CLASS 558, ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES

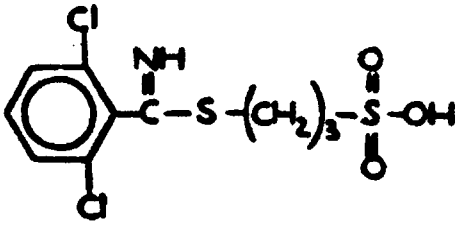
SECTION I - CLASS DEFINITION

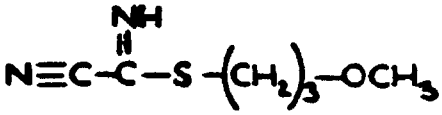
Class 558, Organic Compounds. In this series of classes, Class 558 is to be considered as an integral part of Class 260 (after class 556) and follows the schedule hierarchy, retaining all pertinent definitions and class lines of Class 260.

SUBCLASSES

1 This subclass is indented under subclass 1. Compounds under Class 532, ... wherein the thiomidate group, HN=CH-S-, in which substitution may be made for hydrogen only, is bonded direcctly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon.

(1) Note. Examples of compounds provided for herein are:

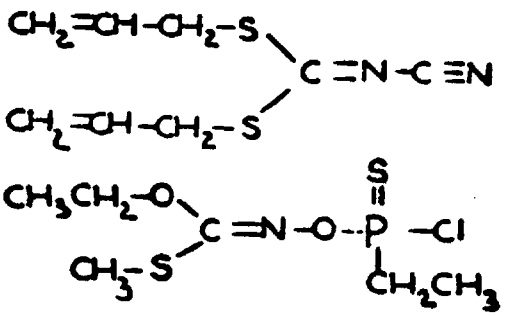




SEE OR SEARCH CLASS:
588, Hazardous or Toxic Waste Destruction or Containment, subclasses 408 and 409 for the chemical destruction of organic hazardous or toxic waste containing chalcogens or nitrogen.

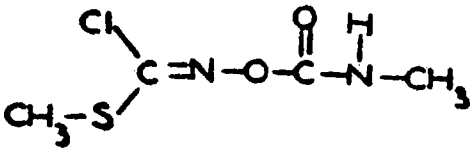
2 This subclass is indented under subclass 1. Compounds wherin the carbon of the thioimidate group is bonded directly to chalcogen (i.e., oxygen, sulfur, selenlum, or tellurium).

(1) Note. Examples of compounds provided for herein are:



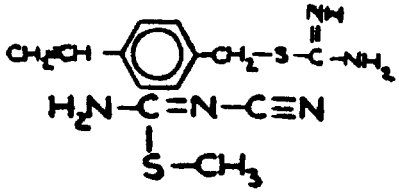
3 This subclass is indented under subclass 1. Compounds wherein the nitrogen of the thioimidate group is attached directly to oxygen by nonionic bonding.

(1) Note. An example of a compound provided for herein is:



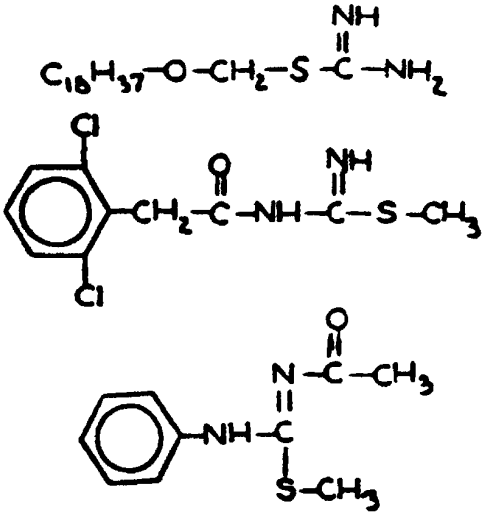
4 Compounds under subclass wherein the carbon of the thiomidate group is bonded directly to nitrogen.

(1) Note. Examples of compounds provided for herein are:



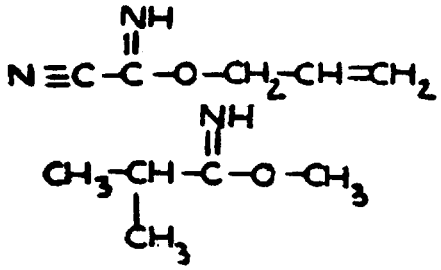
5 This subclass is indented under subclass 4. Compounds wherein the thioimidate group is attached indirectly to chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) by acyclic nonionic bonding.

(1) Note. Examples of compounds provided for herein are:



6 This subclass is indented under subclass 1. Compounds under Class 532, ... wherein the imidate group, HN=CH-O, in which substitution may be made for hydrogen only, is bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon.

(1) Note. Examples of compounds provided for herein are:

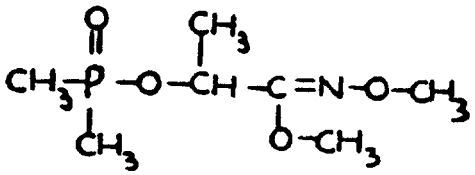


SEE OR SEARCH CLASS:

588, Hazardous or Toxic Waste Destruction or Containment, subclasses 406, 408 and 409 for the chemical destruction of organic hazardous or toxic waste containing halogen, chalcogen, or nitrogen.

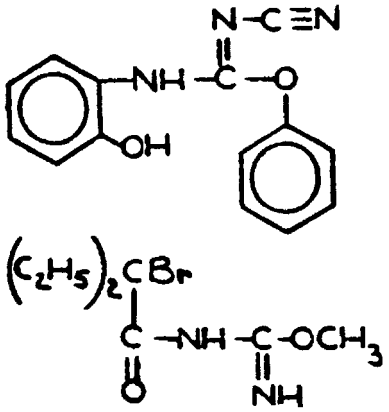
7 Compounds under subcclass 6 wherein the nitrogen of the imidate group is attached directly to oxygen by nonionic bonding.

(1) Note. An example of a compound provided for herein is:



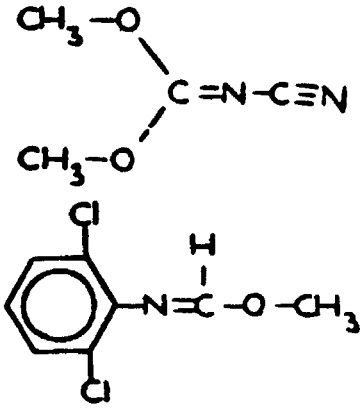
8 This subclass is indented under subclass 6. Compounds wherein the carbon of the imidate group is bonded directly to nitrogen.

(1) Note. Examples of compounds provided for herein are:



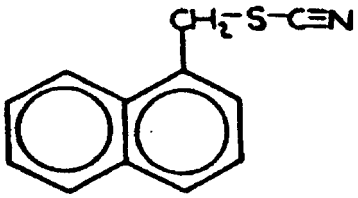
9 This subclass is indented under subclass 6. Compounds wherein the nitrogen of the imidate group is bonded directly to carbon.

(1) Note. Examples of compounds provided for herein are:



10 This subclass is indented under subclass 1. Compounds under Class 532, ... wherein the thiocyano group, -S-C=N, is bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon.

(1) Note. An example of a compound provided for herein is:

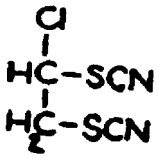


SEE OR SEARCH CLASS:

588, Hazardous or Toxic Waste Destruction or Containment, subclasses 406, 408 and 409 for the chemical destruction of organic hazardous or toxic waste containing halogen, chalcogen, or nitrogen.

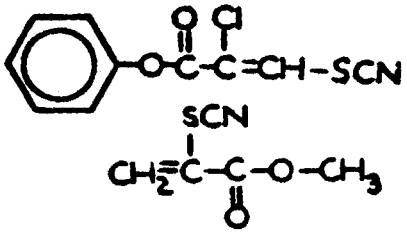
11 Compounds under 10 in which plural thiocyano groups are attached indirectly to each other by nonionic bonding.

(1) Note. An example of a compound provided for herein is:



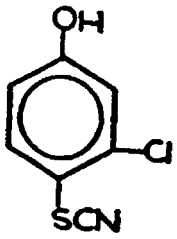
12 This subclass is indented under subclass 10. Compounds wherein the carbonyl carbon of a -C(=0)0- group and the thiocyano group are attached to the same carbon or to a chain consisting off carbons, which chain may include ring members.

(1) Note. Examples of compounds provided for herein are:



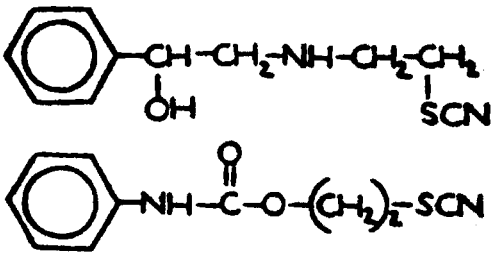
13 This subclass is indented under subclass 10. Compounds wherein a benzene ring is bonded directly to the thiocyano group.

(1) Note. An example of a compound provided for herein is:



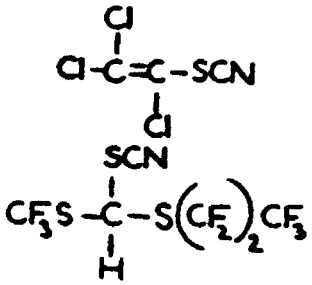
14 This subclass is indented under subclass 10. Compounds wherein the thiocyano group is attached indirectly to nitrogen or carbony1, -C(=0)-, by acyclic nonlonic bonding.

(1) Note. Example of compounds provided for herein are:



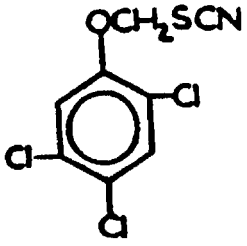
15 This subclass is indented under subclass 10. Compounds wherein the thiocyano group is attached indirectly to sulfur or halogen by acyclic nonionic bonding.

(1) Note. Examples of compounds provided for herein are:



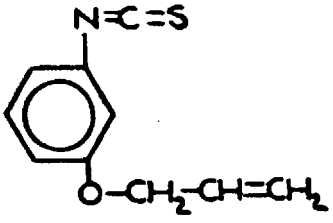
16 This subclass is indented under subclass 10. Compounds wherein the thiocyano group is attached indirectly to oxygen by acyclic nonionic bonding.

(1) Note. An example of a compound provided for herein is:



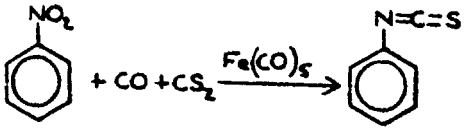
17 This subclass is indented under subclass 1. Compounds under Class 532, ... wherein the isothiocyanate group, -N=C=S, is bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon.

(1) Note. An example of a compound provided for herein is:



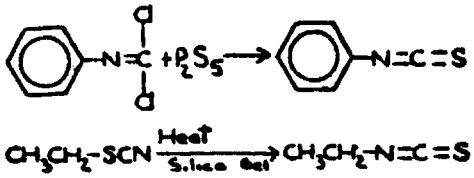
18 This subclass is indented under subclass 17. Processes wherein the isothioicyanate group is formed.

(1) Note. An example of a compound provided for herein is:



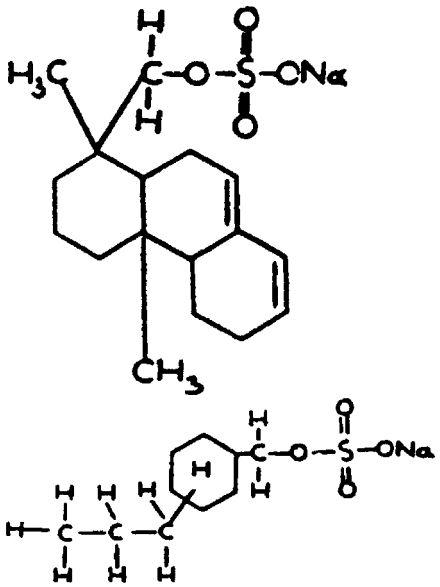
19 This subclass is indented under subclass 18. Processes underr ... in which there is utilized a thiocyano (-S-C=N) compound, an isocyanate (-N=C=O) compound, or an isocyanide dihalide (-N=CXX, wherein X is halogen) compound.

(1) Note. Examples of processes provided for herein are:



20 This subclass is indented under subclass 1. Compound under Class 532, ... which contain the sulfate group, -0-S(=0)(=0)0- wherein at least one of the single bonded oxygens is bonded directly to carbon, which carbon may be single bonded to any atom, but may be multiple bonded only to carbon.

(1) Note. Examples of compounds provided for herein are:



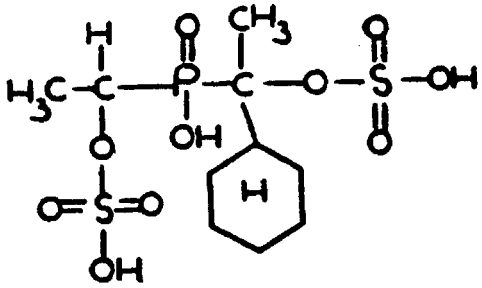
SEE OR SEARCH CLASS:

588, Hazardous or Toxic Waste Destruction or Containment, subclasses 405 through 409 for the chemical destruction of organic hazardous or toxic waste containing halogen, chalcogen, nitrogen, or metals.

21 This subclass is indented under subclass 20. Products wherein the sulfate ester is mixed with a stabiliizing or preserving agent, whose sole function is to prevent physical or chemical change.

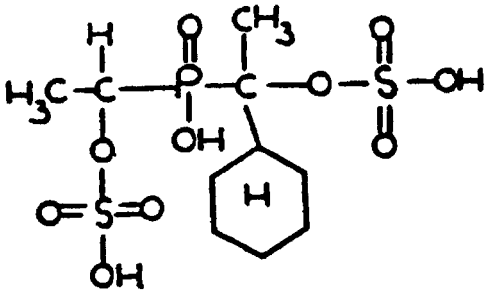
22 This subclass is indented under subclass 20. Compounds in which the sulfate group is attached directly or indirectly to phosphorus by nonionic bonding.

(1) Note. An example of a compound provided for herein is:



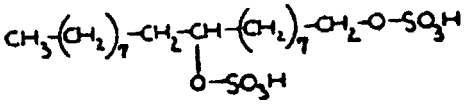
23 This subclass is indented under subclass 20. Compounds in which the sulfate group is bonded directly to chalcogen (i.e., oxygen, sulfur, selenium, or tellurium).

(1) Note. An example of a compound provided for herein is:



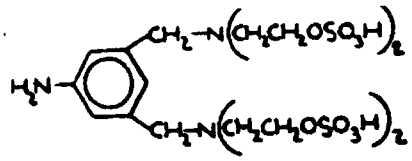
24 This subclass is indented under subclass 20. Compounds in which plural sulfate groups are indirectly attached to each other by nonionic bonding.

(1) Note. An example of a compound provided for herein is:



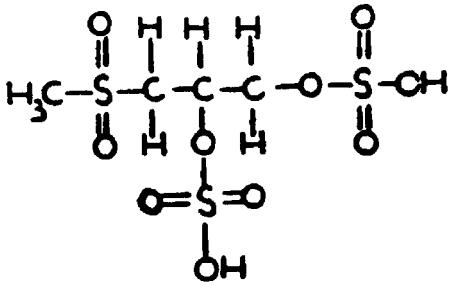
25 This subclass is indented under subclass 24. Compounds wherein a sulfate group is attached indirectly to nitrogen by acyclic nonionic bonding.

(1) Note. An example of a compound provided for herein is:



26 This subclass is indented under subclass 24. Compounds wherein one of the sulfate groups is attached indirectly to an additional chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) by acyclic nonionic bonding.

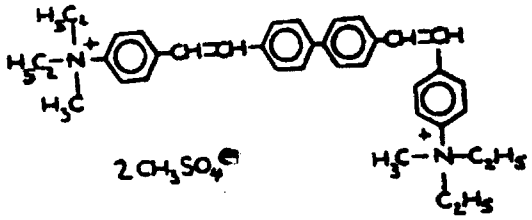
(1) Note. An example of a compound provided for herein is:



27 This subclass is indented under subclass 20. Compounds which contain a quaternary nitrogen.

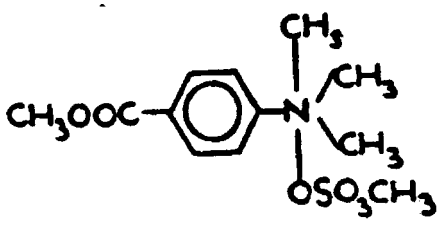
(1) Note. Quaternary nitrogen is pentavalent nitrogen bonded by four valences to carbon, and ionically to an anion for the remaining valence.

(2) Note. An example of a compound provided for herein is:



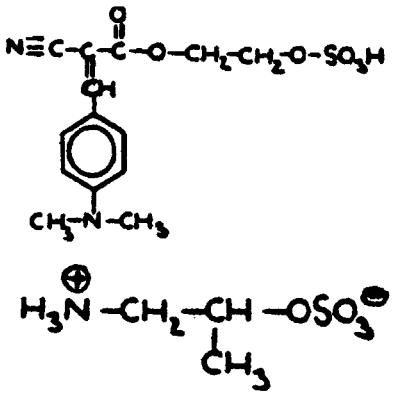
28 This subclass is indented under subclass 27. Compounds wherein the quaternary nitrogen is attached indirectly to -C(=X)-, wherein X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium).

(1) Note. An example of a compound provided for herein is:

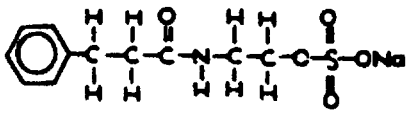


29 This subclass is indented under subclass 20. Compounds wherein the sulfate group is attached indirectly to nitrogen by acyclic nonionic bonding.

(1) Note. Example of compounds provided for herein are:



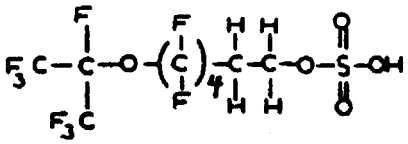
30 This subclass is indented under subclass 29. Compounds wherein the nitrogen is bonded directly to -C(=X)-, wherein X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium).



31 This subclass is indented under subclass 20. Compounds wherein the sulfate group is attached indirectly to chalcogen (i.e., oxygen,

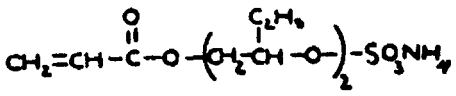
sulfur, selenium or tellurium) by acyclic nonionic bonding.

(1) Note. An example of a compound provided for herein is:



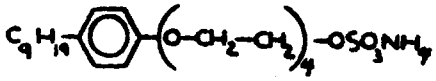
32 This subclass is indented under subclass 31. Compounds wherein the chalcogen X is in the following group: -C(=X)-.

(1) Note. An example of a compound provided for herein is:



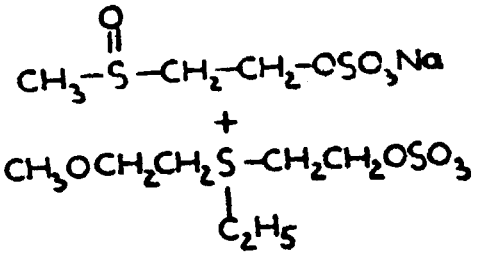
33 This subclass is indented under subclass 31. Compounds wherein a ring is bonded directly to the chalcogen.

(1) Note. An example of a compound provided for herein is:



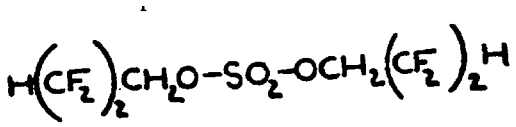
34 This subclass is indented under subclass 31. Compounds wherein the sulfate group is attached indirectly to plural chalcogens by acyclic nonionic bonding.

(1) Note. Examples of compounds provided for herein are:



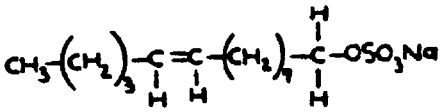
35 This subclass is indented under subclass 20. Compounds wherein the sulfate group is attached indirectly to halogen by acyclic nonionic bonding.

(1) Note. An example of a compound provided for herein is:



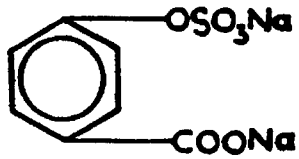
36 This subclass is indented under subclass 20. Compounds wherein the sulfate group is attached directly to an acyclic carbon chain containing carbon to carbon unsaturation.

(1) Note. An example of a compound provided for herein is:



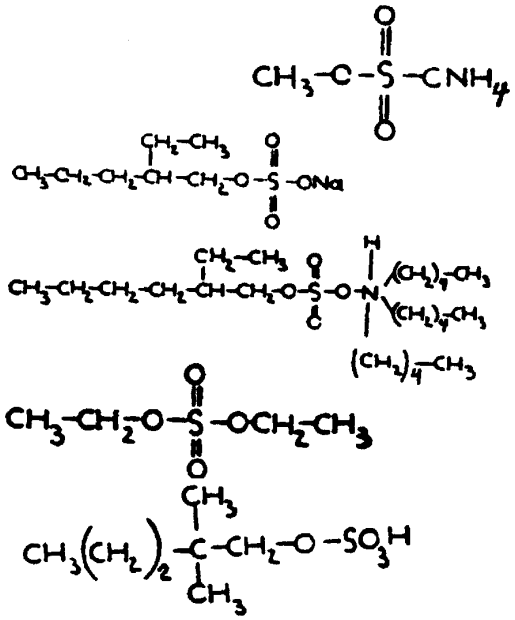
37 This subclass is indented under subclass 20. Compounds wherein the sulfate group is attached directly or indirectly to a benzene ring by nonionic bonding.

(1) Note. An example of a compound provided for herein is:



38 This subclass is indented under subclass 20. Compounds wherein the sulfate group is bonded directly to plural alkyl groups, or to hydrogen and an alkyl group, wherein the hydrogen may be replaced by a group 1A or 11A light metal or by substituted or unsubstituted ammonium.

(1) Note. Examples of compounds provided for herein are:



39 This subclass is indented under subclass 38. Processes of preparing, purifying, recovering, or any treating of the compound.

40 This subclass is indented under subclass 39. Processes wherein heavy metal containing material is utilized.

(1) Note. The material may be utilized as a catalyst, as a promoter, or in any other way.

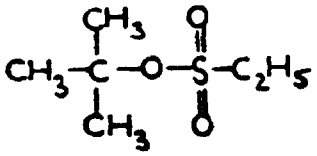
41 This subclass is indented under subclass 39. Processes wherein there is employed as a reactant a compound having an alcoholic -OH group (wherein H of the -OH may be replaced by substituted or unsubstituted ammonium, or by a Group 1A or 11A light metal).

42 This subclass is indented under subclass 39. Processes wherein a reactant which contains an acyclic or alicyclic carbon to carbon double bond is employed.

43 This subclass is indented under subclass 39. Processes which include separating the sulfate group containing compound from impurities or from the reaction mixture.

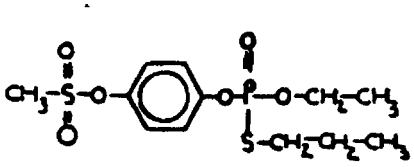
44 This subclass is indented under subclass 1. Compounds under Class 532, ... which contain the sulfonate group, -O-S (=O) (=O)-, wherein carbon is directly bonded to the single bonded oxygen, which carbon may be single bonded to any atom but may be multiple bonded only to carbon.

(1) Note. An example of a compound provided for herein is:



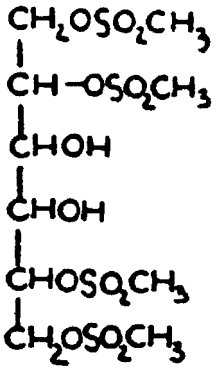
45 This subclass is indented under subclass 44. Compounds wherein the sulfonate group is attached directly or indirectly to phosphorus by nonionic bonding.

(1) Note. An example of a compound provided for herein is:



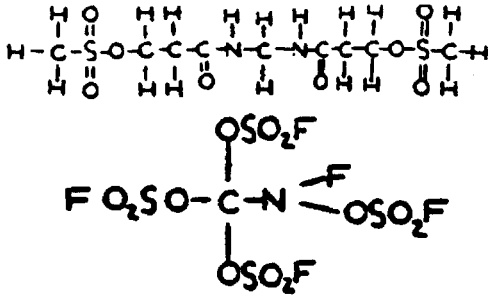
46 Compounds under subclasses 44 wherein plural sulfonate groups are attached indirectly to each other by nonionic bonding.

(1) Note. An example of a compound provided for herein is:



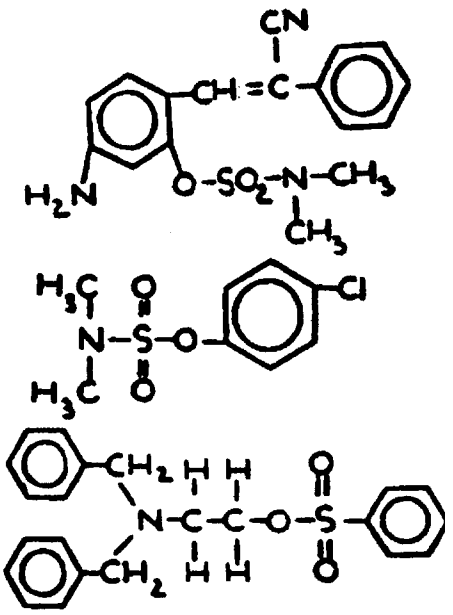
47 This subclass is indented under subclass 46. Compounds which a sulfonate group is attached directly or indirectly to nitrogen by nonionic bonding.

