

# Index

- A**
- Abamectin, 18
  - Abate
    - IUPAC name, 18
    - molecular formula, 18
    - safe handling and precautions, 19
    - Temephos, 19
    - trade names and synonyms, 18
  - Acacia powder
    - characteristics, 19–20
    - gum arabic, 19
    - safe handling and precautions, 20
    - synonyms and trade names, 19
  - Acenaphthene
    - characteristics, 20
    - molecular formula, 20
    - safe handling and precautions, 20–21
    - synonyms and trade names, 20
  - 1-Acenaphthenol, 21
  - Acenaphthylene, 21
  - Acephate, 22
  - Acetal, 22
  - Acetaldehyde, 22–23
  - Acetaldehyde ammonia, 23
  - Acetamide, 24
  - Acetamide acid, 24–25
  - Acetic acid; *see also* Benzyl acetate
    - characteristics, 25
    - chemical formula, 25
    - chemical name, 25
    - precautions, 26
    - safe handling and precautions, 25–26
    - synonyms and trade names, 25
  - Acetic anhydride
    - characteristics, 26–27
    - exposure, 27
    - molecular formula, 26
    - safe handling and precautions, 27
    - synonyms and trade names, 26
  - Acetone cyanohydrin
    - characteristics, 28
    - exposure, 28
    - molecular formula, 28
    - safe handling and precautions, 28
    - synonyms and trade names, 28
  - Acetonitrile, 28–29
  - Acetophenone, 29–30
  - Acetophenone oxime
    - characteristics, 30
    - molecular formula, 30
    - safe handling and precautions, 30
    - synonyms and trade names, 30
  - p*-Acetotoluidide, 31
  - Acetylacetone, 31–32
  - Acetyl bromide
    - characteristics, 32
    - molecular formula, 32
    - safe handling and precautions, 32–33
    - synonyms and trade names, 32
  - Acetyl chloride
    - characteristics, 33
    - exposure, 33
    - molecular formula, 33
    - safe handling and precautions, 33
    - synonyms and trade names, 33
  - Acetylene
    - characteristics, 34
    - explosives, 34
    - molecular formula, 34
    - safe handling and precautions, 34–35
    - solubility, 34
    - synonyms and trade names, 34
  - Acetylene dichloride, 35
  - 2-Acetylfluorene, 35–36
  - 2-Acetylfuran, 36
  - Acetyl iodide
    - characteristics, 36–37
    - molecular formula, 36
    - safe handling and precautions, 37–38
    - synonyms and trade names, 36
    - vapour effect, 37
  - Acrylonitrile, 38
  - Adipamide, 38–39
  - Adipic acid, 39
  - Allethrin, *see* Pyrethrum
  - alpha-Aminoethyl alcohol, 23
  - Anticoagulants
    - described, 12–13
    - flocoumafen, 181–182
    - warfarin, 413–414

Aroclor, *see* Polychlorinated biphenyl (PCB)  
 Asbestos, 434–435  
 Avermectin, 18  
 Azinphos methyl, *see* Guthion

## B

Baritosis, 46

Barium

- baritosis, 46
- characteristics, 46
- exposures, 47
- ingestion, 47
- isotopes, 46
- limits, 47
- molecular formula, 46
- safe handling and precautions, 46–47

Barium chloride (anhydrous)

- characteristics, 49
- exposure, 50
- molecular formula, 49
- precautions, 50
- regulations, 50
- safe handling and precautions, 50
- synonyms and trade names, 49

Barium compounds

- barium carbonate, 48
- barium chloride, 48
- barium hydroxide, 47
- barium nitrate, 48
- barium oxide, 48
- barium peroxide, 48
- barium sulphate, 47
- inhalation, 48–49
- lithopone production, 47
- metal, 48
- soluble compounds, 48
- toxicity, humans, 48
- uses, 47

Barium dichloride dihydrate

- exposure, 50
- molecular formula, 50
- safe handling and precautions, 50–51
- synonyms, 50
- toxicity, 51

Barium fluoride

- characteristics, 51
- health effects, 52
- molecular formula, 51
- poisoning, 52
- safe handling and precautions, 51–52
- synonym and trade name, 51

Barium hydroxide octahydrate

- characteristics, 52
- exposures, 52–53
- molecular formula, 52
- synonym and trade name, 52

Barium nitrate

- characteristics, 53
- molecular formula, 53
- safe handling and precautions, 54
- synonym and trade name, 53

Barium sulphate

- characteristics, 54
- as contrast agent, 54
- inhalation, 49
- molecular formula, 54
- safe handling and precautions, 54–55
- synonym and trade name, 54

Bendiocarb

- adverse effects, 56
- characteristics, 55
- exposure, 56
- insecticide, 55
- irritant, 56
- IUPAC name, 55
- molecular formula, 55
- risk assessment, 56
- safe handling and precautions, 55–56
- synonym and trade name, 55
- toxicity class, 55

Benfurcarb

- assessments, 57
- chemical name, 57
- molecular formula, 57
- regulations, 57
- safe handling and precautions, 57

Benomyl

- characteristics, 58
- chemical name, 58
- molecular formula, 58
- safe handling and precautions, 58
- synonym and trade name, 58

Benzaldehyde

- characteristics, 59
- exposure, 59
- molecular formula, 58
- safe handling and precautions, 59–60
- synonym and trade name, 58
- uses, 59

Benzamide

- characteristics, 60
- molecular formula, 60
- safe handling and precautions, 60
- synonym and trade name, 60

- 1,2-Benzanthracene, 60–61
- Benzene
  - carcinogen, 61
  - characteristics, 61
  - exposure, 61
  - molecular formula, 61
  - safe handling and precautions, 61–62
  - synonym and trade name, 61
- Benzidine
  - characteristics, 62
  - dangers and precautions, 63
  - exposure, 62–63
  - molecular formula, 62
  - safe handling and precautions, 62–63
  - synonym and trade name, 62
- 2,3-Benzofuran
  - carcinogen, 65
  - characteristics, 64–65
  - exposure, 65
  - molecular formula, 64
  - safe handling and precautions, 65
  - synonym and trade name, 64
- Benzotrichloride
  - characteristics, 63–64
  - exposure, 64
  - molecular formula, 63
  - safe handling and precautions, 64
  - synonym and trade name, 63
- Benzyl acetate
  - characteristics, 65
  - molecular formula, 65
  - safe handling and precautions, 65–66
  - synonym and trade name, 65
- Benzyltrimethylammonium
  - dichloroiodate, 66
- Beryllium
  - characteristics, 67
  - inhalation, 67
  - molecular formula, 67
  - safe handling and precautions, 67–68
  - uses, 67
- Beryllium chloride
  - characteristics, 68–69
  - exposure, 69
  - molecular formula, 68
  - precautions, 69–70
  - safe handling and precautions, 69
- Bifenthrin
  - characteristics, 70
  - molecular formula, 70
  - safe handling and precautions, 70–71
  - synonym and trade name, 70
- Biocides
  - described, 12
  - ethylene chlorohydrine, 166
  - pentachlorophenol (PCP), 309
  - tributyltin oxide, 394
- Bis(chloromethyl) ether, 72–73
- Bismuth
  - characteristics, 73
  - exposure, 73
  - molecular formula, 73
  - safe handling and precautions, 73
- Blister agents/vesicant, 291–292; *see also*
  - Nitrogen mustards
- Borazole/borazine, 78
- Boric acid, 75
- Boron
  - characteristics, 74
  - molecular formula, 74
  - safe handling and precautions, 74–75
  - uses, 74
- Boron carbide, 76
- Boron compounds, 75
  - borazole/borazine, 78
  - boric acid, 75
  - boron carbide, 76
  - boron nitride, 78
  - boron tribromide
    - characteristics, 75–76
    - molecular formula, 75
    - safe handling and precautions, 76
    - synonym and trade name, 75
  - boron trichloride
    - characteristics, 78
    - health effects, 79
    - molecular formula, 78
    - safe handling and precautions, 78–79
    - synonym and trade name, 78
  - boron trifluoride
    - characteristics, 79
    - molecular formula, 79
    - synonym and trade name, 79
  - boron trifluoride diethyl ether complex, 79–80
  - sodium tetraborate decahydrate/borax (anhydrous), 76–77
  - sodium tetraborate decahydrate/borax (decahydrate), 77
  - sodium tetraborate pentahydrate, 78
- Boron nitride, 78
- Boron tribromide
  - characteristics, 75–76
  - molecular formula, 75
  - safe handling and precautions, 76
  - synonym and trade name, 75

