4-aminocyclohexyl)methane, 1:129  
  *see 4, 4'-Diaminodicyclohexylmethane*  
4,4'-Methylenebis(2,6-di-*tert*-butylphenol), 3:1057, 1058  
4,4'-Methylenebis(2,6-dichlorophenol), 3:1089  
Methylene bis(dithiocarbamates), 2:610  
Methylenebis(thiocyanate) (MBT), 3:1204  
2,2'-Methylenebis(3,4,6-trichlorophenol), 3:1090  
  *see also Hexachlorophene*  
Methylene bromide, 1:376  
  *see also Dibromomethane*  
2-Methylenebutanedioic acid, 2:595  
  *see also Itaconic acid*  
Methylene chlorobromide, 1:376  
4,4'-Methylenedicyclohexyl diisocyanate (H<sub>12</sub>MDI)<sup>a</sup>, 2:785  
4,4'-Methylenediphenyl diisocyanate (MDI), 2:784  
4,4'-Methylenediphenyl diisocyanate, polymeric (PMDI), 2:784  
Methylene diphenylene isocyanate (MDI)  
  from nitrobenzene, 3:970  
2-Methyleneglutaric acid, 2:595  
  *see also 2-Methylenepentanedioic acid*  
2-Methyleneglutaronitrile, 3:938  
  *see also 2,4-Dicyano-1-butene*  
2-Methylenepentanedioic acid, 2:595  
  *see also 2-Methyleneglutaric acid*  
Methyl *N*-ethyl carbamate, 1:400  
Methylethylketene, 2:812  
2-Methyl-3-furanthiol, 3:1225  
Methyl glycolate, 2:710  
Methylglyoxal, 3:1016  
5-Methyl-3-heptanone, 2:825  
  *see also Amyl ethyl ketone*  
  toxicology, 2:835  
5-Methyl-2-hexanone, 2:822  
  *see also Methyl isoamyl ketone*  
  toxicology, 2:834  
Methyl hexyl ketone (MHK), 2:822  
Methyl 4-hydroxybenzoate, 2:718  
4(5)-Methyl-5(4)-hydroxymethylimidazole, 2:726  
1-Methylimidazole, 2:726  
  toxicology, 2:729  
2-Methylimidazole, 2:726  
  toxicology, 2:730  
4-Methylimidazole  
  toxicology, 2:730  
4(5)-Methylimidazole, 2:726  
2-Methylindole, 2:737  
3-Methylindole, 2:735  
Methyl isoamyl ketone (MIAK), 2:822  
  *see also 5-Methyl-2-hexanone*  
Methyl isobutyl ketone (MIBK), 2:819  
  *see also 4-Methyl-2-pentanone*  
Methyl isocyanate (MI), 2:782  
Methyl isopropenyl ketone, 2:828  
  *see also 3-Methyl-3-buten-2-one*  
Methyl isopropyl ketone (MIPK), 2:818  
  *see also 3-Methyl-2-butanone*  
1-Methyl-2-isopropyl-5-nitroimidazole, 2:726  
Methyl isothiocyanate (MIT), 3:1206, 1209  
  *see also Isothiocyanatomethane*  
*N*-Methyl *J* acid, 3:919  
  *see also 4-Hydroxy-7-methylaminonaphthalene-2-sulfonic acid*  
Methylketene, 2:811, 812  
Methyl Ledate, 2:615  
Methyl lithium, 2:842  
Methylmagnesium bromide, 1:376  
Methyl methanesulfinate, 3:1159  
*l*-5-Methylmethionine, 1:175  
*l*-Methylmethionine sulfonium chloride, 1:204  
Methyl 4-methylbenzenesulfonate, 1:257  
*N*-Methylmethyl carbamate, 1:400  
4-Methyl-2-(1-methylcyclohexyl)phenol, 3:1065  
*N*-Methylmorpholine, 1:133  
4-Methyl-3-nitroacetophenone, 3:1007  
2-Methyl-3-nitroaniline, 3:993  
2-Methyl-4-nitroaniline (MNA), 3:993  
  *see also 5-Nitro-*o*-toluidine*  
2-Methyl-5-nitroaniline, 3:993  
  *see also 4-Nitro-*o*-toluidine*  
4-Methyl-2-nitroaniline, 3:993  
  *see also 3-Nitro-*p*-toluidine*  
1-Methyl-2-nitrobenzene, 3:973  
  *see also 2-Nitrotoluene*  
1-Methyl-3-nitrobenzene, 3:976  
  *see also 3-Nitrotoluene*  
1-Methyl-5-nitroimidazole, 2:726  
  toxicology, 2:731  
2-Methyl-4(5)-nitroimidazole, 2:726, 3:1009  
  toxicology, 2:731  
2-Methyl-2-nitro-1,3-propanediol, 3:961  
2-Methyl-2-nitro-1-propanol (NMP), 3:961  
Methyl 5-norbornen-2-yl ketone, 2:828  
4-Methyl-1-oxa-4-azacyclohexane, 1:133  
  *see N-Methylmorpholine*  
Methyl parathion, 3:1004, 1120  
2-Methylpentanoic acid, 2:436  
  *see also Isocaproic acid*  
4-Methyl-2-pentanol, 2:820  
  *see also Methyl isobutyl carbinol*  
3-Methyl-2-pentanone, 2:820  
  *see also Methyl sec-butyl ketone*

- 4-Methyl-2-pentanone, 2:819, 828  
*see also Methyl isobutyl ketone*  
 toxicology, 2:834
- 4-Methyl-2-pentanone peroxide, 2:819, 820
- 3-Methyl-3-penten-2-one, 2:821
- 4-Methyl-4-penten-2-one, 2:828  
*see also Mesityl oxide*  
 toxicology, 2:834
- Methyl pentyl ketone, 2:822  
*see also 2-Heptanone*
- Methylperimidine, 3:900
- 4-Methylphenylacetaldehyde [104-09-6], 1:61
- 4-Methylphenylacetaldehyde, 1:60
- Methylphenylketene, 2:812
- Methyl phenyl ketone, 2:832  
*see also Acetophenone*  
 toxicology, 2:834
- Methylphosphine, 3:1100
- Methylphosphinic acid, 3:1104
- Methylphosphonic acid, 3:1115
- Methylphosphonic acid dichloride, 3:1114
- N-Methylpiperazine, 1:134
- 1-Methylpiperazine, 1:134  
*see N-Methylpiperazine*
- N-Methylpiperidine, 1:131
- N-methyl-1,3-propanediamine, 1:146  
*see 1-Amino-3-methylaminopropane*
- 2-Methyl-1,3-propanediol, 1:44
- 2-Methylpropanenitrile, 3:937  
*see also Isobutyronitrile*
- 2-Methyl-2-propanethiol, 3:1121, 1216
- 2-Methylpropanoic acid, 2:436, 441  
*see also Isobutyric acid*
- 2-Methyl-2-propenenitrile, 3:938  
*see also Methacrylonitrile*
- 2-Methyl-2-propen-1-ol, 1:77  
*see Methyllyl alcohol*
- D,L-1-Methylpropylamine, 1:115
- 2-Methyl-2-propyl-1,3-propanediol, 1:43
- 2-Methyl-2-propyl-1,3-propanediol dicarbamate, 1:43
- N-Methylpyrrolidine, 1:130
- 1-Methylpyrrolidine, 1:130  
*see N-Methylpyrrolidine*
- N-Methyl-2-pyrrolidone (NMP), 1:392, 2:447, 3:1138
- 5-Methyl-2-pyrrolidone, 3:1020
- 1-Methyl-2-pyrrolidone N-Methyl-2-pyrrolidone (NMP) [872-50-4], 3:1148
- 2-Methylquinoline, 3:1146
- 4-Methylquinoline, 3:1146
- Methyl Selenac, 2:615
- $\alpha$ -Methylstyrene, 1:62  
*see aldehydes from*
- 4-Methylstyrene  
 aldehydes from, 1:62
- 4-Methylstyrene oxide  
 toxicology, 2:642
- N-Methylsulfonamide, 3:995
- 1-Methyl-[1H]-tetrazole-5-thiol, 3:1226
- 5-Methyl-1,3,4-thiadiazole-2-thiol, 3:1226
- N-Methylthiazolidine-2-thione, 2:611
- N-Methylthiazoline-2-thione, 2:610
- Methyl thiocyanate, 3:1204
- Methylthioformimidic chloride, 2:612
- 2-Methylthiophene  
 toxicology, 3:1251
- 2-Methylthiophene [554-14-3], 3:1245
- 2-Methylthiophene, 3:1249
- 3-Methylthiophene, 3:1249  
 toxicology, 3:1251
- 3-methylthiophene, 3:1243
- 3-Methylthiophene [616-44-4], 3:1245
- Methylthiophosphonic acid dichloride, 3:1114
- 3-Methylthio-1,2,4-triazine-5(4H)-ones  
 in herbicides, 3:1230
- Methylthio-1,3,5-triazines  
 in herbicides, 3:1230
- Methyltin trichloride, 3:1271
- Methyl trichloroacetate, 2:483
- 2,2'-(1-Methyltrimethylenedioxy)bis-(4-methyl-1,3',2'-dioxaborinane), 1:361
- Methyl-Tuads, 2:617
- 6-Methyluracil, 2:810
- Methyl vinyl ketone, 2:827  
*see also 3-Buten-2-one*
- 3-Methylxanthine, 3:1132
- Metronidazole, 2:654, 727, 3:1009  
 toxicology, 2:731
- Michael addition, 3:955
- Michaelis-Arbusov reaction, 3:1108, 1110, 1112, 1114
- Microbiological analysis  
 of amino acids, 1:212
- Milban, 2:618
- Mildothane, 3:1210, 1265
- Millonate, 2:797
- Milneb, 2:619
- Mirogastrin, 1:202
- Misonidazole  
 toxicology, 2:731
- MITC-FUME, 3:1209, 1210
- Mitotane, 2:466
- Modumate, 1:201
- Molecular rotation, 1:167, 168
- Moltanin, 1:204
- Mondur, 2:797
- Monex, 2:616
- Monoalkylammonium nitrate salts  
 preparation, 2:746
- Monoalkyl phosphates, 3:1119
- Monochloroacetaldehyde, 2:461
- Monochloroacetic acid  
*see Chloroacetic acid (chloroethanoic acid, monochloroacetic acid) [79-11-8]*
- Monochloro-*o*-phenylphenol (MCOPP), 3:1087  
*see also 5-Chloro-2-hydroxybiphenyl*
- Monocyclic monoterpenes, 3:1191
- Monoethyl phosphonate  
 aluminum salt Al[C<sub>2</sub>H<sub>5</sub>OPH(O)]<sub>3</sub>, 3:1113
- Monomethylurea [598-50-5], 3:1276
- Monothiophosphates, 3:1120
- Mono Thiurad, 2:616
- Morantel, 3:1249
- Mordant Black 1, 3:917
- Mordant Black 3, C.I. 14640, 3:881, 916
- Mordant Black 9, C.I. 16500, 3:883
- Mordant Black 11, 3:917
- Mordant Black 15, 3:883
- Mordant Black 56, 3:896
- Mordant Red 7, C.I. 18760, 3:916
- Morpholine, 1:132  
 toxicology, 1:157
- 4-Morpholinecarbaldehyde, 1:133  
*see N-Formylmorpholine*
- Morpholinocarbonyl chloride  
 toxicology, 1:405
- 2-Morpholinoethylamine, 1:133  
*see N-(2-Aminoethyl)morpholine*
- m*-Tolyl isocyanate (m-TI), 2:782
- MTU, 3:1263
- Mucic acid, 2:708
- Muconic acid, 2:595  
*see also 2,4-Hexanedioic acid*  
 monomethyl ester, 3:1069
- Musk ambrette, 3:1059
- Mycrene, 3:1187, 1189
- Mykon P60, 3:1115
- Mylone, 2:619
- Mylotarg, 1:8
- N**
- N-521, 2:619
- Na-DMDT, 2:618
- Nadolol, 3:880
- Nadoxolol, 3:880
- Naficillin, 3:882
- N-(2-Aminoethyl)-2-pyrrolidone [24935-08-8], 3:1141
- Naphthalene  
 sulfonation, 3:874
- Naphthalene Derivatives, 3:873
- 1,2-Naphthalenediamine, 3:899
- 1,3-Naphthalenediamine, 3:899
- 1,4-Naphthalenediamine, 3:899
- 1,5-Naphthalenediamine, 3:899  
*see also Alphanin; 1, 5-Diaminonaphthalene*
- 1,6-Naphthalenediamine, 3:899
- 1,7-Naphthalenediamine, 3:899
- 1,8-Naphthalenediamine, 3:900  
*see also 1,8-Diaminonaphthalene; Deltamin*
- 2,3-Naphthalenediamine, 3:899
- 2,6-Naphthalenediamine, 3:899