(1) Note. Examples of compounds provided for herein are:



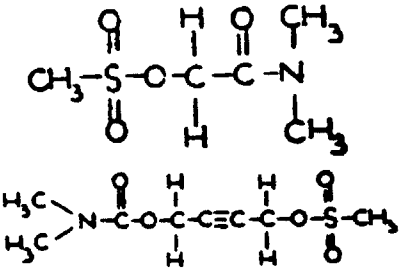
48 This subclass is indented under subclass 44. Compounds wherein the sulfonate group is attached directly or indirectly to nitrogen by acyclic nonionic bonding.

(1) Note. Examples of compounds provided for herein are:



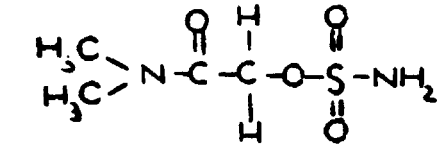
49 This subclass is indented under subclass 40. Compounds in which the nitrogen is bonded directly to -C(=X)-, wherein X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium).

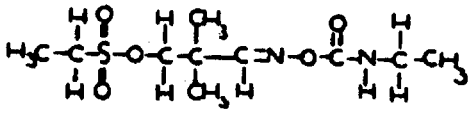
(1) Note. Examples of compounds provided for herein are:



50 This subclass is indented under subclass 49. Compounds wherein the -C(=X)- group is attached directly or indirectly to aditional nitrogen by acyclic nonionic bonding.

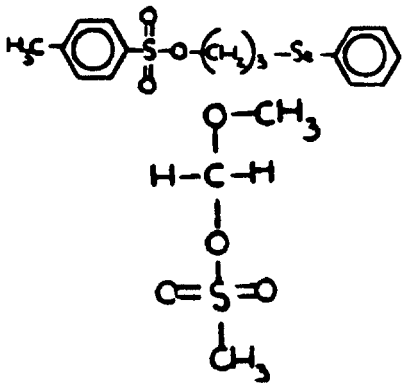
(1) Note. Examples of compounds provided for herein are:





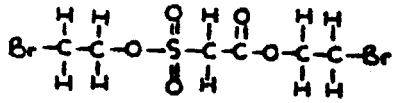
51 This subclass is indented under subclass 44. Compounds wherein the sulfonate group is attached indirectly to chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) by acyclic nonionic bonding.

(1) Note. Examples of compounds provided for herein are:



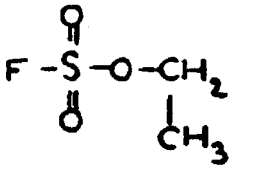
52 This subclass is indented under subclass 51. Compounds wherein the chalcogen, X is in the following group:

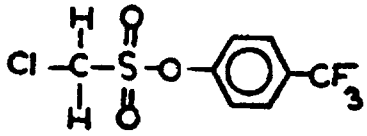
(1) Note. An example of a compound provided for herein is:



53 This subclass is indented under subclass 44. Compounds wherein the sulfonate group is attached directly or indirectly to halogen by acyclic nonionic bonding.

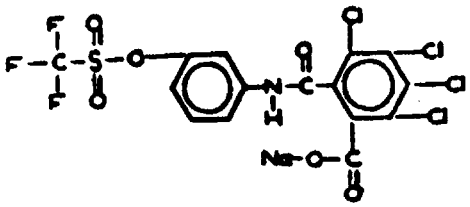
(1) Note. Examples of compounds provided for herein are:

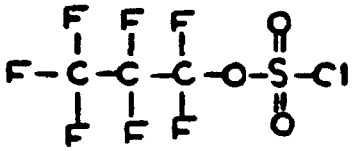




54 This subclass is indented under subclass 53. Compounds wherein the sulfonate group is attached indirectly to plural halogens by acyclic nonionic bonding.

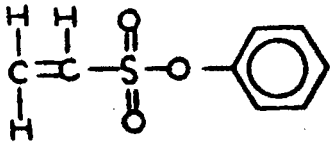
(1) Note. Examples of compounds provided for herein are:





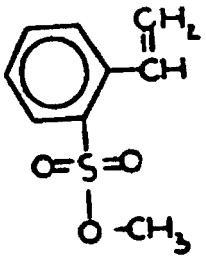
55 This subclass is indented under subclass 44. Compounds where the sulfonate group is attached directly to an acyclic carbon chain containing carbon to carbon unsaturation.

(1) Note. An example of a compound provided for herein is:



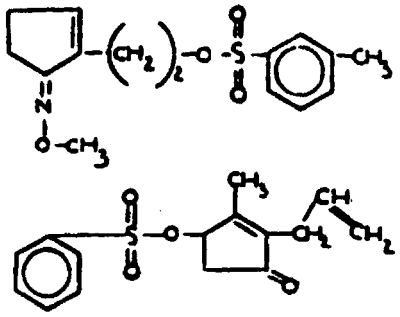
56 This subclass is indented under subclass 44. Compounds wherein the sulfonate group is bonded directly to a benzene ring.

(1) Note. An example of a compound provided for herein is:



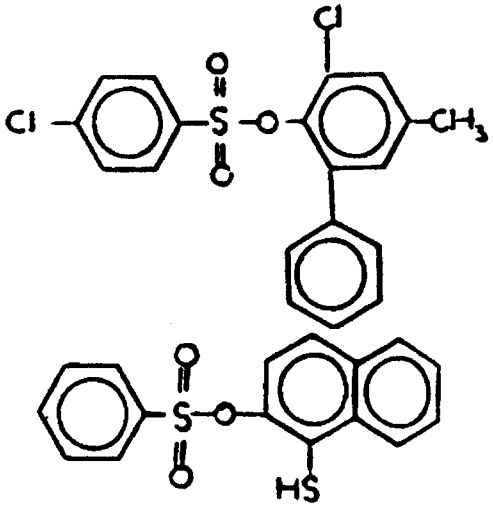
57 This subclass is indented under subclass 56. Compounds wherein the sulfonate group is attached directly or indirectly to an alicylic ring by nonionic bonding.

(1) Note. Examples of compounds provided for herein are:



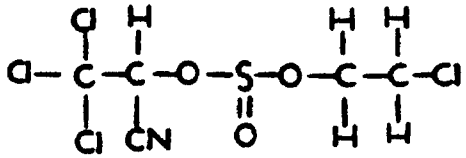
58 This subclass is indented under subclass 56. Compounds which contain an additional benzene ring.

(1) Note. Examples of compounds provided for herein are:



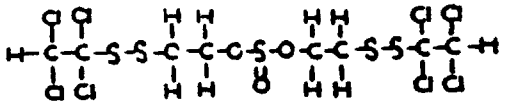
59 This subclass is indented under subclass 1. Compounds under Class 532, ... which contain the sulfite group, -O-S(=O)O-, wherein at least one of the single bonded oxygens is bonded directly to carbon, which carbon may be single bonded to any atom, but may be multiple bonded only to carbon.

(1) Note. An example of a compound provided for herein is:



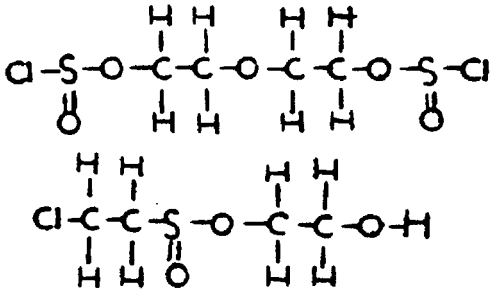
60 This subclass is indented under subclass 59. Compounds in which the sulfite group is attached indirectly to chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) by acyclic nonionic bonding.

(1) Note. An example of a compound provided for herein is:



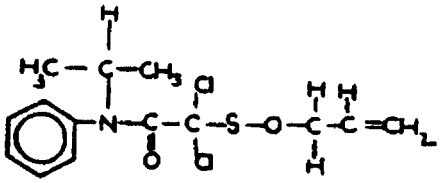
61 This subclass is indented under subclass 1. Compounds under Class 532, ... which contain the sulfinate group, -O-S(=O)-, wherein carbon is bonded directly to the single bonded oxygen, which carbon may be single bonded to any atom, but may be multiple bonded only to carbon.

(1) Note. Examples of compounds provided for herein are:



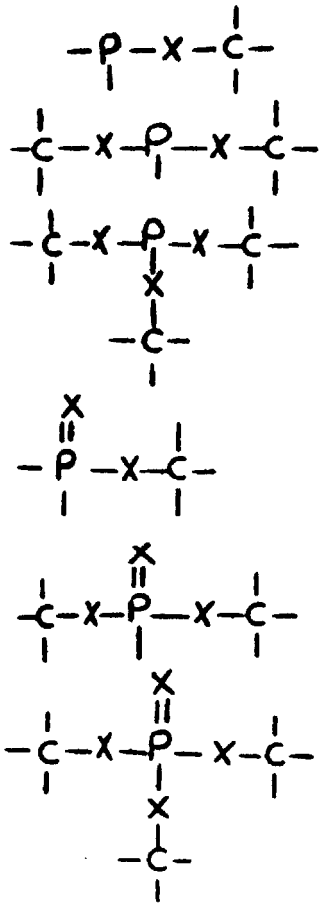
62 This subclass is indented under subclass 1. Compounds under Class 532, ... which contain the sulfenate group, -S-O-, wherein the oxygen is bonded directly to carbon, which carbonmay be single bonded to any atom, but may be multiple bonded only to carbon.

(1) Note. An example of a compound provided for herein is:



70 This subclass is indented under subclass 1. Compounds under Class 532, ... which contain a phosphorus ester group, wherein trivalent or pentavalent phosphorus and carbon are bonded directly to the same divalent chalcogen (i.e., oxygen, sulfur, selenium, or tellurium), and wherein the carbon may be single bonded to any element but may be multiple bonded only to carbon.

(1) Note. Among the different phosphorus ester groups classifiable in this and indented subclasses are (see illustration below) wherein the X's may be the same or diverse chalcogens (i.e., oxygen, sulfur, selenium, or tellurium).



SEE OR SEARCH CLASS:

588, Hazardous or Toxic Waste Destruction or Containment, subclasses 405 through 409 for the chemical destruction of organic hazardous or toxic waste containing halogen, chalcogen, nitrogen, phosphorus, or metals.

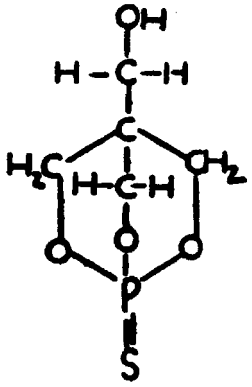
71 This subclass is indented under subclass 70. Products which contain a phosphorus ester in admixture with a preservative or stabilizing agent whose sole function is to prevent physical or chemical change.

72 This subclass is indented under subclass 70. Compounds which contain boron.

73 This subclass is indented under subclass 70. Compounds wherein the phosphorus is part of a ring.

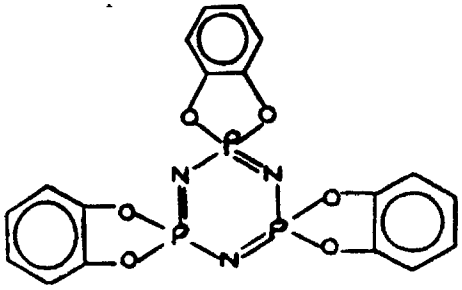
74 This subclass is indented under subclass 73. Compounds wherein the ring phosphorus is shared by two rings.

(1) Note. An example of a compound provided for herein is:



75 This subclass is indented under subclass 74. Compounds in which one of the rings contains phosphorus and nitrogen.

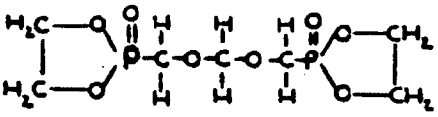
(1) Note. An example of a compound provided for herein is:



76 This subclass is indented under subclass 73. Compounds which contain more than one phosphorus containing ring.

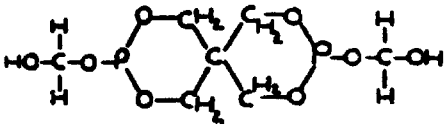
77 This subclass is indented under subclass 76. Compounds which contain a phosphorus atom with two chalcogens (i.e., oxygen, sulfur, selenium, or tellurium) bonded directly thereto in the same ring.

(1) Note. An example of a compound provided for herein is:



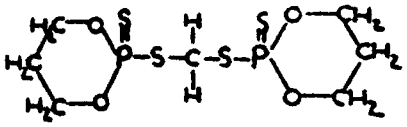
78 This subclass is indented under subclass 77. Compounds wherein an acyclic divalent chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly to the ring phosphorus.

(1) Note. An example of a compound provided for herein is:



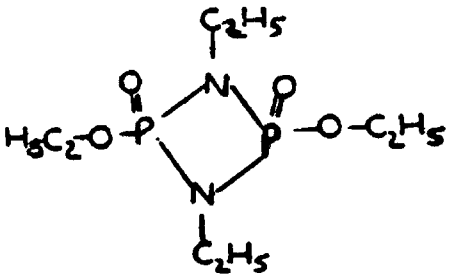
79 This subclass is indented under subclass 78. Compounds wherein a divalent chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is double bonded directly to the ring phosphorus.

(1) Note. An example of a compound provided for herein is:



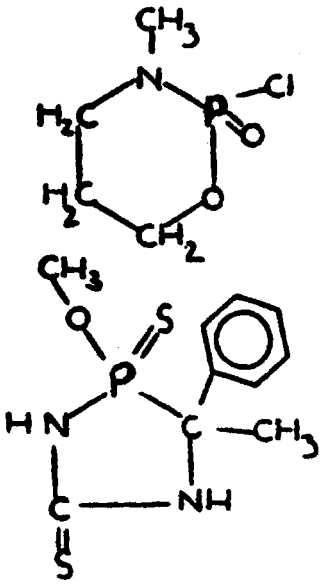
80 This subclass is indented under subclass 73. Compounds wherein the phosphorus containing ring also contains nitrogen as a ring member.

(1) Note. An example of a compound provided for herein is:



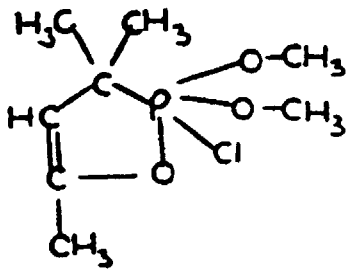
81 This subclass is indented under subclass 80. Compounds wherein the phosphorus containing ring also contains carbon or chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) as a ring member.

(1) Note. Examples of compounds provided for herein are:



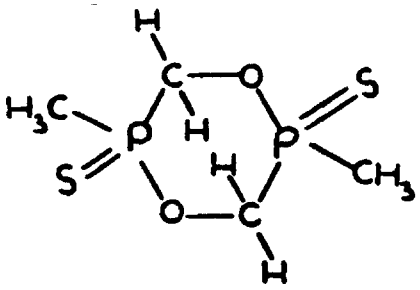
82 This subclass is indented under subclass 73. Compounds wherein the phosphorus containing ring also contains carbon and chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) as ring members.

(1) Note. An example of a compound provided for herein is:



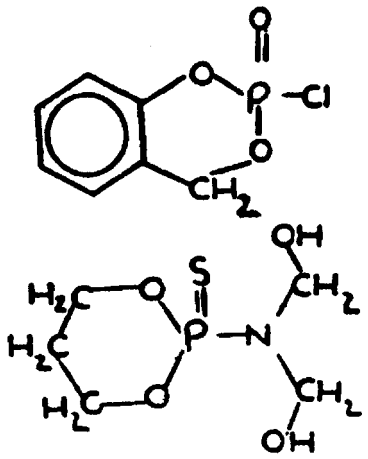
83 This subclass is indented under subclass 82. Compounds wherein the phosphorus containing ring contains at least two ring chalcogens (i.e., oxygen, sulfur, selenium, or tellurium).

(1) Note. An example of a compound provided for herein is:



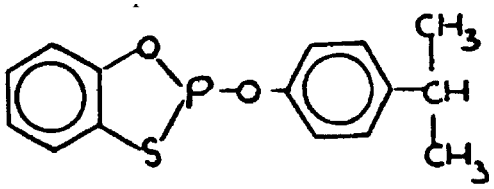
84 This subclass is indented under subclass 83. Compounds wherein the ring phosphorus is attached directly to an acyclic nitrogen or to halogen by nonionic bonding.

(1) Note. Examples of compounds provided for herein are:



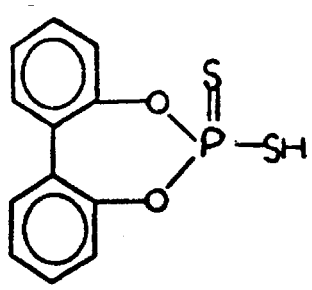
85 This subclass is indented under subclass 83. Compounds in which an acyclic divalent chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is single bonded directly to the ring phosphorus.

(1) Note. An example of a compound provided for herein is:



86 This subclass is indented under subclass 85. Compounds in which a divalent chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is double bonded directly to the ring phosphorus.

(1) Note. An example of a compound provided for herein is:



87 This subclass is indented under subclass 70. Processes for the preparation of phosphorus ester compounds or for the treatment of these compounds.

SEE OR SEARCH THIS CLASS, SUBCLASS:

146, for processes of purification or recovery of phosphorus esters.

88 This subclass is indented under subclass 87. Processes wherein there occurs transformation or rearrangement of the elements of a starting compound without the addition or removal of any elements.

89 This subclass is indented under subclass 87. Processes in which a phosphorus ester group is formed.

(1) Note. See this class, subclass 70 for the definition of a phosphorus ester group and for the structure of the different phosphorus ester groups.

90 This subclass is indented under subclass 89. Processes wherein a reactant contains halogen attached directly to phosphorus by nonionic bonding.

91 This subclass is indented under subclass 90. Processes wherein an additional reactant contains a chalcogen containing hetero ring, wherein chalcogen is oxygen, sulfur, selenium, or tellurium.

92 This subclass is indented under subclass 90. Processes wherein an additional reactant contains a chalcogen containing hetero ring, wherein chalcogen is oxygen, sulfur, selenium, or tellurium.

93 This subclass is indented under subclass 92. Processes in which the phosphorus in the phosphorus containing reactant is attached directly to four or five halagens by nonionic bonding.

94 This subclass is indented under subclass 92. Processes in which the phosphorus in the phosphorus containing reactant is trivalent.

95 This subclass is indented under subclass 92. Processes in which the phosphorus in the phosphorus containing reactant is trivalent.

96 This subclass is indented under subclass 95. Processes in which a nitrogen containing compound is utilized.

(1) Note. The nitrogen containing compound con be present as a catalyst, a proton acceptor, etc.

97 This subclass is indented under subclass 95. Processes wherein the trivalent phosphorus in converted into a pentavalent phosphorus.

(1) Note. This subclass provides for processes wherein the phosphorusis oxidized from a trivalent state to a pentavalent state and a phosphorus ester group is formed.

98 This subclass is indented under subclass 92. Processes in which the phosphorus in the posphorus containing reactant contains carbon bonded to phosphorus.

99 This subclass is indented under subclass 92. Processes in which the phosphorus in the phosphorus containing reactant containing divalent chalcogen (i.e., oxygen, sulfur, selenium, or telurium) single bonded directly to phosphorus.

100 This subclass is indented under subclass 99. Processes wherein a nitrogen containing compound is utilized.

(1) Note. The nitrogen containing compound can be present as a catalyst, proton acceptor, etc.

101 This subclass is indented under subclass 92. Processes in which a nitrogen containing compound is utilized.

(1) Note. The nitrogen containing compound can be present as a catalyst, promoter, proton acceptor, etc.

102 This subclass is indented under subclass 92. Processes in which a metal containing material is utilized.

103 This subclass is indented under subclass 90. Processes wherein an additional reactant contains a -C(=X)- group. wherein X is chalcocgen (i.e., oxygen, sulfur, selenium, or tellurium).

104 This subclass is indented under subclass 89. Processes in which phos- phorus in a phosphorus containing reactant is bonded directly to an -XH group, wherein X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) and wherein H of the -XH group may be replaced by substituted or unsubstituted ammonium, or by a Group IA or Group IIA light metal.

105 This subclass is indented under subclass 104. Processes wherein an additional reactant includes a three-membered hetero ring.

106 This subclass is indented under subclass 104. Processes wherein an additional reactant contains halogen bonded directly to carbon, which carbon may be single bonded to any element, but may be multiple bonded only to carbon.

107 This subclass is indented under subclass 106. Processes in which cyano or -C(=X)-, wherein X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium), is attached indurectly to the halogen by acyclic nonionic bonding.

108 This subclass is indented under subclass 104. Processes wherein an additional reactant contains -C(=X)-, wherein X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium).

109 This subclass is indented under subclass 104. Processes in which an additional reactant is an unsatruated hydrocarbon.

110 This subclass is indented under subclass 104. Processes wherein an additional reactant includes an alcoholic or phenolic -XH group, wherein X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) and wherein H of the -XH group may be replaced by substituted or unsubstituted ammonium, or by a Group 1A or Group 11A light metal.

111 This subclass is indented under subclass 104. Processes in which an additional reactant is a diverse phosphorus containing compound.

112 This subclass is indented under subclass 89. Processes in which a reactant contains only phosphorus and sulfur.

113 This subclass is indented under subclass 89. Processes in which a reactant contains only phosphorus and oxygen.

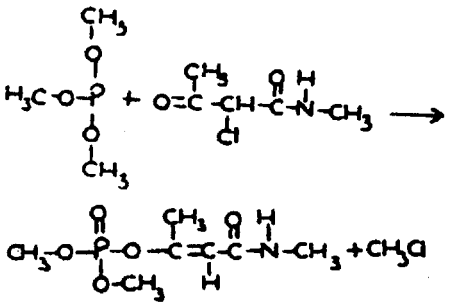
114 This subclass is indented under subclass 113. Processes in which an additional reactant includes an alcoholic or phenolic -XH group, wherein X is chalcogen (i.e., oxygen, sulfur, selenium, or tellrium) and wherein H of the -XH group may be replaced by substituted or unsubstituted ammonium, or by a Group 1A or 11A light metal.

115 This subclass is indented under subclass 89. Processes in which a trivalent phosphorus is converted into a pentavalent phosphorus.

116 This subclass is indented under subclass 115. Processes in which a reactant contains halogen and -C(=X)-, wherein X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium), bonded directly to the same carbon.

(1) Note. This subclass provides for processes which include Perkow-type reactions wherein an alpha - halo coabonyl compound is utilized as reactant.

(2) Note. An example of a process provided for herein is:



117 This subclass is indented under subclass 89. Processes in which a phosphorus ester is a reactant.

(1) Note. This subclass provides for transesterification processes wherein one, or more, of the ester groups in a phosphorus ester compound is replaced by another ester group.

118 This subclass is indented under subclass 117. Processes in which an additional reactant contains an alcoholic or a phenolic -XH group, wherein X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) and wherein the H of the -XH group may be replaced by substituted or unsubstituted ammonium, or by a Group IA or Group IIA light metal.

119 This subclass is indented under subclass 118. Processes in which an alkyl group is bonded directly to the -XH group.

120 This subclass is indented under subclass 117. Processes in which hydrogen or metal is bonded directely to phosphorus in the phosphorus ester reactant.

121 This subclass is indented under subclass 89. Processes in which elemental phosphorus is a reactant.

122 This subclass is indented under subclass 87. Processes in which a trivalent phosphorus is converted into a pentavalent phosphorus.

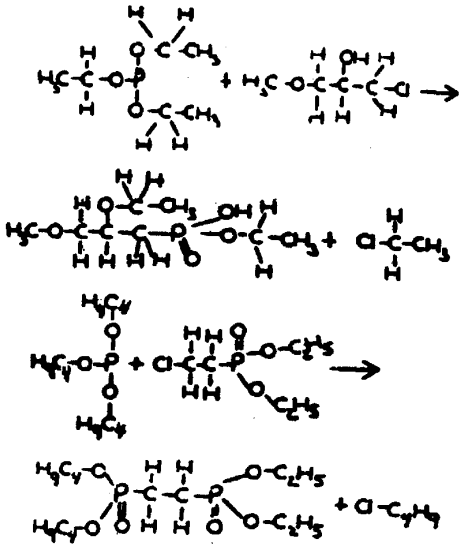
123 This subclass is indented under subclass 122. Processes in which the reactant is molecular oxygen or elemental sulfur.

(1) Note. Air is included herein.

124 This subclass is indented under subclass 122. Processes in which a reactant has halogen bonded directly to carbon.

(1) Note. This subclass provides for processes which include Arbuzov rearrangement reactions.

(2) Note. Examples of compounds provided for herein are:



125 This subclass is indented under subclass 124. Processes in which the reactant contains carbon multiple bonded to another carbon.

126 This subclass is indented under subclass 122. Processes in which a reactant contains a -C(=X)-, group, wherein X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium).

127 This subclass is indented under subclass 87. Processes which include joining a direct linkage between a divalent chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) and each of two phosphori.

128 This subclass is indented under subclass 127. Processes in which a reactant contains halogen attached directly to phosphorus by nonionic bonding.

129 This subclass is indented under subclass 87. Processes in which the -0-0- group or the -S-S- group is formed, or processes in which compounds which contain the -O-O- group or the -S-S- group are utilized.

130 This subclass is indented under subclass 87. Processes which include forming the P-X-C(=X)- group, wherein the X's are the same or diverse chalcogens (i.e., oxygen, sulfur, selenium, or tellurium), and the phosphorus may be trivalent or pentavalent.

131 This subclass is indented under subclass 87. Processes wherein a P-XH group is formed from a phosphorus ester group, wherein X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium), P is trivalent or pentavalent, and H of -XH may be replaced by substituted or unsubstituted ammonium or by a Group IA or IIA light metal.

132 This subclass is indented under subclass 87. Processes wherein a bond is formed between phosphorus and chalcogen (i.e., oxygen, sulfur, selenium, or tellurium).