- Boron trichloride
  - characteristics, 78
  - health effects, 79
  - molecular formula, 78
  - safe handling and precautions, 78–79
  - synonym and trade name, 78
- Boron trifluoride
  - characteristics, 79
  - molecular formula, 79
  - synonym and trade name, 79
- Boron trifluoride diethyl ether complex, 79–80
- Bromomethane, *see* Methyl bromide
- Butadienes
  - 1,3-butadiene
    - characteristics, 80–81
    - exposure, 81
    - handling, 81
    - molecular formula, 80
    - synonym and trade name, 80
  - 1,3-butanediol, 82
  - 2-butanone
    - characteristics, 84
    - explosive, 84
    - molecular formula, 84
    - safe handling and precautions, 84
    - synonym and trade name, 84
  - 1-butene
    - characteristics, 84–85
    - exposure, 85
    - molecular formula, 84
    - precautions and emergency, 86
    - safe handling and precautions, 85–86
    - synonym and trade name, 84
  - 2-butoxyethanol
    - characteristics, 86–87
    - molecular formula, 86
    - safe handling and precautions, 87
    - synonym and trade name, 86
- Butane
  - characteristics, 81
  - explosives, 81
  - exposure, 82
  - molecular formula, 81
  - safe handling and precautions, 82
  - synonym and trade name, 81
- Butanesultone, 83
- Butanethiol
  - characteristics, 83
  - exposure, 83
  - molecular formula, 83
  - safe handling and precautions, 83–84
  - synonym and trade name, 83
- 2-Butoxyethanol, 214
- n*-Butyl acetate
  - characteristics, 88
  - molecular formula, 88
  - synonym and trade name, 88
- sec*-Butyl acetate, 88
- tert*-Butyl acetate
  - characteristics, 88
  - exposure, 89
  - molecular formula, 88
  - safe handling and precautions, 89
  - synonym and trade name, 88
- Butyl acetates
  - butane
    - characteristics, 81
    - explosives, 81
    - exposure, 82
    - molecular formula, 81
    - safe handling and precautions, 82
    - synonym and trade name, 81
  - butanesultone, 83
  - butanethiol
    - characteristics, 83
    - exposure, 83
    - molecular formula, 83
    - safe handling and precautions, 83–84
    - synonym and trade name, 83
  - isobutyl acetate, 87–88
  - n*-butyl acetate
    - characteristics, 88
    - molecular formula, 88
    - synonym and trade name, 88
  - n*-butyl alcohol, 89–90
  - n*-butylamine
    - characteristics, 90
    - exposure, 90
    - molecular formula, 90
    - safe handling and precautions, 90
    - synonym and trade name, 90
- sec*-butyl acetate, 88
- tert*-butyl acetate
  - characteristics, 88
  - exposure, 89
  - molecular formula, 88
  - safe handling and precautions, 89
  - synonym and trade name, 88
- n*-Butyl alcohol, 89–90
- n*-Butylamine
  - characteristics, 90
  - exposure, 90
  - molecular formula, 90
  - safe handling and precautions, 90
  - synonym and trade name, 90

## C

## Cadmium

- characteristics, 98
- molecular formula, 98
- safe handling and precautions, 98–99

## Cadmium acetate, 99

## Cadmium arsenide, 100

## Cadmium compounds

- cadmium chloride anhydrous
  - characteristics, 100
  - exposure, 101
  - molecular formula, 100
  - safe handling and precautions, 101
  - synonyms and trade names, 100

## cadmium fume, 101

## cadmium iodide, 101

## cadmium oxide

- characteristics, 101
- exposure, 101
- molecular formula, 101
- safe handling and precautions, 101–102
- synonyms and trade names, 101

## cadmium sulphate

- exposure, 102
- health effects, 102
- molecular formula, 102
- safe handling and precautions, 102
- synonyms and trade names, 102

## Calcium cyanide

- characteristics, 123–124
- exposure, 124
- molecular formula, 123
- safe handling and precautions, 124
- synonyms and trade names, 123
- toxic, aquatic organisms, 124

## Captafol

- carcinogen, 103
- characteristics, 103
- exposure, 103
- insecticide, 104
- molecular formula, 102
- safe handling, 103
- synonyms and trade names, 102

## Carbaryl

- acceptable daily intake, 105
- characteristics, 104
- exposure, 104–105
- general use pesticide, 104
- IUPAC name, 104
- molecular formula, 104
- safe handling and precautions, 104–105

synonyms and trade names, 104

toxicity level, 105

## Carbofuran

- and bird mortalities, 106–107
- characteristics, 105–106
- insecticide, 105
- IUPAC name, 105
- molecular formula, 105
- poisoning, 106
- precautions, 107
- restricted use pesticides, 106
- safe handling and precautions, 106
- synonyms and trade names, 105
- tolerance limit value, 106
- toxicity class, 106

## Carbon disulphide

- characteristics, 107
- exposure, 107
- molecular formula, 107
- safe handling and precautions, 107–108
- synonyms and trade names, 107

## Carbon monoxide

- characteristics, 108
- chemical asphyxiant, 108
- exposure, 108
- molecular formula, 108
- safe handling and precautions, 108–109
- safety precautions, 109
- synonyms and trade names, 108
- toxicity, 108

## Carbophenothion

- characteristics, 109
- exposure, 109
- IUPAC name, 109
- molecular formula, 109
- safe handling and precautions, 109
- synonyms and trade names, 109
- toxicity class, 109

## Carcinogens

- acephate, 22
- asbestos, 434
- barium nitrate, 53
- 1,2-benzanthracene, 60
- benzene, 61
- benzidine, 62
- beryllium chloride, 69
- captafol, 103
- described, 4
- ethylene dibromide, 169
- furan, 203
- groups, 4
- heptachlor epoxide, 221

