CLASS 548, ORGANIC COMPOUNDS -- PART OF THE CLASS 532-570 SERIES

SUBCLASSES

100 This subclass is indented under subclass 1. Compounds under Class 540 which contain a five-membered hetero ring having two or more ring hetero atoms of which at least one is nitrogen.

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

101 This subclass is indented under subclass 100. Compounds which include aluminum or a metal having a specific gravity greater than 4.

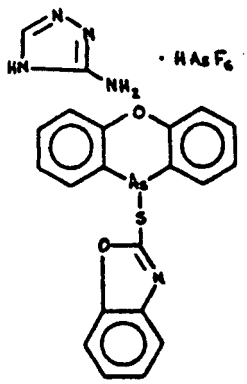
(1) Note. Arsenic is considered a metal.

SEE OR SEARCH THIS CLASS, SUBCLASS:

110, for compounds containing boron or silicon.

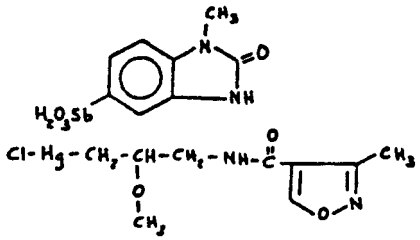
102 This subclass is indented under subclass 101. Compounds which contain arsenic.

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



103 This subclass is indented under subclass 101. Compounds wherein the metal is bonded directly (a) to a ring carbon of the five-membered hetero ring or (b) to a carbon atom which additionally is attached directly or indirectly to the five-membered hetero ring by nonionic bonding.

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



(2) Note. Excluded from this subclass are compounds such as those in Fig. 1 below, which require “doubling back” through the metal to satisfy the conditions necessary for inclusion here.

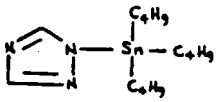
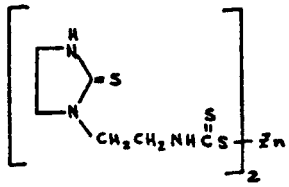


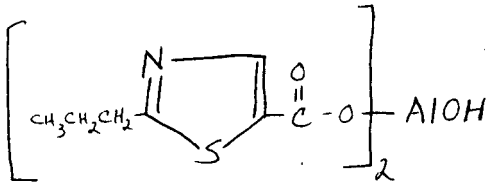
Figure 1

104 This subclass is indented under subclass 101. Compounds wherein the metal is bonded directly to the singly bonded chalcogen of a X group, wherein the X's are the same or diverse chalcogens (i.e., oxygen, sulfur, selenium, or tellurium), which group is attached directly or indirectly to the five-membered hetero ring by nonionic bonding.

(1) Note. These compounds are usually referred to as “salts”.

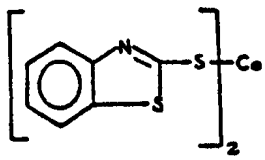
(2) Note. Examples of compounds provided for herein are:





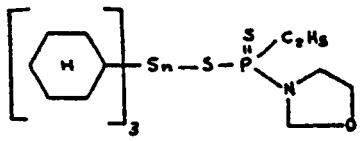
105 This subclass is indented under subclass 101. Compounds wherein the metal is bonded directly to a chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) which is attached directly to a ring carbon of the five-membered hetero ring.

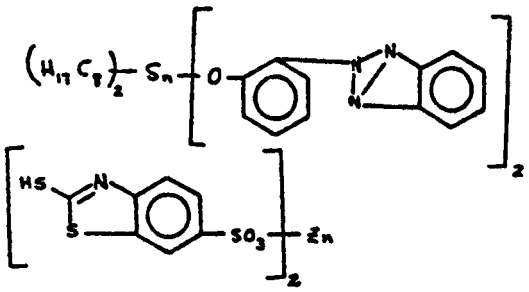
(1) Note. An example of a compound provided for herein is:



106 This subclass is indented under subclass 101. Compounds wherein the metal is bonded directly to chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) which is attached additionally indirectly to the five-membered hetero ring by nonionic bonding.

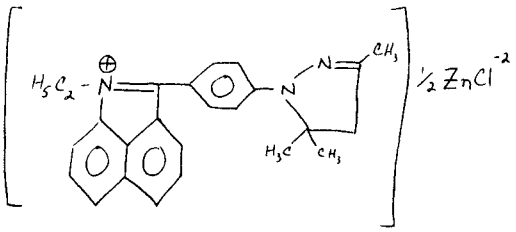
(1) Note. Examples of compounds provided for herein are:





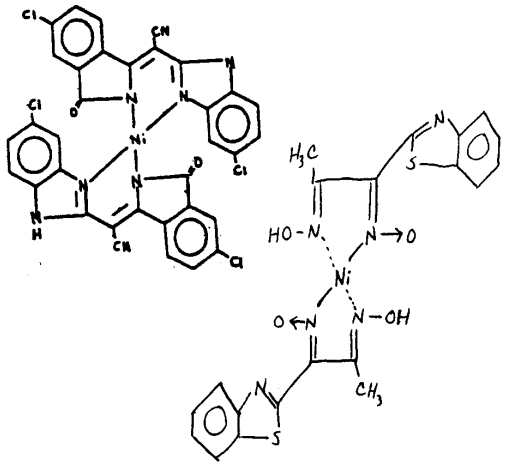
107 This subclass is indented under subclass 101. Compounds wherein the metal is in an anion, i.e., a group having a negative charge, and the five-membered hetero ring is in a cation, i.e., a group having a positive charge.

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



108 This subclass is indented under subclass 101. Compounds wherein the five-membered hetero ring is a cyclo in a polycyclo ring system.

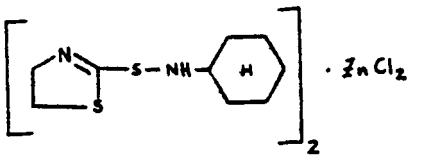
(1) Note. Examples of compounds provided for herein are:

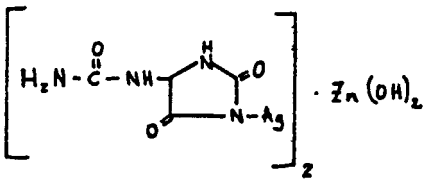


109 This subclass is indented under subclass 101. Compounds which contain an acyclic nitrogen atom or the azide group.

(1) Note. The azide group has been considered to be cyclic, as well as acyclic,

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

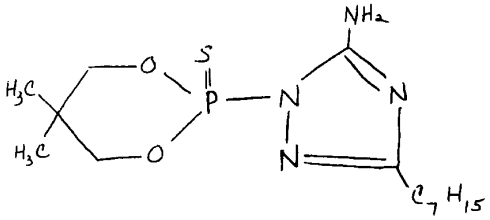




110 This subclass is indented under subclass 100. Compounds which contain boron or silicon.

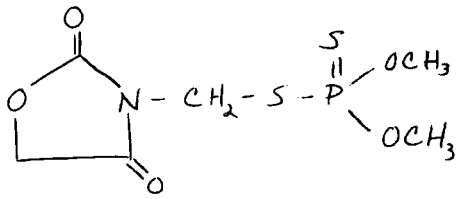
111 This subclass is indented under subclass 100. Compounds wherein phosphorus is attached directly to the five-membered hetero ring by nonionic bonding.