(1) Note. Included in this subclass are processes wherein a phosphorus to sulfur bond is replaced by a phosphorus to oxygen bond, etc.

133 This subclass is indented under subclass 87. Processes wherein ammounium, substituted ammonium, or a Group IA or IIA light metal replaces the H of a P-XH group, wherein X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) and P is trivalent or pentavalent.

134 This subclass is indented under subclass 87. Processes in which an aldehyde or a ketone is a reactant.

135 This subclass is indented under subclass 134. Processes wherein a ketone or aldehyde (i.e., RCOR or RCHO) is employed as a reactant.

136 This subclass is indented under subclass 134. Processes in which a reactant utilized contains halogen bonded directly to carbon.

137 This subclass is indented under subclass 134. Processes in which a reactant contains acyclic or alicyclic carbon to carbon unsaturation.

138 This subclass is indented under subclass 87. Processes which include forming a phosphorus to nitrogen bond.

139 This subclass is indented under subclass 87. Processes which include forming the -C(=X)NHH or -N=C=O group, wherein X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) and substitution may be made for hydrogen only.

140 This subclass is indented under subclass 87. Processes which include forming a nonionic phosphorus to halogen bond.

141 This subclass is indented under subclass 87. Processes which include halogenation of carbon.

142 This subclass is indented under subclass 87. Processes which include forming a carbon to carbon multiple bond.

143 This subclass is indented under subclass 87. Processes in which an oxirane ring containing compound is utilized.

144 This subclass is indented under subclass 87. Processes in which a reactant contains halogen or nitrogen attached directly to phosphorus by nonionic bonding.

145 This subclass is indented under subclass 87. Processes in which a reactant contains nitrogen attached indirectly to phosphorus by nonionic bonding.

146 This subclass is indented under subclass 87. Processes which include separating phosphorus esters from a reaction mixture or from impurities.

147 This subclass is indented under subclass 146. Process in which there are two or more phosphori in the compounds purified or recovered.

148 This subclass is indented under subclass 146. Processes in which products having halogen attached directly to the phosphorus by nonionic bonding are purified or recovered.

149 This subclass is indented under subclass 146. Processes which include an oxidation step as part of the purification or recovery process.

150 This subclass is indented under subclass 146. Preocesses in which a metal containing material is utilized or separated.

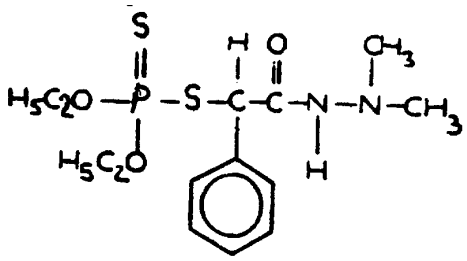
151 This subclass is indented under subclass 70. Compounds which contain oxygen single bonded to oxygen or sulfur single bonded to sulfur.

152 This subclass is indented under subclass 70. Compounds wherein the same chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded to more than one phosphorus.

153 This subclass is indented under subclass 70. Compounds under which include the P-X-C(=X)- group wherein the X's are the same or diverse chalcogens (i.e., oxygen, sulfur, selenium, or telluriurium), and the phosphorus is trivalent or pentavalent.

154 This subclass is indented under subclass 70. Compounds wherein a hydrazine, or a substituted hydrazine, group is attached directly or indirectly to the phosphorus by nonionic bonding.

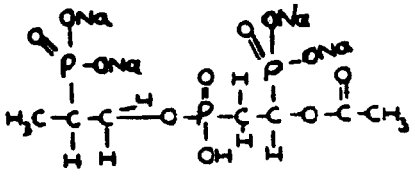
(1) Note. An example of a compound provided for herein is:



(2) Note. The hydrazine group is HHNNH-. Replacement of one or more hygrogens affords a substituted hydrazine group.

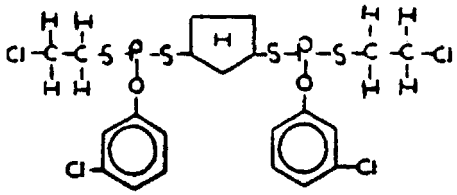
155 This subclass is indented under subclass 70. Compounds which contain two or more phosphori attached indirectly to each other by nonionic bonding.

(1) Note. An example of a compound provided for herein is:



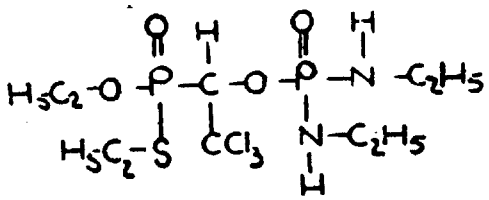
156 This subclass is indented under subclass 155. Compounds which contain at least two phosphorus atoms that are part of hosphorus ester groups.

(1) Note. An example of a compound provided for herein is:



157 This subclass is indented under subclass 156. Compounds wherein nitrogen is bonded directly to phosphorus.

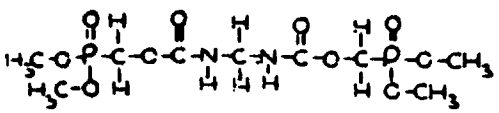
(1) Note. An example of a compound provided for herein is:



158 This subclass is indented under subclass 156. Compounds wherein phosphorus is attached indirectly to nitrogen by acyclic nonionic bonding.

159 This subclass is indented under subclass 158. Compounds which contain the -C(=X)- group, wherein X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium), bonded directly to the nitrogen.

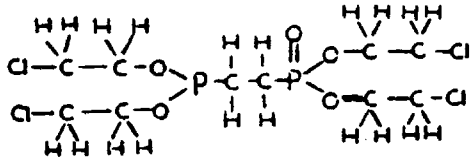
(1) Note. An example of a compound provided for herein is:



160 This subclass is indented under subclass 156. Compounds wherein a -C(=X)- group, wherein X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium), is attached indirectly to phosphorus by acyclic nonionic bonding.

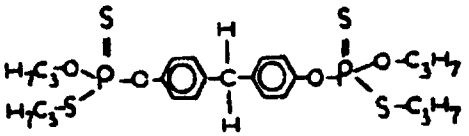
161 This subclass is indented under subclass 156. Compounds wherein a divalent chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is double bonded directly to a pentavalent phosphorus.

(1) Note. An example of a compound provided for herein is:



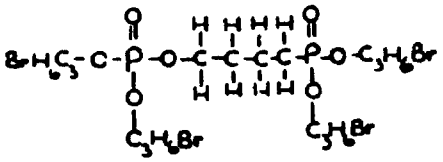
162 This subclass is indented under subclass 161. Compound in which plural phosphori are attached indirectly to each other by a benzene ring or by a chain which includes a benzene ring.

(1) Note. An example of a compound provided for herein is:



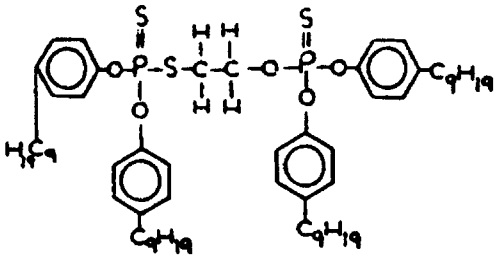
163 This subclass is indented under subclass 161. Compounds in which plural phosphori are attached indirectly to each other by an acyclic chain, which chain contains chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) as a chain member.

(1) Note. An example of a compound provided for herein is:



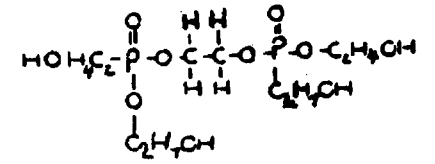
164 This subclass is indented under subclass 163. Compounds in which there are two or more chalcogens (i.e., oxygen, sulfur, selenium, or tellurium) in the acyclic chain.

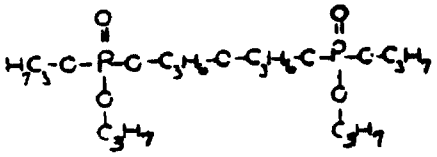
(1) Note. An example of a compound provided for herein is:



165 This subclass is indented under subclass 164. Compounds wherein a divalent chalcogen (i.e., oxygen, sulfur, selenium, or tellurium), which is bonded directly to two carbons or to carbon and hydrogen, is attached indirectly to phosphorus by acyclic nonionic bonding, wherein the hydrogen may be replaced by substituted or unsubstituted ammounium, or by a Group IA or IIA light metal.

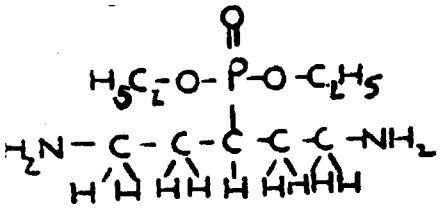
(1) Note. Examples of compounds provided for herein are:





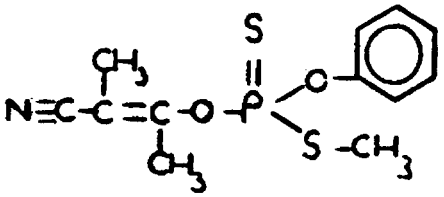
166 This subclass is indented under subclass 70. Compounds wherein the phosphorus is attached indirectly to nitrogen by acyclic nonionic bonding.

(1) Note. An example of a compound provided for herein is:



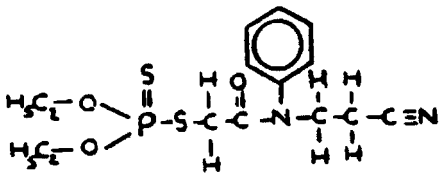
167 This subclass is indented under subclass 166. Compounds in which the nitrogen is part of a cyano or an isocyano group.

(1) Note. An example of a compound provided for herein is:



168 This subclass is indented under subclass 167. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is attached indirectly to the phosphorus by acyclic nonionic bonding.

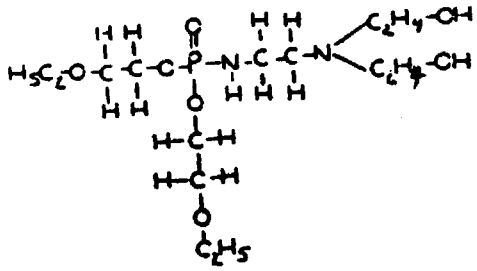
(1) Note. An example of a compound provided for herein:



169 This subclass is indented under subclass 166. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is attached indi-

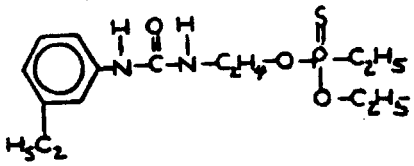
rectly to the phosphorus by acyclic nonionic bonding.

(1) Note. An example of a compound provided for herein is:



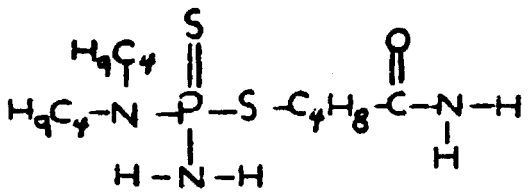
170 This subclass is indented under subclass 169. Compounds in which a -C(=X)- group, sulfur, selenium, or tellurium), is bonded directly to the nitrogen.

(1) Note. An example of a compound porvided for herein is:



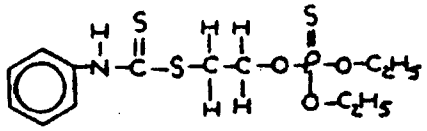
171 This subclass is indented under subclass 170. Compounds wherein the phosphorus is bonded directly to nitrogen.

(1) Note. An example of a compound provided for herein is:



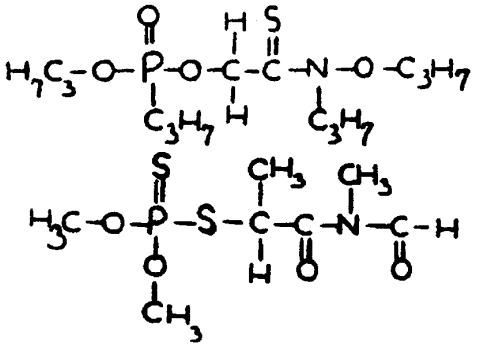
172 This subclass is indented under subclass 170. Compounds in which the -C(=X)- is part of a -C(=X)X- group, wherein the X's may be the same or diverse chalcogens.

(1) Note. An example of a compound provided for herein is:



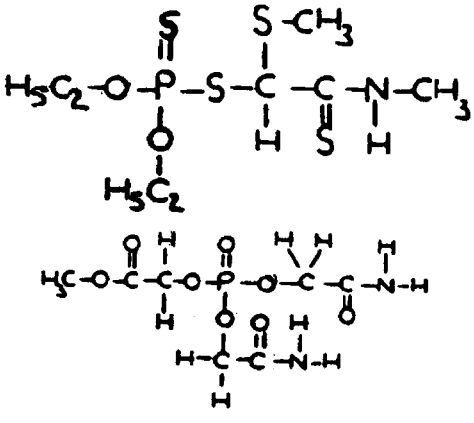
173 This subclass is indented under subclass 170. Compounds in which nitrogen is bonded directly to chalcogen or to an additional -C(=X)- group.

(1) Note. Examples of compounds provided for herein are:



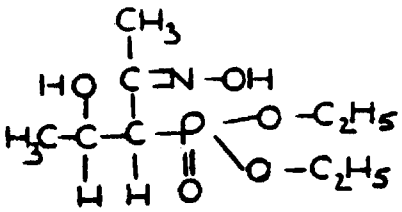
174 This subclass is indented under subclass 170. Compounds wherein the same chalcogen is bonded directly to two carbons.

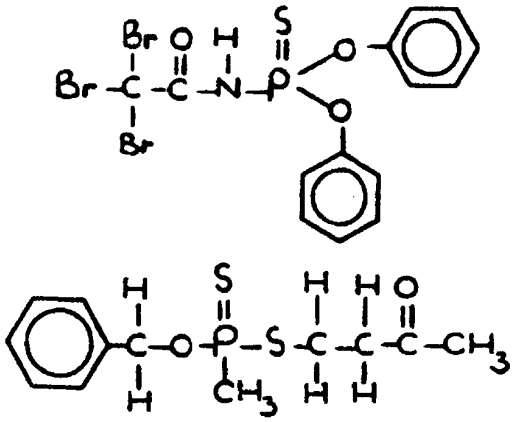
(1) Note. Examples of compounds provided for herein are:



175 This subclass is indented under subclass 169. Compounds in which the nitrogen is bonded directly to chalcogen by nonionic bonding.

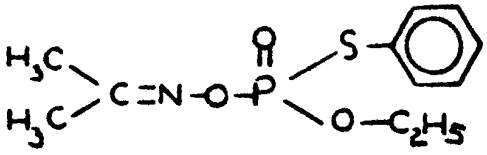
(1) Note. An example of a compound provided for herein is:





176 This subclass is indented under subclass 166. Compounds which contain nitrogen double bonded to carbon.

(1) Note. An example of a compound provided for herein is:



177 This subclass is indented under subclass 70. Compounds in which chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is attached indirectly to the phosphorus by acyclic nonionic bonding.

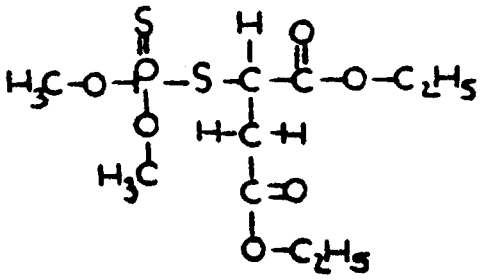
178 This subclass is indented under subclass 177. Compounds wherein the chalcogen, X, is in a -C(=X)- group.

(1) Note. Examples of compounds provided for herein are:

179 This subclass is indented under subclass 178. Compounds in which the -C-(=X)- is part of a -C(=X)X- group, wherein the X's are the same or diverse chalcogens.

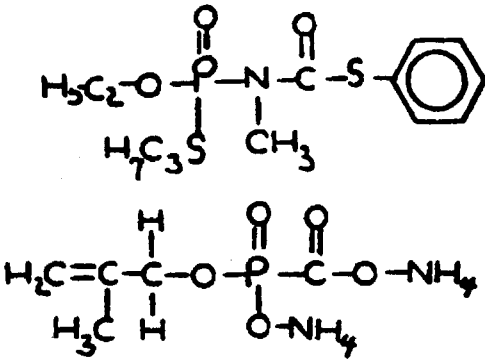
180 This subclass is indented under subclass 179. Compounds in which the phosphorus is attached indirectly to two or more -C(=X)X- groups by acyclic nonionic bonding, wherein the X's are the same or diverse chalcogens.

(1) Note. An example of a compound provided for herein is malathion, i.e.,



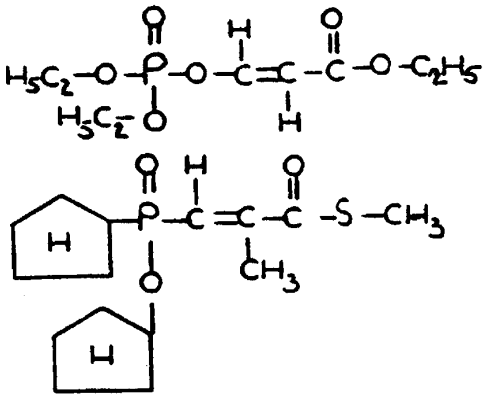
181 This subclass is indented under subclass 179. Compounds in which the carbon of the -C(=X)(X)- group is bonded directly to the phosphorus or to nitrogen, which nitrogen is bonded directly to the phosphorus.

(1) Note. Examples of compounds provided for herein are:



182 This subclass is indented under subclass 179. Compounds wherein the phosphorus is attached directly or indirectly by acyclic nonionic bonding to an acyclic carbon chain containing carbon to carbon unsaturation.

(1) Note. Examples of compounds provided for herein are:

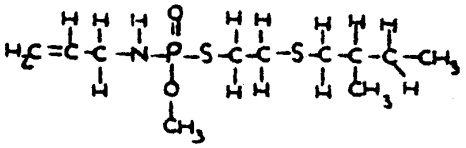


183 This subclass is indented under subclass 177. Compounds wherein plural carbons are bonded directly to the chalcogen, which chalcogen is attached indirectly to the phosphorus by acyclic nonionic bonding.

184 This subclass is indented under subclass 183. Compounds wherein the chalcogen is sulfur and is part or a -S(O)- or of a -S(=O) (=O)- group.

185 This subclass is indented under subclass 183. Compounds wherein the phosphorus is bonded directly to nitrogen.

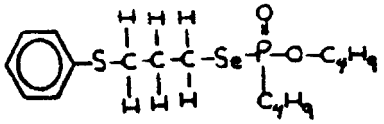
(1) Note. An example of a compound provided for herein is:



186 This subclass is indented under subclass 183. Compounds wherein the phosphorus is attached indirectly by acyclic nonionic bonding to plural ether oxygens or plural thioether sulfurs.

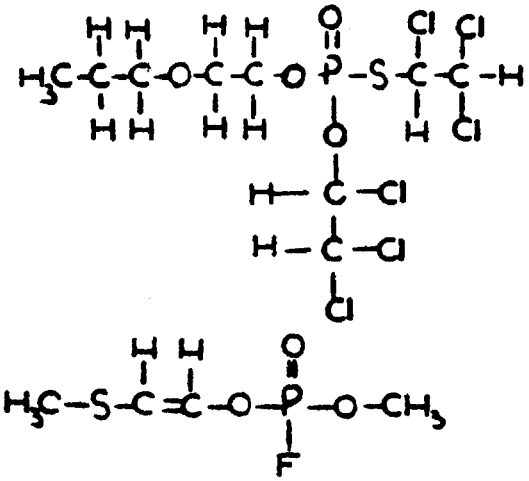
187 This subclass is indented under subclass 183. Compounds wherein an acyclic carbon and a benzene ring are bonded directly to the chalcogen.

(1) Note. An example of a compound provided for herein is:



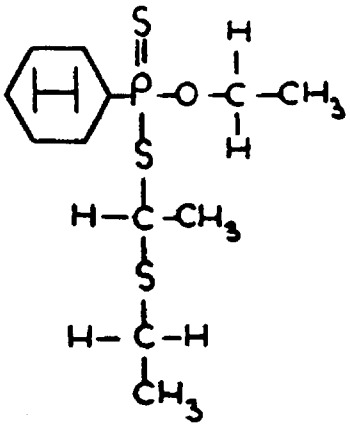
188 This subclass is indented under subclass 183. Compounds wherein the phosphorus is attached directly or indirectly to halogen by acyclic nonionic bonding.

(1) Note. Examples of compounds provided for herein are:

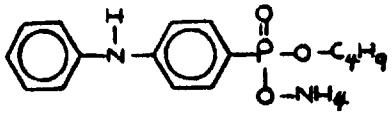


189 This subclass is indented under subclass 183. Compounds wherein the phosphorus is bonded directly to carbon.

(1) Note. An example of a compound provided for herein is:

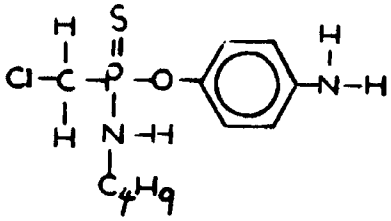


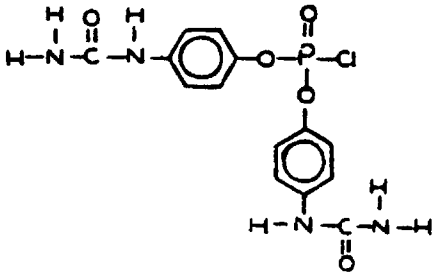
190 This subclass is indented under subclass 70. Compounds wherein the phosphorus is attached indirectly to nitrogen by nonionic bounding.



191 This subclass is indented under subclass 190. Compounds wherein the phosphorus is attached directly to nitrogen or halogen by non-ionic bonding.

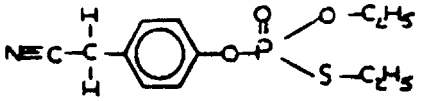
(1) Note. Examples of compounds provided for herein are:





192 This subclass is indented under subclass 190. Compounds wherein the nitrogen is part of a cyano group or of an isocyano group.

(1) Note. An example of a compound provided for herein is:

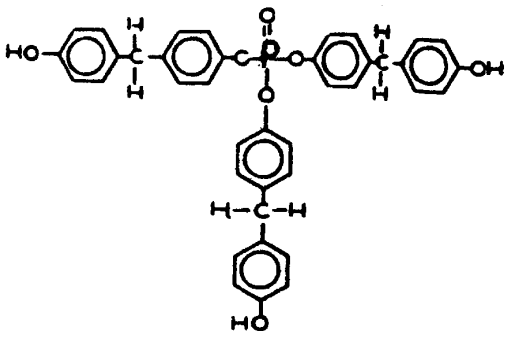


(2) Note. The isocyano group is usually represented structurally as -N=C. It is also sometimes shown by the structure -N=C.

193 This subclass is indented under subclass 190. Compounds in which a benzene ring is bonded directly to a nitro group.

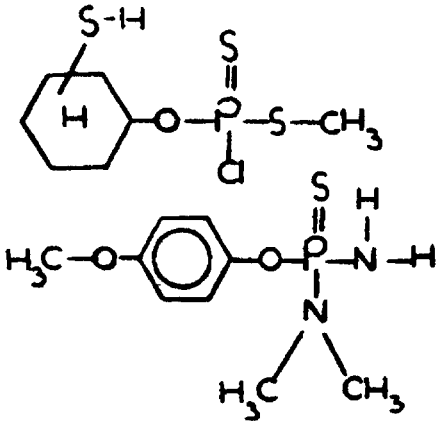
194 This subclass is indented under subclass 70. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is attached indirectly to the phosphorus by nonionic bonding.

(1) Note. An example of a compound provided for herein is:



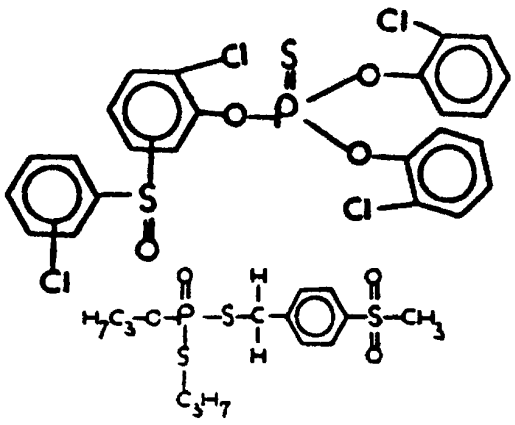
195 This subclass is indented under subclass 194. Compounds in which the phosphorus is attached directly to nitrogen or halogen by nonionic bonding.

(1) Note. Examples of compounds provided for herein are:



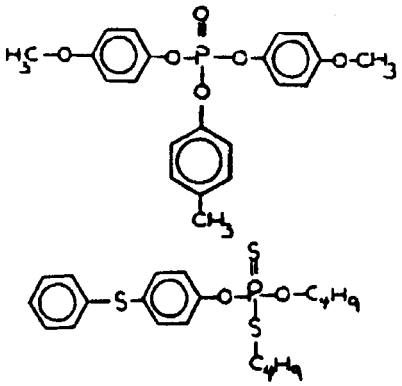
196 This subclass is indented under subclass 194. Compounds in which the chalcogen is part of a -S(=O)- or of a -S(=OO)- or of a -S(=O) (O=) group.

(1) Note. Examples of compounds provided for herein are:



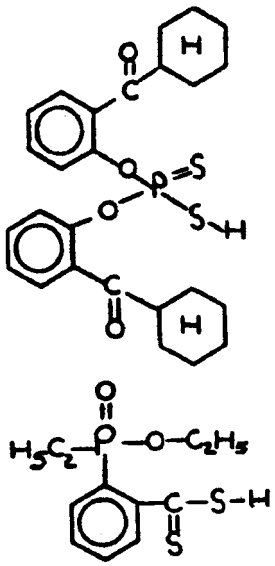
197 This subclass is indented under subclass 194. Compounds wherein a benzene ring is bonded directly to ether oxygen or thioether sulfur.