- International Agency for Research on Cancer (IARC), 4
- lead nitrate, 249
- propylene oxide, 342
- samarium, 365
- tetrahydrofuran, 379
- thallium oxide, 383
- trichloroethylene, 495
- 1,2,3-trichloropropane, 396
- vinyl chloride, 412
- wood dust, 416
- ytterbium (III) chloride hexahydrate, 421
- Cefadroxil, 110
- Cefixime
  - characteristics, 110
  - exposure, 110
  - health effects, 110
  - molecular formula, 110
  - safe handling and precautions, 110
- Chemical asphyxiant, 108
- Chloramine T
  - characteristics, 111
  - exposure, 111
  - molecular formula, 111
  - safe handling and precautions, 111
  - storing of, 111
  - synonyms and trade names, 111
- Chloramine-t, 110
- Chlordane
  - characteristics, 111–112
  - exposure, 112
  - IUPAC name, 111
  - molecular formula, 111
  - safe handling and precautions, 112
  - synonyms and trade names, 111
  - toxicity class, 111
- Chlordecone, *see* Kepone
- Chlorine, 112–113
- Chlorofluorocarbons (CFCs), 113–114
- p*-Chloronitrobenzene
  - characteristics, 114
  - exposure, 114
  - molecular formula, 114
  - safe handling and precautions, 114
  - synonyms and trade names, 114
- Chlorpyrifos
  - characteristics, 115
  - concentrations, 115
  - exposure, 115
  - IUPAC name, 114
  - molecular formula, 114
  - safe handling and precautions, 114
  - synonyms and trade names, 114
  - toxicity class, 114
- Chlorpyrifos-methyl, 115–116
- Choking agents
  - acetic acid, 26
  - acetic chloride, 33
  - boron tribromide, 76
  - cadmium acetate, 99
  - chlorine, 113
  - described, 13
  - fluoboric acid, 194
  - KCN, 121
  - lead chloride, 247
  - mercury, 259
  - phenosulphonic acid, 314
  - rhodium sulphate, 362
  - zinc oxide, 426
- Cobalt iodide, 117
- Cobalt metal, dust, and fume
  - characteristics, 116
  - exposure, 116
  - molecular formula, 116
  - safe handling and precautions, 116–117
- Cobalt sulphate, 117–118
- Colours, dyes and pigments
  - characteristics, 4–5
  - dangerous effects
    - described, 5
    - hexavalent chromium, 5
  - dry pigments, 5
  - history, 5
  - organic pigments, 5
  - safe handling and precautions, 6
  - synthetic pigments, 5
  - toxic pigments, 5
- Combustible materials, 7
- Compressed gas and gases, 6–7
- Copper, 118
- Copper (dust, fume, and mist, as cu), 118–119
- Copper fume (as Cu), 119
- Copper sulphate
  - characteristics, 119–120
  - fungicide, 120
  - molecular formula, 119
  - safe handling and precautions, 120
  - synonyms and trade names, 119
- Corneal abrasion, 435–437
- Corrosive chemical substances
  - acids and alkalis, 7
  - fluorosulphuric acid, 195
  - formic acid, 202
  - phosphorus pentoxide, 326
  - potassium silver cyanide, 127

- Coumaphos  
characteristics, 120–121  
exposure, 121  
IUPAC name, 120  
molecular formula, 120  
safe handling and precautions, 121  
synonyms and trade names, 120  
toxicity class, 120
- Creosate, 326
- Cyanide  
characteristics, 121–122  
cyanide compounds  
calcium cyanide, 123–124  
cyanogen bromide, 124–125  
cyanogen chloride, 125  
cyclohexane, 129  
hydrogen cyanide, 125–126  
potassium cyanide, 127  
potassium silver cyanide, 127  
sodium cyanide, 127–128  
exposure, 122  
health effects, 122  
molecular formula, 121  
OSHA, limits, 123  
safe handling and precautions, 122–123  
toxicity, 122
- Cyanogen bromide, 124–125
- Cyanogen chloride, 125
- Cyclohexane, 129
- Cyclopenta(de)naphthalene, *see* Acenaphthylene
- D**
- DDT  
characteristics, 135  
exposure, 136  
history, 135–136  
insecticide, 135  
IUPAC name, 135  
and malaria control, 137–138  
molecular formula, 135  
safe handling and precautions, 136–137  
synonyms and trade names, 135
- Demeton-S-methyl, 138
- Diazinon, 139
- Dibromoethane, *see* Ethylene dibromide
- Dichlorodiphenyltrichloroethane, *see* DDT
- 1,2-Dichloromethane, *see* Ethylene dichloride
- Dichlorvos  
characteristics, 139–140  
IUPAC name, 139  
molecular formula, 139  
safe handling and precautions, 140–141  
synonyms and trade names, 139  
toxicity class, 139  
uses, 140
- Dicofol  
ADI, 142  
characteristics, 141  
exposure, 141  
IUPAC name, 141  
molecular formula, 141  
safe handling and precautions, 141–142  
synonyms and trade names, 141  
toxicity class, 141  
uses, 141
- Diethylamine  
characteristics, 142  
exposure, 142  
molecular formula, 142  
regulations, 143  
safe handling and precautions, 142  
synonyms and trade names, 142
- Diethyl phthalate  
characteristics, 143  
exposure, 144  
molecular formula, 143  
regulations, 144  
safe handling and precautions, 143–144  
synonyms and trade names, 143
- Diethyl (dimethoxythiophosphorylthio)  
succinate, *see* Malathion
- Dimethoate  
characteristics, 144  
exposure, 144–145  
IUPAC name, 144  
molecular formula, 144  
safe handling and precautions, 144–145  
synonyms and trade names, 144  
toxicity class, 144
- Dimethyl adipate (DMA), 145
- Dimethylamine  
characteristics, 146  
exposure, 146  
handling, 147  
molecular formula, 146  
precautions, 147  
regulations, 146  
synonyms and trade names, 146
- 1,4-Dioxane  
characteristics, 147  
exposure, 147  
molecular formula, 147  
regulations, 148  
safe handling and precautions, 147–148  
synonyms and trade names, 147

- Diphenylamine  
 characteristics, 148  
 exposure, 148  
 molecular formula, 148  
 regulations, 148  
 safe handling and precautions, 148–149  
 synonyms and trade names, 148
- Disulphoton, 149
- Diuron  
 characteristics, 149–150  
 exposure, 150  
 herbicide, 149  
 molecular formula, 149  
 regulations, 150  
 safe handling and precautions, 150  
 synonyms and trade names, 1149
- Divinyl benzene  
 characteristics, 151  
 molecular formula, 150  
 safe handling and precautions, 151  
 synonyms and trade names, 150
- Dyes; *see also* Colours, dyes and pigments  
 acenaphthylene, 21  
 acetaldehyde, 23  
 acrylonitrile, 38  
 barium compounds, 38  
 benzidine, 62  
 cyanide, 121–122  
 ethylene chlorohydrine, 166  
 2-NP, 293  
 phthalic anhydride, 327
- E**
- Effluents, 1
- Endosulfan  
 chemical name, 157  
 and human poisoning, 158  
 molecular formula, 157  
 pesticide, 157  
 safe handling and precautions, 158  
 synonyms and trade names, 157  
 toxicity, 157–158  
 toxicity class, 157
- Endrin, 159
- Ethanol  
 characteristics, 161  
 exposure, 161  
 health effects, 161–162  
 molecular formula, 161  
 safe handling and precautions, 161–162  
 synonyms and trade names, 161  
 uses, 161
- Ethion, 163–164
- 2-Ethoxyethanol, 215
- Ethyl alcohol completely denatured  
 characteristics, 162  
 chemical ingestion, 163  
 exposure, 162  
 ingredients, 162  
 molecular formula, 162  
 synonyms and trade names, 162
- Ethylbenzol  
 characteristics, 164  
 exposure, 164  
 health effects, 164  
 molecular formula, 164  
 regulations, 165  
 safe handling and precautions, 164  
 synonyms and trade names, 164  
 uses, 164
- Ethyl carbamate  
 characteristics, 165  
 exposure, 165–166  
 molecular formula, 165  
 safe handling and precautions, 165–166  
 synonyms and trade names, 165  
 uses, 165
- S-Ethyl dipropylthiocarbamate (EPTC)  
 adverse effects, 160–161  
 characteristics, 160  
 cholinesterase inhibitor, 160  
 exposure, 160  
 handling, 161  
 herbicide, 160  
 molecular formula, 160  
 synonyms and trade names, 160
- Ethylene chlorohydrin  
 characteristics, 166  
 molecular formula, 166  
 regulations, 167  
 safe handling and precautions, 166  
 synonyms and trade names, 166
- Ethylenediamine  
 characteristics, 167  
 exposure, 167  
 molecular formula, 167  
 regulations, 168  
 safe handling and precautions, 167–168  
 synonyms and trade names, 167
- Ethylene dibromide  
 carcinogenic, 169  
 characteristics, 168  
 exposure, 168  
 handling, 169–170  
 molecular formula, 168