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



112 This subclass is indented under subclass 100. Compounds wherein phosphorus is attached indirectly to the five-membered hetero ring by nonionic bonding.

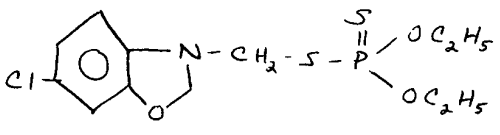
(1) Note. An example of a compound provided for herein is:



113 This subclass is indented under subclass 112. Compounds wherein the five-membered hetero ring is one of the cyclos of a polycyclo ring system.

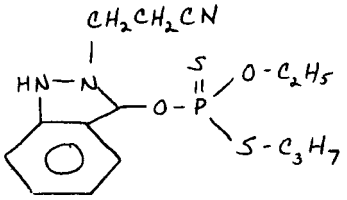
(1) Note. Compounds in which phosphorus is attached directly by nonionic bonding to any ring of the polycyclo ring system other than the five-membered hetero ring are provided for herein as the attachment of the phosphorus to the five-membered hetero ring is considered to be indirect.

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



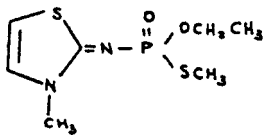
114 This subclass is indented under subclass 113. Compounds wherein the polycyclo ring system and phosphorus are both bonded directly to the same chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) atom.

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



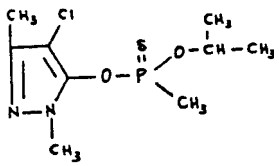
115 This subclass is indented under subclass 112. Compounds in which the five-membered hetero ring and phosphorus are both bonded directly to the same nitrogen atom.

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



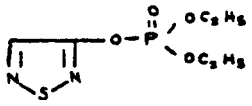
116 This subclass is indented under subclass 112. Compounds in which the five-membered hetero ring and phosphorus are both bonded directly to the same chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) atom.

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



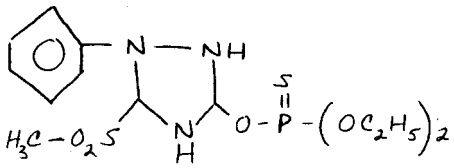
117 This subclass is indented under subclass 116. Compounds wherein the five-membered hetero ring contains chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) as a ring hetero atom.

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



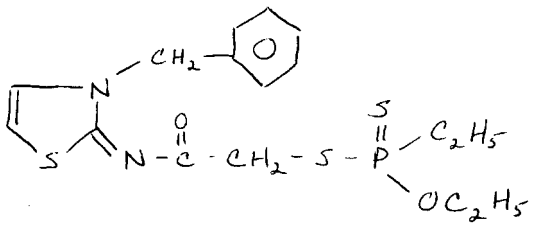
118 This subclass is indented under subclass 116. Compounds wherein the five-membered hetero ring contains three or more ring nitrogens.

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



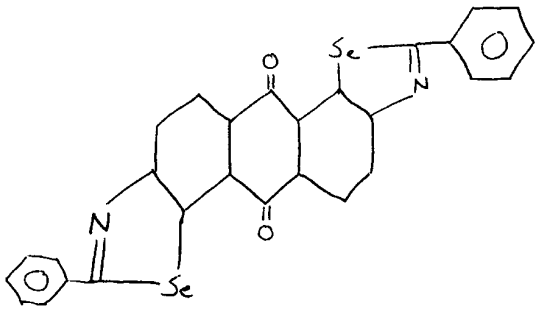
119 This subclass is indented under subclass 112. Compounds wherein the phosphorus is contained in a substituent which is attached directly to ring carbon of the five-membered hetero ring.

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



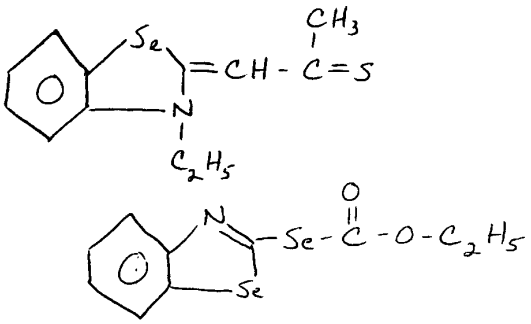
120 This subclass is indented under subclass 100. Compounds wherein the five-membered hetero ring contains ring selenium as an additional hetero atom and is one of the cylcos in a polycyclo ring system.

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



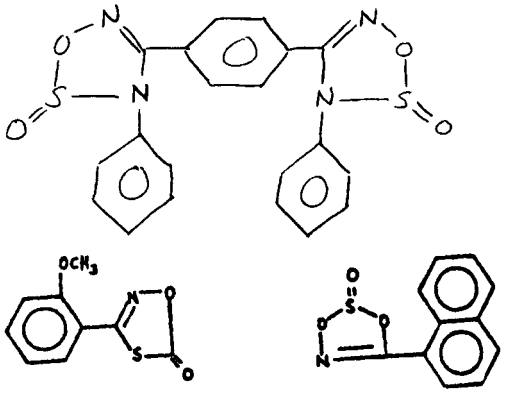
121 This subclass is indented under subclass 120. Compounds in which the polycyclo ring system consists of exactly two rings, one of which is the five-membered hetero ring containing nitrogen and selenium as hetero atoms.

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



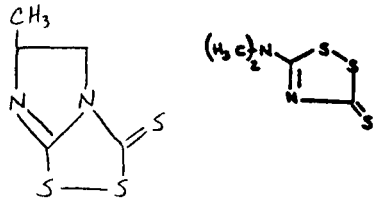
122 This subclass is indented under subclass 100. Compounds wherein the five-membered hetero ring includes at least one atom each of sulfur, oxygen, nitrogen, and carbon and contains no other elements as ring members.

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



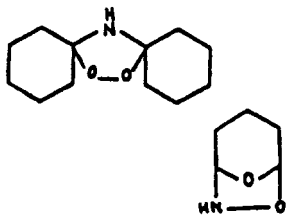
123 This subclass is indented under subclass 100. Compounds wherein the five-membered hetero ring contains at least two ring sulfurs in addition to the ring nitrogen and ring carbon.

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



124 This subclass is indented under subclass 100. Compounds wherein the five-membered hetero ring contains at least two ring oxygens in addition to the ring nitrogen and ring carbon.

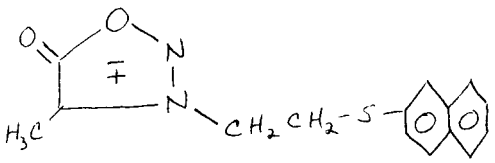
(1) Note. Examples of compounds provided for herein are:



125 This subclass is indented under subclass 100. Compounds wherein the five-membered hetero ring includes at least one atom each of chalcogen (i.e., oxygen, sulfur, selenium, or tellu-

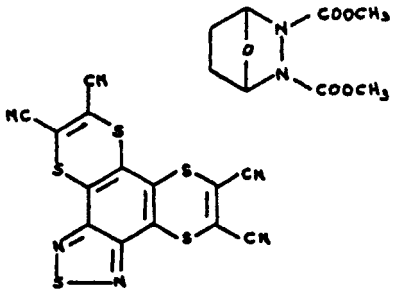
rium) and carbon and at least two ring nitrogens, and contains no other elements as ring members.