(1) Note. Examples of compounds provided for herein are:



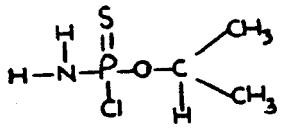
198 This subclass is indented under subclass 194. Compounds wherein the chalcogen, X, is in a -C(=X)- group.

(1) Note. Examples of compounds provided for herein are:



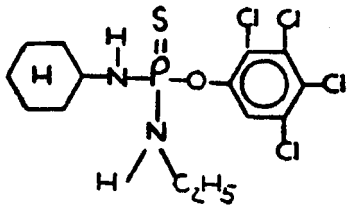
199 This subclass is indented under subclass 70. Compounds wherein the phosphorus is bonded directly to nitrogen.

(1) Note. An example of a compound provided for herein is:



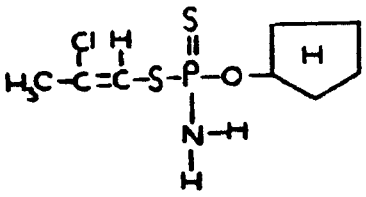
200 This subclass is indented under subclass 199. Compounds in which the phosphorus and a benzene ring are bonded directly to the same chalcogen (i.e., oxygen, sulfur, selenium, or tellurium).

(1) Note. An example of a compound provided for herein is:



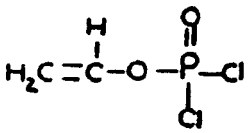
201 This subclass is indented under subclass 199. Compounds wherein the phosphorus is attached indirectly by acyclic nonionic bonding to an acyclic carbon chain containing carbon to carbon unsaturation.

(1) Note. An example of a compound provided for herein is:



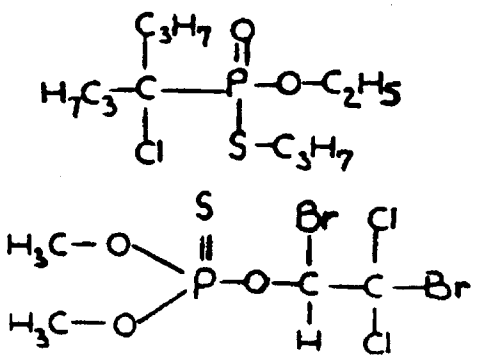
202 This subclass is indented under subclass 70. Compounds in which the phosphorus is attached directly to halogen by nonionic bonding.

(1) Note. An example of a compound provided for herein is:



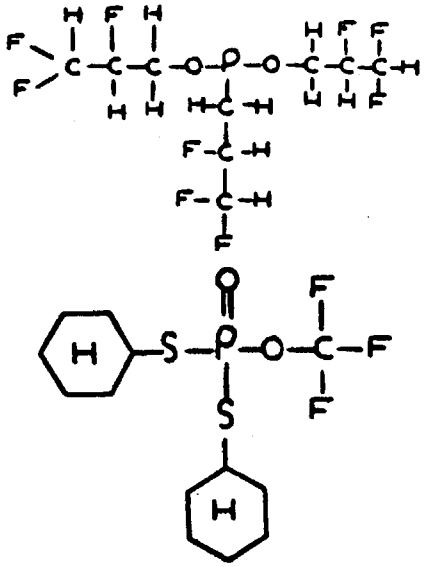
203 This subclass is indented under subclass 70. Compounds wherein the phosphorus is attached indirectly to halogen by acyclic nonionic bonding.

(1) Note. Examples of compounds provided for herein are:



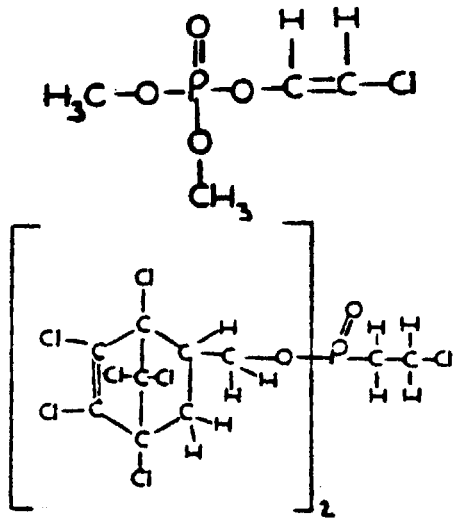
204 This subclass is indented under subclass 203. Compounds in which plural fluorines are bonded to an acyclic carbon or to an acyclic carbon chain.

(1) Note. Examples of compounds provided for herein are:



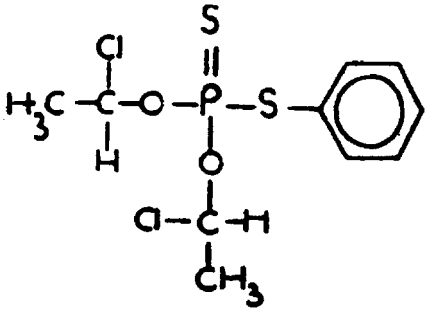
205 This subclass is indented under subclass 203. Compounds which contain carbon multiple bonded to another carbon.

(1) Note. Examples of compounds provided for herein are:



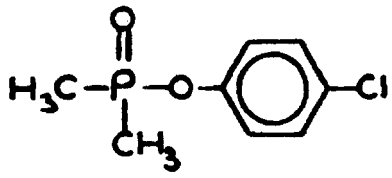
206 This subclass is indented under subclass 205. Compounds wherein the carbon to carbon unsaturation is in a benzene ring.

(1) Note. An example of a compound provided for herein is:



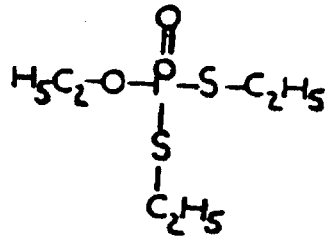
207 This subclass is indented under subclass 70. Compounds in which a divalent chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is double bonded directly to the phosphorus.

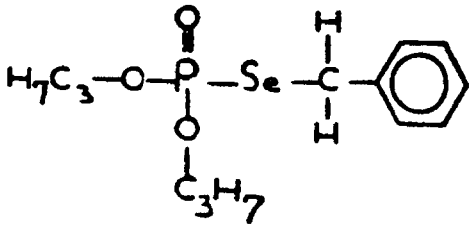
(1) Note. An example of a compound provided for herein is:



208 This subclass is indented under subclass 207. Compounds wherein the phosphorus is single bonded directly to each of three divalent chalcogens, which may be the same or diverse.

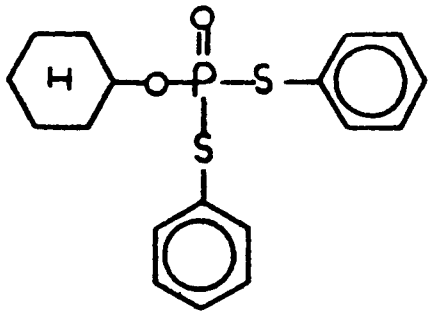
(1) Note. Examples of compounds provided for herein are:





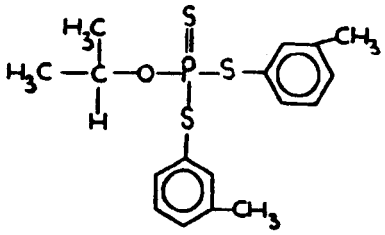
209 This subclass is indented under subclass 208. Compounds in which one of the single bonded chalcogens is bonded directly to an allcyclic ring.

(1) Note. An example of a compound provided for herein is:



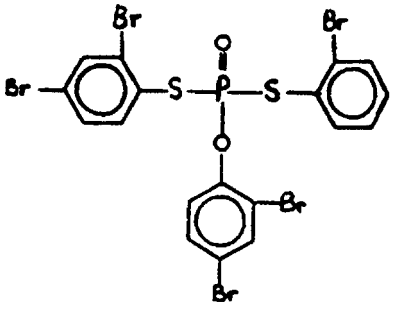
210 This subclass is indented under subclass 208. Compounds wherein one of the single bonded chalcogens is bonded directly to a benzene ring.

(1) Note. An example of a compound provided for herein is:



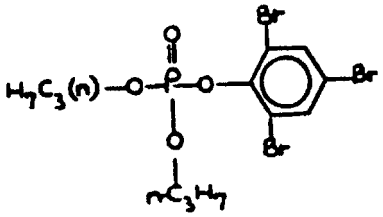
211 This subclass is indented under subclass 210. Compounds wherein each of the three single bonded chalcogens is bonded directly to a benzene ring.

(1) Note. An example of a compound provided for herein is:



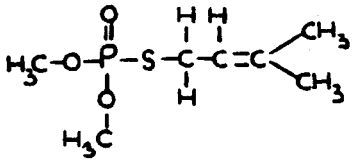
212 This subclass is indented under subclass 210. Compounds in which the benzene ring is bonded directly the three of more halogens.

(1) Note. An example of a compound provided for herein is:



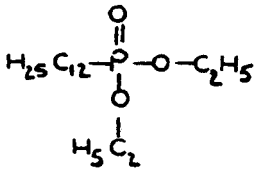
213 This subclass is indented under subclass 208. Compounds which contain acyclic carbon multiple bonded directly to acyclic carbon.

(1) Note. An example of a compound provided for herein is:



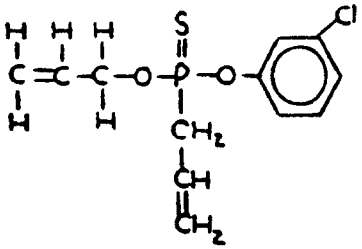
214 This subclass is indented under subclass 207. Compounds wherein the phosphorus is single bonded to each of two divalent chalcogens, which may be the same or diverse.

(1) Note. An example of a compound provided for herein is:



215 This subclass is indented under subclass 214. Compounds wherein one of the single bonded chalcogens is bonded directly to a benzene ring.

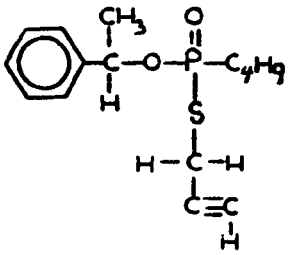
(1) Note. An example of a compound provided for herein is:



216 This subclass is indented under subclass 214. Compounds wherein the phosphorus is bonded directly to a benzene ring.

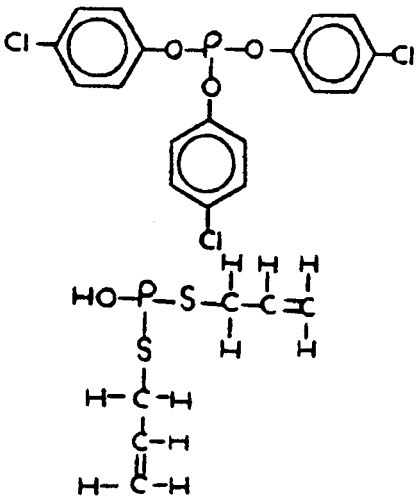
217 This subclass is indented under subclass 214. Compounds which contain acyclic carbon multiple bonded directly to acyclic carbon.

(1) Note. An example of a compound provided for herein is:



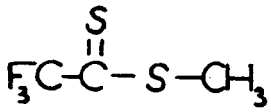
218 This subclass is indented under subclass 70. Compounds in which three divalent chalcogens (i.e., oxygen, sulfor, selenium, or tellurium), which may be the same or diverse, are single bonded directly to trivalent phosphorus.

(1) Note. Examples of compounds provided for herein are:



230 This subclass is indented under subclass 1. Compounds under Class 532, ... which contain the thiocarboxylate group, -C(=X)X-, wherein the X's are the same or diverse chalcogens (i.e., oxygen, sulfur, selenium, or tellurium) with at least one X being sulfur and wherein the single bonded X is bonded directly to an additional carbon, which carbon may be single bonded to any atom, but may be multiple bonded only to carbon.

(1) Note. An example of a compound provided for herein is:

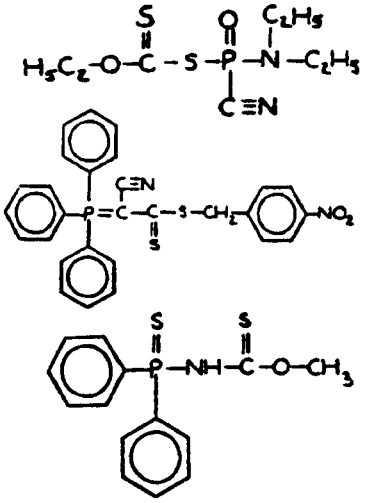


SEE OR SEARCH CLASS:

588, Hazardous or Toxic Waste Destruction or Containment, subclasses 405 through 409 for the chemical destruction of organic hazardous or toxic waste containing halogen, chalcogen, nitrogen, phosphorus, or metals.

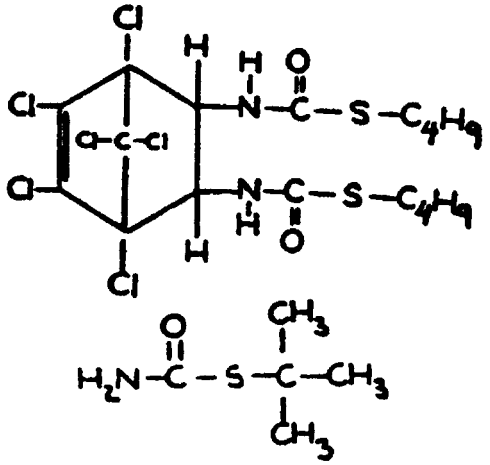
231 This subclass is indented under subclass 230. Compounds in which the thiocarboxylate group is attached directly or indirectly to phosphorus by nonionic bonding.

(1) Note. Examples of compounds provided for herein are:



232 This subclass is indented under subclass 230. Compounds in which the carbon of the thiocarboxylate group is bonded directly to nitrogen.

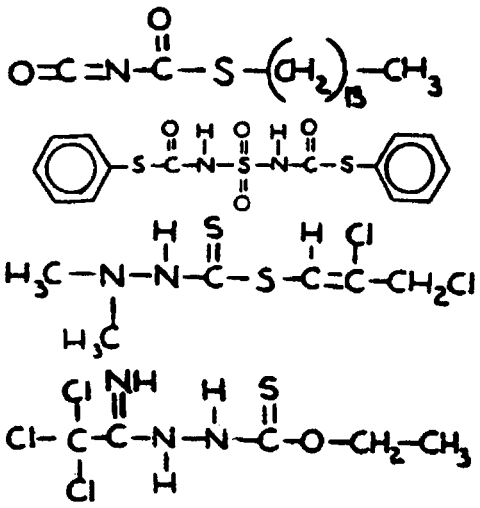
(1) Note. Examples of compounds provided for herein are:



233 This subclass is indented under subclass 232. Compounds in which the nitrogen is further attached directly to chalcogen (i.e., oxygen, sulfur, selenium, or tellurium), nitrogen or

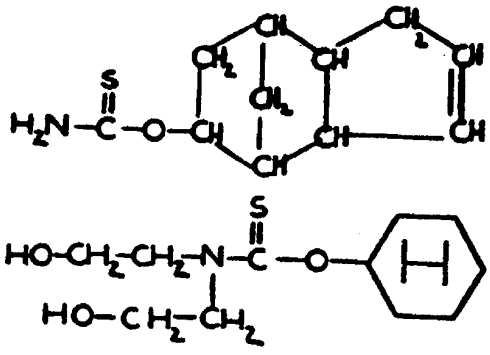
additional -C(=X)-, wherein X is chalcogen, by nonionic bonding.

(1) Note. Examples of compounds provided for herein are:



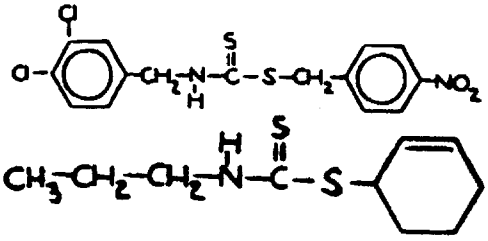
234 This subclass is indented under subclass 232. Compounds in which the thiocarboxylate group is a -C(=S)O- group.

(1) Note. Examples of compounds provided for herein are:



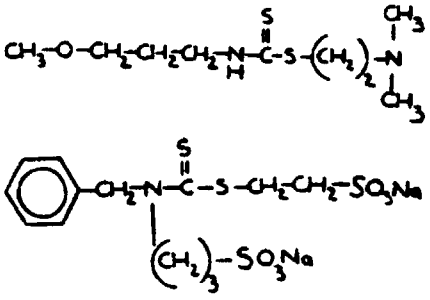
235 This subclass is indented under subclass 232. Compounds in which the thiocarboxylate group is a -C(=S)S group.

(1) Note. Examples of compounds provided for herein are:



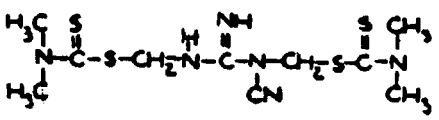
236 This subclass is indented under subclass 235. Compounds in which there is nitrogen or additional chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) attached indirectly to the nitrogen by acyclic nonionic bonding.

(1) Note. Examples of compounds provided for herein are:



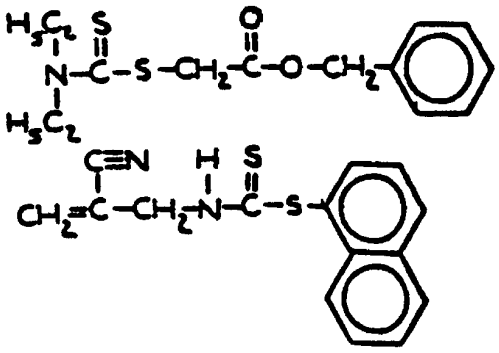
237 This subclass is indented under subclass 236. Compounds in which there is more than one HHN-C(=S)S- group, wherein substitution may be made for hydrogen only.

(1) Note. An example of a compound provided for herein is:



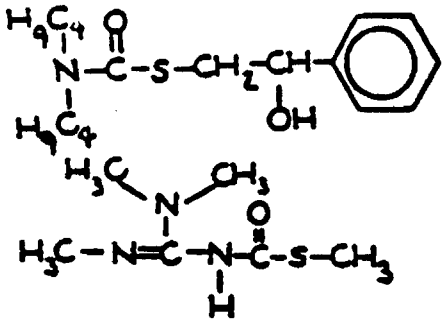
238 This subclass is indented under subclass 236. Compounds in which cyano or -C(=X)-, wherein X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium), is attached indirectly to the nitrogen by acyclic nonionic bonding.

(1) Note. Examples of compounds provided for herein are:



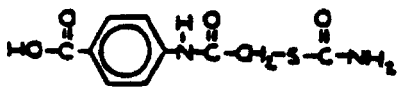
239 This subclass is indented under subclass 232. Compounds in which nitrogen or additional chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is attached indirectly to the nitrogen by acyclic nonionic bonding.

(1) Note. Examples of compounds provided for herein are:



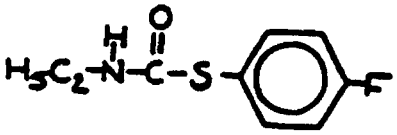
240 This subclass is indented under subclass 239. Compounds wherein the chalcogen is in a -C(-X)- group, X being the chalcogen.

(1) Note. An example of a compound provided for herein is:



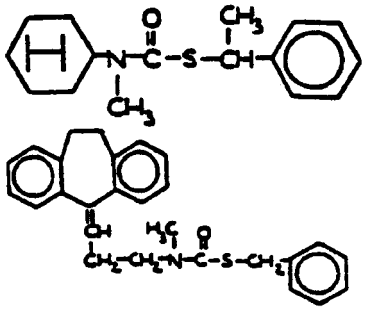
241 This subclass is indented under subclass 232. Compounds wherein the nitrogen or the sulfur of a -C(=O)S- group is bonded directly to a benzene ring.

(1) Note. An example of a compound provided for herein is:



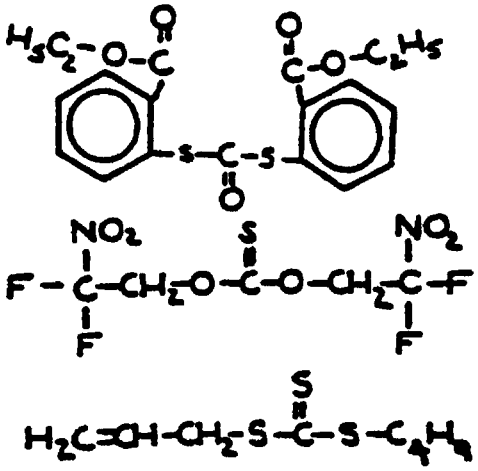
242 This subclass is indented under subclass 232. Compounds wherein the nitrogen is attached indirectly to a benzene ring by nonionic bonding.

(1) Note. Examples of compounds provided for herein are:



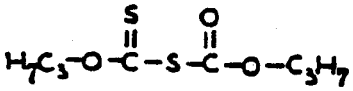
243 This subclass is indented under subclass 230. Compounds which have the thiocarboxylate group as part of an -X-C(=X)X- group, wherein the X's are the same or diverse chalcogens, (i.e., oxygen, sulfur, selenium, or tellurium), at least one of the X's is sulfur, and one of the single bonded X's is bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon.

(1) Note. Examples of compounds provided for herein are:



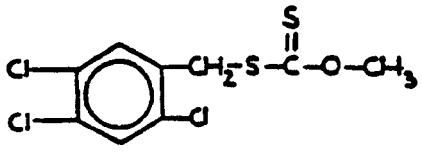
244 This subclass is indented under subclass 243. Compounds in which two -C(=X)- groups, wherein X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) are bonded directly to the same chalcogen or to a chain of chalcogens.

(1) Note. An example of a compound provided for herein is:



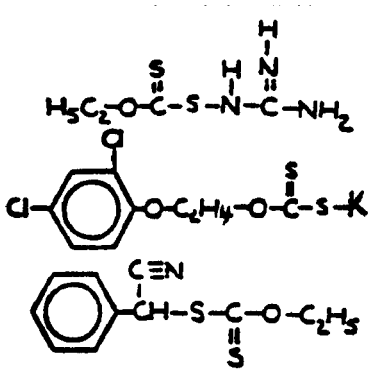
245 This subclass is indented under subclass 243. Compounds wherein the -X-C(=X)X- group is a -S-C(=S)O- group.

(1) Note. An example of a compound provided for herein is:



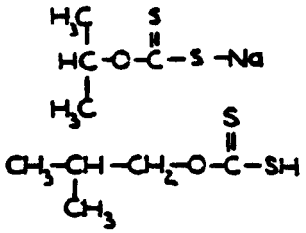
246 This subclass is indented under subclass 245. Compounds in which the -S-C(=S)O- group is indirectly attached to nitrogen or chalcogen (e.e., oxygen, sulfur, selenium, or tellurlum) by acyclic nonionic bonding.

(1) Note. Examples of compounds provided for herein are:



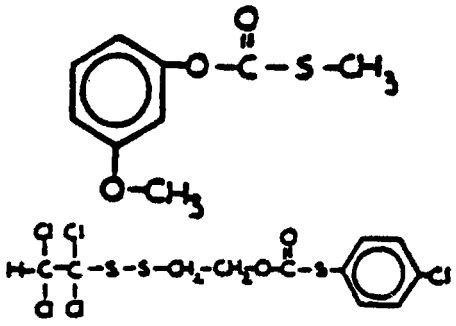
247 This subclass is indented under subclass 245. Compounds wherein the -S-C(=S)O- group is bonded directly to one alkyl group and to hydrogen, which hydrogen may be replaced by substituted or unsubstituted ammonium or by a Group IA or IIA light metal.

(1) Note. Examples of compounds provided for herein are:



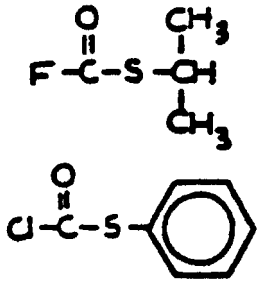
248 This subclass is indented under subclass 243. Compounds wherein the -X-C(=X)X- group is an -S-C(=O)O- group.

(1) Note. Examples of compounds provided for herein are:



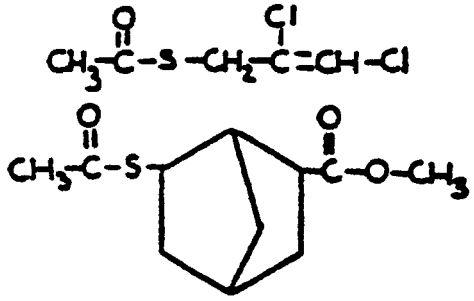
249 This subclass is indented under subclass 230. Compounds in which halogen is bonded to the carbon of the thiocarboxylate group.

(1) Note. Examples of compounds provided for herein are:



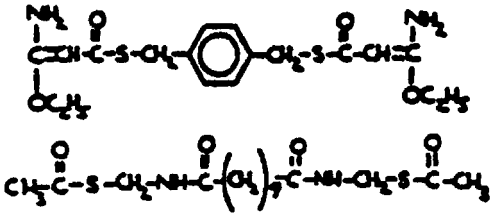
250 This subclass is indented under subclass 230. Compounds wherein the -C(=X)X- grounp is -C(=O)S-.

(1) Note. Examples of compounds provided for herein are:



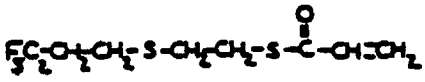
251 This subclass is indented under subclass 250. Compounds which contain more than one -C(=O)S- group.