- regulations, 169
  - synonyms and trade names, 168
  - uses, 168
  - workplace safety dress, 169
- Ethylene dichloride
- characteristics, 170
  - exposure, 170
  - health effects, 170
  - IARC classification, 171
  - molecular formula, 170
  - regulations, 171
  - safe handling and precautions, 170–171
  - synonyms and trade names, 170
  - uses, 170
- Ethylene glycol butyl ether
- exposure, 215
  - safety management, 215–216
- Ethyleneimine
- characteristics, 172
  - exposure, 172
  - molecular formula, 171
  - safe handling and precautions, 172
  - synonyms and trade names, 171
  - uses, 172
- Ethylene oxide
- characteristics, 173
  - explosive, 174
  - exposure, 173
  - inhalation, 173
  - molecular formula, 172
  - safe handling and precautions, 173
  - synonyms and trade names, 172
- Ethyl silicate
- characteristics, 173
  - management, 175
  - molecular formula, 173
  - safe handling and precautions, 174–175
  - synonyms and trade names, 173
  - uses, 173
- Explosives
- acetylene, 34
  - 2-butanone, 84
  - categorization, 8–9
  - ethylene oxide, 173
  - flammables, 8
  - fumigants, 8–9
  - nitroglycerin, 53
- Eye injuries
- acute *vs.* chronic exposure, 431
  - causes, 443
  - chemical substances and eye protection, 437–444
  - corneal abrasion, 435–437
  - disorders, ocular, 432
  - hazardous chemicals
    - alkaline compounds, 434
    - asbestos, 434–435
    - and eye burn, 435
  - irritation, 18
  - ocular exposure, 432
  - ocular pain, causes, 435
  - prevention, 443
    - information about, 443
    - protective eyewear, 443
    - safety glasses, 464
    - shields and helmets, 437
    - strategy, 444
  - types, 433
  - at work, 442

## F

- Famotidine
- characteristics, 181–182
  - medication, 182
  - molecular formula, 181
  - safe handling and precautions, 182
  - synonyms and trade names, 181
- Fenamiphos
- characteristics, 183
  - exposure, 183
  - IUPAC name, 182
  - molecular formula, 182
  - safe handling and precautions, 183
  - synonyms and trade names, 182
  - toxicity class, 182
- Fenitrothion
- characteristics, 183
  - IUPAC name, 183
  - molecular formula, 183
  - safe handling and precautions, 184
  - synonyms and trade names, 183
  - toxicity class, 183
  - uses, 183–184
- Fenoxycarb
- characteristics, 184
  - IUPAC name, 184
  - molecular formula, 184
  - safe handling and precautions, 185
  - synonyms and trade names, 184
  - toxicity class, 184
- Fensulphothion, 185–186
- Fenthion, 186
- Fenvalerate
- characteristics, 186
  - chemical name, 186

- insecticide, 187
  - molecular formula, 186
  - safe handling and precautions, 187
  - solubility, 186
  - Ferbam
    - characteristics, 187
    - fungicide, 187
    - molecular formula, 187
    - safe handling and precautions, 187–188
    - synonyms and trade names, 187
  - Ferrocene, 188–189
  - Fipronil, 189
  - Fission products, 209
  - Flocoumafen
    - characteristics, 190
    - IUPAC name, 190
    - molecular formula, 190
    - rodenticide, 190
    - safe handling and precautions, 190–191
    - synonyms and trade names, 190
  - Fluoboric acid
    - characteristics, 194
    - molecular formula, 194
    - safe handling and precautions, 194–195
    - synonyms and trade names, 194
  - Fluorine
    - characteristics, 191
    - exposure, 191
    - molecular formula, 191
    - reactive non-flammable gas, 192
    - safe handling and precautions, 191–192
  - Fluoroacetamide
    - characteristics, 192
    - chemical name, 192
    - decomposition, 192
    - exposure, 193
    - molecular formula, 192
    - safe handling and precautions, 193
    - synonyms and trade names, 192
  - Fluorobenzene
    - characteristics, 193
    - exposure, 194
    - insecticide, 193
    - molecular formula, 193
    - safe handling and precautions, 194
    - synonyms and trade names, 193
  - Fluorosulphuric acid (FSO<sub>3</sub>H), 195–196
  - Fluvalinate, 196–197
  - Folpet
    - characteristics, 197
    - chemical name, 197
    - combustible substance, 197
    - exposure, 197–198
    - molecular formula, 197
    - safe handling and precautions, 197
    - synonyms and trade names, 197
  - Fonophos, 198
  - Formaldehyde
    - characteristics, 199
    - exposure, 199
    - management, 200
    - molecular formula, 198
    - safe handling and precautions, 199–200
    - synonyms and trade names, 198–199
  - Formamide, 201
  - Formic acid
    - characteristics, 201
    - molecular formula, 201
    - safe handling and precautions, 202
    - synonyms and trade names, 201
  - Formonitrile, 202
  - Fossil fuel, *see* Propane
  - Fungicide
    - Ferbam, 187
    - kepone, 237
    - quintozene, 356–357
  - Furan, 203
  - Furfural, 203–204
- ## G
- Gadolinium
    - molecular formula, 209
    - synonyms and trade names, 209
    - uses, 209–210
  - Gadolinium fluoride
    - handling, 210–211
    - harmful effects, 210
    - inhalation, 210
    - molecular formula, 210
  - Gallium (III) nitrate, 211
  - Gases, *see* Compressed gas and gases
  - General use pesticide (GUP)
    - abamectin, 18
    - bendiocarb, 55
    - carbaryl, 104
    - chlorthrifos, 115
    - dimethoate, 144
    - fenoxycarb, 184
    - malathion, 257
    - propramphos, 339
    - warfarin, 413
  - Glass wool fibres
    - causes, 211–212
    - exposure, 212
    - properties, carcinogenicity, 212

- safety regulation limits for, 212
- uses, 211–212
- Global regulations, hazardous chemicals
  - Argentina, 446–447
  - Asian countries
    - China, 450
    - India, 450–451
    - Republic of Korea, 451
    - Singapore, 451
    - Sri Lanka, 452
    - Taiwan, 451–452
    - Thailand, 452
  - Belgium, 453
  - Brazil, 447
  - Canada, 447–448
  - Chile, 448
  - Europe, 452–453
  - Germany, 476
  - global regulatory agencies, 446
  - highly hazardous chemicals, 456
  - International Programme on Chemical Safety (IPCS), 455
  - Mexico, 448–449
  - MSDS, 457–458
  - multi-hazardous chemical waste, 458–459
  - The Netherlands, 454
  - process hazard analysis, 456
  - risk management program, 456
  - safety precautions, 457
  - United Kingdom, 454–455
  - United States, 449
  - workplace monitoring and follow-up actions, 459
- Grazon, *see* Picloram
- Gum acacia, *see* Acacia powder
- Guthion
  - exposure, 216–217
  - spraying operations, 217

## H

- Hafnis, *see* Hafnium oxide
- Hafnium oxide
  - exposure, 220
  - precautions, 220
  - uses, 219–220
- Heptachlor
  - exposure, 221
  - metabolite, 221
  - PPE, 221
  - trade names, 220
- Heptachlor epoxide, 220

- Herbicide
  - butanethiol, 83
  - 2-butoxyethanol, 87
  - diuron, 149
  - EPTC, 160
  - paraquat dichloride, 304
  - pentachlorophenol, 308
  - picloram, 328
  - propylene oxide, 342
  - triethanolamine, 397
- Hexachlorobenzene, 222
- Hexachlorobutadiene
  - applications, 222
  - carcinogenicity, 223
  - exposure, 222
  - regulations, 223
  - source, 222
  - U.S. EPA classification, 222–223
- Hexachlorocyclopentadiene
  - exposure, 223–224
  - precautions, 223–224
  - regulations, 224
  - uses, 223
- Highly hazardous chemicals (HHCs), 456
- Human poisoning
  - endosulfan, 158
  - HCN, 126
  - osmium tetroxide, 298
- Hydrazine
  - exposure, 225–226
  - precautions, 225–226
  - uses, 225
- Hydrocyanic acid, 226
- Hydrogen cyanide
  - carcinogen, 125
  - characteristics, 125
  - exposure limit, 126
  - and human poisoning, 126
  - molecular formula, 125
  - precautions, 125
  - safe handling and precautions, 125–126
  - synonyms and trade names, 125
- Hydrogen iodide anhydrous
  - exposure, 224
  - precautions, 224
- 1-Hydroxyacenaphthene, *see* 1-Acenaphthenol