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



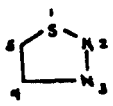
126 This subclass is indented under subclass 125. Compounds wherein the five-membered hetero ring is one of the cyclos of a polycyclo ring system.

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

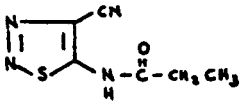


127 This subclass is indented under subclass 125. Compounds in which the five-membered hetero ring has sulfur in the 1-position, nitrogens in the 2- and 3-positions, and carbons in the remaining two positions.

(1) Note. This subclass provides for compounds containing the following ring which may have double bonds between its members:

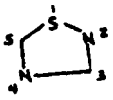


(2) Note. An example of a compound provided for herein is:



128 This subclass is indented under subclass 125. Compounds in which the five-membered hetero ring has sulfur in the 1-position, nitrogens in the 2- and 4-positions, and carbons in the remaining two positions.

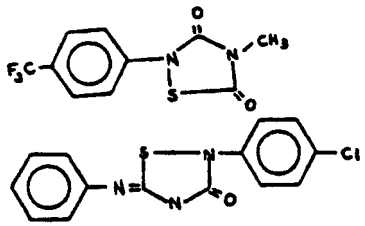
(1) Note. This subclass provides for compounds containing the following ring which may have double bonds between its members.



129 This subclass is indented under subclass 128. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly to the ring carbon of the thiadiazole ring.

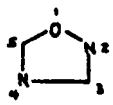
130 This subclass is indented under subclass 129. Compounds which contain nitrogen or additional chalcogen bonded directly to ring carbon of the thiadiazole ring.

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



131 This subclass is indented under subclass 125. Compounds in which the five-membered hetero ring has oxygen in the 1-position, nitrogens in the 2- and 4-positions, and carbons in the remaining two positions.

(1) Note. This subclass provides for compounds containing the following ring which may have double bonds between its members.



132 This subclass is indented under subclass 131. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly to ring carbon of the oxadiazole ring.

133 This subclass is indented under subclass 131. Compounds wherein nitrogen is attached directly to the oxadiazole ring by nonionic bonding.

134 This subclass is indented under subclass 125. Compounds in which the five-membered hetero ring has sulfur in the 1-position, nitrogens in the 2- and 5-positions, and carbons in the remaining two positions.

(1) Note. This subclass provides for compounds containing the following ring which may have double bonds between its members:

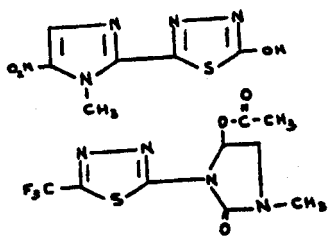
135 This subclass is indented under subclass 134. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) or nitrogen is attached directly to ring carbon of the thiadiazole ring by nonionic bonding.

136 This subclass is indented under subclass 125. Compounds in which the five-membered hetero ring has sulfur in the 1-position, nitrogens in the 3- and 4-positions, and carbons in the remaining two positions.

(1) Note. This subclass provides for compounds containing the following ring which may have double bonds between its members:

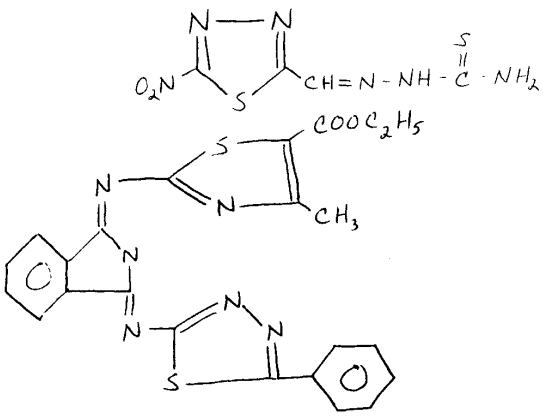
137 This subclass is indented under subclass 136. Compounds wherein a five-membered hetero ring consisting of two nitrogens and three carbons is attached directly to the thiadiazole ring by nonionic bonding.

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



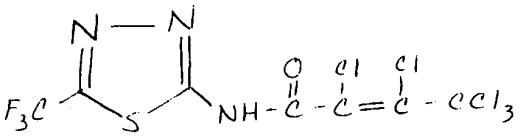
138 This subclass is indented under subclass 136. Compounds wherein nitrogen is attached directly to the thiadiazole ring by nonionic bonding.

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



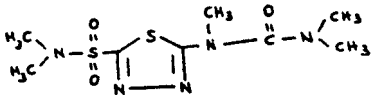
139 This subclass is indented under subclass 138. Compounds in which a group, wherein X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium), is attached directly to the nitrogen by nonionic bonding.

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



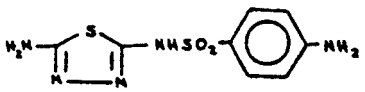
140 This subclass is indented under subclass 139. Compounds in which an additional nitrogen is attached directly to the group by nonionic bonding.

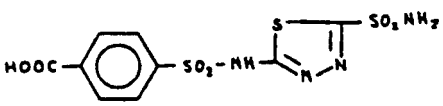
(1) Note. An example of a compound provided for herein is:



141 This subclass is indented under subclass 138. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) or additional nitrogen is attached directly to ring carbon of the thiadiazole ring by nonionic bonding.

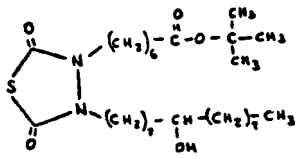
(1) Note. Examples of compounds provided for herein are:

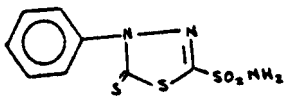




142 This subclass is indented under subclass 136. Compounds wherein chalcogen (i.e., oxygen, sulfur selenium, or tellurium) is bonded directly to each of the ring carbons of the thiadiazole ring, i.e., the 2- and 5-positions.

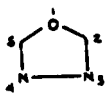
(1) Note. Examples of compounds provided for herein are:





143 This subclass is indented under subclass 125. Compounds in which the five-membered hetero ring has oxygen in the 1-position, nitrogens in the 3- and 4-positions, and carbons in the remaining two positions.

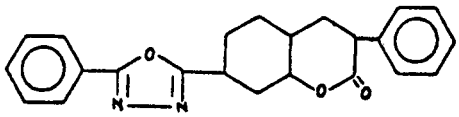
(1) Note. This subclass provides for compounds containing the following ring which may have double bonds between its members:



144 This subclass is indented under subclass 143. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly to ring carbon of the oxadiazole ring.

145 This subclass is indented under subclass 143. Compounds wherein at least two carbocyclic rings are bonded directly to the oxadiazole ring.

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



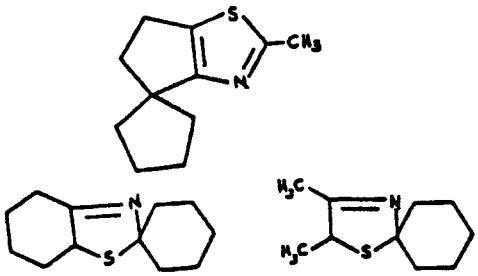
146 This subclass is indented under subclass 100. Compounds in which the five-membered hetero ring has sulfur in the 1-position, nitrogen in the 3-position, and carbons in the remaining three positions.