(1) Note. Examples of compounds provided for herein are:



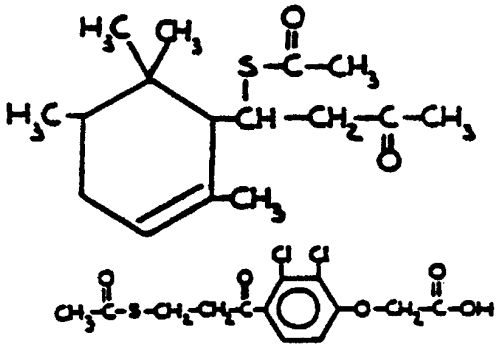
252 This subclass is indented under subclass 250. Compounds wherein a chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is indirectly attached to the-C(=OS- group by acyclic non-ionic bonding.

(1) Note. An example of a compound provided for herein is:



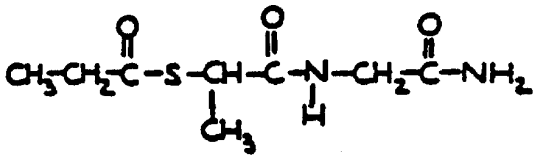
253 This subclass is indented under subclass 252. Compounds wherein the chalcogen is in a -C(=X)- group, X being chalcogen.

(1) Note. Examples of compounds provided for herein are:



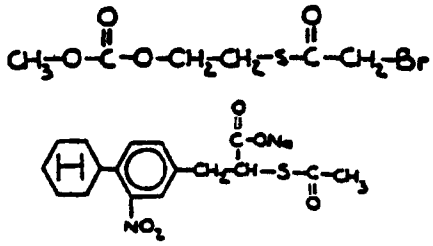
254 This subclass is indented under subclass 253. Compounds wherein the -C(=X)- group is bonded directly to nitrogen.

(1) Note. An example of a compound provided for herein is:



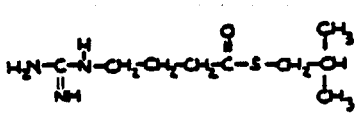
255 This subclass is indented under subclass 253. Compounds wherein the -C(=X)- is part of a -C(=O)O- group.

(1) Note. Examples of compounds provided for herein are:



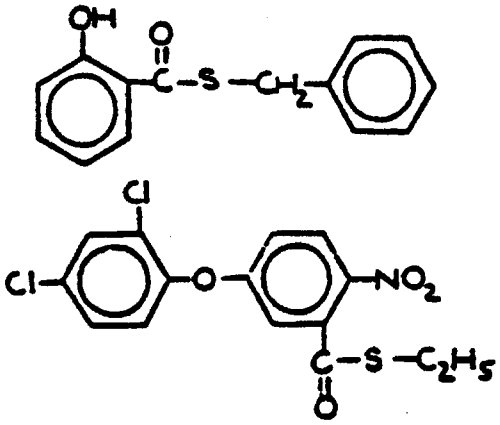
256 This subclass is indented under subclass 250. Compounds wherein the -C(=O)S- group is attached indirectly to nitrogen by acyclic nonionic bonding.

(1) Note. Example of a compound provided for herein is:



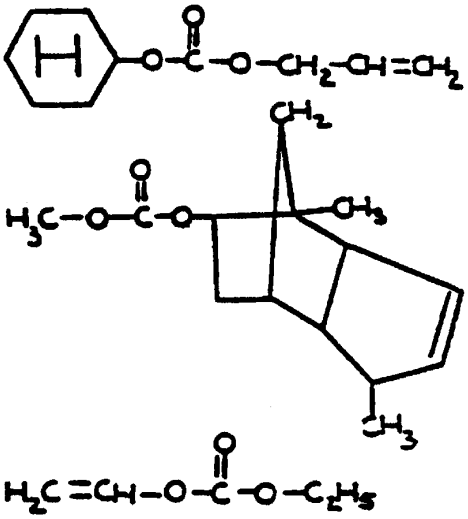
257 This subclass is indented under subclass 250. Compounds wherein the -C(=O)S- group is atached directly or indirectly to a benzene ring by nonionic bonding.

(1) Note. Examples of compounds provided for herein are:



260 This subclass is indented under subclass 1. Compounds under Class 532, ... which contain the -O-C(=O)O- group bonded directly to at least one carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon.

(1) Note. Examples of compounds provided for herein are:

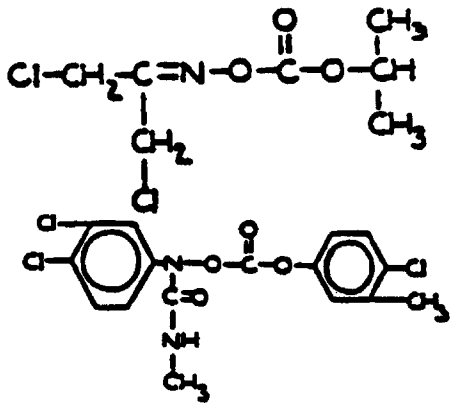


261 This subclass is indented under subclass 260. Products wherein the carbonate ester is mixed with a preserving or stabilizing agent whose

sole function is to prevent physical or chemical change.

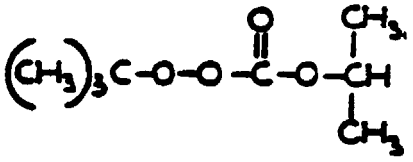
262 This subclass is indented under subclass 260. Compounds wherein the -O-C(=O)O- group is attached directly to nitrogen by nonionic bonding.

(1) Note. Examples of compounds provided for herein are:



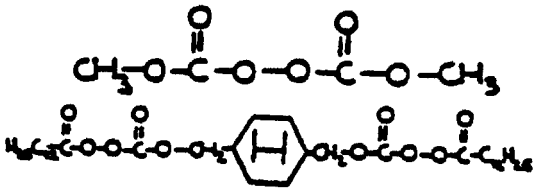
263 This subclass is indented under subclass 260. Compounds wherein the -O-C(=O)-O- group is attached directly to an additional oxygen by nonionic bonding.

(1) Note. An example of a compound provided for herein is:



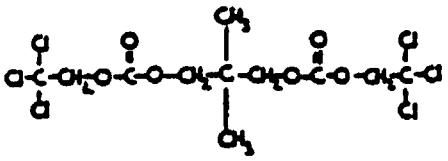
264 This subclass is indented under subclass 263. Compounds wherein carbonyl, -C(=O), is bonded directly to the oxygen.

(1) Note. An example of a compound provided for herein is:



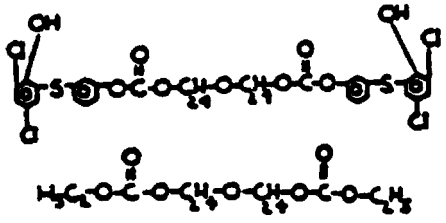
265 This subclass is indented under subclass 260. Compounds which contain more than one -O-C(=O)O- group, which -O- C(=)O- groups are indirectly attached to each other by nonionic bonding.

(1) Note. An example of a compound provided for herein is:



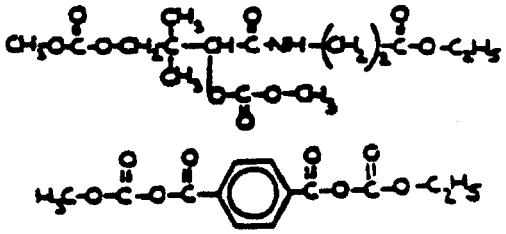
266 This subclass is indented under subclass 265. Compounds wherein an additional chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is attached indirectly to one of the -O-C(=O)O- groups by acyclic nonionic bonding.

(1) Note. Examples of compounds provided for herein are



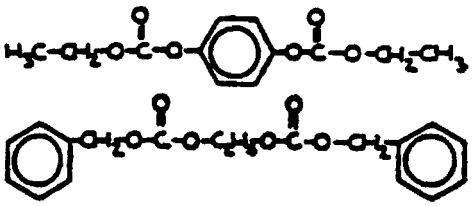
267 This subclass is indented under subclass 266. Compounds wherein the chalcogen is in a -C(=X)- group, X bening the chalcogen.

(1) Note. Examples of compounds provided for herein are:



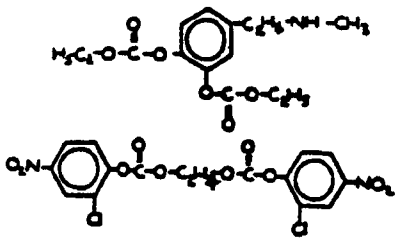
268 This subclass is indented under subclass 265. Compounds wherein one of the -O-C(=O)O- groups is attached directly or indirectly to a benzene ring by nonionic bonding.

(1) Note. Examples of compounds provided for herein are:



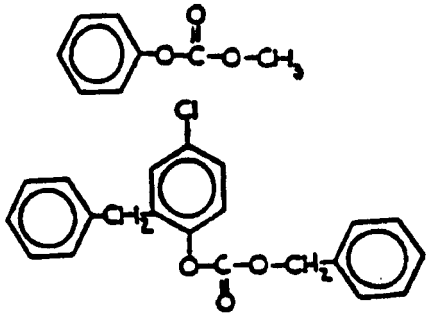
269 This subclass is indented under subclass 268. Compounds in which the benzene ring is attached directly or indirectly to nitrogen by nonionic bonding.

(1) Note. Examples of compounds provided for herein are:



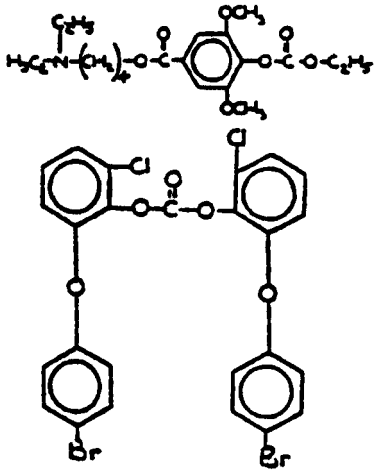
270 This subclass is indented under subclass 260. Compounds wherein the -O-C(=O)O- group is bonded directly to a benzene ring.

(1) Note. Examples of compounds provided for herein are:



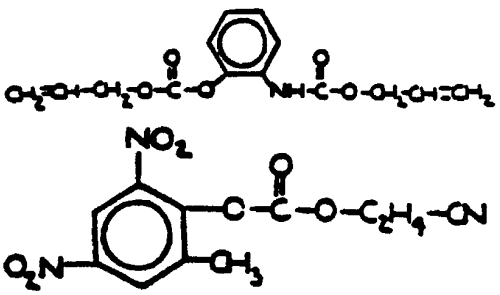
271 This subclass is indented under subclass 270. Compounds wherein the benzene ring is bonded directly to an additional chalcogen (i.e., oxygen, sulfur, selenium, or tellurium).

(1) Note. Examples of compounds provided for herein are:



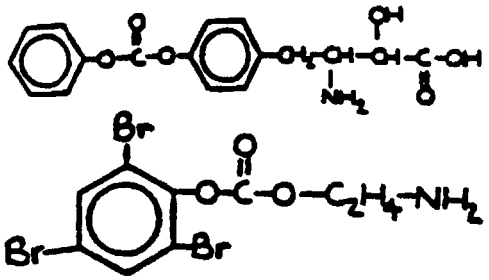
272 This subclass is indented under subclass 270. Compounds wherein the benzene ring is bonded directly to nitrogen.

(1) Note. Examples of compounds provided for herein are:



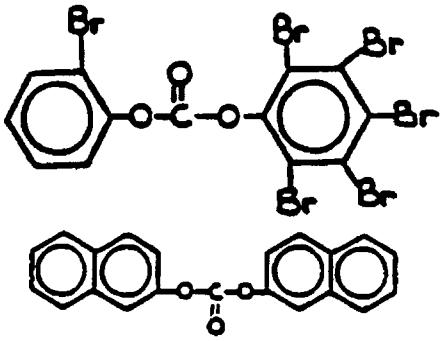
273 This subclass is indented under subclass 270. Compounds wherein the benzene ring is attached indirectly to nitrogen or to an additional chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) by acyclic nonionic bonding.

(1) Note. Examples of compounds provided for herein are:



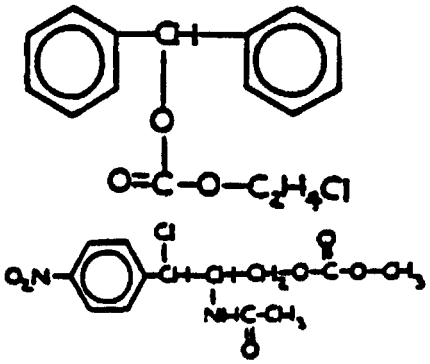
274 This subclass is indented under subclass 270. Compounds wherein the -O-C(=O)O- group is bonded directly to two benzene rings.

(1) Note. Examples of compounds provided for herein are:



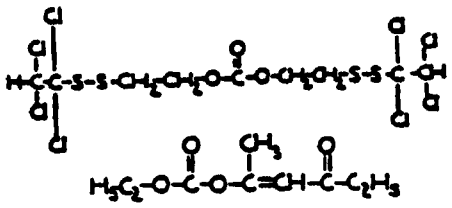
275 This subclass is indented under subclass 260. Compounds wherein the -O-C(=O)O group is attached indirectly to a benzene ring by nonionic bonding.

(1) Note. Examples of compounds provided for herein are:



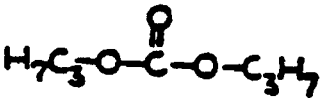
276 This subclass is indented under subclass 260. Compounds wherein the -O-C(=O)O- group is attached indirectly to nitrogen or to chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) by acyclic nonionic bonding.

(1) Note. Examples of compounds provided for herein are:



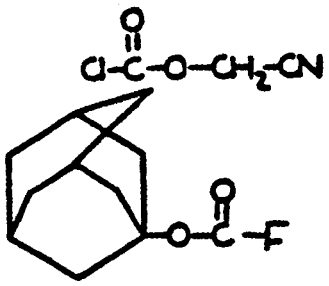
277 This subclass is indented under subclass 260. Compound which contain two alkyl groups, identical or diverse, bonded directly to the -O-C(=O)O- group.

(1) Note. An example of a compound provided for herein is:



280 This subclass is indented under subclass 1. Compounds un Class 532, ... wherein a halocarbonate group (i.e., halo- C(=O)O-) is bonded directly to carbon, which carbon may be single bonded to any atom, but may be multiple bonded only to carbon.

(1) Note. Examples of compounds provided for herein are:

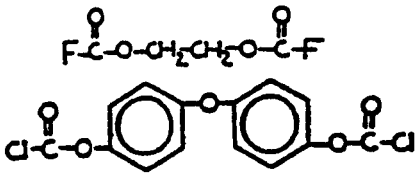


SEE OR SEARCH CLASS:

588, Hazardous or Toxic Waste Destruction or Containment, subclasses 405 through 409 for the chemical destruction of organic hazardous or toxic waste containing halogen, chalcogen, nitrogen, or metals.

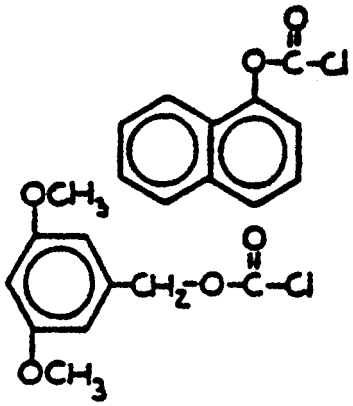
281 This subclass is indented under subclass 280. Compounds which contain more than one halo-C(=O)O- group attached indirectly to each other by nonionic bonding.

(1) Note. Examples of compounds provided for herein are:



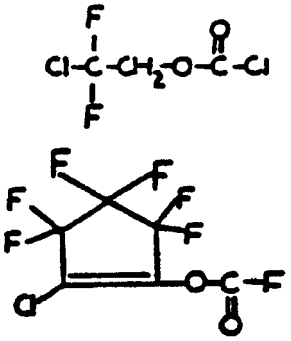
282 This subclass is indented under subclass 280. Compounds wherein the halo-C(=O)O- group is attached directly or indirectly to a benzene ring by nonionic bonding.

(1) Note. Examples of compounds provided for herein are:



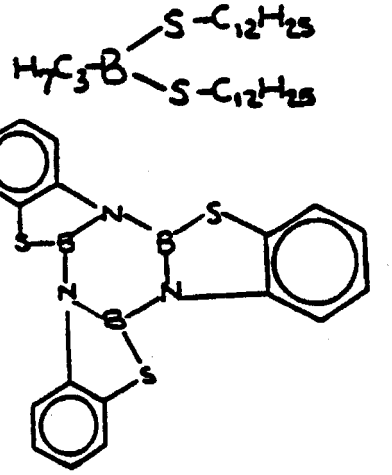
283 This subclass is indented under subclass 280. Compounds wherein the halo-C(=O)O- group is attached indirectly to halogen by nonionic bonding.

(1) Note. Examples of compounds provided for herein are:



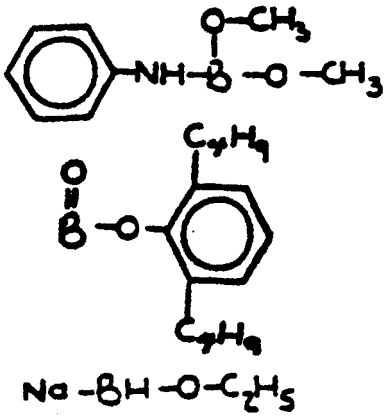
285 This subclass is indented under subclass 1. Compounds under Class 532, ... wherein boron and carbon are single bonded to the same divalent sulfur, which carbon may be single bonded to any atom, but may be multiple bonded only to carbon.

(1) Note. Examples of compounds provided for herein are:



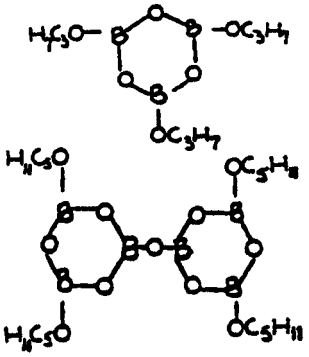
286 This subclass is indented under subclass 1. Compounds under Class 532, ... wherein boron and carbon are single bonded directly to the same oxygen, which carbon may be single bonded to any atom, but may be multiple bonded only to carbon.

(1) Note. Examples of compounds provided for herein are:



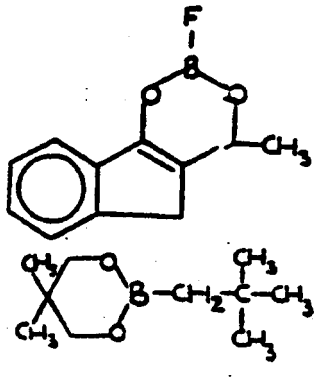
287 This subclass is indented under subclass 286. Compounds which contain a ring having boron and oxygen as ring members.

(1) Note. Examples of compounds provided for herein are:



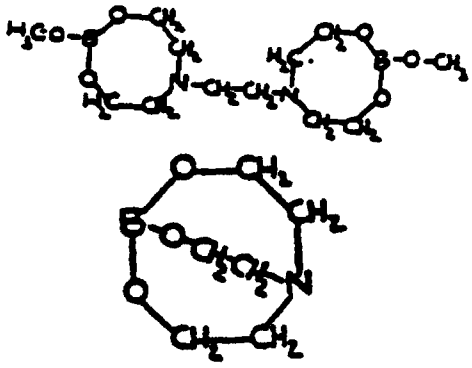
288 This subclass is indented under subclass 287. Compounds which contain a ring having carbon, boron and oxygen as ring members.

(1) Note. Examples of compounds provided for herein are:



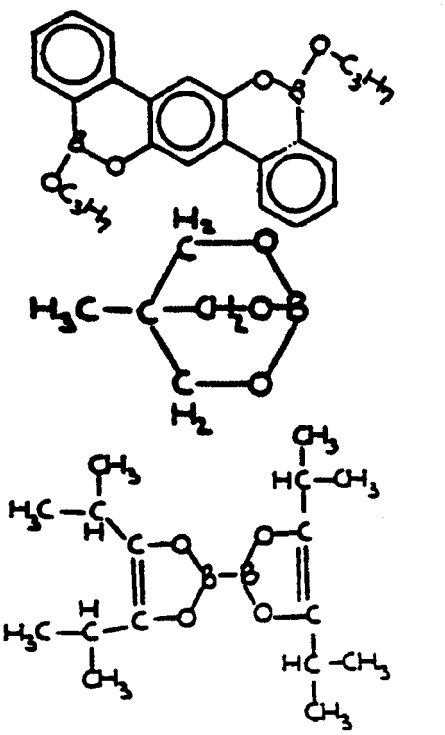
289 This subclass is indented under subclass 288. Compounds which contain a ring having nitrogen, carbon, boron and oxygen as ring members.

(1) Note. Examples of compounds provided for herein are:



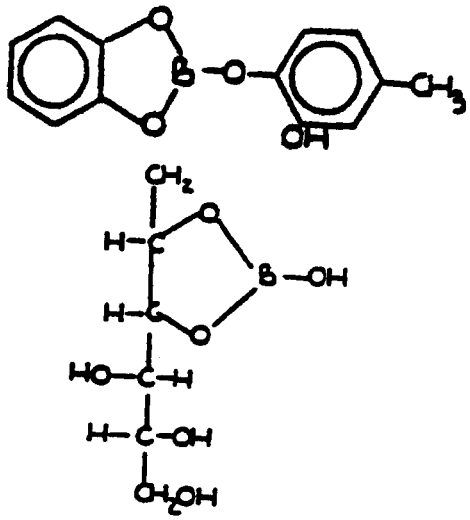
290 This subclass is indented under subclass 288. Compounds which contain plural rings, each having boron, carbon and oxygen as ring members.

(1) Note. Examples of compounds provided for herein are:



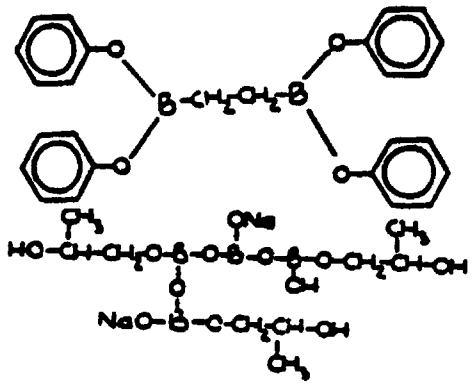
291 This subclass is indented under subclass 288. Compounds wherein a boron is attached directly to three oxygens by nonionic bonding.

(1) Note. Examples of compounds provided for herein are:



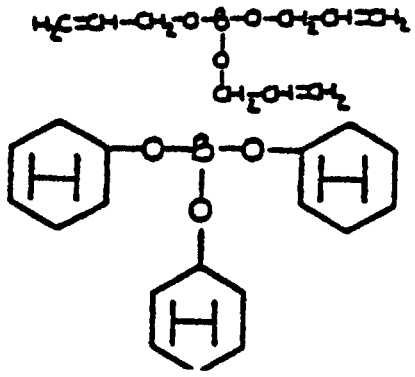
292 This subclass is indented under subclass 286. Compounds wherein plural acyclic borons are attached directly or indirectly to each other by nonionic bonding.

(1) Note. Examples of compounds provided for herein are:



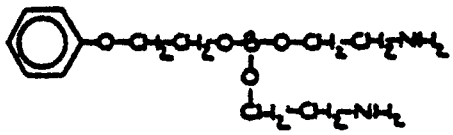
293 This subclass is indented under subclass 286. Compounds wherein a boron is attached directly to three oxygens by nonionic bonding.

(1) Note. Examples of compounds provided for herein are:



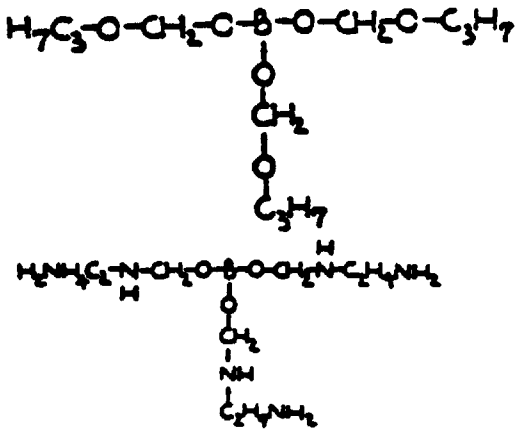
294 This subclass is indented under subclass 293. Compounds wherein boron is attached indirectly to a benzene ring by nonionic bonding

(1) Note. An example of a compound provided for herein is:



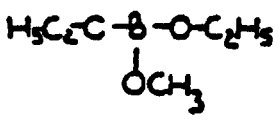
295 This subclass is indented under subclass 293. Compounds wherein boron is attached indirectly to nitrogen or chalcogen (i.e., oxygen, suldur, selenium, or tellirium) by acyclic nonionic bonding.

(1) Note. Examples of compounds provided for herein are:



296 This subclass is indented under subclass 293. Compounds wherein a boron is bonded directly to three oxygens, each oxygen additionally bonded to an alkyl group.

(1) Note. Examples of compounds provided for herein are:

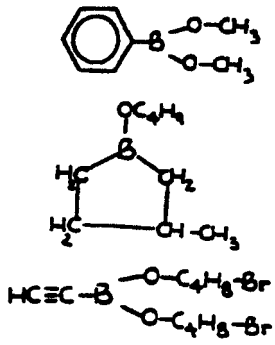


297 This subclass is indented under subclass 286. Processes which utilize boric oxide or an inorganic boric acid for preparing trialkyl borates.

(1) Note. Boric oxide is synonymous with boric anhydride.

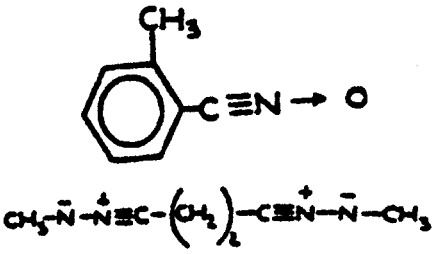
298 This subclass is indented under subclass 286. Compounds wherein boron is bonded directly to carbon.