## I

- Incapacitating agent, 13, 319
- Insecticides
  - acephate, 22
  - bendiocarb, 55

captafol, 103  
 carbofuran, 105  
 chlordecone, 277  
 fenvalerate, 186  
 heptachlor, 220  
 kepone, 237  
 lead arsenate, 246–247  
 methoxychlor, 270  
 methyl bromide, 272–273  
 methyl parathion, 275  
 mevinphos, 275–276  
 phosmet, 320  
 propoxur, 340  
 International Programme  
 on Chemical Safety  
 (IPCS), 455

### Iodine

deficiency, 230  
 exposure, 230–231  
 isotopes, 230  
 precautions, 230–231  
 uses, 230

Iodine cyanide, 231

Iodoethane, 231–232

### Iodoform

alert, 232–233  
 danger/precautions, 232–233  
 exposure, 232  
 warning, 232–233

Iodomethane, 233

### Irritant chemical substances

bendiocarb, 55–57  
 formamide, 201  
 mutagens, characteristics, 9  
 organic peroxides,  
 characteristics, 9  
 skin, beryllium, 68

Isobutyl acetate, 87

## J

Janus Green B, 235

Jemmer stain, 235

Jet fuel, 236

Jet fuel 8, 236

Jojoba oil, 236–237

## K

KCN, *see* Potassium silver cyanide

Kepone, 237

## L

### Lead

causes, humans, 242  
 characteristics, 239  
 exposure risks, 240–241  
 global regulations, 242–243  
 health effects, 241, 243  
 inhalation, 242  
 molecular formula, 239  
 poisoning, 240  
 renal disorders, 243–244  
 safe handling and precautions, 241–242  
 synonyms and trade names, 239  
 toxic effect, 243–244  
 uses, 240

### Lead acetate

acute poisoning, 244  
 molecular formula, 244  
 poisoning, symptoms of, 244  
 safe handling and precautions, 244–245  
 synonyms and trade names, 244  
 use and handling regulations, 245

### Lead acetate trihydrate

breathing, 245  
 clinical manifestations, 245–246  
 exposure, 245  
 molecular formula, 245  
 safe handling and precautions,  
 245–246  
 synonyms and trade names, 245

### Lead arsenate

characteristics, 246  
 chemical name, 246  
 exposure, 246  
 insecticide, 246–247  
 molecular formula, 246  
 safe handling and precautions, 246–247  
 synonyms and trade name, 246

### Lead chloride, 247

### Lead fluoride

characteristics, 248  
 exposure, 248  
 molecular formula, 247  
 safe handling and precautions, 248  
 symptoms toxicity and poisoning, 248  
 synonyms and trade names, 247

### Lead iodide

characteristics, 248  
 molecular formula, 248  
 safe handling and precautions, 248–249  
 warning, 249

- Lead nitrate  
  exposure, 249  
  molecular formula, 249  
  safe handling and precautions, 249–250  
  synonyms and trade names, 249
- Lead (II) phosphate, 250
- Lead stearate, 250
- Lead styphnate  
  characteristics, 250–251  
  chemical name, 250  
  exposure, 251  
  molecular formula, 250  
  safe handling and precautions, 251  
  synonyms and trade names, 250
- M**
- Magnesium phosphide  
  characteristics, 256  
  molecular formula, 255  
  safe handling and precautions, 256  
  storage, 257  
  synonyms and trade names, 255
- Malaria control, *see* DDT
- Malathion  
  exposure, 257  
  molecular formula, 257  
  safe handling and precautions, 257–258  
  synonyms and trade names, 257  
  toxicity class, 257
- Material safety data sheet (MSDS), 2, 457–458
- Medical uses, chemicals  
  chlorine, 9, 112–113  
  hydrazine, 255  
  mercury (II) cyanide, 261  
  nitroglycerin, 392  
  phosphorus pentoxide, 325  
  quinoline, 355  
  reserpine, 359  
  uracil mustard, 405
- Mercuric acetate, 266  
  harmful effects, 260  
  molecular formula, 260  
  safe handling and precaution, 260  
  synonyms and trade names, 260
- Mercuric chloride, 260  
  molecular formula, 260  
  safe handling and precautions, 260–261  
  synonyms and trade names, 260
- Mercuric nitrate, 262
- Mercuric oxide  
  exposure, 262  
  molecular formula, 262  
  poisoning symptoms, 262  
  safe handling and precautions, 262–263  
  synonyms and trade names, 262
- Mercuric sulphate  
  exposure, 263  
  molecular formula, 263  
  poisoning symptoms, 263  
  safe handling and precautions, 264–265  
  synonyms and trade names, 264
- Mercuric thiocyanate  
  airborne exposure limits, 264  
  characteristics, 264  
  exposure, 264  
  molecular formula, 264  
  safe handling and precautions, 264  
  synonyms and trade names, 264
- Mercurous chloride, 265
- Mercurous nitrate  
  characteristics, 266  
  exposure, 266  
  molecular formula, 266  
  pre-existing conditions aggravation, 266  
  safe handling and precautions, 266  
  synonyms and trade names, 266
- Mercury, 259
- Mercury (II) cyanide, 261, 275
- Methamidophos  
  characteristics, 268  
  inhalation, 269  
  molecular formula, 268  
  safe handling and precautions, 269  
  synonyms and trade names, 268  
  toxicity class, 268  
  uses, 269
- Methane  
  characteristics, 266–267  
  chemical family, 266  
  exposure, 267  
  molecular formula, 266  
  safe handling and precautions, 267–268  
  uses, 268
- Methidathion  
  exposure, 269  
  molecular formula, 269  
  safe handling and precautions, 269–270  
  synonyms and trade names, 269  
  toxicity class, 269
- Methomyl, *see* Acetamide acid

- 2-Methoxycarbonyl-1-methylvinyl dimethyl phosphate, *see* Mevinphos
- Methoxychlor  
and cancer, 270  
exposure, 270  
molecular formula, 270  
safe handling and precautions, 270  
synonyms and trade names, 270  
toxicity class, 270
- 2-Methoxyethanol, 213
- 2-Methoxy-1-propanol, 213
- 1-Methoxy-2-propanol, 213
- 4'-Methylacetanilide, *see* *p*-Acetotoluidide
- Methyl alcohol  
exposure, 271  
molecular formula, 271  
safe handling and precautions, 271  
synonyms and trade names, 271  
toxicity signs, 271
- Methyl aldehyde, *see* Formaldehyde
- Methylamine, 271–272
- Methylation, 241
- Methyl bromide  
exposure, 272  
molecular formula, 272  
safe handling and precautions, 272–273  
synonyms and trade names, 272  
toxicity symptoms, 272  
uses, 272–273
- Methylene chloride, 273–274
- Methyl ethyl ketone (MEK), 274
- Methyl iodide, 233
- Methyl parathion  
exposure, 275  
molecular formula, 274  
safe handling and precautions, 275  
synonyms and trade names, 274  
toxicity class, 274  
uses, 275
- 2-Methyl-1,3,5-trinitrobenzene, *see* Trinitrotoluene (TNT)
- Methyl vinyl ketone (MVK)  
exposure, 276  
molecular formula, 275  
safe handling and precautions, 275–276  
symptoms, type and severity, 275  
synonyms and trade names, 275
- Mevinphos  
and carcinogenicity, 277  
molecular formula, 276  
poisoning symptoms, 276  
safe handling and precautions, 276–277  
synonyms and trade names, 276  
toxicity class, 276  
uses, 276–277
- Mirex and chlordecone  
exposure, 277  
molecular formula, 277  
poisoning symptoms, 277  
safe handling and precautions, 277–278  
synonyms and trade names, 277  
uses, 277–278
- Molybdenum, 278
- Mustard gas  
chemical class, alkylating agent, 279  
exposure, 279–280  
and global wars, 280–281  
molecular formula, 279  
poisoning symptoms, 279  
safe handling and precautions, 279–280  
synonyms and trade names, 279  
uses, 279–281
- N**
- Naphthalene  
characteristics, 285  
exposure, 286  
molecular formula, 285  
safe handling and precautions, 286  
sign and symptoms, 286  
synonyms and trade names, 285  
uses, 285
- National Institute for Occupational Safety and Health (NIOSH), 47, 51, 56, 62, 66, 68, 84–85, 88–90, 109, 115, 159, 167, 169, 212, 292, 331, 355, 391, 398
- Nerve agents, 11, 13, 279, 368–369; *see also* Sarin
- Nickel (Ni)  
exposure, 287  
molecular formula, 287  
safe handling and precautions, 287–288  
synonyms and trade names, 287
- Nickel carbonyl  
characteristics, 288  
exposure, 288  
molecular formula, 288  
safe handling and precautions, 288–289  
signs and symptoms, 288  
synonyms and trade names, 288
- Nickel compounds  
nickel (Ni), 287–288  
nickel carbonyl, 288–289  
nickel (II) nitrate hexahydrate, 289  
nickel sulphate, 290  
nickel (II) sulphate hexahydrate, 290–291