(1) Note. This subclass provides for compounds containing the following ring which may have a double bond between its members:

147 This subclass is indented under subclass 146. Compounds which contain a spiro ring system.

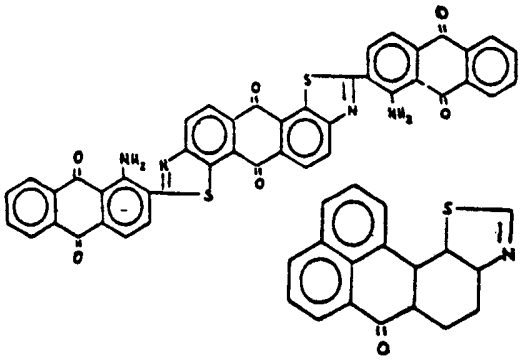
(1) Note. This subclass provides for compounds containing a 1,3-thiazole ring and a spiro ring system whether or not the thiazole ring is one of the cyclos in the spiro system.

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



148 This subclass is indented under subclass 146. Compounds wherein the thiazole ring is a cyclo in a polycyclo ring system.

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

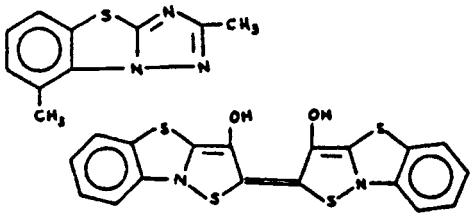


149 This subclass is indented under subclass 148. Compounds in which the polycyclo ring system consists of exactly four rings.

150 This subclass is indented under subclass 148. Compounds in which the polycylco ring system consists of exactly three rings.

151 This subclass is indented under subclass 150. Compounds wherein the tricyclo ring system contains at least one ring hetero atom in addition to the ring sulfur and ring nitrogen of the thiazole ring.

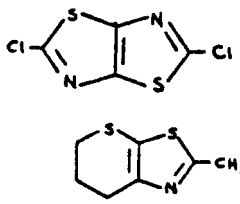
(1) Note. Examples of compounds provided for herein are:



152 This subclass is indented under subclass 148. Compounds in which the polycyclo ring system consists of exactly two rings.

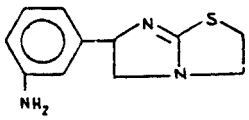
153 This subclass is indented under subclass 152. Compounds wherein the bicyclo ring system contains at least one ring hetero atom in addition to the ring sulfur and ring nitrogen of the thiazole ring.

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

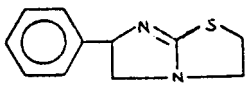


154 This subclass is indented under subclass 153. Compounds wherein the ring nitrogen is a member of both of the cyclos in the bicyclo ring system.

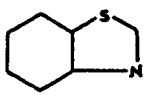
(1) Note. An example of a compound provided for herein is:



155 This subclass is indented under subclass 154. Compounds which have the following structure, or salts thereof, in which the bonds between the ring members may be single or double bonds:

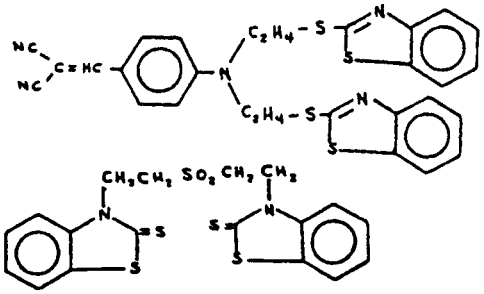


156 This subclass is indented under subclass 152. Compounds containing at least two of the bicyclo ring systems having the following structure, which may contain double bonds between ring members:



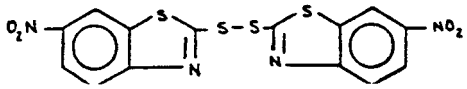
157 This subclass is indented under subclass 156. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly to ring carbon of the thiazole ring.

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



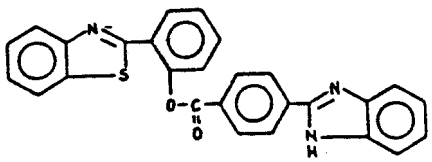
158 This subclass is indented under subclass 157. Compounds which contain a polysulfide linkage between at least two benzothiazole ring systems.

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



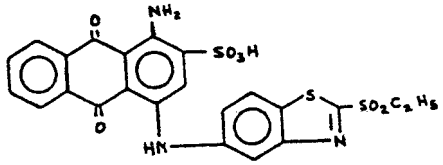
159 This subclass is indented under subclass 152. Compounds containing an additional hetero ring which is one of the cyclos in a polycyclo ring system.

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



160 This subclass is indented under subclass 152. Compounds which contain a polycyclo-carbocyclic ring system having at least three cyclos.

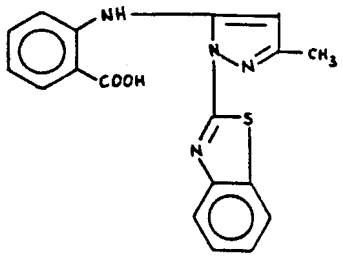
(1) Note. An example of a compound provided for herein is:



161 This subclass is indented under subclass 152. Compounds wherein the nitrogen is attached directly to the thiazole ring by nonionic bonding.

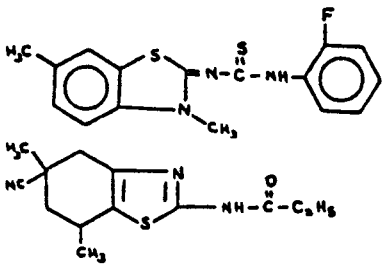
162 This subclass is indented under subclass 161. Compounds wherein the nitrogen is a ring member of a hetero ring.

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



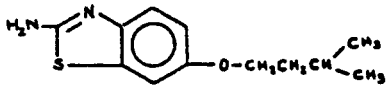
163 This subclass is indented under subclass 161. Compounds wherein the nitrogen is bonded additionally directly to a group, in which X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium).

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



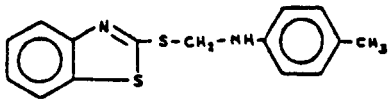
164 This subclass is indented under subclass 161. Compounds wherein the nitrogen is bonded additionally only to hydrogen.

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



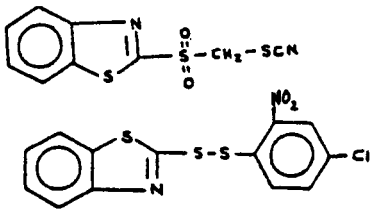
165 This subclass is indented under subclass 152. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly to a ring carbon of the thiazole ring.

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



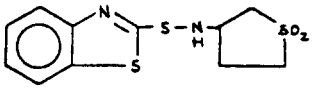
166 This subclass is indented under subclass 165. Compounds wherein an additional chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly to the chalcogen.

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



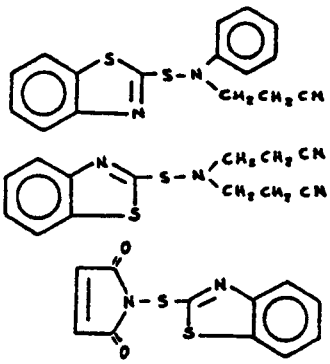
167 This subclass is indented under subclass 165. Compounds wherein nitrogen is attached directly to the chalcogen by nonionic bonding.