- 2,7-Naphthalenediamine, **3:899**  
 1,8-Naphthalenedicarboxylic acid, **2:450**  
*see also Naphthalic acid*  
 2,6-Naphthalenedicarboxylic acid, **2:450, 453, 458**  
 Naphthalene-1,4-dicarboxylic acid dinitrile, **3:945**  
*see also 1,4-Dicyanonaphthalene*  
 Naphthalene-2,6-dicarboxylic acid dinitrile, **3:945**  
*see also 2,6-Dicyanonaphthalene*  
 1,5-Naphthalene diisocyanate (NDI), **3:899**  
 1,2-Naphthalenediol, **3:883**  
 1,3-Naphthalenediol (naphthoresorcinol), **3:883**  
 1,4-Naphthalenediol, **3:883**  
 1,5-Naphthalenediol, **3:883**  
*see also 1,5-Dihydroxynaphthalene; AzuroI*  
 1,6-Naphthalenediol, **3:884**  
 1,7-Naphthalenediol, **3:884**  
 1,8-Naphthalenediol, **3:884**  
 2,3-Naphthalenediol, **3:884**  
 2,6-Naphthalenediol (2,6-naphthohydroquinone), **3:884**  
 2,7-Naphthalenediol, **3:884**  
 Naphthalenediols, **3:883**  
 Naphthalene-1,3-disulfonic acid, **3:877**  
 Naphthalene-1,5-disulfonic acid, **3:877**  
*see also Armstrong Acid*  
 Naphthalene-1,6-disulfonic acid, **3:877**  
 Naphthalene-1,7-disulfonic acid, **3:877**  
 Naphthalene-2,6-disulfonic acid, **3:878**  
 Naphthalene-2,7-disulfonic acid, **3:878**  
 Naphthalene monosulfonic acids, **3:876**  
 Naphthalene-1-sulfonic acid, **3:876**  
 Naphthalene-2-sulfonic acid, **3:876**  
 Naphthalenesulfonic acids, **3:874**  
 salts, **3:876**  
 1,4,5,8-Naphthalenetetracarboxylic acid, **2:450, 458**  
 1,4,5,8-Naphthalenetetracarboxylic dianhydride, **2:456, 458**  
 Naphthalene-1,3,5,7-tetrasulfonic acid, **3:879**  
 1-Naphthalenethiourea, **3:898**  
*see also ANTU*  
 Naphthalene-1,3,5-trisulfonic acid, **3:878**  
 Naphthalene-1,3,6-trisulfonic acid, **3:878**  
 Naphthalene-1,3,7-trisulfonic acid, **3:879**  
 Naphthalic acid, **2:450, 457**  
*see also 1,8-Naphthalenedicarboxylic acid*  
 Naphthalic anhydride, **2:456, 457**  
 Naphthalimide, **2:457**  
*see also Naphthalene-1, 8-dicarboximide*  
 Naphtanone, **3:882**  
 Naphthionic acid, **3:874**  
*see also 1-Aminonaphthalene-4-sulfonic acid; Piria's acid*  
 1-Aminonaphthalene-4-sulfonic acid; Piria's acid, **3:903**  
*ortho-Naphthionic acid, 3:903*  
*see also 1-Aminonaphthalene-2-sulfonic acid*  
 1-Naphthoic acid nitrile, **3:945**  
*see also 1-Cyanonaphthalene*  
 2-Naphthoic acid nitrile, **3:945**  
*see also 2-Cyanonaphthalene*  
 1-Naphthol, **3:879**  
 2-Naphthol, **3:881**  
 Naphthol BN, **3:898**  
 Naphthostyryl, **3:905**  
 Naphthosultam, **3:905**  
 Naphthosultone, **3:905**  
 1-Naphthoxyacetic acid, **3:880**  
 2-Naphthoxyacetic acid, **3:880, 882**  
 D-3-(2'-Naphthyl)-alanine, **1:175**  
 1-Naphthylamine, **3:897**  
*see also 1-Aminonaphthalene*  
 toxicology, **3:898**  
 2-Naphthylamine, **3:898**  
*see also 2-Aminonaphthalene*  
 toxicology, **3:898**  
 1,5-Naphthylene diisocyanate (NDI), **2:784**  
 1-Naphthyl isocyanate, **2:782**  
 1-Naphthyl-N-methylcarbamate, **1:400, 3:880**  
*see also Carbaryl*  
 N-1-Naphthylphthalamic acid, **3:898**  
*see also Naptalam*  
 1-Naphthyl salicylate, **3:880**  
*see also Alphol*  
 Naphtol AS-G, **1:288**  
 Naphtol as (Naphtol Anilid-Säure), **3:886, 898**  
 Naproxcinod, **1:19**  
 Naproxen, **3:882**  
 Naptalam, **3:898**  
*see also N-1-Naphthylphthalamic acid*  
 Natural moisturizing factor, **1:205**  
 Naugard, **3:1112**  
 NDBC, **2:615**  
 N-Dodecyl-2-pyrrolidone [2687-96-9], **3:1141**  
 Nebularine, **3:1132**  
 Nemafox, **3:1265**  
 Neo acids, **2:440, 444, 445**  
 Neosozin, **1:228**  
 Neo-Carbimazole, **3:1263**  
 Neo-Mercazole, **3:1263**  
 Neo-Morphazole, **3:1263**  
 Neopentyl alcohol, **3:1024**  
*see also 2,2-Dimethyl-1-propanol*  
 Neopentyl glycol, **1:40**  
*see also 2,2-Dimethyl-1, 3-propanediol*  
 Neo-Thyreostat, **3:1263**  
 Neo-Tomizol, **3:1263**  
 Neral, **3:1263**  
*see also Citral b*  
 Nerolidol, **2:573**  
 Nerolin, **3:882**  
*see also 2-Methoxynaphthalene*  
 Nerolin "new", **3:882**  
*see also 2-Ethoxynaphthalene*  
 Neryl diphosphate, **3:1188**  
 Nesdonal, **3:1264**  
 N-Ethyl-2-pyrrolidone [2687-91-4], **3:1141**  
 Neutron moderator  
 metallic hydrides, **2:694**  
 zirconium hydride, **2:696**  
 N-(2-Hydroxyethyl)-2-pyrrolidone [3445-11-2], **3:1141**  
 N-(1-Hydroxyethyl)-2-pyrrolidone (HEP)  
 production of N-vinyl-2-pyrrolidone, **3:1141**  
 Niagara 9130, **2:618**  
 Nibodur 1098, **2:687**  
 Nickel(II) acetate tetrahydrate, **3:928**  
 Nickel(II) acetylacetonate, **3:928**  
 Nickel compounds, **3:927**  
 Nickel dibutylidithiocarbamate, **2:605**  
 Nickel diethyldithiocarbamate, **2:618**  
 Nickel(II) dimethylglyoximate, **3:929**  
*see also Bis(dimethylglyoximate) nickel(II)*  
 Nickel fluoroborate, **1:351**  
 Nickel(II) formate, **3:929**  
 Nickelocene, **3:930**  
*see also Bis( $\eta^5$ -cyclopentadienyl)nickel(II)*  
 Nickel(II) oxalate dihydrate, **3:929**  
 Nickel poisoning antidotes  
 dithiocarbamic acid derivatives, **2:614**  
 Nifurzide, **3:1010**  
 Nimorazole, **3:1009**  
 Ninhydrin  
 reaction with amino acids, **1:211**  
 Niridazole, **3:1010**  
 N-Isopropyl-2-methyl-2-propyl-1,3-propanediol dicarbamate, **1:43**  
 Nissol, **3:898**  
 Nitalrin, **3:1002**  
 Nitration  
 aromatic, **3:966**  
 aromatic, reaction mechanisms, **3:968**  
 high-temperature vapor-phase, of propane, **3:956**  
 nitrating agent, **3:967**  
 Nitriles, **3:933**  
 aliphatic, **3:937**  
 amines from, **1:119**  
 araliphatic, **3:941**  
 aromatic, **3:941**  
 toxicology, **3:941**  
 Nitrioltriacetic acid (NTA), **2:645, 3:949**  
 in detergents, **3:951**  
 toxicology, **3:952**  
 Nitrioltrimethylenephosphonic acid, **3:1115**  
 4-Nitroacetanilide, **3:991**  
 2-Nitroacetophenone, **3:1007**  
 3-Nitroacetophenone, **3:1007**  
*see also 1-(3-Nitrophenyl)ethanone*  
 4-Nitroacetophenone, **3:1008**  
*see also 4-Nitrophenyl methyl ketone*  
 2-Nitro-5-acetylthiophene, **3:1010**  
 Nitroalcohols  
 from aliphatic nitro compounds, **3:957**

- Nitroalkylphenols, 3:1006
- Nitroamines  
 from aliphatic nitro compounds, 3:957
- Nitroamino aromatics, 3:988  
 toxicity, 3:992
- 4-Nitro-2-aminophenol, 3:1005
- 5-Nitro-2-aminophenol, 3:1003
- 4-Nitro-2-aminophenol-6-sulfonic acid, 3:1001
- 4'-Nitro-4-aminostilbene-2,2'-disulfonic acid, 3:1000
- 2-Nitroaniline (ONA), 3:982, 990
- 3-Nitroaniline (MNA), 3:990
- 4-Nitroaniline (PNA), 3:983, 990
- 4-Nitroaniline-2-sulfonamide, 3:1000
- 2-Nitroaniline-4-sulfonic acid, 3:1000
- 4-Nitroaniline-2-sulfonic acid, 3:999
- 3-Nitro-*p*-anisidine, 3:1005
- 4-Nitro-*o*-anisidine, 3:1004
- 5-Nitro-*o*-anisidine, 3:1003
- 2-Nitroanisole, 1:289, 3:982, 1003
- 3-Nitroanisole, 3:1004
- 4-Nitroanisole, 3:983, 1004  
 see also 4-Methoxynitrobenzene
- 2-Nitroanisole-4-sulfonyl chloride, 3:1003
- ipso*-Nitroanium ion, 3:968
- 2-Nitrobenzaldehyde, 3:973
- 4-Nitrobenzaldehyde, 3:976
- Nitrobenzene-2,5-disulfonic acid, 3:1000
- Nitrobenzene (oil of mirbane), 3:969  
 binary azeotropes, 3:969  
 reduction to hydrazobenzene, 1:279  
 toxicity, 3:972
- 3-Nitrobenzenesulfonic acid, 3:996
- 2-Nitrobenzenesulfonamide, 3:995
- 3-Nitrobenzenesulfonamide, 3:996
- 3-Nitrobenzenesulfonamide, 3:996
- 2-Nitrobenzenesulfonic acid, 3:995
- 3-Nitrobenzenesulfonic acid, 3:996
- 4-Nitrobenzenesulfonic acid, 3:996
- Nitrobenzenesulfonic acids  
 derivatives, 3:996
- 2-Nitrobenzenesulfonyl chloride, 3:982, 995
- 3-Nitrobenzenesulfonyl chloride, 3:996
- 4-Nitrobenzenesulfonyl chloride, 3:998
- 3-Nitrobenzenesulfonyl fluoride, 3:996
- 2-Nitrobenzidine, 1:286
- 2-Nitrobenzoic acid, 1:290, 306, 3:973
- 3-Nitrobenzoic acid, 1:290, 307, 3:976
- 4-Nitrobenzoic acid, 1:307, 309, 3:976
- 3-Nitrobenzotrifluoride, 3:988
- 2-Nitrobenzyl chloride, 3:975, 987
- 4-Nitrobenzyl chloride, 3:987  
 see also 1-Chloromethyl-4-nitrobenzene
- 4-Nitrobenzyl cyanide, 3:987
- 2-Nitrochlorobenzene, 3:981  
 see also 2-Chloronitrobenzene
- 3-Nitrochlorobenzene, 3:982  
 see also 3-Chloronitrobenzene
- 4-Nitrochlorobenzene, 3:983  
 see also 4-Chloronitrobenzene
- Nitrochlorobenzenes  
 toxicology, 3:984
- 2-Nitro-4-chloro-1-methylbenzene, 3:986  
 see also 4-Chloro-2-nitrotoluene
- 2-Nitro-6-chloro-1-methylbenzene, 3:987  
 see also 2-Chloro-6-nitrotoluene
- 4-Nitro-2-chloro-1-methylbenzene, 3:987  
 see also 2-Chloro-4-nitrotoluene
- Nitro Compound, aliphatic  
 aliphatic amines from, 1:120
- Nitro compounds, aliphatic (nitroalkanes, nitroparaffins), 3:955  
 see also Nitroalkanes, Nitroparaffins
- Nitro compounds, aromatic, 3:965
- 2-Nitro-*p*-cresol, 3:1006
- 4-Nitro-*m*-cresol, 3:1006  
 see also 1-Hydroxy-3-methyl-4-nitrobenzene
- 6-Nitrodiazo-1,2,4-acid, 3:916, 920
- 2-Nitro-1,4-dichlorobenzene, 3:985  
 see also 1,4-Dichloro-2-nitrobenzene
- 3-Nitro-1,2-dichlorobenzene, 3:985  
 see also 1,2-Dichloro-3-nitrobenzene
- 4-Nitrodiphenylamine (PNDPA), 3:984
- Nitroethane, 3:955, 960, 961
- (2-Nitroethyl)-benzene, 3:960
- 2-(2-nitroethyl)thiophene, 3:1248
- 2-Nitro-1-ethoxybenzene, 1:290
- Nitrofen, 3:983, 1004
- 5-Nitro-2-furaldehyde, 3:1009  
 see also 2-Formyl-5-nitrofurane
- Nitrofurantoin, 3:1009
- Nitrofurazone, 3:1009
- Nitroguanidine [556-88-7], 2:663
- Nitroheterocycles, 3:1008
- 2-Nitrohydroquinone diethyl ether, 3:1005  
 see also 2,5-Diethoxynitrobenzene
- 2-Nitrohydroquinone dimethyl ether, 3:1005  
 see also 2,5-Dimethoxynitrobenzene
- 3-Nitro-4-hydroxyphenylarsonic acid, 1:228
- 2-Nitroimidazole, 3:1009
- 4-Nitroimidazole, 2:726, 3:1009  
 toxicology, 2:731
- Nitroimidazoles  
 toxicology, 2:730
- Nitroketones, 3:1007  
 from aliphatic nitro compounds, 3:957
- Nitromethane, 3:955, 959
- 4-Nitro-1-methylbenzene, 3:976  
 see also 4-Nitrotoluene
- 3-Nitro-4-methylbenzenesulfonic acid, 3:997  
 see also 2-Nitrotoluene-4-sulfonic acid
- 5-Nitro-2-methylbenzenesulfonic acid, 3:998  
 see also 4-Nitrotoluene-2-sulfonic acid
- 1-Nitronaphthalene, 3:979  
 toxicology, 3:979
- 2-Nitronaphthalene, 3:978, 979  
 toxicology, 3:979
- 2-Nitrophenol, 3:982, 1003
- 3-Nitrophenol, 3:1004
- 4-Nitrophenol, 3:983, 1004
- Nitrophenols  
 ether derivatives, 3:1003
- 2-Nitrophenol-4-sulfonic acid, 3:1000
- 4-Nitrophenylacetic acid, 3:987
- 1-(2-Nitrophenyl)ethanol, 3:1007
- 1-(3-Nitrophenyl)ethanone, 3:1007  
 see also 3-Nitroacetophenone
- 2-Nitrophenyl ethyl ether, 3:1003
- 4-Nitrophenyl ethyl ether, 3:1005  
 see also 4-Ethoxynitrobenzene
- (3-Nitrophenyl)hydrazine, 3:990
- (4-Nitrophenyl)hydrazine, 3:991
- 3-Nitrophenyl-2-hydroxyethylsulfone, 3:996
- 4-Nitrophenyl isocyanate, 3:991
- 4-Nitrophenyl methyl ketone, 3:1008  
 see also 4-Nitroacetophenone
- 2-Nitrophenylpyruvic acid, 3:973
- 2-Nitrophenylsulfenyl chloride, 3:995
- 1-Nitropropane, 3:955, 961
- 2-Nitropropane, 3:955, 961  
 carcinogenicity, 3:963
- 3-Nitropyridine, 3:1008
- 4-Nitropyridine *N*-oxide, 3:1008
- Nitroquaniil, 3:991
- 4-Nitroquinoline, 3:1009
- 5-Nitroquinoline, 3:1009
- 8-Nitroquinoline, 3:1009
- 6-Nitrosaccharin, 3:999
- Nitrosobenzene  
 from nitrobenzene, 3:971
- N*-Nitroso derivatives  
 of amino acids, 1:169
- 1-Nitroso-2-naphthol, 3:882
- $\beta$ -Nitrostyrenes  
 from aliphatic nitro compounds, 3:957
- 5-Nitro-2-thiazolamine, 3:1010  
 see also 2-Amino-5-nitrothiazole
- 2-Nitrotoluene (ONT), 3:973  
 see also 1-Methyl-2-nitrobenzene
- 3-Nitrotoluene, 3:976  
 see also 1-Methyl-3-nitrobenzene
- 4-Nitrotoluene (PNT), 3:976  
 see also 4-Nitro-1-methylbenzene
- Nitrotoluenes, 3:973  
 toxicity, 3:977
- 2-Nitrotoluene-4-sulfonic acid, 1:291, 3:997  
 see also 3-Nitro-4-methylbenzenesulfonic acid