- Nickel (II) nitrate hexahydrate  
characteristics, 289  
exposure, 289  
molecular formula, 289  
poisoning symptoms, 289  
safe handling and precautions, 289  
synonyms and trade names, 289
- Nickel sulphate, 290
- Nickel (II) sulphate hexahydrate  
molecular formula, 290  
symptoms, 290  
synonyms and trade names, 290  
uses, 290
- 4-Nitro-1,1'-diphenyl  
characteristics, 71  
danger and precautions, 71–72  
exposure, 71  
molecular formula, 71  
safe handling and precautions, 71–72  
synonym and trade name, 71
- Nitrogen mustards  
blister agents, 291–292  
nitroglycerin, 292–293  
2-nitropropane, 293–294  
o-nitrotoluene, 294
- Nitroglycerin  
characteristics, 292  
exposure, 292  
molecular formula, 292  
precautions, 293  
safe handling and precautions, 292  
synonyms and trade names, 292
- 2-Nitropropane  
care and precautions, 294  
characteristics, 293  
exposure limits, 294  
molecular formula, 293  
safe handling and precautions, 293  
synonyms and trade names, 293
- o-Nitrotoluene  
characteristics, 294  
exposure, 294  
molecular formula, 294  
safe handling and precautions, 294  
synonyms and trade names, 294
- O**
- Occupational Safety and Health  
Administration (OSHA), 38, 47, 51, 53,  
61–63, 72, 75, 85, 89, 117, 143, 158, 163,  
200, 245, 288, 294, 297, 316, 322, 331, 338,  
416, 424
- Octabenzene  
explosion, 298  
handling, 297–298  
molecular formula, 297  
precautions, 297–298  
protection against fire, 298  
uses, 297
- Ocular disorders, *see* Eye injuries
- Organic solvents  
acenaphthene, 20  
acetone, 31  
benzyl, 58  
2-butoxyethanol, 86  
captafol, 103  
fensulphothion, 185  
folpet, 197
- Organophosphate larvicide, *see* Abate
- OSHA, *see* Occupational Safety and Health  
Administration (OSHA)
- Osmium tetroxide  
exposure, 298–299  
molecular formula, 298  
toxicity symptoms, 298  
uses, 298
- Oxidisers/oxidising agents/materials, 10
- Oxydisulphoton  
acute exposure, 299  
molecular formula, 299  
precautions, 299  
signs and exposure symptoms, 299  
synonyms and trade names, 299
- P**
- Palladium chloride, 302
- Paraffin, 303
- Paraquat dichloride  
characteristics, 304  
exposure, 304  
health effects, 304  
molecular formula, 303  
safe handling and precautions, 304–305  
synonyms and trade names, 303  
toxicity level, 304  
uses, 304
- Parathion (parathion ethyl)  
acceptable daily intake, 306  
characteristics, 305  
health effects, on ingestion, 306  
IUPAC name, 305  
molecular formula, 305  
safe handling and precautions, 305–306  
synonyms and trade names, 305

- toxicity class, 305
- uses, 305
- PBB, *see* Polybrominated biphenyl (PBB)
- PBDE-PP, *see* 2,2',4,4',5-Pentabromodiphenyl ether
- PCNB, *see* *p*-Chloronitrobenzene
- Pentaboron nonahydride
  - characteristics, 306
  - health effects, 307
  - molecular formula, 306
  - safe handling and precautions, 306–307
  - synonyms and trade names, 306
- 2,2',4,4',5-Pentabromodiphenyl ether, 307
- Pentachloroethane, 308
- Pentachlorophenol (PCP)
  - characteristics, 308
  - molecular formula, 308
  - safe handling and precautions, 308–309
  - synonyms and trade names, 308
  - uses, 308
- n*-Pentane
  - applications, 309–310
  - characteristics, 309
  - molecular formula, 309
  - safe handling and precautions, 310
  - synonyms and trade names, 309
- 2,4-Pentanedione, *see* Acetylacetone
- Pentanol
  - characteristics, 310
  - chemical family, 310
  - exposure, 310
  - molecular formula, 310
  - synonyms and trade names, 310
- Perchloroethylene
  - characteristics, 312
  - exposure, 312
  - molecular formula, 311
  - regulations, 312
  - safe handling and precautions, 312–313
  - synonyms and trade names, 311
- Personal protective equipment (PPE), 2, 174
- Pesticides
  - abamectin, 18
  - abate, 18–19
  - algicides, 11
  - antifouling agents, 11
  - antimicrobial chemicals, 11
  - attractants, 12
  - biocides, 12
  - biopesticides, 12
  - carbamate, 11
  - characteristics, 10
  - cyanide, 121–122
  - defoliants, 12
  - desiccants, 12
  - disinfectants and sanitisers, 12
  - endosulfan, 157
  - fumigants, 12
  - fungicides, 12
  - herbicides, 12
  - insect growth regulators, 12
  - insecticides, 12
  - methidathion, 269
  - microbial, 11
  - microbial pesticides, 12
  - miticides (acaricides), 12
  - molluscicides, 12
  - nematicides, 12
  - organochlorine, 11
  - organophosphate, 10–11
  - ovicides, 12
  - parathion (parathion ethyl), 305
  - pheromones, 12
  - plant growth regulators, 12
  - pyrethroid, 11
  - pyrophoric chemical substances, 12
  - radioactive chemicals, 12–13
  - reactive agents/chemical substances, 12
  - repellents, 12
  - rodenticides, 12
  - sensitising chemical substances,
    - sensitisers, 13
  - teratogens, 13
  - toxic alcohols, 13
  - water-reactive substances, 13
- Petroleum ether, 311
- Phenol
  - characteristics, 311
  - compounds, 313–314
  - exposure, 313
  - molecular formula, 313
  - safe handling and precautions, 313
  - synonyms and trade names, 313
  - uses, 313
- Phenosulphonic acid, 314
- Phorate, 315
- Phosacetim
  - characteristics, 315–316
  - exposure, 316
  - IUPAC name, 315
  - molecular formula, 315
  - safe handling and precautions, 316
- Phosdrin
  - characteristics, 316
  - exposure, 316
  - molecular formula, 316