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



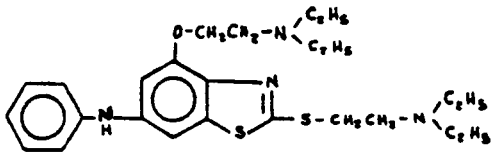
168 This subclass is indented under subclass 167. Compounds wherein the nitrogen is bonded additionally directly to two carbons.

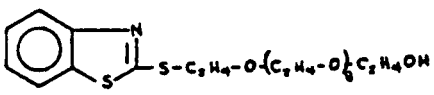
(1) Note. Examples of compounds provided for herein are:

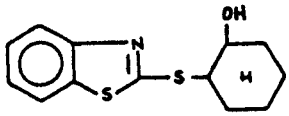


169 This subclass is indented under subclass 165. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is attached indirectly to the thiazole ring by nonionic bonding.

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

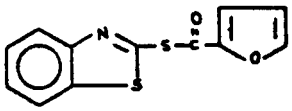






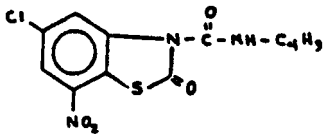
170 This subclass is indented under subclass 169. Compounds wherein the chalcogen, X (i.e., oxygen, sulfur, selenium, or tellurium), is in a group.

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



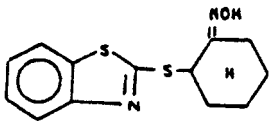
171 This subclass is indented under subclass 170. Compounds in which nitrogen is bonded directly to the group.

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



172 This subclass is indented under subclass 169. Compounds in which nitrogen is attached directly to chalcogen by nonionic bonding.

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

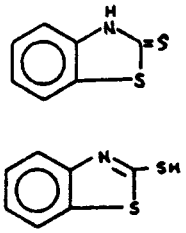


173 This subclass is indented under subclass 165. Compounds wherein halogen is attached directly or indirectly to the bicyclo ring system by nonionic bonding.

174 This subclass is indented under subclass 165. Compounds in which sulfur attached directly to a ring carbon of the thiazole ring is either (a) attached by a double bond or (b) in a -SH or -SM group, wherein M is a Group IA or Group

IIA light metal, i.e., a metal having a specific gravity less than 4.

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



175 This subclass is indented under subclass 174. Processes in which the bicyclo ring system is formed.

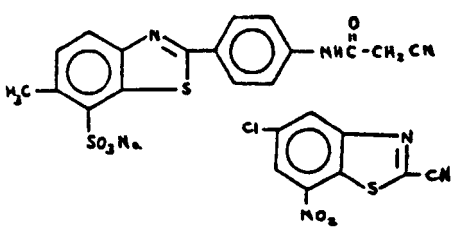
(1) Note. Included herein are processes of forming the bicyclo ring system by any means e.g., ring enclosure, ring expansion, etc.

176 This subclass is indented under subclass 175. Processes which utilize aniline or an alkylated derivative thereof as a starting material.

177 This subclass is indented under subclass 174. Processes wherein the sulfur derivative of the bicyclo ring system is separated from impurities or from the reaction mixture.

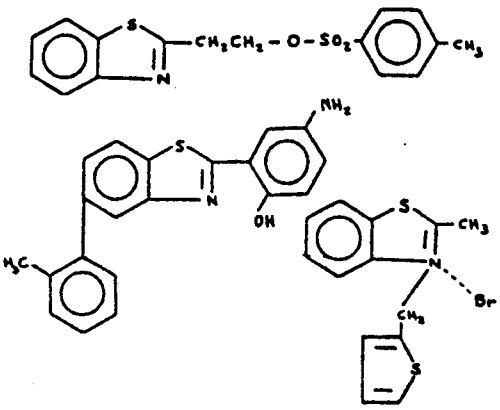
178 This subclass is indented under subclass 152. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) or nitrogen is attached directly to the other cyclo of the bicyclo ring system by nonionic bonding, i.e., the cyclo other than the thiazole ring.

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



179 This subclass is indented under subclass 152. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is attached indirectly to the bicyclo ring system by nonionic bonding.

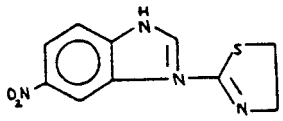
(1) Note. Examples of compounds provided for herein are:



180 This subclass is indented under subclass 179. Compounds wherein the chalcogen, X (i.e., oxygen, sulfur, selenium, or tellurium), is in a group.

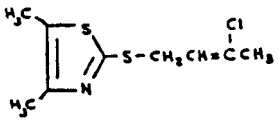
181 This subclass is indented under subclass 146. Compounds containing a polycyclo heterocyclic ring system which has nitrogen as a ring hetero atom.

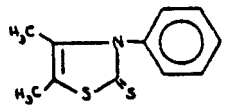
(1) Note. An example of a compound provided for herein is:



182 This subclass is indented under subclass 146. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly to ring carbon of the thiazole ring.

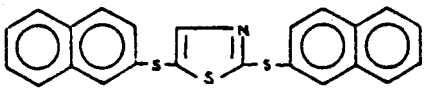
(1) Note. Examples of compounds provided herein are:





183 This subclass is indented under subclass 182. Compounds wherein at least two chalcogens (i.e., oxygen, sulfur, selenium, or tellurium) are bonded directly to ring carbons of the thiazole ring.

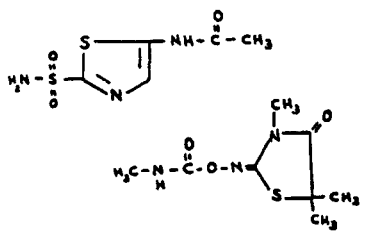
(1) Note. An example of a compound provided for herein is:



184 This subclass is indented under subclass 182. Compounds wherein nitrogen is attached directly to the thiazole ring by nonionic bonding.

185 This subclass is indented under subclass 184. Compounds in which nitrogen is bonded directly to a group, wherein X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium).

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

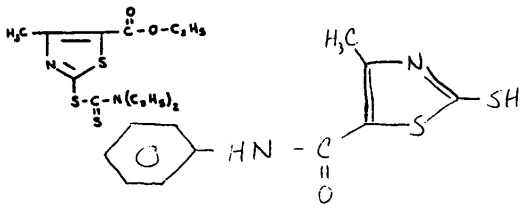


186 This subclass is indented under subclass 182. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is attached indirectly to the thiazole ring by nonionic bonding.

187 This subclass is indented under subclass 186. Compounds wherein the chalcogen, X (i.e., oxygen, sulfur, selenium, or tellurium), is in a group.

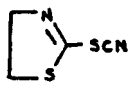
188 This subclass is indented under subclass 187. Compounds in which the group is bonded directly to the thiazole ring.

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



189 This subclass is indented under subclass 182. Compounds wherein nitrogen is attached indirectly to the thiazole ring by nonionic bonding.