- 4-Nitrotoluene-2-sulfonic acid (PNTOS), 3:998  
*see also 5-Nitro-2-methylbenzenesulfonic acid*  
 Nitrotoluenesulfonic acids  
 derivatives, 3:997  
 4-Nitrotoluene-2-sulfonyl chloride, 3:999  
 2-Nitro-*p*-toluene sulfonyl chloride, 3:998  
 3-Nitro-*p*-toluidine (MNPT), 3:993  
*see also 4-Methyl-2-nitroaniline*  
 4-Nitro-*o*-toluidine, 3:993  
*see also 2-Methyl-5-nitroaniline*  
 5-Nitro-*o*-toluidine, 3:993  
*see also 2-Methyl-4-nitroaniline*  
 6-Nitro-*o*-toluidine, 3:993  
 1-Nitro-2,4,5-trichlorobenzene, 3:986  
*see also 1,2,4-Trichloro-5-nitrobenzene*  
 Nitroxyls, 3:977  
 Nizatidine, 3:960  
 NJBUD, 2:615  
*N*-Methyl-2-pyrrolidone (NMP) [872-50-4], 3:1138  
 toxicology, 3:1142  
*N*-Methylpyrrolidone *N*-Methyl-2-pyrrolidone (NMP) [872-50-4], 3:1138  
*N,N'*-Bis(1-methylpropyl)-1,4-benzenediamine [101-96-2], 3:1141  
*see NVP stabilizer*  
*N,N'*-diaminoguanidine [4364-78-7], 2:664  
*N,N*-Dihydroxymethyl-2-oxo-4,5-dihydroxyimidazolidine, 3:1278  
*N,N*-Dihydroxymethyl-2-oxo-4-hydroxy(methoxy)-5,5-dimethylhexahydropyrimidine, 3:1282  
*N,N*-Dihydroxymethylurea [140-95-4], 3:1278  
*N,N*-Dimethyl-*N,N'*-diphenylurea [611-92-7], 3:1276  
*N,N*-Dimethylurea, symmetric [96-31-1], 3:1276  
*N,N*-Diphenylurea [102-07-8], 3:1276  
*N,N'*-Diphenylurea [603-54-3], 3:1276  
*N,N,N',N'*-Tetramethylguanidine [80-70-6], 2:666  
*N,N,N'*-triaminoguanidine [2203-24-9], 2:665  
 Nocceler PPD, 2:616  
 Nocceler TS, 2:616  
 Nocceler ZP, 2:616  
*N*-Octyl-2-pyrrolidone [2687-94-7], 3:1141  
 Nomersan, 2:618  
 Nomex, 2:452  
*see also Poly(1,3-phenyleneisophthalamide)*  
 Nonacarbonyl diiron (diiron nonacarbonyl), 2:772  
 Nonanedioic acid, 2:585  
*see also Azelaic acid*  
 Nonanoic acid, 2:445 2:436, 443  
*see also Pelargonic acid*  
 Nonylphenol, 3:1062  
 4-Nonylphenol, branched, 3:1062  
 Novoldiamine, 1:148  
*see 1-Diethylamino-4-aminopentane*  
 Noxyflex-S, 3:1263  
*N,N,N'*-Trichloromelamine, 2:495  
*N*-Vinyl-2-pyrrolidone (NVP) [88-12-0], 3:1140  
 toxicology, 3:1142  
*N*-Vinylpyrrolidone *N*-Vinyl-2-pyrrolidone (NVP) [88-12-0], 3:1140
- O**  
 Ocimene, 3:1190  
 Octabromobiphenyl oxide, 1:379, 385  
*see toxicology*  
 Octadecylamine, 1:137  
 Octadecyl isocyanate, 2:782  
 Octadecylamine, 1:137  
 Octamethylenediamine  
*see 1, 1:147, 8-Diaminooctane*  
 Octanedioic acid, 2:585  
*see also Suberic acid*  
 1,2-Octanediol, 1:49  
 toxicology, 1:55  
 1-Octanethiol, 3:1217  
 Octanoic acid, 2:445 2:436, 443  
*see also Caprylic acid*  
 2-Octanone, 2:822, 823  
*see also Methyl hexyl ketone*  
 toxicology, 2:834  
 Octylamine, 1:115, 125, 137,  
*tert*-Octylphenol, 3:1062  
 Octylphosphonic acid, 3:1115  
 Octyltin(thio)acetic acid isoocetyl esters, 3:1271  
 Octyltin trichloride, 3:1271  
 Octyltin tris(isooctyl thioglycolate), 3:871  
 Olanzapine, 3:1251  
 Olefins  
 epoxidation, 2:633  
 ionic liquids in oligomerization of, 2:752  
 Koch carbonylation to acids, 2:439  
 $\alpha$ -, oxidation to ketones, 2:823  
 Oleum  
 as sulfonating agent, 1:243  
 Oleylamine, 1:137  
 OMH-1, 2:692  
 Omnival, 1:202  
 Opilionides, 3:1041  
 Optically active compounds, 1:167  
*see chiral compounds*  
 Optical rotational dispersion (ORD), 1:168  
 Optimax, 1:203  
 Orange GC base, 3:983  
 Orange I, 3:881  
 Organoboranes, 1:357  
 Organometallic Compounds  
 of antimony, 1:223  
 Organophosphates, 3:1099  
 toxicology, 3:1122  
 Oricel ESL, 2:615  
 Oricel TBT, 2:617  
 Oricel TP, 2:615  
 Ornicetil, 1:203  
 Ornidazole  
 toxicology, 2:732  
 Ornitaine, 1:203  
 L-Ornithine, 1:176, 203  
 acetate, 1:203  
 L-aspartate, 1:203  
 as drug, 1:203  
 monohydrochloride, 1:203  
 2-oxoglutarate, 1:203  
 Orthamic acid, 3:995  
 Oryzalin, 3:1002  
 Oxalic acid, 2:585  
*see also Ethanedioic acid*  
 Oxaloacetic acid, 3:1021  
*see also 2-Oxosuccinic acid*  
 1,3-Oxazines, 2:808  
 1,3-Oxazolidine-2,5-diones, 1:170  
 Oxazolidines  
 from aliphatic nitro compounds, 3:957  
 Oxazolines  
 from aliphatic nitro compounds, 3:957  
 1,3-Oxazolin-5-ones, 1:170  
 Oxidation  
 of pentanols, 3:1025  
 of phenols, 3:1039  
 Oxitriptan, 1:204  
 2-Oxo-5-alkylhexahydro-1,3,5-triazines, 3:1280  
 Oxoarsenic compounds, 1:229  
 Oxocarboxylic acids, 3:1015  
 4-Oxo-3,5-dialkoxymethyltetrahydro-1,3,5-oxadiazines, 3:1280  
 $\alpha$ -Oxoglutaric acid, 3:1021  
 2-Oxohexahydropyrimidine Propyleneurea, 3:1276  
 2-Oxo-4-hydroxy-5,5-dimethylhexahydropyrimidyl-*N,N*-bisneopentals, 3:1283  
 2-Oxo-4-hydroxy-5,5-dimethyl-6-isopropylhexahydropyrimidine, 3:1282  
 2-Oxo-5-hydroxyhexahydropyrimidine (5-hydroxypropyleneurea), 3:1276  
 2-Oxo-4-hydroxyhexahydropyrimidines, 3:1278  
 Oxone, 3:1171  
 Oxoorganoarsines, 1:228  
 3-Oxopentane dicarboxylic acid, 3:1020  
*see also Acetonedicarboxylic acid*  
 4-Oxopentanoic acid, 3:1019  
*see also Levulinic acid*  
 2-Oxopropanoic acid, 3:1015, 1021  
*see also Pyruvic acid*  
 1-Oxopyridyl disulfide  
 as veterinary drug, 3:1230  
 2-Oxosuccinic acid, 3:1021  
*see also Oxaloacetic acid*  
 2-Oxo-4-ureido-6-methylhexahydropyrimidine [1129-42-6], 3:1282  
 2,2-[Oxybis(methylene)]-bis(2-ethyl)-1,3-propanediol, 1:52  
*see Ditrimehylolpropane*  
 2,2-[Oxybis(methylene)]-bis[2-hydroxymethyl]-1,3-propanediol, 1:54  
*see Dipentaerythritol*  
 2,2'-Oxy-bis(4,4,6-trimethyl-1,3,2-dioxaborinane), 1:361  
 Oxy C Acid, 3:923  
*see also 2-Amino-5-hydroxynaphthalene-4,8-disulfonic acid*  
 Oxy Chicago acid, 3:874  
*see also 1-Hydroxynaphthalene-4, 8-disulfonic acid*

- Oxychlorination  
of propene to allyl chloride, 1:72
- Oxyfan, 1:204
- Oxy Koch acid, 3:874  
*see also 1-Hydroxynaphthalene-3, 6, 8-trisulfonic acid*
- Oxy L acid, 3:874  
*see also 1-Hydroxynaphthalene-5-sulfonic acid*
- Oxy Tobias acid, 3:874  
*see also 2-Hydroxynaphthalene-1-sulfonic acid*
- Ozonolysis  
of cyclic olefins, 2:588
- P**
- P-229, 3:1111
- Pacitron, 1:203
- Pansan, 1:202
- Panstabil, 1:201
- Pantovipar, 1:201
- Papaverine, 3:1071
- PAPI, 2:797
- Parathion, 3:1004, 1120
- Parzate, DSE, 2:618
- Parzate, Zineb, 2:618
- Patchoulane, 3:1187
- p*-Bromophenylurea [167-25-5], 3:1276
- p*-chloranil [118-75-2], 1:311
- o*-*p*-Cl-Phenylalanine, 1:176
- Pegasus, 3:1265
- Pelargonic acid, 2:436  
*see also Nonanoic acid*
- Pemine, 1:205
- Pendramine, 1:205
- o*Penicillamine, 1:176, 204, 3:1215
- Pennzone, 3:1262
- 1,4,7,10,13-Pentazatridecane, 1:149  
*see Tetraethylenepentamine*
- Pentaborane, 1:353  
toxicology, 1:362
- Pentabromobiphenyl oxide, 1:379
- Pentabromochlorocyclohexane, 1:379
- Pentabromoethylbenzene, 1:379
- Pentacarbonyl iron (iron pentacarbonyl)  
toxicology, 2:776
- Pentachloroaniline, 3:986
- Pentachloronitrobenzene, 3:986
- Pentachlorothiophenol, 3:1224
- Pentaerythritol (2,2-bis(hydroxymethyl)-1,3-propanediol), 1:52  
allyl ethers of, 1:82  
spirocyclic phosphites from, 3:1112  
toxicology, 1:55
- Pentaerythritol tetranitrate (PETN), 1:53
- Pentaethylenhexamine, 1:149
- Pentamethylenedithiocarbamic acid  
piperidinium salt of, 2:603
- Pentamethylenedithiocarbamic acid tetrasulfide, 2:607
- Pentamethylene glycol, 1:40  
*see also 1,5-Pentanediol*
- 2,2-Pentamethylene-1,3-oxathiolane-5-one, 3:870
- Pentamethylphenol, 3:1048
- Pentanedioic acid, 2:585  
*see also Glutaric acid*
- 1,2-Pentanediol, 1:49
- 1,5-Pentanediol, 1:40  
*see also Pentamethylene glycol*  
toxicology, 1:55
- 2,3-Pentanedione, 2:831
- 2,4-Pentanedione, 2:830  
*see also Acetylacetone*  
toxicology, 2:834
- n*-Pentanoic acid 2:436, 441, 442  
*see also n-Valeric acid*
- 1-Pentanol, 3:1024, 1028  
*see also Amyl alcohol*
- 2-Pentanol, 3:1024, 1029  
*see also sec-Amyl alcohol*  
optically active, 3:1024
- 3-Pentanol, 3:1024  
optically active, 3:1024
- Pentanol (amyl alcohols), 3:1023  
azeotropic mixtures with water, 3:1025  
optically active, 3:1025  
toxicology, 3:1030
- 3-Pentanone, 2:823  
*see also Diethyl ketone*  
toxicology, 2:834
- 1,4,7,10,13-Pentaoxacyclopentadecane, 2:535
- 1,4,7,13,16-Pentaoxa-10,19-diazacycloheneicosane, 2:535
- Pentenes  
hydration, 3:1027
- Pentetic acid, 2:645
- Pentex, 2:616
- Pentothal, 3:1264
- Pentoxifylline, 3:1134
- Pentylamine, 1:115, 125
- n*-Pentyl carbamate, 1:400
- 2-*tert*-Pentylphenol, 3:1061
- 3-*tert*-Pentylphenol, 3:1061
- 4-*tert*-Pentylphenol, 3:1060
- tert*-Pentylphenols, 3:1060
- Pepsalara, 1:202
- Perfluorocarboxylic acids, 2:447
- Perfuazoate, 1:209
- Perhydro- $\beta$ -carotene, 3:1187
- Perinone Orange, 2:458
- Perkacit TMTD, 2:617
- Perkacit ZBC, 2:616
- Perkacit ZDEC, 2:615
- Perkin reaction, 2:530
- Perkow reaction, 2:464, 3:1117
- Peroxy carbonates  
from chloroformates, 2:500
- Peroxy carboxylic acids  
epoxidation of olefins with, 2:633
- Peroxyimide acids, 2:635
- Perthane, 2:466
- Perylene Bordeaux, 2:457
- Perylene dianhydride, 2:456, 457
- Perylene diimide, 2:457
- Perylene-3,4,9,10-tetracarboxylic acid, 2:450, 457
- Pesimurait, 1:201
- PETD, 2:617
- Pharmaceuticals  
fine chemicals, 1:25
- PHB, 2:711
- PHB-Ester, 2:718
- Phenacetin, 3:1005  
*see also 4-Ethoxyacetanilide*
- $\beta$ -Phenethyl bromide, 1:374
- p*-Phenetidine, 3:1005
- Phenetole, 3:1082  
*see also Phenyl ethyl ether*
- Phenol  
from benzenesulfonic acid, 1:242  
from benzoic acid, 1:298  
catechol from, 3:1069  
ethylation, 3:1049  
phenol alkylation product, composition, 3:1055
- Phenol derivatives, 3:1037  
halogen derivatives, 3:1084
- Phenol ethers, 3:1081
- Phenolic microbicides, 3:1085
- Phenols  
oxidative carbonylation of, 1:413  
reaction with urea, 1:416
- Phenoxyacetic acid, 3:1083
- 3-Phenoxybenzal bromide, 1:374
- 3-Phenoxybenzyl bromide, 1:374
- Phenoxybutyric acids, 1:392
- 2-Phenoxyethanol, 3:1082
- Phenoxy herbicides, 2:522
- 2-Phenylacetaldehyde [122-78-1], 1:61
- 2-Phenylacetaldehyde, 1:60, 61
- Phenylacetone, 2:833  
*see also 1-Phenyl-2-propanone*
- Phenylacetonitrile, 3:943  
*see also Benzyl cyanide*
- D*Phenylalanine, 1:176
- D,L*-Phenylalanine, 1:176
- L*-Phenylalanine, 1:167, 172  
production, 1:186
- Phenyl 2-aminobenzenesulfonate, 1:262
- Phenylarsine, 1:229
- (Phenylazo)malononitrile, 2:861
- Phenyl benzoate, 1:302
- Phenylboric acid, 1:359