(1) Note. Examples of compounds provided for herein are:



299 This subclass is indented under subclass 1. Compounds under Class 532, ... which are nitrile oxides or nitrile imines, i.e., compounds wherein cyano, -C=N, is bonded directly to carbon, which carbon may be single bonded to any element but maybe multiple bonded only to carbon, and wherein the nitrogen of the cyano group is bonded directly to oxygen or to nitrogen.

(1) Note. Examples of compounds provided for herein are:

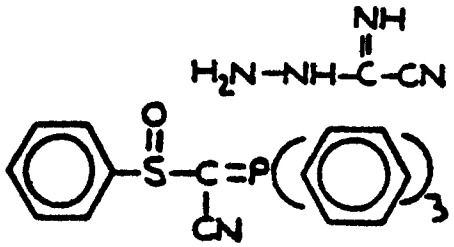


SEE OR SEARCH CLASS:

588, Hazardous or Toxic Waste Destruction or Containment, subclass 408 and 409 for the chemical destruction of organic hazardous or toxic waste containing chalcogen or nitrogen.

300 This subclass is indented under subclass 1. Compounds under Class 532, ... wherein nitrogen or phosphorus is double bonded and cyano, -C=N, is single bonded to the same carbon atom.

(1) Note. Examples of compounds provided for herein are:

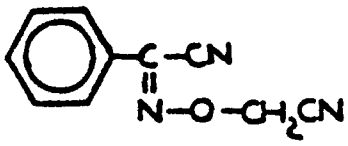


SEE OR SEARCH CLASS:

588, Hazardous or Toxic Waste Destruction or Containment, subclass 408 and 409 for the chemical destruction or containment of organic hazardous or toxic waste containing oxygen or nitrogen.

301 This subclass is indented under subclass 300. Compounds wherin the double bonded nitrogen is bonded directly to oxygen.

(1) Note. An example of a compound provided for herein is:

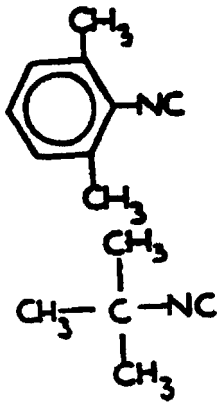


302 This subclass is indented under subclass 1. Compounds under Class 532, ... wherein an isonitrile group, usually represented as -N=C, is bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon.

(1) Note. Compounds containing the isonitrile group can also be named as isocyanides or as carbylamines.

(2) Note. The isonitrile group can be written differently from -N=C; it can, for example, be written as -N=C.

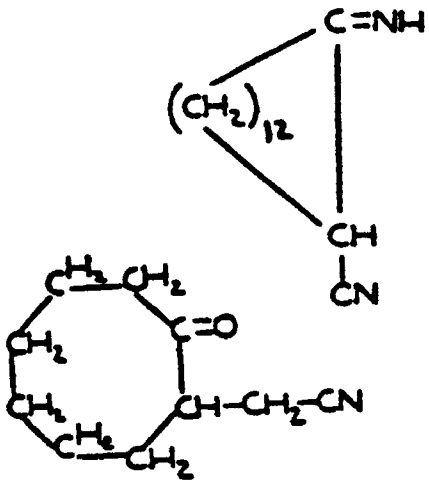
(3) Note. Examples of compounds provided for herein are:



SEE OR SEARCH CLASS:
588, Hazardous or Toxic Waste Destruction or Containment, subclass 408 for the chemical destruction of organic hazardous or toxic waste containing nitrogen.

303 This subclass is indented under subclass 1. Compounds under Class 532, ... which are nitriles, i.e., compounds wherein cyan, -C=N, is bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to carbon.

(1) Note. Examples of compounds provided for herein are:



SEE OR SEARCH CLASS:
588, Hazardous or Toxic Waste Destruction or Containment, subclasses 405 through 409 for the chemical destruction of organic hazardous or toxic waste containing, halogen, chalcogen, nitrogen, phosphorus, or metals.

304 This subclass is indented under subclass 303. Products which contain a nitrile in admixture with a preservative or stabilizing ageent whose sole function is to prevent physical or chemical change.

305 This subclass is indented under subclass 304. Products wherein the preserved or stabilized nitrile contains acyclic or alicyclic carbon to carbon unsaturation.

306 This subclass is indented under subclass 305. Products wherein the preservative or stabilizing agent is an organic compound which contains nitrogen.

307 This subclass is indented under subclass 305. Products wherein the preservative or stabilizing agent contains sulfur or phosphorus.

308 This subclass is indented under subclass 303. Processes which involve formation of the cyano (-C≡N) group.

(1) Note. Examples of processes provided for herein are: (a) conversion of methylaine to acetonitrile by heating with a

transition metal catalyst in the presence of hydrogen, and (b) preparation of acetonitrile by contacting nitropropane with platinum under vapor phase conditions.

(2) Note. For processes wherein nitriles are formed by introducing a cyano group into an organic compound via reaction with, inter alia, inorganic cyanides, search this class, subclasses 332+.

309 This subclass is indented under subclass 308. Processes wherein there is utilized a hetero ring containing reactant.

(1) Note. Examples of precesses provided for herein are: (a) the preparation of 1-cyano-1, 3-butadiene by the dehydration of tetrahydrofuramide, and (b) the preparation of isobutyronitrile and methacyrlonitrile by the high temperature, chromia gel catalyzed reaction of ammonia and isobutylene oxide.

310 This subclass is indented under subclass 309. Processes wherein oxygen, or nitrogen, and carbonyl carbon are adjacent ring members of the hetero ring.

(1) Note. Examples of processes provided for herein are: (a) the production of hydroxy capronitrile by the reastion of epsilon caprolactone with ammonia in vapor phase using zinc oxide catalyst, and (b) the production of phthalonitrile by catalytic reaction of ammonia and phthalimide.

311 This subclass is indented under subclass 308. Processes wherein a carboxylic acid, or an amide, anhydride, ester, halide, or salt thereof is utilized as a reactant.

(1) Note. An example of a process provided for herein is: The production of adiponitrile by vapor phase reaction of adipic acid and ammonia in the presence of a dehydration agent.

312 This subclass is indented under subclass 311. Processes wherein there is utilized a formamide, a heavy metal salt, an alumunum halide, an organophosphorus compound, an organosilicon compound, or a compound containing nitrogen and sulfur.

313 This subclass is indented under subclass 311. Processes wherein the reaction is conducted in liquid phase.

(1) Note. An example of process provided for herein is: the preparation of malononitrile by reacting cyanoacetamide with phosphorus oxychloride and an alkaline earth metal salt in the presence of ethylene dichloride solvent.

314 This subclass is indented under subclass 308. Processes wherein there is utilized nitryl halide, nitrosyl halide, or compounds containing one of the groups HCH=NO- or HHNO- (wherein substitution may be made for hydrogen only.)

(1) Note. Nitryl halide is NO2X, where X is halogen.

(2) Note. Nitrosyl halide is NOX, wherein X is halogen.

(3) Note. Examples of compounds containing the group HCH=NO- are oximes, oxime ethers and oxime esters.

(4) Note. Examples of compounds containing the group HHNO- are hydroxylamine, hydroxylamine salts, hydroxyylamine ethers and hydroxylamine esters.

315 This subclass is indented under subclass 308. Processes wherein there is employed as a reactant an aldehyde, a ketone, or a compound having nitrogen double bonded to carbon.

(1) Note. Examples of processes provided for herein are: (a) the production of acetonitrile and acrylonitrile by reacting acrolein with ammonia and oxygen in the presence of an ammoxidation catalyst, and (b) the production of a saturated aliphatic nitrile from an unsaturated aliphatic primary imine by reacting the imine with excess ammonia in the presence of a dehydrogenation-hydrogenation catalyst.

316 This subclass is indented under subclass 308. Processes wherein there is employed as a reactant a compound having acyclic or clicyclic carbon bonded directly to -OH (wherein H of -OH may be replaced by substituted or unsubstituted ammonium, or by a Group IA or IIA light metal).

(1) Note. An example of a process provided for herein is the production of benzonitrile by reacting benzyl alcohol and ammonia in the presence of a catalyst at high temperature.

317 This subclass is indented under subclass 308. Processes wherein there is utilized and azide or a nitrogen oxide.

(1) Note. Examples of processes provided for herein are: (a) the production of acrylonitrile by the catalytic reaction of nitric oxide with propylene, and (b) the production of benzonitrile by the reaction of benzal chloride with sodium azine in the presence of mineral acid.

318 This subclass is indented under subclass 317. Processes wherein there is utilitzed ammonia.

(1) Note. Examples of processes provided for herein are: (a) the production of acetonitrile by the reaction of carbon monoxide, ammonia and hydrogen, and (b) the production of acetonitrile by the vapor phase reaction of propane and ammonia in the presence of cobalt molybdate.

319 This subclass is indented under subclass 318. Processes wherein there is also utilized molecular oxygen of a molecular containing gas.

(1) Note. Air is included within the scope of molecular oxygen containing gas.

(2) Note. Ammoxidation is the art term for the type reaction encompassed by this subclass and its indents.

(3) Note. Examples of processes provided for herein are: (a) the production of acrylonitrile by reaction of propane, ammonia and oxygen in the presence of a catalyst, and (b) the production of adiponitrile by reaction of cyclohexane, ammonia and oxygen in the presence of a catalyst.

320 This subclass is indented under subclass 319. Processes wherein a reactant contains acyclic or alicyclic carbon to carbon unsaturation.

(1) Note. An example of a process provided for herein is the production of acrylonitrile by the reaction of propylene, oxygen and ammonia in the presence of a catalyst.

321 Processes under 320 wherein there is utilized a material that contains niobium, tantalum, silver, sulfur, ruthenium, rhodium, palladium, osmium, iridium or platinum.

(1) Note. The elements listed above are generally present as components of catalysts.

322 Processes undersubclass 320 wherein there is utilized a material that contains tellurium.

323 This subclass is indented under subclass 320. Processes wherein there is utilized a material that contans molybdenum.

324 This subclass is indented under subclass 323. Processes wherein there is utilized a material that contains bismuth.

325 This subclass is indented under subclass 320. Processes wherein there is utilized a material that contains antimony.

326 This subclass is indented under subclass 319. Processes wherein there is utilized a reactant that contains a benzene ring.

327 This subclass is indented under subclass 319. Processes wherein there is utilized a reactant that contains a benzene ring.

(1) Note. An example of a process provided for herein is the production of muconitrile by the reaction of benzene, ammonia and oxygen in the presence of a catalyst.

328 This subclass is indented under subclass 327. Processes wherein there is utilized a material that contains an alkali metal.

(1) Note. An example of a process provided for herein is the production of dicyanonaphthalene by the reaction of di-lower alkyl naphthalene, ammonia and oxygen is the presence of a supported akali-metal vanadium bronze catalyst.

329 This subclass is indented under subclass 318. Processes wherein the product of the process contains a denzene ring bonded directly to cyano.

(1) Note. An example of a process provided for herein is: the production of o-aminobenzonitrile by the reaction of oa-nitrotoluene and ammonia in the presence of silica gel.

330 This subclass is indented under subclass 318. Processes wherein an acyclic or alicyclic carbon to carbon double bond is present in a reactant.

(1) Note. An example of a process provided for herein is: the production of acetonitrile by the high temperature reaction of ethylene and ammonia in the presence of iron nitride.

331 Processes under subclss 303 wherein the reaction that occurs is the condensation of plural molecules of HCN to produce diaminomaleonitrile.

332 This subclass is indented under subclass 303. Processes wherein cyano is bonded to carbon by the reaction of an organic compound with an inorganic cyanide, such as HCN, cyanogen, cyanogen chioride, metal cyanide, ammonium cyanide, etc.

(1) Note. An example of a process provided for herein is: the production of acetonitrile by reaction of acetone and cyanogen in the presence of activated alumina.

(2) Note. The inorganic cyanides listed above are considered inorganic by reason of their classification in Class 423.

333 This subclass is indented under subclass 332. Processes wherein a carbon to carbon triple bond is present in the organic compound.

(1) Note. An example of a process provided for herein is: the production of acrylonitrile by the vapor phase reaction of acetylene and HCN in the presence of zinc oxide.

334 This subclass is indented under subclass 333. Processes unde ... conducted in liquid phase.

335 This subclass is indented under subclass 332. Processes wherein an acyclic or clicyclic carbon to carbon double bond is present in the organic compound.

(1) Note. An example of a process provided for herein is: the production of propionitrile by the reaction of ethylene and HCN in the presence of nickel cyanide.

336 This subclass is indented under subclass 335. Processes wherein there is utilized cyanogen halide or cyanogen.

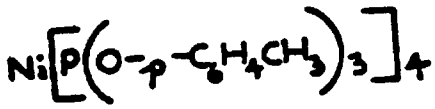
(1) Note. An example of a process provided for herein is: the production of betachloropropionitrile by the reaction of ethylene with cyanogen chloride.

337 This subclass is indented under subclass 335. Processes wherein the organic campound contains carbon bonded directly to halogen.

(1) Note. An example of a process provided for herein is: the production of 1,4-dicyano-2-butene by the reaction of 1,4-dihalo-2-butene with hydrogen cyanide in the presence of a catalyst.

338 This subclass is indented under subclass 335. Processes wherein there is utilized an organic material that contains (1) nickel, and (2) phosphorus, arsenic, or antimony.

(1) Note. An example of a process provided for herein is: the production of adiponitrile by the reaction of 3-pentenenitrile and HCH in the presence of



339 This subclass is indented under subclass 335. Processes wherein there is employed a material that contains cobalt, copper, silver, or gold.

(1) Note. An example of a process provided for herein is: the production of 3-pentene-nitrile by the reaction of butadiene and HCN in the presence of cuprous halide catalyst.

340 This subclass is indented under subclass 335. Processes wherein there is employed a material that contains ruthenium, rhodium, palladium, osmium, iridium or platinum.

(1) Note. An example of a process provided for herein is: the production of propionitrile by the reaction of ethylene and hydrogen cyanide in the presence of rhodium.

341 This subclass is indented under subclass 335. Processes wherein a carbonyl, -C(=O)-, is present in the organic compound.

(1) Note. An example of a process provided for herein is: the production of 3-cyanopropionamide by the reaction of acrylamide and hydrocyanic acid in the presence of alkali metal cyanide.

342 This subclass is indented under subclass 332. Processes wherein cyano replaces halogen bonded directly to carbon.

(1) Note. An example of a process provided for herein is: the production of acrylonitrile by the reaction of 1,2-dichhloroethane with sodium cyanide.

343 Processes under subcvlass 342 wherein cyano replaces halogen bonded directly to a benzene ring.

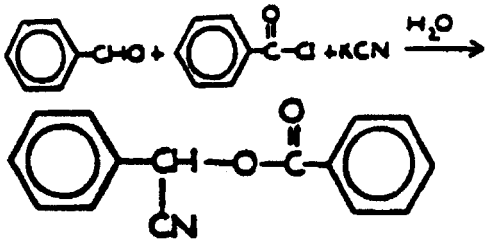
(1) Note. An example of a process provided for herein is: the production of terephthaloitrile by the reaction of p-dibromobenzene with HCN in the presence of nickel cyanide on alumina.

344 This subclass is indented under subclass 342. Processes wherein there is utiltized, other than as a reactant, an organic compound of nitrogen, phosphorus, arsenic, antimony or bismuth.

(1) Note. An example of a process provided for herein is: the production of 4-chlorobutyronitrile by the reaction of 1-chloro-3-bromopropane with ammonium cyanide in the presence of cetyltrimethyl ammonium bromide phase transfer catalyst.

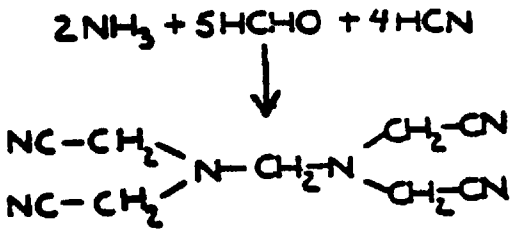
345 This subclass is indented under subclass 332. Processes wherein the inorganic cyanide is reacted with (1) an aldehyde, and (2) a carboxylic acid halide or a carboxylic acid anhydride.

(1) Note. An example of a process provided for herein is:



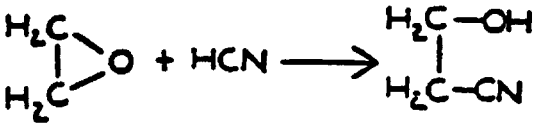
346 This subclass is indented under subclass 332. Precesses wherein the inorganic cyanide is reacted with (1) an aldehyde or a ketone, and (2) ammonia or a substituted ammonia.

(1) Note. An example of a process provided for herein is:



347 This subclass is indented under subclass 332. Processes wherein the inorganic cyanide is reacted with a hetero ring containing compound.

(1) Note.An example of a process provided for herein is:



348 This subclass is indented under subclass 332. Processes wherein cyano replaces hydrogen bonded directly to carbon.

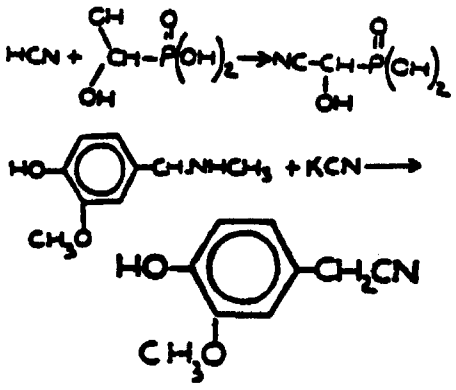
(1) Note. An example of a process provided for herein is: the production of acetonitrile by the reaction of methane and cyanogen chloride.

349 This subclass is indented under subclass 348. Processes wherein cyano replaces hydrogen bonded directly to a benzene ring.

(1) Note. An example of prosess provided for herein is: the production of phthalonitrile by the reaction of benxonitrile and HCN in the presence of a tungsten catalyst.

350 This subclass is indented under subclass 332. Processes wherein cyano replace (1) oxygen single bonded to carbon, or (2) nitrogen single bonded to carbon.

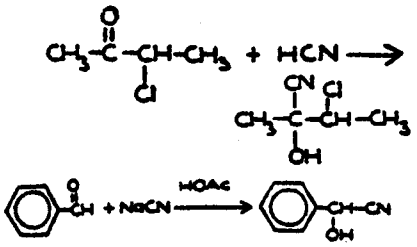
(1) Note. Examples of processes provided for herein are:



351 This subclass is indented under subclass 332. Processes wherein cyano is attached directly to the carbonyl carbon of an aldehyde or ketone.

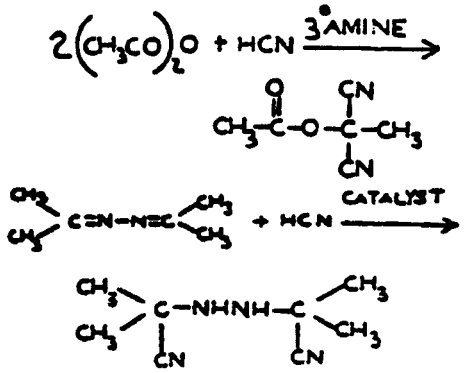
(1) Note. The carbonyl group, -C(=O)-, does not remain as such in the reaction product.

(2) Note. Examples of processes provided for herein are:



352 This subclass is indented under subclass 332. Processes wherein th inorganic cyanide is reacted with a carboxylic acid, a carboxylic acid halide, a carboxylic acid anhydride, or a compound containing nitrogen double bonded to carbon.

(1) Note. Examples of processes provided for herein are:



353 This subclass is indented under subclass 303. Processes wherein carbon monoxide is untiltized as a reactant.

(1) Note. An example of a process provided for herein is: the production of betaformylpropionitrile by the reaction of acrylonitrile with a mixed gas consisting of hydrogen and carbon monoxide in the prosence of cobalt carbonyl.

354 This subclass is indented under subclass 303. Processes wherein compounds having an asymmetric carbon are racemized or opticaly resolved, or wherein such compounds are made to undergo inversion of optical configuration.

355 Processes under subclass wherein there occurs transformation or rearrangement of the elements of a starting compound without the addition or removal of any elements.

(1) Note. Examples of processes provided for herein are: (1) the catalytic isomerization of 2-methyl-3- butenenitrile to 3-pentenenitrile, (2) isomerizing 3-pentenenitrile to 4- pentenenitrile, and (3) isomerizing trans-2-penteneitrile to cis-2- pentenenitrile.

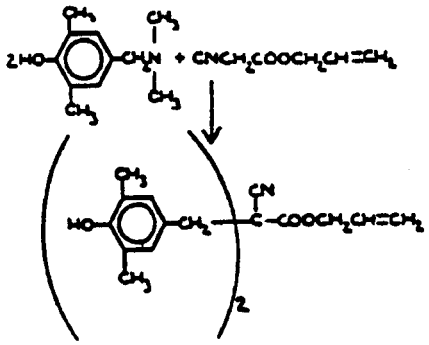
356 This subclass is indented under subclass 355. Processes wherein the starting compound that is isomerized contains plural cyano groups.

(1) Note. An example of a process provided for herein is: the production of 1, 4-dicyano-1-butene by catalytic isomerization of 1, 4-dicyano-2-botene.

357 This subclass is indented under subclass 303. Processes wherein two organic reactants combine in such a way that a carbon of one reactant bonds directly to a carbon of the other reactant.

(1) Note. For processes where the two organic reactants are plural molecules of identical nitrile reactants, see this class, subclasses 360+.

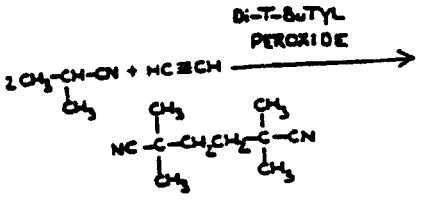
(2) Note. An example of a process provided for herein is:



358 This subclass is indented under subclass 357. Processes wherein a free radical reaction occurs, or an epoxy compound is utilized.

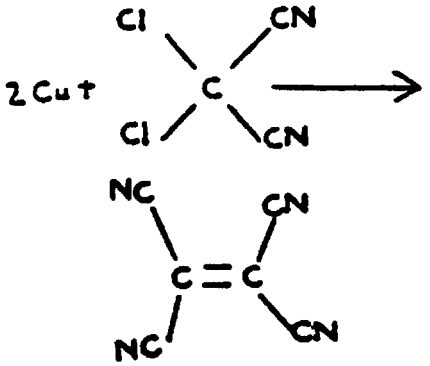
(1) Note. A reaction shall be considered free radical, for purposes of this subclass, if it is stated to be free radical in nature, or if it is catalyzed by a material known or stated to promote free radical reaction.

(2) Note. Examples of processes provided for herein are: (1) the production of allyl cyanide by the reaction of ethylene oxide with acetonitrile, and (2)



359 This subclass is indented under subclass 357. Processes wherein halogen is lost, during the reaction, from each of the carbons that form the carbons that form the carbon to carbon bond.

(1) Note. An example of a process provided for herein is:



360 This subclass is indented under subclass 357. Processes wherein the carbon to carbon bond forms between carebons of plural molecules of identical nitrile reactants.

(1) Note. An example of a process provided for herein is: the production of succinonitrile by dehydrodimerizing acetonitrile in the presence of lead oxide.

361 This subclass is indented under subclass 360. Processes wherein the nitrile reactant contains carbon to carbon unsaturation and is acyclic.

(1) Note. An amalgam is an alloy of mercury.

(2) Note. The art terms often used for the type reactions provided for herein are "reductive dimerization" or "hydrodimerization."

362 Processes under subclasses 361, which employ an amalgam.

(1) Note. An amalgam is an alloy of mercury with another metal or other metals.

363 This subclass is indented under subclass 361. Processes wherein there is utilized an organic phosphorus compound.

(1) Note. An example of a process provided for herein is: the production of 2- methyleneglutaronitrile by the dimerization of acrylonitrile in the presence of tricyclohexylphosphine.

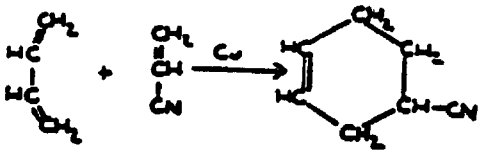
364 This subclass is indented under subclass 361. Processes wherein there is utilized a material that contains aluminum or a metal having a specitic gravity greater than four.

(1) Note. Arsenic is considered a metal.

(2) Note. An example of a process provided for herein is the dimerization of acrylonitrile to 2- methyleneglutaronitrile in the presence of titanium tetrachloride and triethylamine.

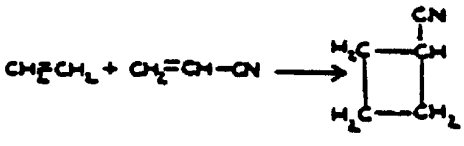
365 This subclass is indented under subclass 357. Processes wherein a carbocyclic ring is formed.

(1) Note. An example of a process provided for herein is:



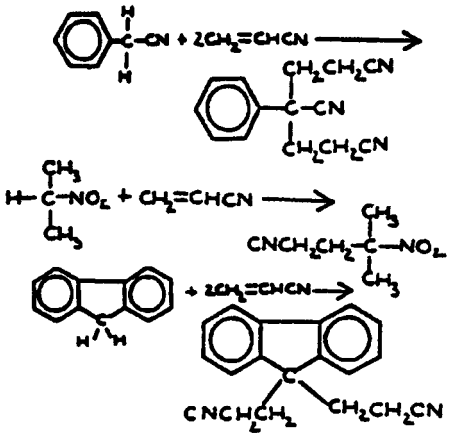
366 This subclass is indented under subclass 365. Processes wherein the carbocyclic formed is monocyclic and is three-membered or four-membered.