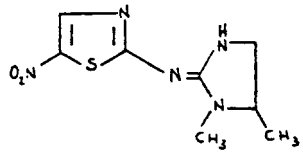
(1) Note. An example of a compound provided for herein is:

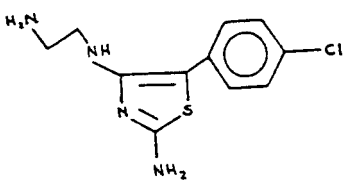


190 This subclass is indented under subclass 146. Compounds in which nitrogen is attached directly to the thiazole ring by nonionic bonding.

191 This subclass is indented under subclass 190. Compounds wherein at least two nitrogens are attached directly to the thiazole ring by nonionic bonding.

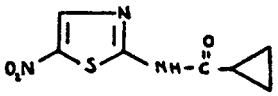
(1) Note. Examples of compounds provided for herein are:

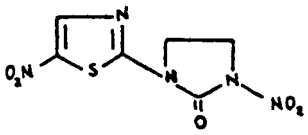




192 This subclass is indented under subclass 191. Compounds in which X nitrogen is bonded directly to a -C- group, wherein X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium).

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

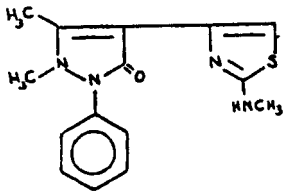


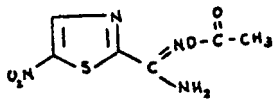


193 This subclass is indented under subclass 190. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is attached indirectly to the thiazole ring by nonionic bonding.

194 This subclass is indented under subclass 193. Compounds in which the chalcogen, X (i.e., oxygen, sulfur, selenium, or tellurium), is in a group.

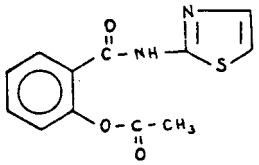
(1) Note. Examples of compounds provided for herein are:





195 This subclass is indented under subclass 194. Compounds in which the nitrogen is bonded directly to the group.

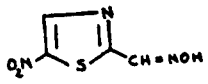
(1) Note. An example of a compound provided for herein is:



196 This subclass is indented under subclass 195. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) or an additional nitrogen is bonded directly to the group.

197 This subclass is indented under subclass 193. Compounds wherein nitrogen is bonded directly to chalcogen (i.e., oxygen, sulfur, selenium, or tellurium).

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

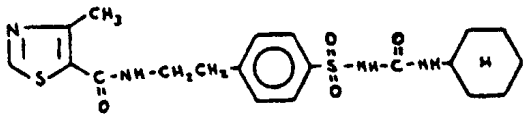


198 This subclass is indented under subclass 190. Compounds wherein nitrogen is attached indirectly to the thiazole ring by nonionic bonding.

199 This subclass is indented under subclass 190. Compounds wherein the nitrogen is bonded additionally to hydrogen.

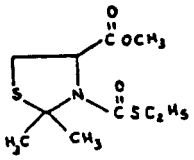
200 This subclass is indented under subclass 146. Compounds wherein a group, in which X is chalcogen, (i.e., oxygen, sulfur, selenium, or tellurium), is bonded directly to the thiazole ring.

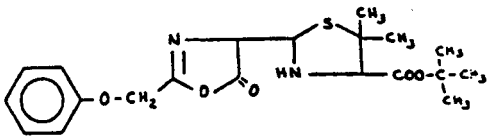
(1) Note. An example of a compound provided for herein is:



201 This subclass is indented under subclass 200. Compounds in which the is part of a X group, wherein the X's are the same or diverse chalcogens (i.e., oxygen, sulfur, selenium, or tellurium).

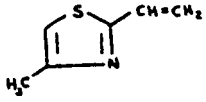
(1) Note. Examples of compounds provided for herein are:





202 This subclass is indented under subclass 146. Compounds in which there are two double bonds between the ring members of the thiazole ring.

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

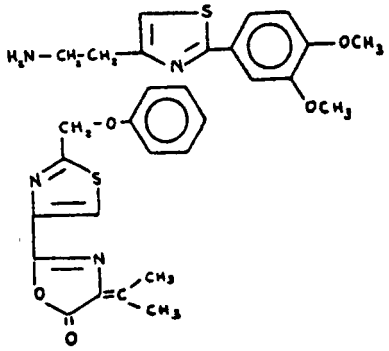


203 This subclass is indented under subclass 202. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is attached indirectly to the thiazole ring by nonionic bonding.

204 This subclass is indented under subclass 203. Compounds wherein the chalcogen, X (i.e., oxygen, sulfur, selenium, or tellurium), is in a group.

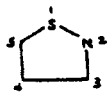
205 This subclass is indented under subclass 203. Compounds in which nitrogen is attached indirectly to the thiazole ring by nonionic bonding.

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



206 This subclass is indented under subclass 100. Compounds in which the five-membered hetero ring has sulfur in the 1-position, nitrogen in the 2-position, and carbons in the remaining three positions.

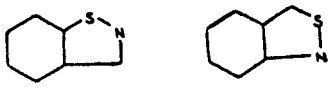
(1) Note. This subclass provides for compounds containing the following ring which may have double bonds between its members:



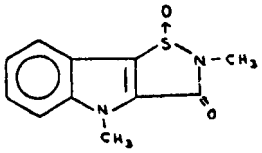
207 This subclass is indented under subclass 206. Compounds wherein the thiazole ring is a cyclo in a polycyclo ring system.

(1) Note. A thiazole ring in a polycyclo ring system is numbered as if it were a single

ring and not part of a ring system; accordingly, the thiazole ring in each of the following poly-cyclo ring systems is considered to be 1, 2-thiazole:

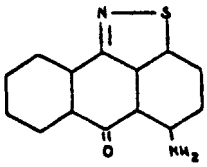


(2) Note. An example of a compound provided for herein is:



208 This subclass is indented under subclass 207. Compounds wherein one ring carbon is a member of three of the cyclos in the polycyclo ring system (i.e., peri-fusion).

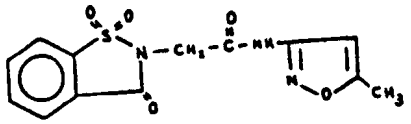
(1) Note. An example of a compound provided for herein is:



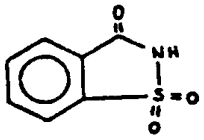
209 This subclass is indented under subclass 207. Compounds wherein acyclic chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly to a ring carbon of the thiazole ring.

210 This subclass is indented under subclass 209. Compounds in which at least three chalcogens (i.e, oxygen, sulfur, selenium, or tellurium) are bonded directly to the thiazole ring.

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



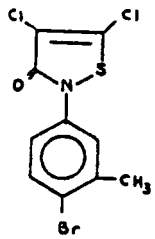
211 This subclass is indented under subclass 210. Compounds which have the following structure, or salts thereof:

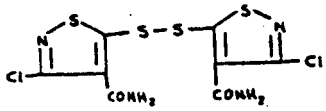


212 This subclass is indented under subclass 207. Compounds wherein nitrogen is attached directly to the thiazole ring of the polycyclo ring system by nonionic bonding.

213 This subclass is indented under subclass 206. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly to ring carbon of the thiazole ring.