- Phenylboronic acid, **1:359**  
 Phenyl carbamate, **1:400**  
 Phenyl chloroformate, **2:498**  
 5-Phenyl-L-cysteine, **1:176**  
 2-Phenyldithiocarbamic acid, **2:601**  
 1,2-Phenylenediacetonitrile, **3:943**  
*see also 1,2-Bis-(cyanomethyl)benzene*  
*o*-Phenylenediamine, **3:990**  
*p*-Phenylenediamine (PPD), **3:991**  
*p*-Phenylene diisocyanate (PPDI), **2:784**  
 Phenylethanolamine intermediates  
 from aliphatic nitro compounds, **3:957**  
 Phenyl ethyl ether, **3:1082**  
*see also Phenetole*  
*D*-Phenylglycine, **1:176**  
 Phenylglyoxylonitrile, **3:943**  
*see also Benzoyl cyanide*  
*N*-Phenylhydroxylamine  
 from nitrobenzene, **3:971**  
 2-Phenylimidazole, **2:726**  
 Phenylimidazoles  
 toxicology, **2:730**  
 Phenyl isocyanate (PI), **2:782**  
 Phenyl isothiocyanate, **3:1206**  
*N*-Phenyl J acid, **3:919**  
*see also 4-Hydroxy-7-phenylaminonaphthalene-2-sulfonic acid*  
 Phenylketene, **2:812**  
 Phenyllithium, **2:843**  
 Phenyl methyl ether, **3:1082**  
*see also Anisole*  
*N*-Phenyl-2-naphthylamine (PBN), **3:882**  
*N*-Phenylloxazolidone, **2:631**  
 Phenylloxirane, **2:639**  
 Phenylphosphine C<sub>6</sub>H<sub>5</sub>PH<sub>2</sub>, **3:1100**  
 Phenylphosphonic acid, **3:1104, 1110**  
 sodium salt, **3:1110**  
 Phenylphosphonic acid, **3:1115**  
 3-Phenylpropanal, **1:62**  
 2-Phenylpropanal, **1:60, 62**  
*see also Hydratropic aldehyde*  
 3-Phenylpropanal, **1:60, 62**  
*see also Dihydrocinnamaldehyde*  
 Phenylpropanolamine  
 intermediates from aliphatic nitro compounds, **3:957**  
 1-Phenyl-1-propanone, **2:832**  
*see also Propiophenone*  
 toxicology, **2:834**  
 1-Phenyl-2-propanone, **2:833**  
*see also Benzyl methyl ketone*  
 3-Phenyl-2-propenal, **1:60, 64**  
*see also Cinnamaldehyde*  
 3-Phenylpropenoic acid, **2:529**  
*see Cinnamic acid*  
 3-Phenylpropionic acid, **2:530**  
 Phenylsulfamic acid  
 from nitrobenzene, **3:971**  
 Phenylsulfanyl chloride, **3:1158**  
 4-[*N*-(Phenylsulfonyl)amino]acetanilide, **1:254**  
*N*-(Phenylsulfonyl)benzenesulfonamide, **1:254**  
*N*-Phenylthiazolidine-2-thione, **2:609**  
 Phenylthiohydantoin amino acid, **1:210**  
 Phenylurea [64-10-8], **3:1276**  
 Phenyl vinyl sulfoxide, **3:1177**  
 Phloroglucinol, **3:1073**  
 keto-enol tautomerism, **3:1073**  
 toxicology, **3:1074**  
 Phomopsis viticola, **1:208**  
 Phosclere, **3:1112**  
 Phosfleur, **3:1106**  
 Phosflex, **3:1118**  
 Phosgene  
 in isocyanate production, **2:790**  
 Phosokresol B, C, E, **3:1122**  
 9*H*-9-Phosphabicyclononane, **3:1100**  
 Phosphine oxides, **3:1106**  
 (CH<sub>3</sub>)<sub>3</sub>PO, **3:1107**  
 (C<sub>8</sub>H<sub>17</sub>)<sub>3</sub>PO, **3:1107**  
*sec*-C<sub>8</sub>H<sub>17</sub>PO(C<sub>8</sub>H<sub>17</sub>)<sub>2</sub>, **3:1107**  
 Phosphines, **3:1100**  
 primary, *c*-C<sub>6</sub>H<sub>11</sub>PH<sub>2</sub>, **3:1100**  
 primary, *n*-C<sub>4</sub>H<sub>9</sub>PH<sub>2</sub>, **3:1100**  
 primary, C<sub>2</sub>H<sub>5</sub>PH<sub>2</sub>, **3:1100**  
 primary, CH<sub>3</sub>PH<sub>2</sub>, **3:1100**  
 primary, C<sub>6</sub>H<sub>5</sub>PH<sub>2</sub>, **3:1100**  
 secondary, C<sub>8</sub>H<sub>17</sub>PH, *asym.*, **3:1101**  
 secondary, C<sub>8</sub>H<sub>17</sub>PH, *sym.*, **3:1101**  
 secondary, (*c*-C<sub>6</sub>H<sub>11</sub>)<sub>2</sub>PH, **3:1101**  
 secondary, (*n*-C<sub>4</sub>H<sub>9</sub>)<sub>2</sub>PH, **3:1101**  
 secondary, (C<sub>2</sub>H<sub>5</sub>)<sub>2</sub>PH, **3:1101**  
 secondary, (C<sub>6</sub>H<sub>5</sub>)<sub>2</sub>PH, **3:1101**  
 secondary, (CH<sub>3</sub>)<sub>2</sub>PH, **3:1101**  
 tertiary, (*c*-C<sub>6</sub>H<sub>11</sub>)<sub>3</sub>P, **3:1101**  
 tertiary, (*n*-C<sub>4</sub>H<sub>9</sub>)<sub>3</sub>P, **3:1101**  
 tertiary, (C<sub>2</sub>H<sub>5</sub>)<sub>3</sub>P, **3:1101**  
 tertiary, (C<sub>6</sub>H<sub>5</sub>)<sub>3</sub>P, **3:1101**  
 tertiary, (CH<sub>3</sub>)<sub>3</sub>P, **3:1101**  
 tertiary, (NCCH<sub>2</sub>CH<sub>2</sub>)<sub>3</sub>P, **3:1101**  
 toxicology, **3:1122**  
 Phosphine sulfides, **3:1106**  
 Phosphinic acid, **3:1110**  
*see also Hypophosphorous acid*  
 Phosphinothricin, **3:1110**  
 ammonium salt, **3:1110**  
 Phosphinothricine, **1:206**  
 Phosphites, **3:1111**  
 toxicology, **3:1125**  
 Phosphonic acid esters, **3:1116**  
 Phosphonic acid halides  
 CH<sub>3</sub>P(O)Cl<sub>2</sub>, **3:1117**  
 C<sub>6</sub>H<sub>5</sub>P(O)Cl<sub>2</sub>, **3:1117**  
 Phosphonic acids, **3:1113**  
 Phosphonium salts, **3:1104**  
 [(CH<sub>2</sub>OH)<sub>4</sub>]P<sup>+</sup>Cl<sup>-</sup>, **3:1105**  
 [(C<sub>4</sub>H<sub>9</sub>)<sub>4</sub>]P<sup>+</sup>Br<sup>-</sup>, **3:1105**  
 [(C<sub>6</sub>H<sub>5</sub>)<sub>4</sub>]P<sup>+</sup>Br<sup>-</sup>, **3:1105**  
 [(C<sub>4</sub>H<sub>9</sub>)<sub>3</sub>PCl<sub>16</sub>H<sub>33</sub>]Br, **3:1105**  
 [(C<sub>4</sub>H<sub>9</sub>)<sub>3</sub>PCH<sub>3</sub>]I, **3:1105**  
 [(C<sub>6</sub>H<sub>5</sub>)<sub>3</sub>PCH<sub>2</sub>OCH<sub>3</sub>]Cl, **3:1105**  
 [(CH<sub>3</sub>)<sub>4</sub>]P<sup>+</sup>Cl<sup>-</sup>, **3:1105**  
 Phosphonoacetic acid, **3:1115**  
 2-Phosphonobutane-1,2,4-tricarboxylic acid, **3:1115**  
 NH<sub>4</sub> salt, **3:1115**  
 Phthalic acid (1,2-benzene dicarboxylic acid), **2:450**  
 Phthalic anhydride (isobenzofuran-1,3-dione), **2:456**  
 from naphthalene, **2:454**  
*o*-*p*-Hydroxyphenylglycine, **1:175**  
 Phytates, **3:1187**  
 Phytol, **3:1197, 1198**  
 Phytosol, **3:1116**  
 Picramide, **3:992**  
*see also 2,4,6-Trinitroaniline*  
 Picryl chloride, **3:984**  
*see also 2,4,6-Trinitrochlorobenzene*  
 Pigment Red 1, C.I. 12070, **3:991**  
 Pigment Red 3, C.I. 12120, **3:883, 993**  
 Pigment Red 49, **3:906**  
 Pigments  
 aluminum powder and mica, coated with iron oxide, **2:775**  
 phthaloperinone, **3:900**  
 Pigment Yellow 5, **3:990**  
 Pimelic acid, **2:585, 591**  
*see also Heptanedioic acid*  
 Pinacol, **1:49**  
*see also 2,3-butanediol, 3-Dimethyl-2-Pinacolone, 2:821*  
*see also 3,3-Dimethyl-2-butanone; Methyl tert-butyl ketone*  
 Pinacol rearrangement, **2:821**  
 Pinacyanol, **3:1146**  
 Pinane, **3:1193**  
 isomers, **3:1193**  
 2-Pinane hydroperoxide, **3:1194**  
 2-Pinanol, **3:1194**  
 isomers, **3:1194**  
 α-Pinene, **3:1187**  
 epoxidation, **2:634**  
 α-Pinene oxide, **2:639**  
 1-Pipecolic acid, **1:176**  
 Piperazine, **1:133**  
 toxicology, **1:155**  
 1-Piperazinecarboxylic acid, **1:176**  
 Piperidine, **1:130**  
*o*-Piperidine-3-carboxylic acid, **1:177**  
 Piperidinomethyl dithiocarbamates, **2:610**  
 3-Piperidinylindoles, **2:737**  
 Piperidones, **2:447**  
 Piperonal (3,4-(methylenedioxy)benzaldehyde), **3:1070**