(1) Note. An example of a process provided for herein is:



367 This subclass is indented under subclass 357. Processes wherein an acyclic or alicyclic carbon, which is adjacent to a benzene ring or to an atom double or triple bonded to a noncarbon atom, is cyanalkylated by means of reaction with acrylonitrile or hydrocarbyl-substituted acrylonitrile.

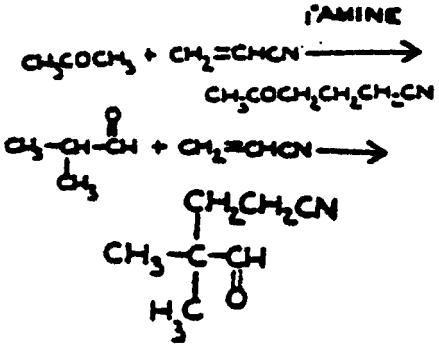
(1) Note. Examples of prosesses provided for herein are:



(2) Note. The acyclic or aliycylic carbon of this subclass is generally considered to by the carbon of a reactive methylene group.

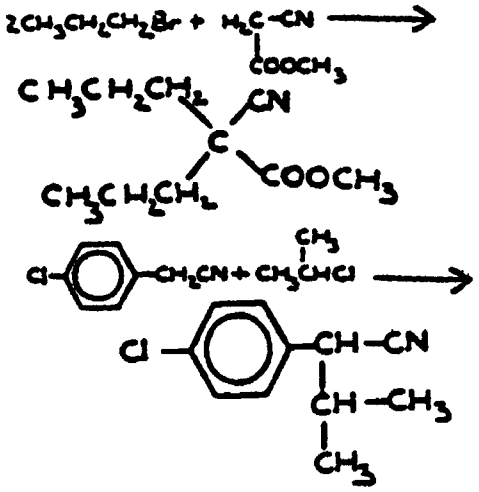
368 This subclass is indented under subclass 367. Processes wherein the acyclic or alicyclic carbon to be cyanoalkylated is adjacent to a carbonyl, -C(=O), group.

(1) Note. Examples of processes provided for herein are:



369 This subclass is indented under subclass 357. Processes wherein an acyclic or alicyclic carbon, which is adjacent to a benzene ring or to an atom double or triple bonded to a noncarbon atom, is alkylated by means of an alkyl halide, alkyl sulfate, substituted alkyl halide or substituted alkyl sulfate.

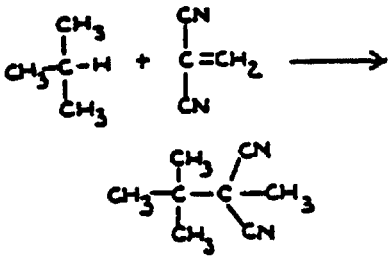
(1) Note. Examples of processes provided for herein are:



(2) Note. The acyclic or alicyclic carbon of this subclass is generally considered to be the carbon of a reactive methylene group.

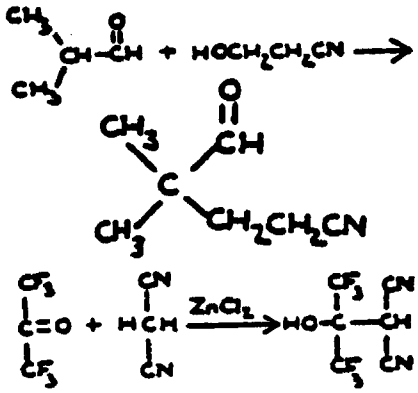
370 This subclass is indented under subclass 357. Processes wherein a reactant is employed having an unsaturated carbon bonded directly to two cyano groups.

(1) Note. An example of a process provided for herein is:



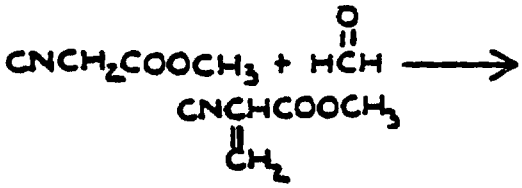
371 This subclass is indented under subclass 357. Processes wherein there is employed a reactant that is an aldehyde or a ketone.

(1) Note. Examples of processes provided for herein are:



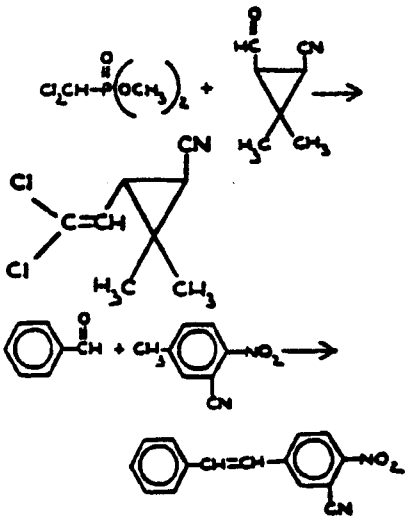
372 This subclass is indented under subclass 371. Processes wherein formaldehyde is employed as a reactant.

(1) Note. An example of a process provided for herein is:



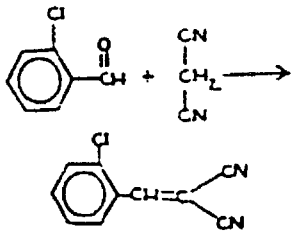
373 This subclass is indented under subclass 371. Processes wherein the carbonyl carbon of the ketone or aldehyde reacts to form a carbon to carb on double bond with carbon of a second reactant.

(1) Note. Examples of processes provided for herein are:



374 This subclass is indented under subclass 373. Processes wherein the carbon of the second reactant is bonded directly to two atoms, each of which is double or triple bonded to noncarbon atoms.

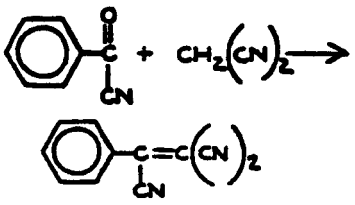
(1) Note. An example of a process provided for herein is:



375 This subclass is indented under subclass 357. Processes unnder ... wherein reaction between a nitrile reactant having no cyclic or alicyclic carbon to carbon double bond and a second

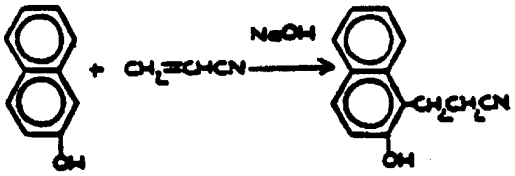
reactant results in formation of a carbon to carbon double bond between carbons of the two reactants.

(1) Note. An example of a process provided for herein is:



376 This subclass is indented under subclass 357. Processes wherein carbon replaces hydrogen bonded to a benzene ring.

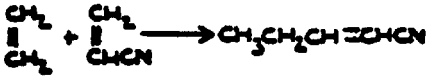
(1) Note. An example of a process provided for herein is:



377 This subclass is indented under subclass 357. Processes wherein an acyclic or alicyclic carbon to carbon double bond is part of a nitrile reactant and is part of a second reactant.

(1) Note. The type reaction known in the art as "olefin disproportionation" is generally callified herein.

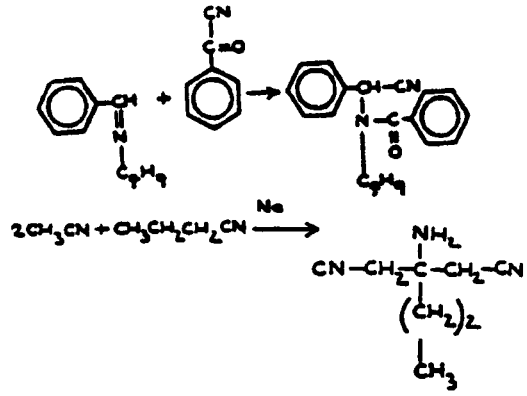
(2) Note. Examples of processes provided for herein are: (1) the reactions of the three component system (A) olefin, (B) olefinically undaturated nitrile and (C) a monoadduct reaction product of an olefin and an olefinically unsaturated nitrile, and (2)



378 This subclass is indented under subclass 357. Processes wherein a nitrile reactant contains no acyclic or alicyclic carbon to carbon unsaturation.

(1) Note. If different nitriles are reactants, one nitrile reactant may contain acyclic or alicyclic carbon to carbon unsaturation.

(2) Note. Examples of processes provided for herein are:



379 This subclass is indented under subclass 303. Processes wherein an exsting acyclic or alicyclic carbon to carbon single bond is converted to an acyclic or alicyclic carbon to carbon double bond.

(1) Note. An example of a process provided for herein is:

380 This subclass is indented under subclass 379. Processes wherein formation of the carbon to carbon double bond is accomplished by removal of one hydrogen and one halogen from adjacent single bonded acyclic or alicyclic carbons.

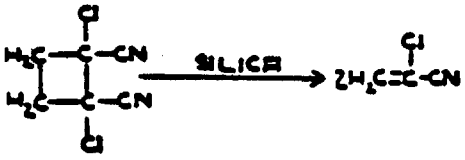
(1) Note. An example of a process provided for herein is:

381 This subclass is indented under subclass 379. Processes wherein formation of the carbon to carbon double bond is accomplished by dehalogenation, dehydrocyanation, ring cleavage or depolymerization.

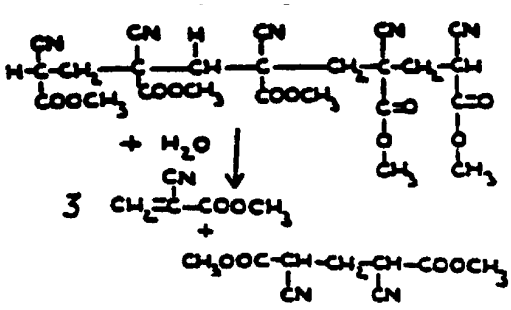
(1) Note. An example of a dehalogenation process provided for herein is:

(2) Note. An example of a dehydrocyanation process provided for herein is:

(3) Note. An example of a ring cleavage process provided for herein is:

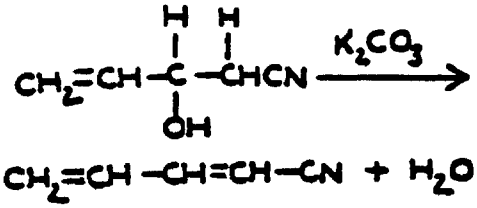


(4) Note. An example of a depolymerization process provided for herein is:



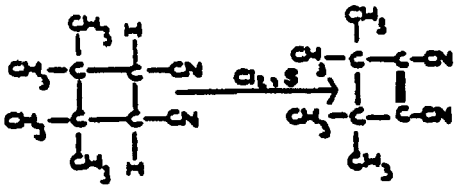
382 This subclass is indented under subclass 379. Processes wherein formation of the carbon to carbon double bond is accomplished by dehydration.

(1) Note. An example of a process provided for herein is:



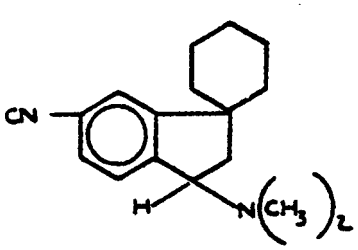
383 This subclass is indented under subclass 379. Processes wherein formation of the carbon to carbon double bond is accomplished by removal of hydrogen from adjacent single bonded acyclic or alicyclic carbons.

(1) Note. An example of a process provided for herein is:



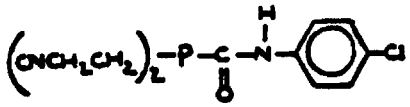
384 This subclass is indented under subclass 303. Compounds which contain boron or a spiro ring system.

(1) Note. An example of a spiro compound provided for herein is:



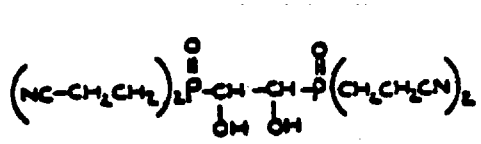
385 This subclass is indented under subclass 303. Compounds wherein phosphorus is attached indirectly to the cyano group by nonionic bonding.

(1) Note. An example of a compound provided for herein is:



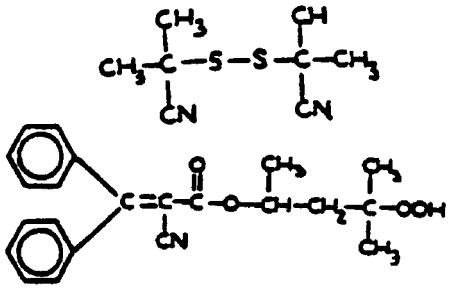
386 This subclass is indented under subclass 385. Compounds wherein the phosphorus is attached directly to nitrogen, halogen, or chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) by nonionic bonding.

(1) Note. An example of a compound provided for herein is:



387 This subclass is indented under subclass 303. Compounds wherein sulfur is single bonded to sulur, or oxygen is single bonded to oxygen.

(1) Note. Examples of compounds provided for herein are:

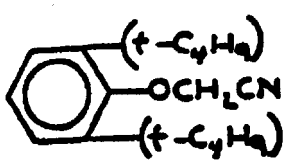


388 This subclass is indented under subclass 303. Compounds wherein the cyano group is attached indirectly to a benzene ring by acyclic nonionic bonding.

(1) Note. An exampleof a compound provided for herein is:

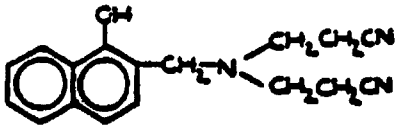
389 This subclass is indented under subclass 388. Compounds wherein the acyclic chain between the benzene ring and the cyano group has a noncarbon atom as a chain member.

(1) Note. An example of a compound provided for herein is:



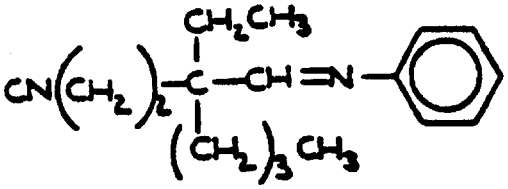
390 This subclass is indented under subclass 389. Compounds wherein the acyclic chain has nitrogen as a chain member.

(1) Note. An example of a compound provided for herein is:



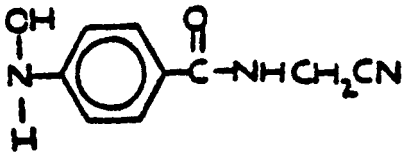
391 This subclass is indented under subclass 390. Compounds wherein the nitrogen is double bonded to carbon, which is also a member of the chain.

(1) Note. An example of a compound provided for herein is:



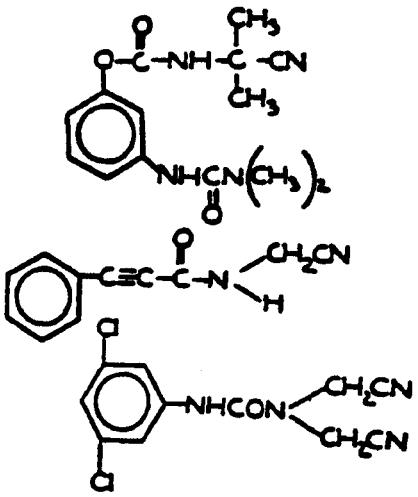
392 This subclass is indented under subclass 390. Compounds wherein the nitrogen is bonded directly to -C(=X-, which is also in the chain, wherein X is chalcogen (i.e., oxygen, sulfur, seleium, or tellurium).

(1) Note. An example of a compound provided for herein is:



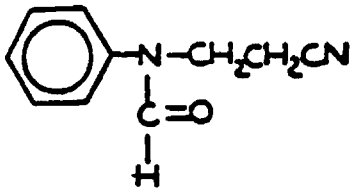
393 This subclass is indented under subclass 392. Compounds wherein the chain also has carbon to carbon unsaturation, an additional nitrogen, or chalcogen (i.e., oxygen, sulfur, selenium, or tellurium).

(1) Note. Examples of compounds provided for herein are:



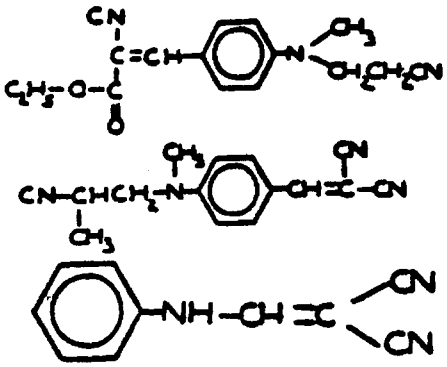
394 This subclass is indented under subclass 390. Compounds wherein the benzene ring is bonded directly to the chain nitrogen.

(1) Note. An example of a compound provided for herein is:



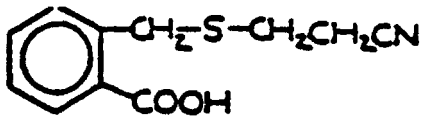
395 This subclass is indented under subclass 394. Compounds wherein an acyclic carbon which is double bonded to another carbon is also bonded directly to cyano or to carbonyl.

(1) Note. Examples of compounds provided for herein are:



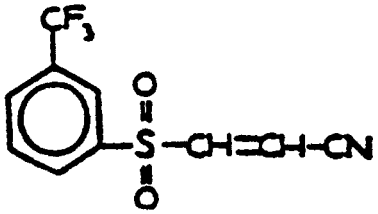
396 This subclass is indented under subclass 389. Compounds wherein the acyclic chain has sulfur as a chain member.

(1) Note. An example of a compound provided for herein is:



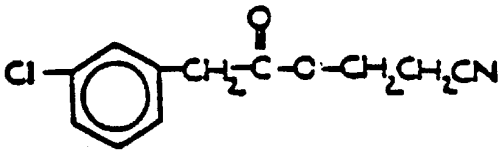
397 This subclass is indented under subclass 396. Compounds wherein the sulfur is double bonded to oxygen.

(1) Note. An example of a compound provided for herein is:



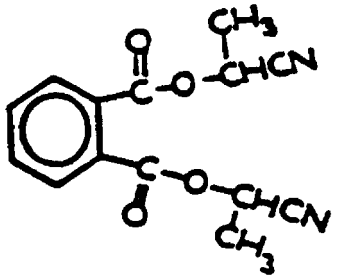
398 This subclass is indented under subclass 389. Compounds wherein-C(=O)- is part of the acyclic chain.

(1) Note. An example of a compound provided for herein is:



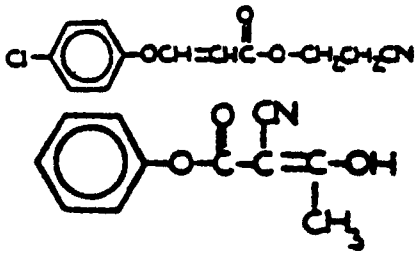
399 This subclass is indented under subclass 398. Compounds wherein the benzene ring is bonded dircftly to the carbon of the -C(=O)- group.

(1) Note. An example of a compound provided for herein is:



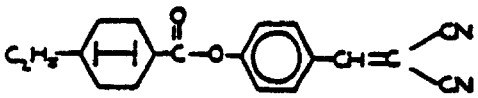
400 This subclass is indented under subclass 398. Compounds wherein an acyclic carbon which is double bonded to another carbon is also bonded directly to cyano or to carbonyl.

(1) Note. Examples of compounds provided for herein are:



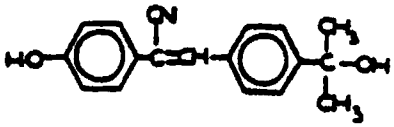
401 This subclass is indented under subclass 388. Compounds wherein a chain consisting of two carbons multiple bonded to each other connects the cyano group and the benzene ring.

(1) Note. An example of a compound provided for herein is:



402 This subclass is indented under subclass 401. Compounds wherein one of the carbons of the chain is bonded directly to an additional benzene ring.

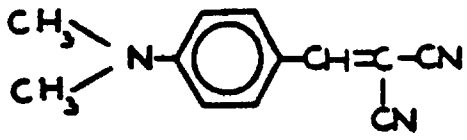
(1) Note. An example of a compound provided for herein is:



403 This subclass is indented under subclass 401. Compounds wherein the benzene ring is bonded directly to nitrogen, except as nitro or nitrosos.

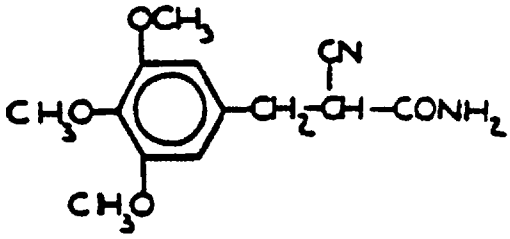
(1) Note. A nitro or nitroso group may be bonded directly to the benzene ring, provided that a nitrogen which is not part of a nitro or nitrosos group is also bonded directly thereto.

(2) Note. An example of a compound provided for herein is:



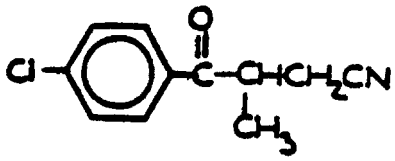
404 This subclass is indented under subclass 388. Compounds wherein the cyano group is attached ndirectly to -C(=X)- by nonionic bonding, wherein X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium).

(1) Note. An example of a compound provided for herein is:



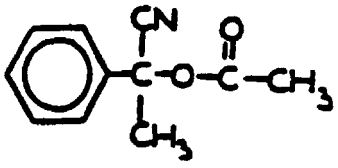
405 This subclass is indented under subclass 404. Compounds wherein the carbon of the -C(=X)- group is bonded directly to two carbons.

(1) Note. An example of a compound provided for herein is:



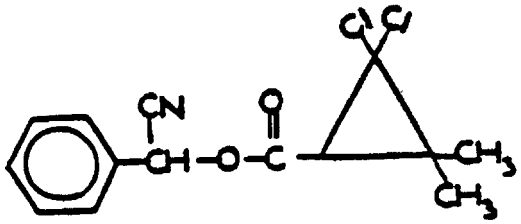
406 This subclass is indented under subclass 404. Compounds wherein a carbonyl group, -C(=O)-, is bonded directly to oxygen.

(1) Note. An example of a compound provided for herein is:



407 This subclass is indented under subclass 406. Compounds which contain a three-membered carbocyclic ring.

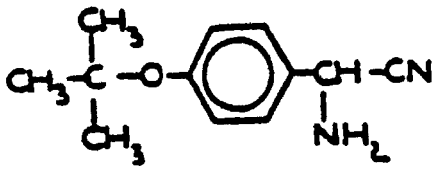
(1) Note. An example of a compound provided for herein is:



408 This subclass is indented under subclass 388. Compounds wherein the cyano group is attached indirectly to nitrogen, except as nitro or nitroso, by nonionic bonding.

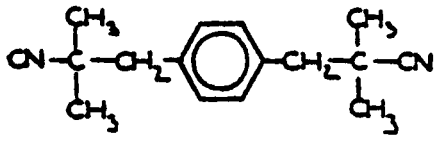
(1) Note. A nitro or nitroso group may be attached indirectly to the cyano group by nonionic bonding, provided that a nitrogen which is not part of a nitro or nitroso group is also so attached.

(2) Note. An example of a compound provided for herein is:



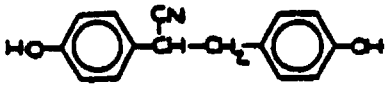
409 This subclass is indented under subclass 408. Compounds wherein plural cyano groups are present.

(1) Note. An example of a compound provided for herein is:



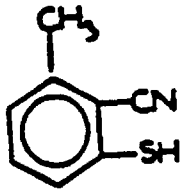
410 This subclass is indented under subclass 388. Compounds wherein the cyano group is attached indirectly to oxygen by nonionic bonding.

(1) Note. An example of a compound provided for herein is:



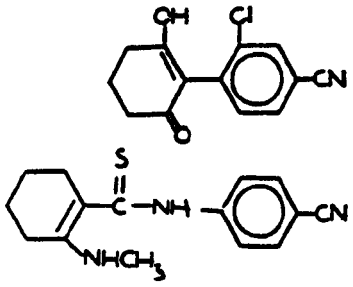
411 This subclass is indented under subclass 303. Compounds wherein the cycano group is bonded directly to a benzene ring.

(1) Note. An example of a compound provided for herein is:



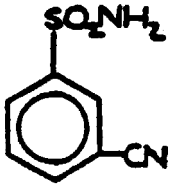
412 This subclass is indented under subclass 411. Compounds wherein sulfur and hydroxy are bonded to the same benzene ring, or which contain a monocyclic unsaturated alicyclic ring or a thiocarbonyl group, -C(S)-.

(1) Note. Examples of compounds provided for herein are:



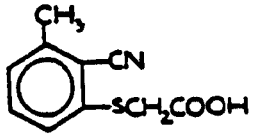
413 This subclass is indented under subclass 411. Compounds wherein the cyano group is attached indirectly, by nonionic bonding, to sulfur which is double bonded to oxygen.

(1) Note. An example of a compound provided for herein is:



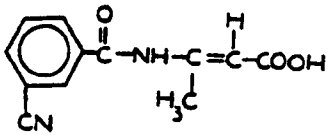
414 This subclass is indented under subclass 411. Compounds wherein the cyano group is attached indirectly to carbonyl, -C(=O)-, by nonionic bonding.

(1) Note. An example of a compound provided for herein is:



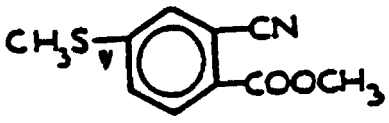
415 This subclass is indented under subclass 414. Compounds wherein the carbonyl is bonded directly to a benzene ring.