- safe handling and precautions, 316–317
- synonyms and trade names, 316
- toxicity, 316
- Phosfolan, 317
- Phosgene, 318
- Phosgene oxime
  - breathing, 319
  - characteristics, 318–319
  - health effects, 319
  - IUPAC name, 318
  - molecular formula, 318
  - safe handling and precautions, 319
  - synonyms, 318
- Phosmet
  - characteristics, 319–320
  - exposure, 320
  - insecticide, 320
  - IUPAC name, 319
  - molecular formula, 319
  - synonyms and trade names, 319
  - uses, 320
- Phosphamidon
  - ADI, 321
  - characteristics, 321
  - exposure, 321
  - health effects, 321
  - IUPAC name, 320
  - molecular formula, 320
  - safe handling and precautions, 321
  - synonyms and trade names, 320
  - toxicity class, 320
  - types, 320
- Phosphine (hydrogen phosphide), aluminum phosphide, 322
- Phosphoric acid, 323
- Phosphorus pentachloride
  - characteristics, 324
  - exposure, 325
  - molecular formula, 324
  - safe handling and precautions, 325
  - synonyms and trade names, 324
- Phosphorus pentasulphide
  - characteristics, 326
  - exposure, 327
  - molecular formula, 326
  - safe handling and precautions, 327
  - synonyms and trade names, 326
- Phosphorus pentoxide
  - characteristics, 325
  - corrosive substances, 326
  - exposure, 325–326
  - molecular formula, 325
  - safe handling and precautions, 325–326
  - synonyms and trade names, 325
- Phosphorus-white phosphorus, *see* White phosphorus
- Phthalic anhydride
  - characteristics, 327
  - exposure, 327
  - molecular formula, 327
  - safe handling and precautions, 327–328
  - synonyms and trade names, 327
- Picloram, 328
- Picric acid
  - characteristics, 329
  - exposure, 329
  - molecular formula, 329
  - safe handling and precautions, 329–330
  - storing, 330
  - synonyms and trade names, 329
  - uses, 329
- Picrotoxin, 331
- Pigments, *see* Colours, dyes and pigments
- Pirimiphos methyl
  - characteristics, 331–332
  - exposure, 332
  - IUPAC name, 331
  - molecular formula, 331
  - safe handling and precautions, 332
  - synonyms and trade names, 331
  - WHO classification, 331
- Polybrominated biphenyl (PBB)
  - applications, 333
  - safe handling and precautions, 334
  - sources, 334
  - uses, 333
- Polybrominated diphenyl ether (PBDE)
  - characteristics, 332
  - health effects, 332–333
  - regulations, 333
  - safe handling and precautions, 33
- Polychlorinated biphenyl (PCB)
  - applications, 335
  - characteristics, 334
  - health effects, 336
  - organic pollutants, 335
  - precautions, 336
  - safe handling and precautions, 335–336
  - synonyms and trade names, 334
- Polycyclic aromatic hydrocarbon (PAH)
  - characteristics, 336
  - exposure, 337
  - levels, 338
  - regulations, 338

- safe handling and precautions, 337
  - toxicity, 337
  - Potassium cyanide, 127
  - Potassium silver cyanide
    - characteristics, 127
    - molecular formula, 127
    - safe handling and precautions, 127
    - synonyms and trade names, 127
  - Process hazard analysis (PHA), 456
  - Process safety management (PSM), 456; *see also*
    - Safety management system
  - Propane
    - characteristics, 338
    - exposure, 338–339
    - molecular formula, 338
    - synonyms and trade names, 338
  - Propetamphos, 339
  - Propoxur
    - characteristics, 340
    - dietary dose, 340–341
    - exposure, 340
    - insecticide, 340
    - molecular formula, 339
    - safe handling and precautions, 340
    - synonyms and trade names, 339
    - toxicity class, 340
    - toxicity level, 340
  - Propylene imine
    - characteristics, 341
    - molecular formula, 341
    - safe handling and precautions, 342
    - synonyms and trade names, 341
    - uses, 341
  - Propylene oxide, 342
  - Pyrethrins and pyrethroids, 343
  - Pyrethrum
    - characteristics, 343
    - exposure, 343
    - health effects, 343–344
    - molecular formula, 343
    - poison, 344
    - safe handling and precautions, 343–344
    - synonyms and trade names, 343
    - uses, 343
- Q**
- Quinalphos, 353
  - Quinoline
    - characteristics, 355
    - exposure, 355
    - handling, 355
    - molecular formula, 354
    - precautions, 355–356
    - synonyms and trade names, 354
    - target organs, 356
    - uses, 355
    - warning regulations
      - Canada, 356
      - European Union, 356
      - United States, 356
  - Quinone (*p*-Benzoquinone), 354
  - Quintozene
    - Canadian regulations, 357
    - characteristics, 356
    - chemical class, 356
    - European Union regulations, 357–358
    - exposure, 357
    - formulations, 357
    - fungicide, 356–357
    - molecular formula, 356
    - precautions, 357
    - synonyms, 357
- R**
- Reserpine
    - accidental ingestion, 360
    - exposure, 359–360
    - safe handling and precautions, 359–360
    - synonyms and trade names, 359
    - uses, 359
  - Resorcinol
    - characteristics, 360
    - molecular formula, 360
    - safe handling and precautions, 360–361
    - synonyms and trade names, 360
  - Restricted use pesticides (RUP)
    - bendiocarb, 55
    - carbofuran, 106
    - carbophenothion, 109
    - coumaphos, 120
    - DDT, 135
    - diazinon, 139
    - fenamiphos, 183
    - fenthion, 186
    - fluralinate, 196
    - fonophos, 198
    - methamidophos, 268
    - methidathion, 270
    - mevinphos, 277
    - parathion, 305
    - propetamphos, 339
    - pyrethrum, 343

- Rhodium chloride, trihydrate  
 molecular formula, 361  
 potential health effects, 361  
 safe handling and precautions, 361  
 synonyms and trade names, 361
- Rhodium sulphate  
 plating solution, 362  
 precautions, 362–363  
 safe handling, 363
- Risk Management Program (RMP), 456
- Rodenticide, 190
- S**
- Safety management system (SMS)  
 chemical inventory  
 follow-up steps, 466–467  
 inspection information requirements, 467  
 report on, 466  
 workplace exposure, 464–465  
 workplace inspection principles, 465–466  
 components, 3  
 global regulations, 457  
 handling and precautions  
 exposure level, without safety and PPE, 468  
 health disorders list, 468  
 MSDS, 468  
 for occupational workers, 468  
 physical hazards types, 468  
 regulations, 469  
 safety precautions, 468  
 safety, workplace, 462–463  
 workplace inspections and monitoring, 463–464
- Samarium  
 application, 377–378  
 exposure, 378  
 minerals occurring, 378  
 molecular formula, 377  
 toxicological properties, 378
- Samarium (III) fluoride, 379
- Samarium (III) nitrate hexahydrate  
 exposure, 379  
 molecular formula, 379  
 safe handling and precautions, 379–380
- Samarium oxide, 367–368
- Sarin  
 characteristics, 368  
 chemical name, 368  
 exposure, 368–369  
 molecular formula, 368  
 safe handling and precautions, 368–369  
 synonyms and trade names, 368  
 toxicity from, 368
- Selenious acid  
 exposure, 370  
 molecular formula, 370  
 safe handling and precautions, 370  
 use, 370
- Selenium  
 exposure, 369–370  
 molecular formula, 369  
 safe handling and precautions, 369–370  
 signs, 369  
 uses, 369
- Selenium chloride  
 exposure, 371  
 molecular formula, 371  
 safe handling and precautions, 371
- Selenium (IV) oxide  
 acute inhalation, 372  
 exposure, 371  
 molecular formula, 371  
 safe handling and precautions, 371–372
- Selenium sulphide  
 characteristics, 372  
 exposure, 372  
 molecular formula, 372  
 safe handling and precautions,  
 372–373  
 synonyms, 372  
 uses, 372
- Sodium cyanide  
 characteristics, 127  
 exposure, 128  
 molecular formula, 127  
 safe handling and precautions, 128  
 synonyms and trade names, 127
- Sodium tetraborate decahydrate/borax  
 (anhydrous), 76–77
- Sodium tetraborate decahydrate/borax  
 (decahydrate), 77
- Sodium tetraborate pentahydrate, 78
- Standard operating procedures (SOPs), 440
- Styrene  
 exposure, 373  
 molecular formula, 373  
 poisoning symptoms, 373  
 safe handling and precautions, 373–374  
 synonyms and trade names, 373  
 uses, 373
- Sulphur dioxide  
 and cancer, 375  
 molecular formula, 374  
 safe handling and precautions, 374  
 uses and exposure, 374
- Suprax, *see* Cefixime