- Piracetam, **3:1141**  
 Piria reaction, **1:246**  
 Piria's acid, **3:903**  
*see also 1-Aminonaphthalene-4-sulfonic acid; Naphthionic acid*  
*p*-Isobutylacetophenone  
 aldehydes from, **1:63**  
 Pivalic acid, **2:436, 444**  
*see also 2,2-Dimethylpropanoic acid; Trimethylacetic acid*  
*N*-Pivaloylcysteine, **3:1218**  
 Pizotyline, **3:1247**  
 Plant design  
 fine chemicals, **1:16**  
 Plexamine, **1:202**  
 Pliabrac, **3:1118**  
 Plictran, **3:1271**  
*L-p*-NO<sub>2</sub>-Phenylalanine, **1:176**  
 Polaris, **1:210**  
 Polilevo, **1:201, 203**  
 Polo, **3:1265**  
 Polyalkyleneureas, **3:1275**  
 Poly-3-alkylthiophenes, **3:1250**  
 Poly(allyl esters), **1:80**  
 Polyamines, **1:148**  
 Polybutadiene oxide, **2:641**  
 Poly-1,7-carboranyl siloxanes, **1:356**  
 Polychloroacetaldehydes, **2:466**  
 Polychloronitrobenzenes, **3:984**  
 Polydichloroacetaldehydes, **2:467**  
 Polyethylenimine, **1:234, 239**  
 Polyglyoxal  
 glyoxal, **2:651**  
 Poly( $\beta$ -hydroxybutyric acid), **2:712**  
 Polyisobutenamine, **1:125**  
 Polymer  
 produced by aluminoxanes, **1:105**  
 Polymers  
 aziridine-modified, **1:234**  
 Polymer synthesis  
 ionic liquids for, **2:748**  
 Poly(methyl isopropyl ketone), **2:828**  
 Polymethylphenols, **3:1047, 1048**  
 Polymim, **1:234**  
 Polymram, **2:619**  
 Polysolvan O, **2:478**  
 Polysolvan-O, **2:710**  
 Poly(tribromostyrene), **1:379**  
 Pomarsol, **2:618**  
 Pomarsol-Z, **2:618**  
 Porofor B 13 CP 50, **1:255**  
 Porofor BSH, **1:253**  
 Potassium benzoate, **1:301**  
 Potassium borohydride, **2:688**  
 Potassium dithiocarbamates, **2:605**  
 Potassium fluoroborate, **1:351**  
 Potassium guaiacol sulfonate, **3:1070**  
 Potassium hydride, **2:678**  
 Potassium tri-*sec*-butylborohydride, **2:679**  
 Potentiator, **1:201**  
 Powdered metals  
 by reduction of metal salts with NaH, **2:678**  
 Powder metallurgy  
 titanium hydride in, **2:695**  
 Prehntic acid, **2:450**  
*see also 1,2,3,5-Benzenetetracarboxylic acid*  
 Preventol, **3:1081**  
 Prilezhaev (Prileschajew) reaction, **2:633**  
 Prins reaction, **3:1028**  
 Priorin, **1:201**  
 Proban process, **3:1106**  
 Prochloraz, **2:728**  
 Procion dyes, **2:556**  
 D-Proline, **1:177**  
 D,L-Proline, **1:177**  
 L-Proline, **1:167, 172, 203,**  
 production, **1:187**  
 Propanedioic acid, **2:585**  
*see also Malonic acid*  
 1,2-Propanediol (propylene glycol), **3:1016**  
 1,3-Propanediol, **1:44**  
 toxicology, **1:55**  
 Propene  
 allyl chloride from, **1:69**  
 2-Propene-1-sulfinothioate, **3:1121**  
 Propene tetramer  
 as alkylating agent for phenols, **3:1062**  
 Propene trimer  
 as alkylating agent for phenols, **3:1062**  
 2-Propen-1-ol, **1:74**  
*see Allyl alcohol*  
 2-Propiolactone (2-oxetanone), **2:710, 805**  
 Propiolic acid, **2:436, 440**  
*see also Propynoic acid; Acetylenecarboxylic acid*  
 Propionitrile, **3:937**  
 Propiophenone, **2:832**  
*see also Ethyl phenyl ketone*  
 Propoxur, **3:1071**  
 Propycil, **3:1263**  
 Propylamine, **1:115**  
 uses, **1:124**  
 Propyl carbamate, **1:400**  
 Propyl chloroformate, **2:498**  
 Propyl cyanide, **3:937**  
*see also Butyronitrile*  
*n*-Propyl cyanoacetate, **2:857**  
 Propylene carbonate, **1:407, 408**  
 2-Propylene chlorohydrin, **2:506, 511**  
*see also 2-Chloro-1-propanol*  
 Propylene-1,2-diamine  
*see 1, 1:145, 2-Diaminopropane*  
 Propylene-1,3-diamine  
*see 1, 1:145, 3-Diaminopropane*  
 1,3-Propyleneurea, **3:1276**  
 Propylene oxide  
 2-methyl-1,3-propanediol, **1:44**  
 Propylene oxide (Methyloxirane) (PO)  
 by epoxidation with *tert*-butyl hydroperoxide, **2:636**  
 isomerization to allyl alcohol, **1:75**  
 from propylene chlorohydrin, **2:510**  
 Propyleneurea (2-oxohexahydropyrimidine) [**65405-39-2**],  
**3:1276**  
 Propylenimine, **1:233**  
 toxicology, **1:239**  
 Propyl gallate, **2:721**  
 Propyl 4-hydroxybenzoate, **2:718**  
 1-Propylimidazole  
 toxicology, **2:729**  
 2-Propylpentanoic acid, **2:436**  
*see also Dipropylacetic acid*  
 Propyl-Thiocil, **3:1263**  
 2-propylthiophene, **3:1247**  
 Propyl-Thyracil, **3:1263**  
 Propynoic acid, **2:436**  
*see also Propiolic acid*  
 Proteinogenic amino acids, **1:171**  
 Proteins, **1:165**  
 biologic value, **1:193**  
 daily requirement, **1:193**  
 deficiency symptoms, **1:214**  
 Prothiucil, **3:1263**  
 Proxyphylline, **3:1134**  
 Psicossoma, **1:202**  
 Psychoverlan, **1:202**  
 Pummerer rearrangement, **3:1179**  
 Pumosetrag, **3:1251**  
 Purine derivatives, **3:1131**  
 as antiasthmatic agents, **3:1134**  
 as antiemetics, **3:1134**  
 in beverages, **3:1134**  
 as cardiovascular drugs, **3:1134**  
 as chemotherapeutics, **3:1134**  
 6-Purinethiol hydrate, **3:1226**  
 Purpuroil, **3:913**  
*see also 5-Amino-1-naphthol*  
*5-Amino-1-naphthol*, **3:874**  
 Pursuit, **1:207**  
 Pyrantel, **3:1246, 1249**  
 Pyrazinamide, **2:654**  
 Pyrazoles  
 from acetylacetone, **2:830**  
 Pyrazophos, **3:1120**  
 Pyridine  
 nitro derivatives, **3:1008**  
 2,3-Pyridinedicarboximide, **2:492**  
 Pyridine-2-thiol, **3:1226**  
 2-Pyridinethiol *N*-oxide  
 as pharmaceutical, **3:1129**



- D-3-(3'-Pyridyl)-alanine, **1:177**  
 Pyridyldithiocarbamic acid  
   Zn-, Pb- and Cd-salts, **2:605, 615**  
 Pyridyldithiocarbamic acid esters, **2:608**  
 Pyrimidine-2-thiol, **3:1226**  
 Pyrocatechol, **3:1068**  
   *see also Catechol*  
 Pyrogallol, **3:1071**  
   toxicology, **3:1072**  
 Pyromellitic acid, **2:450, 455**  
   *see also 1,2,4,5-Benzenetetracarboxylic acid*  
 Pyromellitic anhydride, **2:458**  
 Pyromellitic dianhydride (PMDA), **2:455, 456**  
 Pyrotechnics  
   zirconium hydride for, **2:696**  
 Pyrovatex CP, **3:1116**  
 Pyrrolidine, **1:130**  
   toxicology, **1:155**  
 2-Pyrrolidone[616-45-5], **3:1137**  
 2-Pyrrolidone, **3:1137**  
   *see also  $\gamma$ -Butyrolactam*  
   toxicology, **3:1141**  
 2-Pyrrolidone [616-45-5]  $\gamma$ -Butyrolactam,  
   **3:1137**  
 Pyrrolidone derivatives, **3:1141**  
 2-Pyrrolidone-1-dithiocarbamic acid, **2:601**  
 Pyrrolidones, **2:447**  
   *see also Pyrrolidinones*  
 L-Pyrrolysine, **1:177**  
 Pyruvic acid, **3:1015**  
   *see also 2-Oxopropanoic acid*  
   toxicology, **3:1016**
- Q**  
 Quinoline, **3:1145**  
   in dyes, **3:1146**  
   nitro derivatives, **3:1010**  
   in pharmaceuticals and agriculturals, **3:1146**  
 Quinoline-8-sulfonic acid, **3:1146**  
 2-Quinolinethiol, **3:1226**  
 Quinoline Yellow, **3:1146**  
 8-Quinolinol, **3:1147**  
 2-Quinolinone, **3:1146**
- R**  
 2R Acid (Columbia acid), **3:874**  
   *see also 2-Amino-8-hydroxynaphthalene-3, 6-disulfonic acid*  
 Radcol, **1:204**  
 Radziszewski reaction, **2:726**  
*raloxifene*, **3:1252**  
 Ramberg-Bäcklund reaction, **3:1174**  
 Raney cobalt  
   as catalysts in thiol production, **3:1223**  
 Raney palladium  
   as catalysts in thiol production, **3:1223**  
 Ranitidine, **3:960**  
   from methyl isothiocyanate, **3:1209**  
 Raptor, **1:207**  
 Reactive Black 5, **3:922**  
 Reactive Red 6, **3:923**  
 Reactive Red 9, **3:919**  
 Reactive Red 12, **3:922**  
 Red FG Base, **3:986**  
 Red phosphorus  
   reducing agent in thiol production, **3:1223**  
 Reducdyn, **1:201**  
 Reduction  
   catalytic, **1:281**  
   with complex hydrides, flow diagram, **2:693**  
   electrochemical, **1:281**  
   of nitrobenzene to hydrazobenzene, **1:279**  
 Regulan, **1:147**  
 Reimer-Tiemann reaction, **3:1040, 1069**  
 Reofos, **3:1118**  
 Reproterol, **3:1134**  
 Retinane, **3:1187**  
 Rexene NTA, **3:951**  
 R-Gene, **1:201**  
 Rhodacarborane complexes, **1:357**  
 Rhodanine, **2:610**  
 Rhodocet, **2:797**  
 Ricinoleic acid, **2:705**  
 Ridomil, **1:209**  
 Ritter reaction, **1:120**  
 Robac 22, **3:1262**  
 Robac BJDD, **2:615**  
 Robac CPD, **2:615**  
 Robac DBTU, **3:1262**  
 Robac DETU, **3:1262**  
 Robac LPD, **2:615**  
 Robac PPD, **2:616**  
 Robac PTM, **2:617**  
 Robac TBTU, **2:617**  
 Robac TMT, **2:617**  
 Robac ZBED, **2:615, 616**  
 Robac ZDC, **2:615**  
 Robinson annelation, **2:827**  
 Ronidazole, **2:728**  
 Roundup, **1:206**  
 Rovral, **1:209**  
 Royalac 133, **2:615**  
 Rubber, synthetic  
   butyllithium as catalyst for polymerization, **2:840**  
 Rubidium hydride, **2:676**  
 Rubinate, **2:797**  
 Rufigallic acid, **2:720**  
 RZ-100, **2:616**
- S**  
 Saccharic acid, **2:708**  
 Saccharomyces cerevisiae, **3:1259**  
 L-Saccharopine, **1:177**  
 S Acid (Chicago acid), **3:874**  
   *see also 1-Amino-8-hydroxynaphthalene-4-sulfonic acid*  
 2S Acid (Chicago acid), **3:874**  
   *see also 1-Amino-8-hydroxynaphthalene-2, 4-disulfonic acid*  
 Safrane, **3:1187**  
 Safrole (5-allyl-1,3-benzodioxole), **3:1070**  
 Salicylic acid, **2:450**  
 Salmonella typhimurium, **3:1259**  
 Salvarsan, **1:229**  
 Salvoseptyl, **3:1263**  
 Sancellor 22, **3:1262**  
 Sancellor EUR, **3:1262**  
 Sancellor TS, **2:616**  
 Sancellor TT, **2:617**  
 Sandoflam, **3:1118**  
 Sandoflam 5060, **3:1120**  
 Sandoflam 5087, **3:1116**  
 Sanger's reagent, **1:210**  
 Sankel, **2:618**  
 Sansalid, **3:1264**  
 $\alpha$ -Santalane, **3:1187**  
 Santicizer, **3:1118**  
 Sargenor, **1:201**  
 Scarlet VD, **3:988**  
 Scepter, **1:206**  
 Schaeffer acid, **3:874**  
   *see also 2-Hydroxynaphthalene-6-sulfonic acid*  
 Schlenk equilibrium, **2:846**  
 Schwartz's reagent, **2:698**  
 Scuranate, **2:797**  
 Sebacic acid, **2:592 2:585, 586**  
   *see also Decanedioic acid*  
   by dimerization of monomethyl adipate, **2:588**  
 2-sec-Butyl-2-methyl-propanediol dicarbamate, **1:44**  
 Sekinin, **1:204**  
 Selenium dithiocarbamates, **2:605, 615**  
 Selenium oxide  
   oxidation of acetaldehyde with, **2:653**  
 L-Selenocysteine, **1:177**  
 L-Selenomethionine, **1:177**  
 o-Semidine, **1:282**  
 p-Semidine, **1:282**  
 Sequion, **3:1115**  
 Sequion 10 H 60, **3:1115**  
 D,L-Serine, **1:177**  
 D-Serine, **1:177**  
 L-Serine, **1:167, 173**  
   production, **1:187**  
 Sevin, **3:880**  
 Sharples process, **3:1026**  
 Sideryl, **1:201**  
 Silane, **2:677**  
 Sillthiopham, **3:1250**