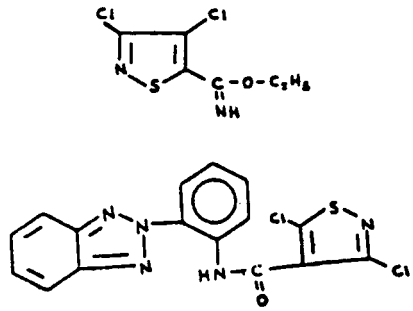
(1) Note. Examples of compounds provided for herein are:





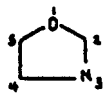
214 This subclass is indented under subclass 206. Compounds wherein nitrogen or chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is attached indirectly to the thiazole ring by nonionic bonding.

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



215 This subclass is indented under subclass 100. Compounds in which the five-membered hetero ring has oxygen in the 1-position, nitrogen in the 3-position, and carbons in the remaining three positions.

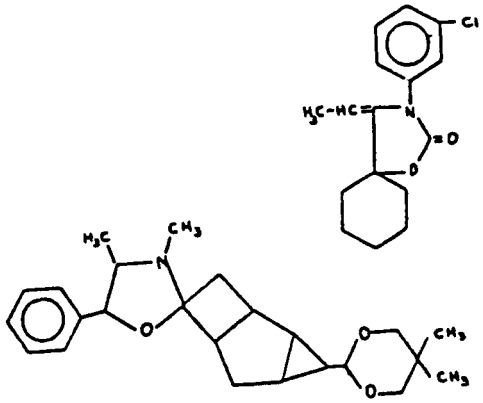
(1) Note. This subclass provides for compounds containing the following ring:



216 This subclass is indented under subclass 215. Compounds which contain a spiro ring system.

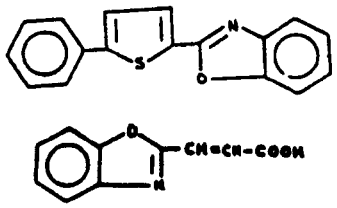
(1) Note. This subclass provides for compounds containing a 1, 3-oxazole ring and a spiro ring system whether or not the oxazole ring is one of the cyclos in the spiro system.

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



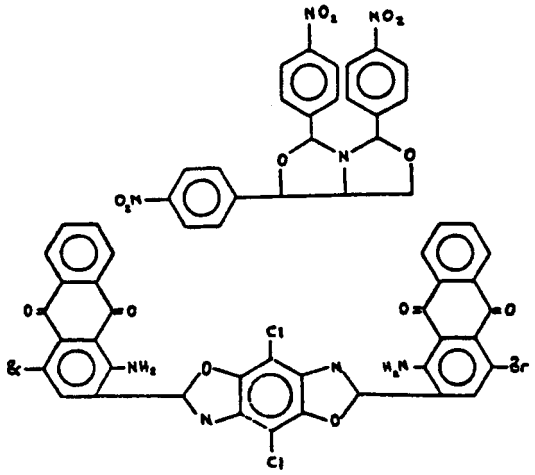
217 This subclass is indented under subclass 215. Compounds wherein the oxazole ring is cyclo in a polycyclo ring system.

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



218 This subclass is indented under subclass 217. Compounds wherein the polycyclo ring system contains at least one ring hetero atom in addition to the ring oxygen and ring nitrogen of the oxazole ring.

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

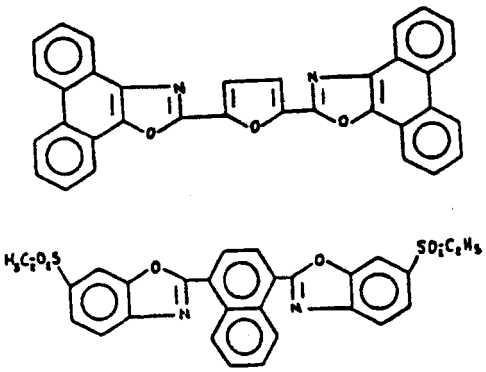


219 This subclass is indented under subclass 217. Compounds which contain at least two of the oxazole-containing polycyclo ring systems.

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

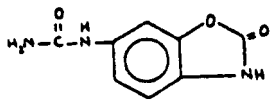
220 This subclass is indented under subclass 219. Compounds wherein the plural oxazole-containing polycyclo ring systems are each bonded directly either (a) to the same polycyclo ring system or (b) to the same hetero ring.

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



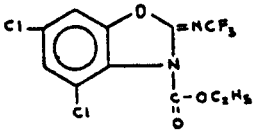
221 This subclass is indented under subclass 217. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly to the carbon in the 2-position of the oxazole ring, i.e., the ring carbon between the ring oxygen and the ring nitrogen.

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



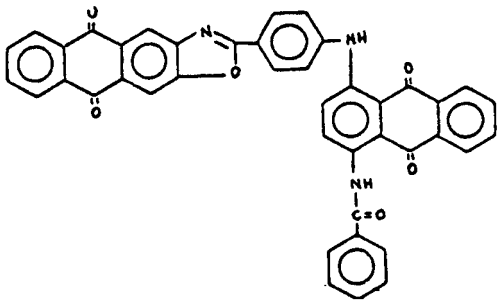
222 This subclass is indented under subclass 217. Compounds wherein nitrogen is bonded directly to the carbon in the 2-position of the oxazole ring, i.e., the ring carbon between the ring oxygen and the ring nitrogen.

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



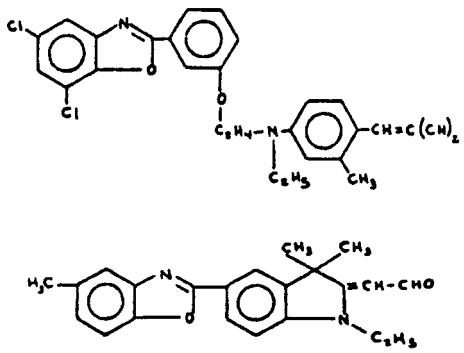
223 This subclass is indented under subclass 217. Compounds wherein the polycyclo ring system contains at least four rings.

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



224 This subclass is indented under subclass 217. Compounds wherein a carbocyclic ring is bonded directly to the carbon atom in the 2-position of the oxazole ring, i.e., the ring carbon between the ring oxygen and the ring nitrogen.

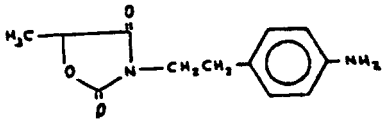
(1) Note. Examples of compounds provided for herein are:



225 This subclass is indented under subclass 215. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly to ring carbon of the oxazole ring.

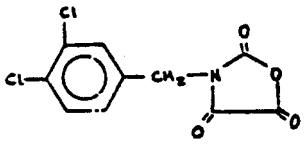
226 This subclass is indented under subclass 225. Compounds wherein at least two chalcogens (i.e, oxygen, sulfur, selenium, or tellurium) are bonded directly to ring carbons of the oxazole ring.

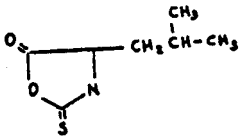
(1) Note. An example of a compound provided for herein is:



227 This subclass is indented under subclass 226. Compounds wherein chalcogens (i.e., oxygen, sulfur, selenium, or tellurium) are bonded directly to the carbons in the 2- and 5-positions of the oxazole ring.