(1) Note. An example of a compound provided for herein is:



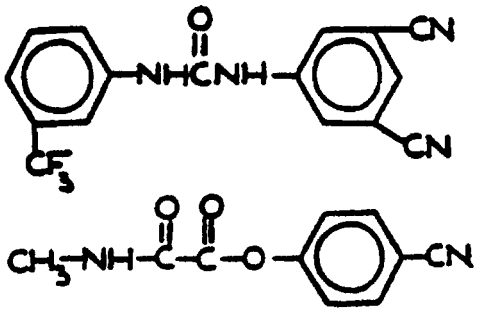
416 This subclass is indented under subclass 415. Compounds wherein the carbonyl is bonded directly to both a benzene ring and to oxygen.

(1) Note. An example of a compound provided for herein is:



417 This subclass is indented under subclass 414. Compounds wherein two noncarbon atoms, or a noncarbon atom and an additional carbonyl, are bonded directly to the carbonyl group.

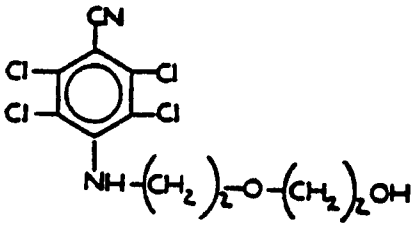
(1) Note. Examples of compounds provided for herein are:



418 This subclass is indented under subclass 411. Compounds wherein the cyano group is attached indirectly to nitrogen, except as notro on nitroso, by nonionic bonding.

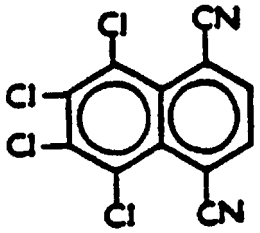
(1) Note. A nitro or nitroso group may be attached indirectly to the cyano group by nonionic bonding, provided that a nitrogen which is not part of a nitro or nitroso group is also so attached.

(2) Note. An example of a compound provided for herein is:



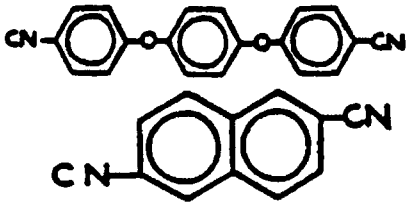
419 This subclass is indented under subclass 418. Compounds wherein plural cyano groups are present.

(1) Note. An example of a compound provided for herein is:



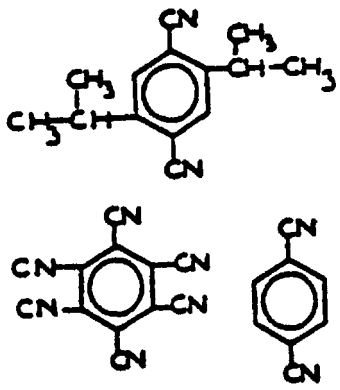
420 This subclass is indented under subclass 419. Compounds wherein cyano groups are bonded directly to more that one benzene ring.

(1) Note. Examples of compounds provided for herein are:



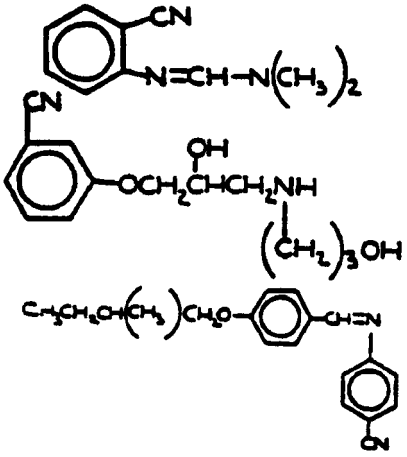
421 This subclass is indented under subclass 419. Compounds wherein plural cyano groups are bonded directly to a benzene ring, which is further unsubstituted or hydrocarbyl substituted only.

(1) Note. Examples of compounds provided for herein are:



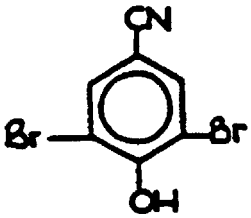
422 This subclass is indented under subclass 418. Compounds wherein a benzene ring is attached indirectly to the nitrogen by acyclic nonionic bonding.

(1) Note. Examples of compounds provided for herein are:



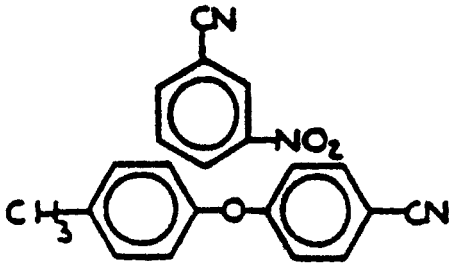
423 This subclass is indented under subclass 411. Compounds wherein the cyano group is attached indirectly to oxygen by nonionic bonding.

(1) Note. An example of a compound provided for herein is:



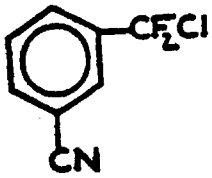
424 Compounds under subclas 423 wherein the oxygen is bonded directly to nitrogen, or two benzene rings are bonded directly to the same oxygen.

(1) Note. Examples of compounds provided for herein are:



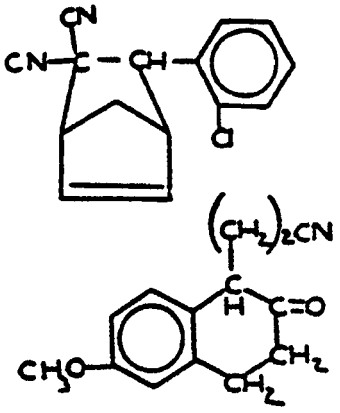
425 This subclass is indented under subclass 411. Compounds wherein the cyano group is attached indirectly to halogen by nonionic bonding.

(1) Note. An example of a compound provided for herein is:



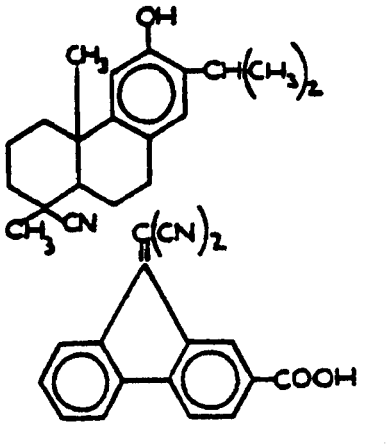
426 This subclass is indented under subclass 303. Compounds wherein the cyano group is attached indirectly to a benzene ring by nonionic bonding.

(1) Note. Examples of compounds provided for herein are:



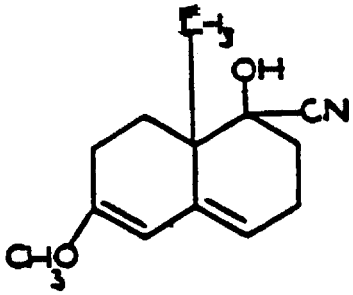
427 This subclass is indented under subclass 426. Compounds which contain a polycyclo ring system having at least three cyclos, and at least one of the cyclos of the system is a benzene ring.

(1) Note. Examples of compounds provided for herein are:



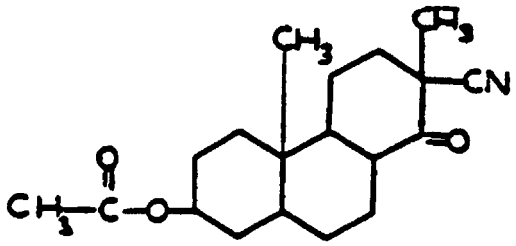
428 This subclass is indented under subclass 303. Compounds which contain a polycyclo alicyclic ring system.

(1) Note. An example of a compound provided for herein is:



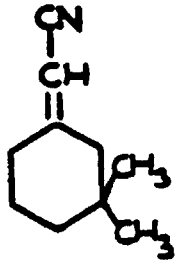
429 This subclass is indented under subclass 428. Compounds wherein at least three cyclos are in the polycyclo alicyclic ring system.

(1) Note. An example of a compound provided for herein is:



430 This subclass is indented under subclass 303. Compounds which contain a six-membered alicyclic ring.

(1) Note. An example of a compound provided for herein is:

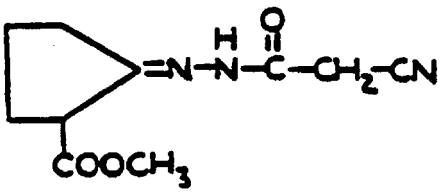


431 This subclass is indented under subclass 430. Compounds wherein the six-membered alicyclic ring is bonded directly to the cyano group.

(1) Note. An example of a compound provided for herein is:

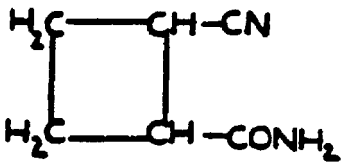
432 This subclass is indented under subclass 303. Compounds which contain a five-membered alicyclic ring.

(1) Note. An example of a compound provided for herein is:



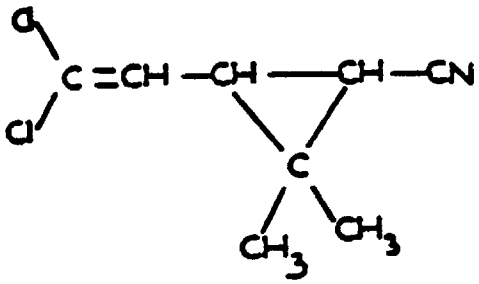
433 This subclass is indented under subclass 303. Compounds which contain a four-membered alicyclic ring.

(1) Note. An example of a compound provided for herein is:



434 This subclass is indented under subclass 303. Compounds which contain a three-membered alicyclic ring.

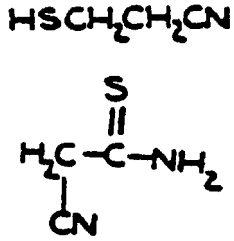
(1) Note. An example of a compound provided for herein is:



435 This subclass is indented under subclass 303. Compounds which are acyclic.

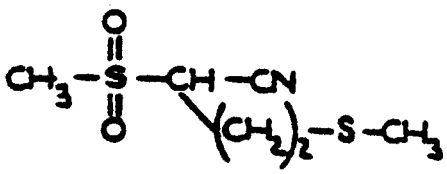
436 This subclass is indented under subclass 435. Compounds wherein the cyano group is attached in directly to sulfur by nonionic bonding.

(1) Note. Examples of compounds provided for herein are:



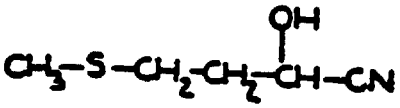
437 This subclass is indented under subclass 436. Compounds wherein oxygen is double bonded to the sulfur.

(1) Note. An example of a compound provided for herein is:



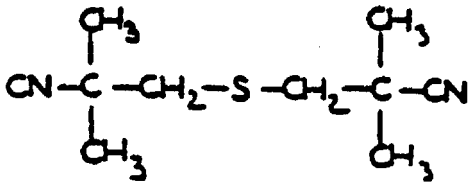
438 This subclass is indented under subclass 436. Compounds wherein two carbons are bonded directly to the same divalent sulfur.

(1) Note. An example of a compound provided for herein is:



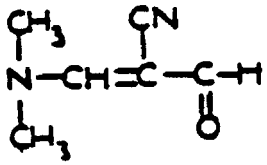
439 This subclass is indented under subclass 438. Compounds wherein plural cyano groups are present.

(1) Note. An example of a compound provided for herein is:



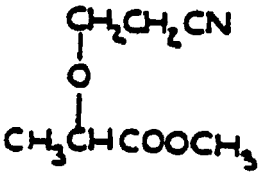
440 This subclass is indented under subclass 435. Compounds wherein the cyano group is attached indirectly to carbonyl, -C(=O)-, by nonionic bonding

(1) Note. An example of a compound provided for herein is:



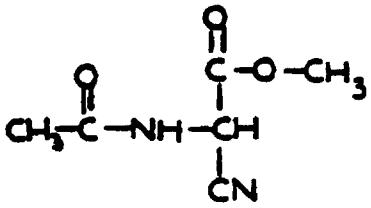
441 This subclass is indented under subclass 440. Compounds wherein the carbonyl group is bonded directly to oxygen.

(1) Note. An example of a compound provided for herein is:



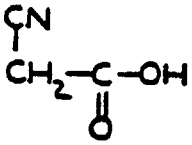
442 This subclass is indented under subclass 441. Compounds wherein plural carbonyl, -C(=O), groups are attached indirectly to the cyano group by nonionic bonding.

(1) Note. An example of a compound provided for herein is:



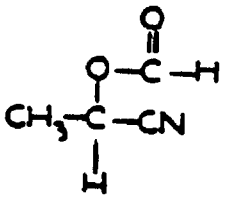
443 This subclass is indented under subclass 441. Compounds wherein the carbon adjacent to the carbonyl carbon is bonded directly to the cyano group.

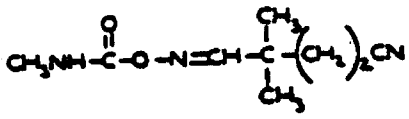
(1) Note. An example of a compound provided for herein is:



444 This subclass is indented under subclass 441. Compounds wherein the oxygen is between the cyano group and the carbonyl.

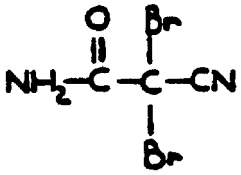
(1) Note. Examples of compounds provided for herein are:





445 This subclass is indented under subclass 440. Compounds wherein the carbonyl is bonded directly to nitrogen.

(1) Note. An example of a compound provided for herein is:

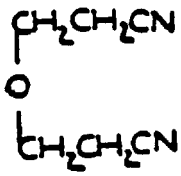


446 This subclass is indented under subclass 435. Compounds wherein the cyano group is attached indirectly, by nonionic bonding, to nitrogen, which is double bonded to carbon.

(1) Note. An example of a compound provided for herein is:

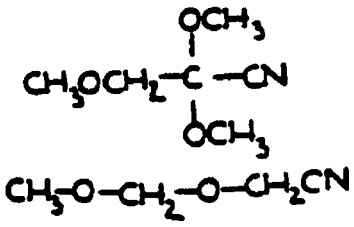
447 This subclass is indented under subclass 435. Compounds wherein the same oxygen is bonded directly to plural carbons.

(1) Note. An example of a compound provided for herein is:



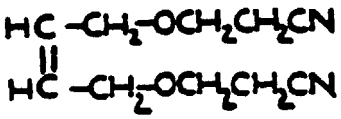
448 This subclass is indented under subclass 447. Compounds wherein the same carbon is bonded directly to plural oxygens.

(1) Note. Examples of compounds provided for herein are:



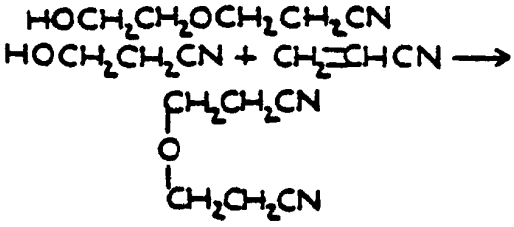
449 This subclass is indented under subclass 447. Compounds wherein carbon, which is multiple bonded to another carbon, is attached directly or indirectly to the cyano group by nonionic bonding.

(1) Note. An example of a compound provided for herein is:



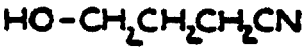
450 This subclass is indented under subclass 447. Processes wherein an ether group is formed.

(1) Note. Examples of reactions provided for herein are:



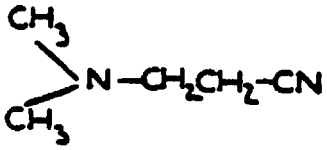
451 This subclass is indented under subclass 435. Compounds wherein carbon is bonded directly to -OH (wherein H of -OH may be replaced by substituted or unsubstituted ammonium, or by a Group IA or IIA light metal).

(1) Note. An example of a compound provided for herein is:



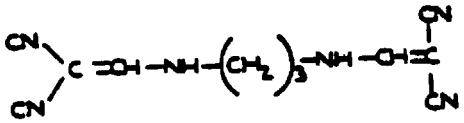
452 This subclass is indented under subclass 435. Compounds wherein the cyano group is attached indirectly to nitrogen by nonionic bonding.

(1) Note. An example of a compound provided for herein is:



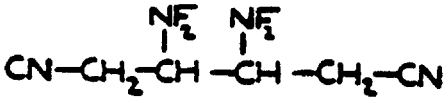
453 This subclass is indented under subclass 452. Compounds wherein plural cyano groups are bonded directly to the same carbon.

(1) Note. An example of a compound provided for herein is:



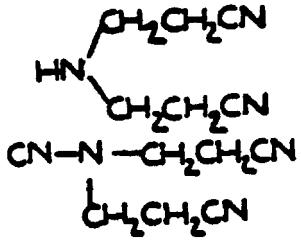
454 This subclass is indented under subclass 452. Compounds wherein plural cyano groups are bonded directtly to the same chain.

(1) Note. An example of a compound provided for herein is:



455 This subclass is indented under subclass 454. Compounds wherein nitrogen is a member of the chain.

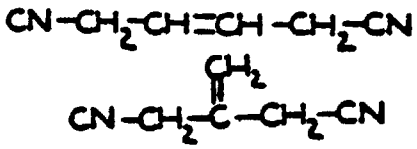
(1) Note. Examples of compounds provided for herein are:



456 This subclass is indented under subclass 454. Processes wherein saturated hydrocarbon dinitriles are separated from impurities, or from a reaction medium.

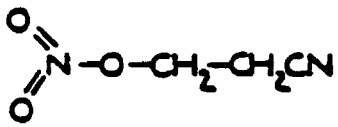
457 This subclass is indented under subclass 454. Compounds wherein carbon is multiple bonded to a carbon in the chain.

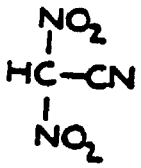
(1) Note. Example of compounds provided for herein are:

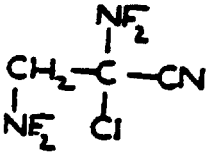


458 This subclass is indented under subclass 452. Compounds wherein the nitrogen is part of a nitro, nitroso nitrate, or N-oxide group, or is attached directly to halogen by nonionic bonding.

(1) Note. Examples of compounds provided for herein are:

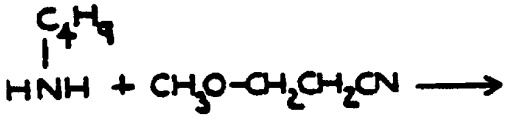


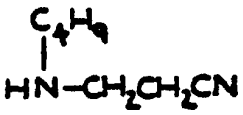


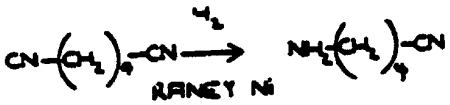


459 Processes under sublcass 452 wherein halo, hydroxy or alkoxy is displace by ammonia or substituted ammonia, or wherein a dinitrile is hydrogenated.

(1) Note. Examples of processes provided for herein are:

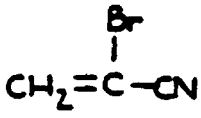






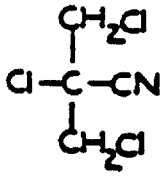
460 This subclass is indented under subclass 435. Compounds wherein the cyano group is attached indirectly to halogen by nonionic bonding.

(1) Note. An example of a compound provided for herein is:



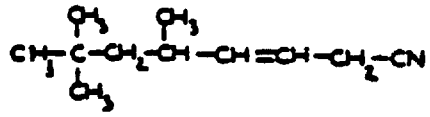
461 This subclass is indented under subclass 460. Compounds wherein the cyano group is attached indirectly to plural halogens by non-ionic bonding.

(1) Note. An example of a compound provided for herein is:



462 This subclass is indented under subclass 435. Compounds which contain carbon to carbon unsaturation.

(1) Note. Examples of compounds provided for herein are:



463 This subclass is indented under subclass 462. Processes wherein a nitrile containing carbon to carbon unsaturation is separated from impurities or from a reaction medium.

464 This subclass is indented under subclass 463. Processes which utiltze a material that contains silicon, aluminum, or a metal having specific gravity greater than four, or which utilize an ion exchange resin.

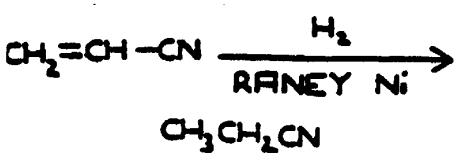
(1) Note. Arsenic is considered a metal.

465 This subclass is indented under subclass 463. Processes unde ... wherein the nitrile to be separated from impurities or from a reaction medium is prepared by hydrocyanation.

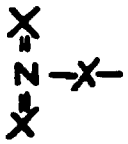
466 This subclass is indented under subclass 463. Processes wherein the nitrile to be separated from impurities of from a reaction medium is prepared by reaction of an organic compounds ammonia, and molecular oxygen or a molecular oxygen-containing gas.

467 This subclass is indented under subclass 435. Processes wherein saturated nitriles are prepared.

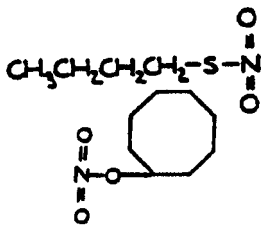
(1) Note. Examples of processes provided for herein are:



480 This subclass is indented under subclass 1. Compounds under Class 532, ... which contain the group, (see illustration below) wherein the X's are the same or diverse chalcogens (i.e., oxygen, sulfur, selenium, or tellurium), bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to an additional carbon.



(1) Note. Examples of compounds provided for herein are:

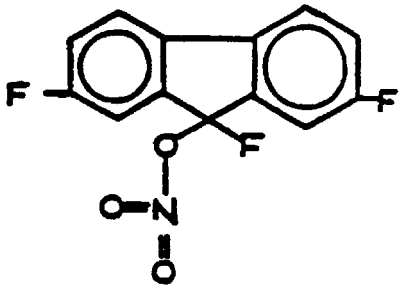


SEE OR SEARCH CLASS:
588, Hazardous or Toxic Waste Destruction or Containment, subclasses 406, 408 and 409 for the chemical destruction of organic hazardous or toxic waste containing, halogen, chalcogen, or nitrogen.

481 This subclass is indented under subclass 480. Compounds in admixture with a preserving or stabilizing agent whose sole function is to prevent physical or chemical change.

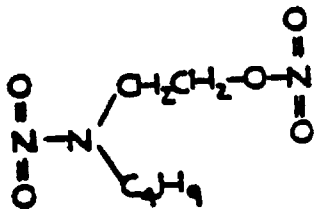
482 This subclass is indented under subclass 480. Compounds which contain a benzene ring.

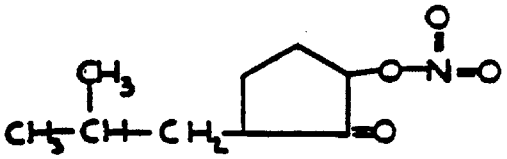
(1) Note. An example of a compounds provided for herein is:



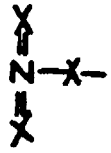
483 This subclass is indented under subclass 480. Compounds which contain additional nitrogen or additional chalcogen (i.e., oxygen, sulfur, selenium, or tellurium).

(1) Note. Examples of compounds provided for herein are:

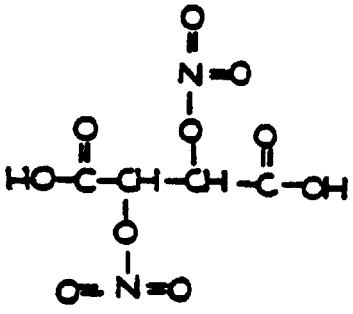




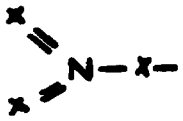
484 This subclass is indented under subclass 483. Compounds which contain more than one group:



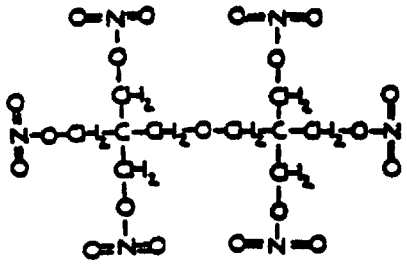
(1) Note. An example of a compound provided for herein is:



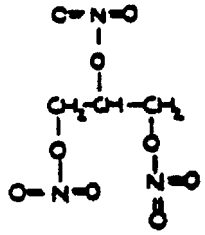
485 This subclass is indented under subclass 484. Compounds which contain at least four groups.



(1) Note. An example of a compound provided for herein is:



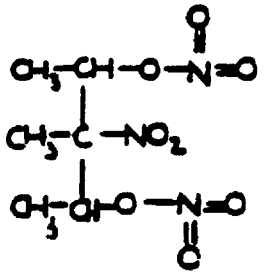
486 This subclass is indented under subclass 484. The compound, trinitroglycerine, which has the following structure:

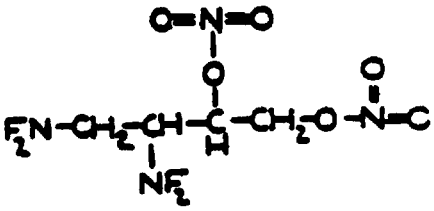


(1) Note. This compound is also referred to as glyceryl trinitrate.

487 This subclass is indented under subclass 484. Compounds in which carbon is bonded directly to nitrogen.

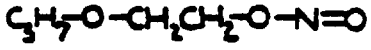
(1) Note. Examples of compounds provided for herein are:





488 This subclass is indented under subclass 1. Compounds under Class 532, ... which contain the X=N-X- group, wherein the X's are the same or diverse chalcogens (i.e., oxygen, sulfur, selenium, or tellurium), bonded directly to carbon, which carbon may be single bonded to any atom but may be multiple bonded only to an additional carbon.

(1) Note. Examples of compounds provided for herein are:



SEE OR SEARCH CLASS:

568, Organic Compounds, subclasses 924+ for compounds wherein the nitro group is bonded directly to carbon.

588, Hazardous or Toxic Waste Destruction or Containment, subclasses 408 and 409 for the chemical destruction of organic hazardous or toxic waste containing chalcogen or nitrogen.

END