- Silver fluoroborate, **1:351**  
 Silvex, **2:521**  
 Singer synthesis, **2:647**  
 Sitaxsentan, **3:1251**  
 Skatole, **2:735**  
 Skin cosmetics  
   amino acids in, **1:205**  
*S*-Methyl-L-cysteine, **1:175**  
 Smiles rearrangement, **3:1155, 1174**  
 Sodium aluminum diethyl dihydride, **1:93**  
 Sodium aluminum hydride (sodium alanate), **2:691**  
 Sodium amalgam  
   reduction of nitrobenzene with, **1:281**  
 Sodium benzoate, **1:301**  
 Sodium bis(2-methoxyethoxy)dihydroaluminat, **2:682**  
 Sodium borohydride (sodium boronate), **2:683**  
   *see also Sodium tetrahydridoborate*  
 Sodium chloroacetate, **2:475, 478**  
 Sodium *N*-chloroimidodisulfonate, **2:493**  
 Sodium *N*-chloro-*p*-toluenesulfonamide, **2:494**  
 Sodium cyanoborohydride, **2:687**  
   toxicology, **2:699**  
 Sodium cyanotrihydridoborate, **2:687**  
 Sodium dichloroacetate  
   toxicology, **2:487**  
 Sodium dichloroisocyanurate  
   dihydrate, **2:493**  
 Sodium diethyldihydroaluminat, **2:692**  
 Sodium dithiocarbamates, **2:604, 605, 615, 2:618, 619**  
 Sodium dithionite  
   in situ production, **2:687**  
 Sodium ethanesulfinate, **3:1153**  
 Sodium ethylene bis(dithiocarbamate), **2:604**  
 Sodium fluoroborate, **1:351**  
 Sodium hydride, **2:677**  
 Sodium tetrahydroaluminat, **2:691**  
 Sodium tetrahydridoborate, **1:355, 2:683**  
   *see also Sodium borohydride*  
 Sodium triacetoxylborohydride, **2:685**  
 Sodium trichloroacetate, **2:484**  
 Sohio process, **3:934**  
 Sokalan, **3:1119**  
 Solvent  
   drying with calcium hydride, **2:680**  
 Solvent Orange 7, **3:978**  
 Solvent Red 26, C.I. 26120, **3:978**  
 Solvent Red 31, **3:895**  
 Solvent Yellow 14, C.I. 12055, **3:883**  
 Soprophor, **3:1119**  
 Sorbenor, **1:201**  
 Sorbic acid (2,4-hexadienoic acid)  
   from ketene and crotonaldehyde, **2:804**  
 Soxinol TS, **2:616**  
 Soya amine, **1:137**  
 Soybean formula, **1:194**  
 Soybean oil  
   epoxidized, **2:640**  
 Spartocine, **1:201**  
 Spasmocyclon, **2:721**  
 Spectroscopy  
   chemical analysis of amino acids, **1:210**  
 Spelear, **1:203**  
 Spike, **3:1209**  
 Spirocyclic phosphites  
   e.g., [26741-53-7], **3:1112**  
 Squalane, **3:1187**  
 Squalene, **3:1197**  
*S*-Seven, **3:1116**  
 Stabilizer C, **3:1262**  
 Staining  
   chemical analysis of amino acids, **1:211**  
 Starch  
   allyl ethers of, **1:82**  
 Stavivor, **3:1112**  
 Stetter dicarboxylic acid synthesis, **2:590**  
 Stibabenzene, **1:224**  
 Stibonium salts, **1:224**  
 Stilbene  
   epoxidation, **2:634**  
*cis*-Stilbene oxide  
   toxicology, **2:642**  
 Stobbe condensation, **2:584**  
 Strecker degradation  
   flavors by, **1:195**  
 Streptococcus faecalis, **1:212**  
 Streptomyces venezuelae, **3:966**  
 Strobilurins, **1:26**  
 Strontium hydride, **2:676**  
 Styrene  
   aldehydes from, **1:62**  
 Styrene chlorohydrin, **2:513**  
   toxicology, **2:516**  
 Styrene oxide, **2:639**  
   toxicology, **2:642**  
 Suberic acid, **2:585, 591**  
   *see also Octanedioic acid*  
 Suberone, **2:591**  
 Succinic acid, **2:585, 590**  
   *see also Butanedioic acid*  
 Succinic acid dinitrile, **3:1138**  
 Succinic anhydride  
   in 2-pyrrolidone production, **3:1138**  
 Succinimide in 2-pyrrolidone production, **3:1138**  
 Succinonitrile, **3:938**  
   *see also Dicyanoethane*  
 Suffix, **1:207**  
 Suffix BW, **1:207**  
 Sulbentine, **2:612, 619**  
 Sulfamic acid, **1:262**  
   *see also 4-Aminobenzenesulfonic acid*  
   from nitrobenzene, **3:970**  
 Sulfapyrazine, **2:654**  
 Sulfides, heterocyclic, **3:1228**  
   uses, **3:1229**  
 Sulfides, organic  
   [CH<sub>3</sub>CH<sub>2</sub>CH(CH<sub>3</sub>)<sub>2</sub>S], **3:1220**  
   (CH<sub>2</sub>CH-CH<sub>2</sub>)<sub>2</sub>S, **3:1220**  
   (CH<sub>2</sub>CH-CH<sub>2</sub>)<sub>2</sub>S<sub>2</sub>, **3:1220**  
   [CH<sub>3</sub>(CH<sub>2</sub>)<sub>2</sub>]<sub>2</sub>S, **3:1220**  
   [CH<sub>3</sub>(CH<sub>2</sub>)<sub>3</sub>]<sub>2</sub>S, **3:1220**  
   [(CH<sub>3</sub>)<sub>3</sub>C]<sub>2</sub>S, **3:1220**  
   (CH<sub>3</sub>)<sub>2</sub>S, **3:1220**  
   (CH<sub>3</sub>)<sub>2</sub>S<sub>2</sub>, **3:1220**  
   (CH<sub>3</sub>)<sub>2</sub>S<sub>3</sub>, **3:1220**  
   (CH<sub>3</sub>)<sub>2</sub>S<sub>4</sub>, **3:1220**  
   (CH<sub>3</sub>)<sub>2</sub>S<sub>5</sub>, **3:1220**  
 Sulfinic acid amides, **3:1160**  
 Sulfinic acid derivatives, **3:1157**  
   addition to multiple bonds, **3:1172**  
   alkylation of, **3:1172**  
 Sulfinic acid esters, **3:1158**  
 Sulfinic acids, **3:1151**  
   redox reactions of, **3:1156**  
   toxicology, **3:1164**  
 Sulfinyl chlorides  
   from disulfides, **3:1157**  
   from sulfuranes, **3:1157**  
   from thioesters, **3:1157**  
*N*-Sulfinylnonafluorobutanesulfonamide, **3:1160**  
*N*-Sulfinylphthalimides, **3:1159**  
 4-Sulfoanthranilic acid, **3:998**  
 Sulfo I Acid, **3:923**  
   *see also 2-Amino-5-hydroxynaphthalene-1,7-disulfonic acid*  
 Sulfonenes  
   cleavage of, **3:1156**  
 Sulfolitruw, **1:203**  
 Sulfonamide  
   phosgenation of, **2:791**  
 Sulfonation  
   of aromatics, **1:243**  
 Sulfones, **3:1170**  
   nucleophilic cleavage of, **3:1154**  
   physical data and formulae for, **3:1170**  
   from sulfonyl carbanions, **3:1173**  
   toxicology, **3:1181**  
 Sulfosate, **1:206**  
 5-Sulfo-Tobias acid, **3:909**  
   *see also 2-Aminonaphthalene-1,5-disulfonic acid*  
 Sulfoxides, **3:1175**  
   optically active, **3:1178**  
   from oxidation of sulfides, **3:1175**  
   physical data and formulas for, **3:1176**  
   from sulfates, **3:1178**  
 Sulfoxides, α,β-unsaturated, **3:1178**  
 Sulfur Black 1, **3:984**  
 Sulfur dioxide

- reaction with  $\text{NaBH}_4$  to sodium dithionite, 2:685
- Sulfur trioxide  
as sulfonating agent, 1:243
- Sulpiride, 3:960
- Sumatra benzoin, 2:530
- Sumidur, 2:797
- Sundermeyer process, 2:677
- Super Accelerator 501, 2:617
- Super-Hydride, 2:682
- Suprasc, 2:797
- Suprofen, 3:1246
- Suramin sodium (Bayer 205), 3:911
- Surital, 3:1264
- Sydones, 1:169
- Symclosene, 2:493
- Syringic acid, 2:720
- T**
- 2,4,5-T, 2:519  
*see also* (2,4,5-Trichlorophenoxy)acetic acid  
tolerances for residues, 2:525  
toxicology, 2:523
- Tagamet, 3:1209
- Takenate, 2:797
- Tallow amine, 1:137
- Tallow amine, hydrogenated, 1:137
- N*-Tallow-1,3-propanediammonium dioleate  
uses, 1:141
- Tar  
alkylphenols from, 3:1041  
cyclopentadiene from, 2:572  
indole from, 2:735
- Tartaric acid, 2:705  
for production of pyruvic acid, 3:1016
- meso*-Tartaric acid, 2:705
- Tartronic acid, 2:705, 708
- TCC, 2:493  
toxicology, 2:495
- TCDD, 2:521
- TDE, 2:466
- Tectrade, 2:797
- Tedimon, 2:797
- Temik, 1:403
- Temocapril, 3:1248
- Tenidap, 3:1247
- Teniposide, 3:1246
- Tenoxicam, 3:1250
- Terbufos, 3:1121
- Terephthalic acid (TPA), 2:450  
from benzoic acid, 1:299  
by oxidation of *p*-xylene, 2:454  
from phthalic acid, 2:453  
from potassium benzoate, 2:453
- Terpenes, 3:1185  
acyclic monoterpenes, 3:1189  
acyclic diterpenes, 3:1197  
acyclic triterpenes, 3:1197  
biodegradation, 3:1188  
biosynthesis of, 3:1187  
extraction, 3:1189  
as food additives, 3:1198  
structures, 3:1187  
toxicology, 3:1199
- $\alpha$ -Terpinene, 3:1191  
isomers, 3:1191
- Terpinolene, 3:1191
- Terra-cur, 2:619
- Tersan, 2:618
- Tetraacetylglucuril (TAGU), 2:654
- Tetraalkylammonium tetraalkylboride  
preparation, 2:746
- Tetraallyl pentaerythritol ether, 1:82
- 3,3',4,4'-Tetraaminodiphenyl  
hydrochloride, 1:287
- Tetaborane, 1:354
- Tetabromobenzidine, 1:286
- Tetabromobisphenol A, 1:378, 3:1079  
toxicology, 1:384
- Tetabromoethene, 1:369
- Tetabromomethane, 1:369, 383
- Tetabromo-2-methylphenol, 3:1088  
toxicology, 3:1089
- Tetabromophthalic anhydride, 1:379, 381  
toxicology, 1:385
- Tetrabromo-*p*-xylene, 1:379
- 3,5,3',5'-Tetra-*tert*-butyl-4,4'-dihydroxybiphenyl, 3:1058, 1080
- Tetrabutylphosphonium bromide, 3:1105
- Tetrabutylphosphonium iodide, 3:1105
- Tetrabutylthiuram disulfide, 2:606
- Tetrabutylthiuram monosulfide, 2:606
- Tetrabutyltin, 3:1271
- Tetracarbonyl nickel, 3:927
- 2,2',5,5'-Tetrachlorobenzidine, 1:289
- 3,3',5,5'-Tetrachlorobenzidine, 1:286
- 2,4,4,4-Tetrachloro-1-butanol, 1:75
- 1,3,4,6-Tetrachloro-3 $\alpha$ ,6 $\alpha$ -diphenylglycuril, 2:494
- Tetrachlorometaldehyde, 2:466
- 2,4,6,8-Tetrachloro-2,4,6,8-tetraabicyclo[3.3.0]octane-3,7-dione, 2:494
- Tetracyanoethylene, 2:860
- Tetracyanoethylene (TCNE), 3:938  
*see also* *Ethenetetracarboxytrile*
- Tetradecanedioic acid, 2:585
- Tetraethylamine, 1:137
- Tetraethylborane, 1:358
- Tetraethylenepentamine (TEPA), 1:149
- Tetraethylthiuram disulfide (TETD), 2:606
- Tetraethylthiuram monosulfide, 2:606
- Tetrafluoroboric acid, 1:349
- Tetrahexylammonium benzoate  
preparation, 2:746
- 1,2,5,6-Tetrahydrobenzaldehyde, 2:640
- Tetrahydro-2-furanol, 1:75
- Tetrahydroimidazo[4,5-*d*]imidazo-2,5(1*H*, 3*H*)-dione Acetylenediurea, 3:1281
- Tetrahydro-3-imino-2,4-dimethylthiophene, 3:1252
- Tetrahydro-2*H*-1,4-oxazine, 1:132  
*see Morpholine*
- Tetrahydrophthalic anhydride, 2:594
- Tetrahydropyrrole, 1:130  
*see Pyrrolidine*
- Tetrahydrothiazoloquinoxalines, 2:611
- Tetrahydrothiophene, 3:1251
- Tetrameric cyanogen chloride, 2:555
- 4-(1,1,3,3-Tetramethylbutyl)phenol (4-*tert*-octylphenol), 3:1061, 1062
- Tetramethylene diisocyanate  
by phosgenation of carbamate salts, 2:791
- N,N,N',N'*-Tetramethylhexamethylenediamine, 1:148  
*see N,N,N',N'*-Tetramethyl-1,6-hexanediamine
- N,N,N',N'*-Tetramethyl-1,6-hexanediamine, 1:148
- 1,1,3,3-Tetramethyl-5-indanol, 3:1068
- 2,3,4,5-Tetramethylphenol, 3:1048
- 2,3,4,6-Tetramethylphenol, 3:1047–1049
- 2,3,5,6-Tetramethylphenol, 3:1047–1049
- Tetramethylphosphonium chloride, 3:1105
- N,N,N',N'*-Tetramethyl-1,3-propanediamine, 1:147
- Tetramethylthiuram disulfide (TMTD), 2:604, 606, 618
- Tetramethylthiuram monosulfide (TMTM), 2:606
- Tetramethylthiuram tetrasulfide, 2:606
- Tetramethylurea [632-22-4], 3:1276
- 1,4,7,10-Tetraoxacyclododecane, 2:535
- 1,4,10,13-Tetraoxa-7,16-diazaacycloctadecane, 2:535
- 1,4,10,13-Tetraoxa-7,16-dithiaacycloctadecane, 2:535
- 1,3,10,12-Tetraoxo-cyclooctadecan-2,11-dione, 1:409
- Tetrapentylthiuram disulfide, 2:606
- Tetrapentylthiuram monosulfide, 2:606
- Tetraphenylphosphonium bromide, 3:1105
- Tetraphenylurea [632-89-3], 3:1276
- Tetrapropylthiuram disulfide, 2:606
- Tetrapropylthiuram monosulfide, 2:606
- Tetrone A, 2:617
- Textile finishing  
crease-resistant treatment with glyoxal resins, 2:653
- Thenaldine, 3:1245
- Thenitrazole, 3:1010
- Thenychlor, 3:1251
- Thenyldiamine, 3:1249
- Theobromine, 3:1132
- Theophylline, 3:1132
- Theophylline cholineate, 3:1134
- Theophylline ethylenediamine, 3:1134
- Theophylline monohydrate, 3:1132
- Thermal heat-transfer fluids  
ionic liquids as, 2:749
- Thermolin, 3:1118
- Thiadiazinethiones, 2:612
- 1,2,5-Thiadiazol-3-thiol  
as pesticide, 3:1230