## T

- Temephos, *see* Abate
- Teratogen, endrin, 159
- Terbufos
- characteristics, 377–378
  - exposure, 378
  - molecular formula, 377
  - safe handling and precautions, 378
  - synonyms and trade names, 377
- Tetrachloroethylene
- exposure, 379
  - molecular formula, 378
  - safe handling and precautions, 379
  - synonyms and trade names, 378
  - uses, 378
- Tetraethyl lead
- characteristics, 251
  - exposure, 252
  - molecular formula, 251
  - signs and symptoms, 252
  - synonyms and trade names, 251
- Tetrahydrofuran
- exposure, 379
  - molecular formula, 379
  - poisoning symptoms, 379
  - safe handling and precautions, 379–380
  - synonyms, 379
- Tetramethyl lead
- acute poisoning, signs and symptoms, 253
  - characteristics, 252
  - exposure, 253
  - molecular formula, 252
  - safe handling and precautions, 253
  - synonyms and trade names, 252
- Tetramethylthiuram disulphide, *see* Thiram
- Thallium (soluble compounds)
- exposure, 380
  - molecular formula, 380
  - poisoning symptoms, 381
  - safe handling and precautions, 380–381
  - uses, 380
- Thallium bromide, 382
- Thallium iodide, 382
- Thallium nitrate, 382
- Thallium oxide, 382–383
- Thiodicarb
- chemical name, 383
  - exposure, 383
  - molecular formula, 383
  - safe handling and precautions, 383–384
  - synonym and trade name, 383
  - uses, 383
- Thiourea
- application, 384
  - exposure, 384
  - molecular formula, 384
  - safe handling and precautions, 384
  - synonyms and trade names, 384
- Thiram
- acute inhalation symptoms, 385
  - molecular formula, 385
  - safe handling and precautions, 385
  - synonyms and trade names, 384
  - toxicity class, 384
- Thorium
- history, 385–386
  - molecular formula, 385
  - physical properties, 386
  - safe handling and precautions, 386–387
  - societal applications, 386
  - uses, 385–386
- Thorium nitrate anhydrous
- molecular formula, 387
  - poisoning symptoms, 387
  - safe handling and precautions, 387–388
  - synonyms and trade names, 387
- Tin, 388–389
- Tin (IV) chloride
- exposure, 389
  - molecular formula, 389
  - safe handling and precautions, 389–400
  - synonyms and trade names, 389
- Tin organic compounds, 390–391
- Tin oxide
- molecular formula, 391
  - safe handling and precautions, 391
  - synonyms and trade names, 391
- Toluene
- characteristics, 391
  - exposure, 392
  - molecular formula, 391
  - safe handling and precautions, 392
- Tordon, *see* Picloram
- Toxic compounds
- barium, 48
  - bendiocarb, 56
  - benfuracarb, 57
  - carbaryl, 105
  - carbofuran, 106
  - carbophenothion, 109
  - flocoumafen, 190
  - fluvalinate, 196
  - lead, 239

- Tributyl phosphate (TBP)  
exposure, 393  
molecular formula, 392  
safe handling and precautions, 393  
synonyms and trade names, 392
- Tributyltin oxide  
chemical class, 393  
exposure, 393–394  
molecular formula, 393  
safe handling and precautions, 393–394  
synonyms and trade names, 394  
uses, 394
- 1,1,1-Trichloro-2,2-bis(4-methoxyphenyl)ethane,  
*see* Methoxychlor
- Trichloroethylene (technical)  
exposure, 395  
molecular formula, 395  
safe handling and precautions, 395  
synonyms and trade names, 395
- 1,2,3-Trichloropropane  
molecular formula, 396  
safe handling and precautions, 396  
synonyms and trade names, 396  
uses, 396
- Triethanolamine  
application, 396–397  
exposure, 397  
molecular formula, 396  
safe handling and precautions, 397  
synonyms and trade names, 397
- Triforine, 397–398
- Trinitrotoluene (TNT)  
exposure, 398  
molecular formula, 398  
safe handling and precautions, 398  
synonyms and trade names, 397
- Triphenyl phosphate, 399
- Trisodium phosphate (anhydrous)  
exposure, 400–401  
molecular formula, 400  
safe handling and precautions, 400–401  
synonyms and trade names, 400  
use, 400
- U**
- United Nations Conference on Environment  
and Development (UNCED), 461
- Uracil mustard  
effects, 405  
exposure, 405  
importance, 406  
molecular formula, 405  
safe handling and precautions, 405–406  
synonyms, 405
- Uranium  
exposure, 407  
isotopes, 406  
molecular formula, 406  
safe handling and precautions, 407
- Urethane (ethyl carbamate), 407
- V**
- Vanadium pentoxide  
exposure, 409  
molecular formula, 409  
safe handling and precautions, 409–410  
synonyms and trade names, 409  
uses, 409
- Vinyl acetate monomer (VAM)  
exposure, 410  
molecular formula, 410  
safe handling and precautions,  
410–411  
synonyms and trade names, 410  
uses, 410
- Vinyl chloride  
exposure, 411  
molecular formula, 411  
safe handling and precautions,  
411–412  
synonyms and trade names, 411
- W**
- Warfarin  
accumulation, 414  
chemical class, 413  
chemical name, 413  
exposure, 414  
molecular formula, 413  
safe handling and precautions, 414  
symptoms, 414  
synonyms and trade names, 413  
uses, 413  
warning, 414
- Wax, *see* Paraffin
- Welding fumes  
composition and quantity, 414–415  
safe handling and precautions, 415
- White phosphorus  
characteristics, 323–324  
exposure, 324  
molecular formula, 323  
safe handling and precautions, 324

## Wood dust

- exposure, 416
- safe handling precautions, 416–417
- safety management, 416–417
- synonyms, 416
- uses, 416

## Workplace Hazardous Materials Information System (WHMIS), 167, 245, 247, 251, 263, 265, 289, 356, 393, 395, 464

Workplace safety, 462–463; *see also* Safety management system (SMS)

## X

## Xylene

- application, 419
- exposure, 419–420
- molecular formula, 419
- safe handling and precautions, 419–420
- synonyms and trade names, 420

## Y

## Ytterbium (III) chloride hexahydrate, 421–422

## Ytterbium (III) oxide, 422

## Yttrium barium copper oxide (YBCO), 421

## Yttrium fluoride, 422

## Yttrium garnets, 209

## Z

## Zinc

- exposure, 424
- molecular formula, 423

- recommended dietary allowance, 424
- safe handling and precautions, 423–424
- uses, 423

## Zinc chloride anhydrous

- exposure, 424–425
- molecular formula, 424
- safe handling and precautions, 424–425
- synonyms and trade names, 424

Zinc ethylenebisdithiocarbamate, *see* Zineb

## Zinc oxide

- characteristics, 425
- exposure, 426
- inhalation, 426
- molecular formula, 425
- safe handling and precautions, 426
- synonyms and trade names, 425

## Zinc phosphide

- exposure, 426–427
- molecular formula, 426
- synonyms and trade names, 426

## Zineb

- ethylene thiourea, 427–428
- exposure, 427
- molecular formula, 427
- safe handling and precautions, 427–428
- synonyms and trade names, 427
- toxicity class, 427

## Ziram

- carcinogenicity test, 429
- molecular formula, 428
- safe handling and precautions, 428–429
- synonyms and trade names, 428
- uses, 428