- Thiate EF-2, **3:1262**  
 Thiate H, **3:1262**  
 Thiate U, **3:1262**  
 1,3-Thiazines, **2:612**  
 Thiazole  
   nitro derivatives, **3:1010**  
 L-Thiazolidine-4-carboxylic acid, **1:177**  
 2-Thiazoline-2-thiol, **3:1226**  
 Thiazoline-2-thiones, **2:611**  
 Thiazolotriazinium salts, **2:611**  
 Thiele – Winter acetoxylation, **1:313**  
 Thieryllithium, **3:1243**  
 2-thienyllithium, **3:1248**  
 Thimecil, **3:1263**  
 Thin layer chromatography  
   of amino acids, **1:211**  
 Thioban, **3:1264**  
 2-Thiobarbituric acid  
   as pharmaceuticals, **3:1229**  
 Thio-Barbitylal, **3:1264**  
 2,2'-Thiobis(6-*tert*-butyl-4-methylphenol), **3:1059**  
 4,4'-Thiobis(2-*tert*-butyl-5-methylphenol), **3:1059**  
 2,2'-Thiobis(4-chlorophenol), **3:1090**  
   *see also Fenticlor*  
 2,2'-Thiobis(4,6-dichlorophenol), **3:1091**  
   *see also Bithionol*  
 2,2'-Thiobis(3,4,6-trichlorophenol), **3:1091**  
 3,3'-Thiobis(2,4,6-trichlorophenol), **3:1091**  
 Thiocarbamoyl chlorides, **2:607**  
 Thiocarbamoylsulfenamides, **2:607**  
 Thiocyanates  
   properties of, **3:1204**  
 Thiocyanates, organic, **3:1203**  
   toxicology, **3:1205**  
   uses, **3:1205**  
 3-Thiocyanatopropyltriethoxysilane, **3:1204, 1205**  
 Thiodibutyric acid, **1:392**  
 Thioformylthiocarbamic acid esters, **2:608**  
 Thiofuran thiophene, **3:1242**  
 Thioguanine, **3:1132**  
 Thiohydantoins, **1:170**  
 Thiols, **3:1213, 1216**  
   *see addition reactions*  
   oxidation of, **3:1154**  
   salt formation, **3:1214**  
   toxicology, **3:1230**  
 Thiols, aliphatic  
   from alcohols, **3:1216**  
   from alkenes, **3:1216**  
   (CH<sub>3</sub>)<sub>3</sub>C-CH<sub>2</sub>-C(CH<sub>3</sub>)<sub>2</sub>-SH, **3:1215**  
   CH<sub>3</sub>CH<sub>2</sub>-SH, **3:1215**  
   CH<sub>3</sub>-(CH<sub>2</sub>)<sub>2</sub>-SH, **3:1215**  
   CH<sub>3</sub>-(CH<sub>2</sub>)<sub>3</sub>-SH, **3:1215**  
   CH<sub>3</sub>-(CH<sub>2</sub>)<sub>5</sub>-SH, **3:1215**  
   CH<sub>3</sub>-(CH<sub>2</sub>)<sub>7</sub>-SH, **3:1215**  
   CH<sub>3</sub>-(CH<sub>2</sub>)<sub>11</sub>-SH, **3:1215**  
   (CH<sub>3</sub>)<sub>3</sub>C-SH, **3:1215**  
   *tert*-C<sub>12</sub>H<sub>25</sub>-SH, **3:1215**  
   CH<sub>3</sub>-SH, **3:1215**  
   C<sub>6</sub>H<sub>11</sub>-SH, **3:1215**  
   physical data, **3:1215**  
   uses, **3:1218**  
 Thiols, aromatic  
   by reduction of aromatic sulfonic acids, **3:1223**  
   by thiolation of chloronitrobenzenes, **3:1223**  
   by thiolation of haloaromatics, **3:1224**  
 Thiols, heterocyclic  
   by cyclization, **3:1227**  
   physical and chemical properties, **3:1225**  
   by substitution, **3:1227**  
   uses, **3:1229**  
 Thionazine, **2:654**  
 Thioneb, **2:619**  
 Thionembutal, **3:1264**  
 Thiooxine, **3:1147**  
 Thiophanate methyl, **3:1210**  
 Thiophene, [110-02-1], **3:1241, 1245**  
   acetylation, **3:1248**  
   acylated, **3:1245**  
   amino- and hydroxythiophene derivatives, **3:1250**  
   carbonyl reactions, **3:1247**  
   derivatives, **3:1252**  
   dicarboxylic Acids, **3:1248**  
   dichlorination, **3:1248**  
   electrophilic substitution, **3:1243**  
   feedstocks for, **3:1244**  
   halogenated, **3:1248**  
   nitro derivatives, **3:1010**  
   production, **3:1244**  
   reduced, **3:1251**  
   specifications, transportation, health and safety, **3:1245**  
   toxicology, **3:1251**  
   uses, **3:1245**  
 Thiophene-2-acetic, **3:1246**  
 Thiophene-2-acetic acid, **3:1247**  
 Thiophene-2-aldehyde, **3:1245, 1248**  
 Thiophene-2-carbaldehyde, **2:857**  
 Thiophene-2-carboxylic acid, **3:1246**  
 Thiophene-2-ethanol, **3:1248**  
 Thiophene-2-magnesium, **3:1248**  
 Thiophene-3-malonic acid, **3:1249**  
 Thiophenols  
   e.g., **3:1222**  
   physical and chemical properties, **3:1222**  
 Thiophosphinates, **3:1111**  
 Thiophosphonic acid halides  
   C<sub>2</sub>H<sub>5</sub>P(S)Cl<sub>2</sub>, **3:1117**  
   CH<sub>3</sub>P(S)Cl<sub>2</sub>, **3:1117**  
   C<sub>6</sub>H<sub>5</sub>P(S)Cl<sub>2</sub>, **3:1117**  
 Thiophosphoric acid esters, **3:1119**  
 Thiophosphoric anhydride  
   *O,O*-diester, **3:1120**  
 6-Thiopurine  
   as pharmaceutical, **3:1229**  
 Thioseconal, **3:1264**  
 Thiosulfonic acid esters, **3:1160**  
 2-Thiouracil  
   as pharmaceutical, **3:1229**  
 Thiourea, **3:1255**  
   solubility of, **3:1255**  
   toxicology, **3:1258**  
   uses, **3:1258**  
 Thiourea derivatives, **3:1260**  
   e.g., **3:1264**  
   e.g., Na-salt, **3:1264**  
   isomers, **3:1260**  
   as pesticides, **3:1265**  
   pharmacologically active, **3:1263**  
   as plant protection agents, **3:1265**  
   toxicology, **3:1262**  
   as vulcanization accelerators, **3:1262**  
 2-Thioxoperhydro-1,3-thiazin-4-ones, **2:611**  
 Thiurad, **2:617**  
 Thiuram disulfides, **2:604, 606**  
 Thiuram E, **2:617**  
 Thiuram monosulfides, **2:606**  
 Thiuram sulfides, **2:604**  
 Thiuram tetrasulfides, **2:606**  
 Thiuram trisulfides, **2:606**  
 D,L-Threonine, **1:177**  
 L-Threonine, **1:173**  
   production, **1:187**  
 Thymol (6-isopropyl-3-methylphenol), **3:1041**  
   production, **3:1050**  
 Thymoquinone, **1:312**  
 Thyreocordon, **3:1264**  
 Thyreostat, **3:1263**  
 Thyreostat II, **3:1263**  
 Thyrostabil, **3:1263**  
 Thyroxine (T<sub>4</sub>), **1:178**  
   *see also Levothyroxine*  
 Tiagabine, **3:1250**  
 Tiaprofenic acid, **3:1246**  
 Ticarcillin, **3:1249**  
 Ticlopidine, **3:1248**  
 Tiemonium, **3:1248**  
 Tienilic acid, **3:1246**  
 Timentin, **3:1249**  
 Timipedium, **3:1248**  
 Tin, **3:1269**  
   *see also Tin ores*  
   reducing agent in thiol production, **3:1223**  
 Tin compounds  
   organic, **3:1269**  
   production of organotin, **3:1270**  
 Tin fluoroborate, **1:351**

- Tinopal CBS, 1:259  
 Tiobarbital, 3:1264  
 Tiotil, 3:1263  
 Tiouracil, 3:1263  
 Tipepidine, 3:1248  
 Tiqizium bromide, 3:1248  
 Tishchenko reaction, 2:640  
 Titanium  
   titanium powder from titanium hydride, 2:695  
 Titanium hydride, 2:695  
 Titanium nitride  
   from titanium hydride, 2:696  
 Tobias acid, 3:874  
   *see also 2-Aminonaphthalene-1-sulfonic acid*  
*m*-Tolidine  
   dihydrochloride, 1:288  
*o*-Tolidine, 1:287  
   dihydrochloride, 1:287  
   disulfate, 1:287  
   hydrochloride, 1:287  
   safety precautions, 1:284  
   sulfate, 1:287  
   toxicology, 1:293  
*o*-Tolidine-6,6'-disulfonic acid, 1:291  
 Tolnaftate, 3:882  
 Tolonate, 2:797  
 Toluene  
   benzyl alcohol from, 1:320  
 Toluene diisocyanate (TDI), 2:781, 784  
 Toluenedisulfonic acids, 1:255  
*m*-Toluenesulfonic acid, 1:256  
*o*-Toluenesulfonic acid, 1:256  
*p*-Toluenesulfonic acid, 1:255  
*o*-Toluenesulfonyl chloride, 1:244  
*p*-Toluenesulfonyl isocyanate (4-TSI), 2:783  
*m*-Toluic acid, 1:303  
*o*-Toluic acid, 1:303  
*p*-Toluic acid, 1:304  
*o*-Toluidine-4-sulfonic acid, 3:998  
*p*-Toluidine-2-sulfonic acid, 3:999  
   *see also 5-Amino-3-methylbenzenesulfonic acid*  
*o*-Tolyl isocyanate (o-TI), 2:782  
*p*-Tolyl isocyanate (p-TI), 2:782  
 Topsin, 3:1265  
 Topsin M, 3:1210, 1265  
 Tosyl chloride, 1:257  
   *see also 4-Methylbenzenesulfonyl chloride*  
 Touchdown, 1:206  
 2,4,5-TP, 2:521  
 trans-Cyclooctene [931-89-5], 2:566  
 Transesterification  
   production of carbonic esters by, 1:417  
 Trapanal, 3:1264  
 Trapex, 3:1209  
 Trevisa CS, 3:1111  
 1,2,4-Triacetoxybenzene  
   hydroxyhydroquinone from, 3:1073  
 Triacetyl cyanurate, 2:549  
 Trialkylaluminum  
   from lkylaluminum sesquichlorides, 1:98  
 Trialkylborohydrides, 2:677  
 1,2,3-Trialkylimidazolium alkyl sulfate salts  
   preparation, 2:746  
 Trialkyl phosphates, 3:1118  
   (CH<sub>2</sub>CH(C<sub>2</sub>H<sub>5</sub>))(CH<sub>2</sub>)<sub>3</sub>CH<sub>3</sub>O)<sub>3</sub>PO, 3:1118  
   (CH(CH<sub>3</sub>)(CH<sub>2</sub>ClO)<sub>2</sub>)<sub>3</sub>PO, 3:1118  
   (CH<sub>2</sub>(CH<sub>2</sub>)<sub>2</sub>CH<sub>3</sub>)<sub>3</sub>PO, 3:1118  
   (CH<sub>2</sub>CH<sub>2</sub>ClO)<sub>3</sub>PO, 3:1118  
   (CH(CH<sub>2</sub>Cl)<sub>2</sub>O)<sub>3</sub>PO, 3:1118  
   (CH<sub>2</sub>CH<sub>2</sub>OC<sub>6</sub>H<sub>5</sub>O)<sub>3</sub>PO, 3:1118  
   (C<sub>2</sub>H<sub>5</sub>O)<sub>3</sub>PO, 3:1118  
   (CH<sub>3</sub>O)<sub>3</sub>PO, 3:1118  
 Trialkylphosphines  
   production, 3:1101  
 Trialkyl phosphites, 3:1112  
   (CH<sub>2</sub>C(C<sub>2</sub>H<sub>5</sub>)(H)(CH<sub>2</sub>)<sub>3</sub>CH<sub>3</sub>O)<sub>3</sub>P, 3:1112  
   (CH<sub>2</sub>(CH<sub>2</sub>)<sub>2</sub>CH<sub>3</sub>O)<sub>3</sub>P, 3:1112  
   (CH<sub>2</sub>CH<sub>2</sub>ClO)<sub>3</sub>P, 3:1112  
   (CH(CH<sub>2</sub>)<sub>2</sub>O)<sub>3</sub>, 3:1112  
   (*m*-C<sub>12</sub>H<sub>25</sub>O)<sub>3</sub>P, 3:1112  
   (C<sub>2</sub>H<sub>5</sub>O)<sub>3</sub>P, 3:1112  
   (CH<sub>3</sub>O)<sub>3</sub>P, 3:1112  
   (iso-C<sub>8</sub>H<sub>17</sub>O)<sub>3</sub>P, 3:1112  
 Triallylamine, 1:82, 85  
 Triallyl cyanurate, 1:78, 2:543  
   cross-linking agent in copolymers, 1:81  
 Triallyl isocyanurate, 2:550  
 Triallyl phosphate, 1:78, 80  
   polymerization, 1:81  
 Triallyl phosphite, 1:80  
 1,2,4-Triaminobenzene, 3:992  
 Tri-*tert*-amyl borate, 1:360  
 Triaryl phosphates, 3:1118  
 Triaryl phosphites, 3:1112  
   (C<sub>6</sub>H<sub>5</sub>O)<sub>3</sub>P, 3:1113  
*s*-Triazines, 2:543  
 [1*H*]-1,2,4-Triazole-3-thiol, 3:1226  
 2,4,6-Tribromoaniline, 1:369  
 1,3,5-Tribromobenzene, 1:369  
 Tribromoethene, 1:369  
 Tribromomethane, 1:369, 383  
 2,4,6-Tribromophenol, 1:369, 375  
 3,5,4'-Tribromosalicylanilide (TBS), 3:1092  
   *see also Trisanyl*  
 2,3,5-tribromothiophene, 3:1249  
 Tributene  
   as alkylating agent for phenols, 3:1061  
 Tributylaluminum, 1:93  
 Tributylamine, 1:115  
 Tributylborane, 1:358  
 Tri-*n*-butyl borate, 1:361  
 2,4,6-Tri-*tert*-butylphenol, 3:1054, 1059  
 Tributyl phosphate (TBP), 3:1118  
 Tributylphosphine, 3:1101  
 Tributyl phosphite [102-85-2], 3:1112  
 Tributyltin chloride, 3:1271  
 Trichloroacetaldehyde, 2:467  
   *see also Chloral*  
   toxicology, 2:470  
 Trichloroacetic acid, 2:482  
   toxicology, 2:487  
 Trichloroacetic acid esters, 2:483  
 Trichloroacetic acid salts, 2:484  
 4,4,4-Trichloroacetacetates, 2:805  
 Trichloroacetonitrile, 3:938  
   *see also Trichloroethanenitrile*  
 Trichloroacetyl chloride, 2:483  
 Trichloroamine, 2:492  
 2,4,5-Trichloroaniline, 3:986  
 2,4,5-Trichlorobenzene-sulfonic acid, 1:261  
 2,4,5-Trichlorobenzene-sulfonyl chloride, 1:261  
 Trichloroborazine, 1:360  
 Trichlorobromomethane, 1:369  
 Trichloroethanenitrile, 3:938  
   *see also Trichloroacetonitrile*  
 Tri(2-chloroethyl) phosphate [115-96-8], 3:1118  
 Trichloroisocyanuric acid, 2:492, 493  
 Trichloromethyl chloroformate  
   in isocyanate production, 2:792  
 4-Trichloromethylloxetanones, 2:805  
 Trichloronat, 3:1116  
 1,2,4-Trichloro-5-nitrobenzene, 3:986,  
   *see also 1-Nitro-2, 4, 5-trichlorobenzene*  
 Trichloronitromethane, 3:960  
   *see also Chloropicrin*  
 Trichloroparaldehyde, 2:465  
 2,4,5-Trichlorophenol, 2:520  
 (2,4,5-Trichlorophenoxy)acetic acid, 2:520  
   *see also 2,4,5-T*  
 2-(2,4,5-Trichlorophenoxy)propionic acid, 2:520  
   *see also Fenoprop*  
 4,3',4'-Trichlorosalicylanilide, 3:1091  
 5,3',4'-Trichlorosalicylanilide, 3:1091  
   *see also Anobial*  
 Trichlorosulfuranes, 3:1157  
 2,3,6-Trichlorotoluene, 1:242  
 Triclosan, 3:1089  
   *see also 5-Chloro-2-(2,4-dichlorophenoxy)phenol*  
   toxicology, 3:1089  
 Tricyclic sesquiterpenes, 3:1197  
 Tricyclodecanedimethanol, 1:48  
 Tricyclohexylphosphine, 3:1101  
 Tricyclohexyltin chloride, 3:1271  
 Tricyclohexyltin hydroxide, 3:1271  
 Tridecanedioic acid, 2:585  
   *see also Brassylic acid*

- 1,13-Tridecanedioic acid, 2:593  
 Tridecylamine, 1:125  
 Tridodecyl phosphite [3076-63-9], 3:1112  
 Triethanolamine borate, 1:360  
 Triethylaluminum, 1:93  
   diethylzinc from, 1:95  
   production, 1:96  
   for production of long-chain alcohols, 1:100  
 Triethylamine, 1:115  
   toxicology, 1:154  
 Triethylborane, 1:358  
 Triethyl borate, 1:361  
 Triethylenediamine, 1:135  
 Triethylenemelamine, 1:238  
 Triethylenetetramine (TETA), 1:149  
   toxicology, 1:156  
 Tri(2-ethylhexyl) phosphate (TOF), 3:1119  
 Triethyl phosphate, 3:1118  
 Triethylphosphine, 3:1101  
 Triethyl phosphite [122-52-1], 3:1112  
 Trifluoroacetic anhydride, 3:1015  
 4,4,4-Trifluoroacetoacetate, 2:805  
 Trifluorobromomethane, 1:369, 377  
   toxicology, 1:384  
*p*-(Trifluoromethoxy)phenyl isocyanate (4-TFMOPI), 2:783  
 Trifluoromethylphosphine, 3:1100  
 $\alpha,\alpha,\alpha$ -Trifluoro-3-tolyl isocyanate (3-TFMPI), 2:783  
 Trifluralin, 3:988  
*m*-Trigallic acid, 2:715  
 Triglycidyl isocyanurate, 2:552  
 Tri-Grignard reagent, 2:847  
 Trihexylaluminum, 1:93  
 Trihydroxybenzenes, 3:1071  
 3,4,5-Trihydroxybenzoic acid, 2:720  
   toxicology, 2:722  
 Triisobutylaluminum, 1:93  
 Triisobutylaluminum (TIBA), 1:102  
 Triisobutylamine, 1:115  
 Triisobutylborane, 1:358  
 1,3,5-Triisopropylbenzene  
   phloroglucinol from, 3:1074  
 Triisopropyl borate, 1:361  
 Triisopropyl boroxine, 1:361  
 2,4,6-Triisopropylphenol, 3:1050  
   production, 3:1051  
 Triisopropyl phosphite [116-17-6], 3:1112  
 Trilon A, 3:951  
 Trimellitic acid, 2:450, 455  
   see also 1,2,4-Benzenetricarboxylic acid  
 Trimellitic anhydride (TMA), 2:455, 458  
 Trimesic acid, 2:450  
   see also 1,3,5-Benzenetricarboxylic acid  
 Trimethoprim, 3:1071  
 Trimethyladipic acid, 2:591, 829  
 2,4,4-Trimethyladipic acid, 2:585  
   see also 2,4,4-Trimethylpentanedioic acid  
 Trimethylaluminum, 1:93  
 Trimethylaluminum (TMA), 1:102  
 2,4,6-Trimethylaniline, 3:980  
   see also Mesidine  
 Trimethylborane, 1:358  
 Trimethyl borate, 1:361  
 Trimethyl boroxine, 1:361  
 3,3,5-Trimethyl-2-cyclohexen-1-one, 2:829  
   see also  $\alpha$ -Isophorone  
   toxicology, 2:834  
 4,4,5-Trimethyl-1,3-dioxane, 2:821  
 Trimethylene chlorobromide, 1:373  
 Trimethylene chlorohydrin, 2:506  
 2,4,4-Trimethylhexanedioic acid, 2:585  
   see also 2,4,4-Trimethyladipic acid  
 1,3,5-Trimethyl-2-nitrobenzene, 3:980  
 Trimethylolthane, 1:51  
 Trimethylolpropane, 1:50  
   allyl ethers of, 1:82  
   toxicology, 1:55  
 2,2,4-Trimethyl-1,3-pentanediol, 1:48  
   toxicology, 1:55  
 2,4,4-Trimethyl-1-pentene  
   as alkylating agent for phenols, 3:1061  
 2,4,4-Trimethyl-2-pentene  
   as alkylating agent for phenols, 3:1061  
 2,3,4-Trimethylphenol, 3:1048  
 2,3,5-Trimethylphenol, 3:1047, 1048  
 2,3,6-Trimethylphenol, 3:1047, 1048  
 2,4,5-Trimethylphenol, 3:1048, 1049  
 2,4,6-Trimethylphenol, 3:1047–3:1049  
 3,4,5-Trimethylphenol, 3:1048  
 Trimethyl phosphate [512-56-1], 3:1118  
 Trimethylphosphine, 3:1101  
 Trimethylphosphine oxide, 3:1107  
 Trimethyl phosphite [121-45-9], 3:1112  
 2,2'-(1,1,3-Trimethyltrimethylenedioxy)bis(4,4,6-trimethyl-1,3,2-dioxaborinane), 1:361  
 2,4,6-Trinitroaniline, 3:992  
   see also Picramide  
 1,3,5-Trinitrobenzene, 3:973  
 2,4,6-Trinitrochlorobenzene, 3:984  
   see also Picryl chloride  
 2,4,6-Trinitrotoluene (TNT)  
   phloroglucinol from, 3:1074  
 Trioctadecylamine, 1:137  
 Trioctylaluminum, 1:93  
 Trioctylphosphine oxide (TOPO), 3:1108  
 Triododecylamine, 1:137  
 1,4,10-Trioxa-7,13-diazacyclopentadecane, 2:535  
 Triolamine, 1:137  
 Tripentaerythritol, 1:54  
 Tripentylamine, 1:115  
 Triphenylborane, 1:358  
 Triphenyl borate, 1:361  
 Triphenylmethanethiol, 3:1216  
 Triphenylphosphine (TPP), 3:1101, 1102  
 Triphenyl phosphite [101-02-0], 3:1113  
 Triphenyltin acetate, 3:1271  
 Triphenyltin hydroxide, 3:1271  
 Tripropylaluminum, 1:93  
 Tripropylamine, 1:115  
 Tript-OH, 1:204  
 Trisanyl, 3:1092  
   see also 3,5,4-Tribromosalicylanilide  
 Tris(2-carboxyethyl) isocyanurate, 2:549  
 1,3,5-Tris(chloromethyl)hexahydro-2,4,6-triazine, 2:463  
 Tris(2-cyanoethyl)phosphine, 3:1102  
 Triscyanomethylamine, 3:951  
 Tris(2-ethylhexyl) phosphate, 3:1118  
 Tris(2-hydroxyethyl) isocyanurate, 2:549  
 Tris(hydroxymethyl)aminomethane, 3:960  
   see also 2-Amino-2-(hydroxymethyl)-1,3-propanediol  
 Tris(hydroxymethyl)nitromethane, 3:960  
   see also 2-(Hydroxymethyl)-2-nitro-1,3-propanediol  
 Tris(hydroxymethyl)phosphine, 3:1102  
 Tris(3-methylbutyl)amine, 1:115  
 Tris(4-nonylphenyl)phosphite, 3:1064  
 Trisodium cyanurate, 2:554  
 Trisodium nitrilotriacetate, 3:949  
 Trisodium phosphonoformate, 3:1115  
 Trisorcin, 1:205  
 Triuret, 2:551  
 Triuret [556-99-0], 3:1273  
 Trolovol, 1:205  
 Trommcardin, 1:201  
 Trophicard-Köhler, 1:201  
 Tropic acid, 2:705  
 Truce-Smiles rearrangement, 3:1174  
 $\alpha$ -Truxillic acid, 2:530  
 Truxinic acid, 2:530  
 L-Tryosine, 1:173  
 L-Tryptophan, 1:173  
 Tryptamine, 2:736  
 Tryptophan  
   from indole, 2:736  
 D,L-Tryptophan, 1:178  
 L-Tryptophan, 1:203  
   syntheses, 1:188  
 Tryptophol, 2:737  
 Tuex, 2:617  
 Turpinal SL, 3:1115  
 Tyrazol, 3:1263  
 D,L-Tyrosine, 1:178  
 L-Tyrosine, 1:167, 203  
   production, 1:189

## U

- Ultex, 2:616  
 Ultrinox, 3:1112

- Unads, 2:616  
 Undecanedioic acid, 2:585  
*n*-Undecanoic acid, 2:436  
*see also Undecylic acid*  
 Undecylic acid, 2:436  
*see also n-Undecanoic acid*  
 Urbacid, 1:228  
 Urbasulf, 1:228  
 Urea, 3:991  
   bicyclic, 3:1281  
   cyanuric acid from, 2:550  
   cyclization, 3:1280  
 Urea derivatives, 3:1273  
   production processes, 3:1274  
 Ureidocarboxylic acid, 1:170  
 Uric acid, 3:1132  
 7,7'-Urylenebis(4-hydroxynaphthalene-2-sulfonic acid), 3:920  
*see also J Acid urea*  
 Ustilan, 3:1209  
 Uvitex NFW, 1:259
- V**  
 Valcazit NPV/C, 3:1262  
 Valeric acid, 2:436, 443  
*see also n-Pentanoic acid*  
 Valeric acid mixture, 2:445  
 $\gamma$ -Valerolactone, 3:1020  
 D-Valine, 1:178  
 D,L-Valine, 1:178  
 L-Valine, 1:167, 173  
   production, 1:189  
 Vanillic acid, 2:719  
*see also 4-Hydroxy-3-methoxybenzoic acid*  
 Vanillin (4-hydroxy-3-methoxybenzaldehyde)  
   from guaiacol, 3:1070  
 Van Slyke method  
   for analysis of amino acids, 1:169  
 Vapam, 2:618  
 Vat dye  
   indigoid, 3:881  
 Vat Red 14, 3:990  
 Vegadex, 2:619  
 Velcorin, 2:500  
 Veratrole (1,2-dimethoxybenzene), 3:1070, 1083  
 Verdamax, 3:1265  
 Versatic acid 5, 2:445  
 Versatic acid 10, 2:444, 445  
 Versatic acid 911, 2:436  
 Versatic acids, 2:440, 444, 445  
 Versene NTA, 3:951  
 Vestanat/e, 2:797  
 Victastab, 3:1116  
 Victawet, 3:1119  
 Victoria Blue, 3:897  
 Vidarabin, 3:1134  
*see also 9- $\beta$ -D-Arabinofuranosyladenine*  
 Vinylacetyl chloride, 2:446  
 4-Vinylbenzenesulfonamide, 1:259  
 4-Vinylbenzenesulfonic acid, 1:258  
 Vinyl bromide, 1:372  
 4-Vinylcyclohexene [100-40-3], 2:566  
 4-Vinylcyclohexene, 2:566  
 Vinylcyclohexene dioxide  
   toxicology, 2:642  
*N*-Vinylimidazole, 2:726, 727  
   toxicology, 2:729  
 Vinyl isothiocyanate, 3:1206  
 4-Vinylphenol, 3:1067  
 Vinylphosphonic acid, 3:1115  
*N*-Vinyl-2-pyrrolidone (NVP), 3:1140  
   toxicology, 3:1142  
 1-Vinyl-2-pyrrolidone *N*-Vinyl-2-pyrrolidone (NVP) [88-12-0], 3:1140  
 Visclair, 1:204  
 Vitamin E, 3:1049  
*see from alkylphenols*
- Vitamin H, bacterial, 1:306  
 Vitamin L<sub>1</sub>, 1:305  
 Vitride, 2:692  
 Vivacalcium, 1:202  
 Vioptal, 1:202  
 Voranate, 2:797  
 Vorlex, 3:1209  
 Vulafor 322, 3:1262  
 Vulcafor DDCN, 2:616  
 Vulcafor SDC, 2:615  
 Vulcafor TMTD, 2:617  
 Vulcafor TMTM, 2:616  
 Vulcafor ZD:1C, 2:615  
 Vulcafor ZDMC, 2:615  
 Vulcanization accelerator  
   thiuram sulfides and salts of *N,N*-dialkylthiocarbamic acids,  
     2:613  
 Vulkacit CRV, 2:617  
 Vulkacit J, 2:617  
 Vulkacit L, 2:615  
 Vulkacit LDA, 2:615  
 Vulkacit LDB, 2:615  
 Vulkacit P, 2:616  
 Vulkacit P extra N, 2:616  
 Vulkacit Thiuram, 2:617  
 Vulkacit Thiuram MS, 2:616  
 Vulkacit ZP, 2:616
- W**  
 Wastewater (sewage)  
   recovery of metals by reduction with NaBH<sub>4</sub>, 2:687  
 Water softening  
   with nitrilotriacetic acid, 3:951  
 Wenker process, 1:236  
 Weston, 3:1112  
 Wheland intermediate, 3:968  
*ipso*-Wheland intermediate, 3:969  
 Wilkinson's catalyst, (PPh<sub>3</sub>)<sub>3</sub>RhCl, 2:697  
 Williamson synthesis, 2:678  
 Windshield wiper, 1:104  
 Wurtz synthesis, 3:1101  
   of dicarboxylic acids, 2:590
- X**  
 Xama, 1:235  
 Xanthine, 3:1132  
 Xylene  
   separation of *m*- and *p*-, 1:242  
   separation of *p*- and *o*-, 1:242  
*m*-Xylenesulfonic acid, 1:258  
 Xylenesulfonic acids, 1:255  
 2,3-Xylenol, 3:1041  
 2,6-Xylidine, 3:978  
*see also 2,6-Dimethylaniline*  
 3,4-Xylidine, 3:978  
*see also 3,4-Dimethylaniline*  
 2,4-Xylidine (*m*-Xylidine), 3:978  
*see also 2,4-Dimethylaniline*
- Z**  
 Zantac, 3:1209  
 Zerlate, 2:618  
 Ziegler – Natta catalysts  
   use of organoaluminium, 1:101  
 Zinc  
   reducing agent in thiol production, 3:1223  
   reduction with Zn and NaOH, 1:280  
 Zinc carbamate, 2:618  
 Zinc dithiocarbamates, 2:604, 605, 615, 2:618  
 Zinc fluoroborate, 1:351  
 Zineb, 2:618  
 Zirconium hydride, 2:696  
 Zirconocene hydride chloride, 2:698  
 Zocor, 1:11