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



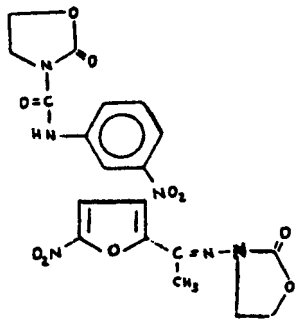


228 This subclass is indented under subclass 225. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly to the carbon atom in the 5-position of the oxazole ring.

229 This subclass is indented under subclass 225. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly to the carbon atom in the 2-position of the oxazole ring, i.e., the ring carbon between the ring oxygen and the ring nitrogen.

230 This subclass is indented under subclass 229. Compounds wherein nitrogen, halogen, or, in which X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium), is attached directly to the oxazole ring by nonionic bonding.

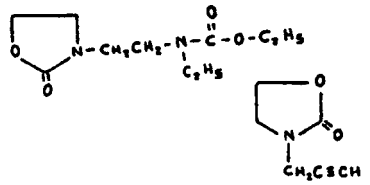
(1) Note. Examples of compounds provided for herein are:



231 This subclass is indented under subclass 229. Compounds wherein the substituent on the ring nitrogen contains nitrogen or ethylenic or acet-

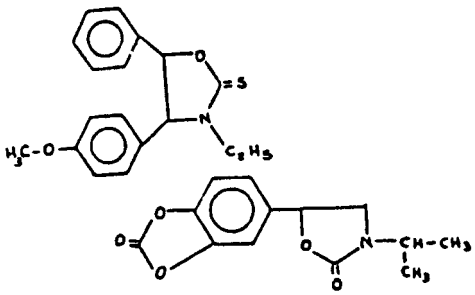
ylenic unsaturation, i.e., double or triple bond between two adjacent carbons.

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



232 This subclass is indented under subclass 229. Compounds wherein the substituent on the 4- or 5-position of the oxazole ring contains chalcogen (i.e., oxygen, sulfur, selenium, or tellurium).

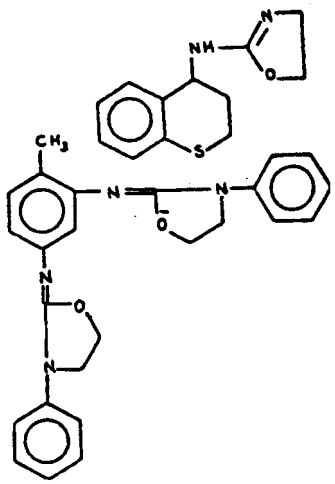
(1) Note. Examples of compounds provided for herein are:



233 This subclass is indented under subclass 215. Compounds wherein nitro- is bonded directly to ring carbon of the oxazole ring.

234 This subclass is indented under subclass 233. Compounds in which an additional ring is attached directly to the nitrogen by nonionic bonding.

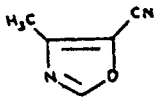
(1) Note. Examples of compounds provided for herein are:

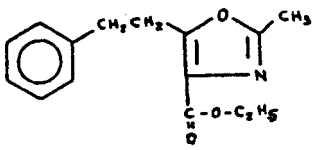


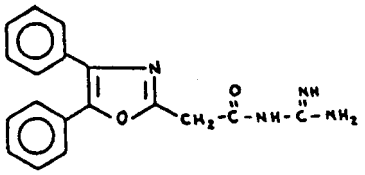
235 This subclass is indented under subclass 215. Compounds in which there are two double bonds between the ring members of the oxazole ring.

236 This subclass is indented under subclass 235. Compounds wherein -CN or, in which X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium), is attached directly or indirectly to the oxazole ring by nonionic bonding.

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

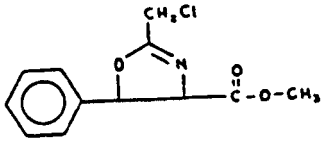






237 This subclass is indented under subclass 215. Compounds in which there is only one double bond between ring members of the oxazole ring.

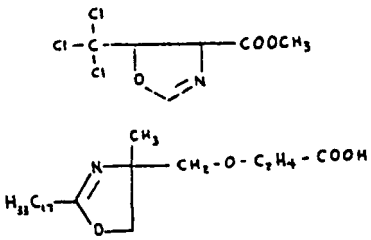
(1) Note. An example of a compound provided for herein is:



238 This subclass is indented under subclass 237. Compounds wherein the substituent attached to the ring carbon in the 2-position, i.e., the ring carbon between the ring oxygen and the ring nitrogen, contains nitrogen, except as a member of the nitro ($-NO_2$) or nitroso (-NO) group.

239 This subclass is indented under subclass 237. Compounds wherein attached to the ring carbon in the 2-position of the oxazole ring, i.e., the ring carbon between the ring oxygen and the ring nitrogen, is either hydrogen or a hydrocarbon radical only.

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

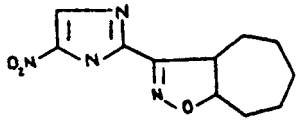


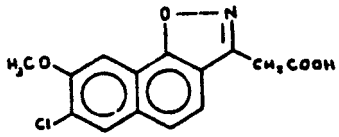
240 This subclass is indented under subclass 100. Compounds in which the five-membered hetero ring has oxygen in the 1 position, nitrogen in the 2-position, and carbons in the remaining three positions.

(1) Note. This subclass provided for compounds containing the following ring which may have a double bond between its members:

241 This subclass is indented under subclass 240. Compounds wherein the oxazole ring is a cyclo in a polycyclo ring system.

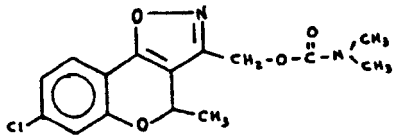
(1) Note. Examples of compounds provided herein are:

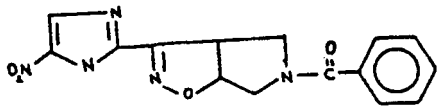




242 This subclass is indented under subclass 241. Compounds wherein the polycyclo ring system contains at least one ring hetero atom in addition to the ring oxygen and ring nitrogen of the oxazole ring.

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

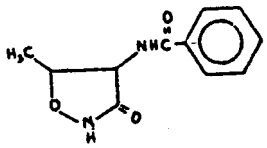




243 This subclass is indented under subclass 240. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly to ring carbon of the oxazole ring.

244 This subclass is indented under subclass 243. Compounds in which nitrogen is bonded directly to ring carbon of the oxazole ring.

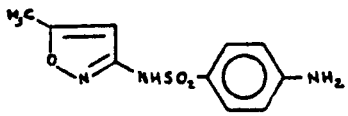
(1) Note. An example of a compound provided for herein is:



245 This subclass is indented under subclass 240. Compounds in which nitrogen is bonded directly to ring carbon of the oxazole ring.

246 This subclass is indented under subclass 245. Compounds wherein nitrogen is bonded directly to the carbon atom in the 3-position of the oxazole ring.

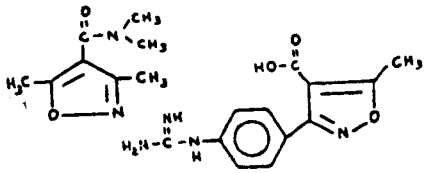
(1) Note. An example of a compound provided for herein is:



247 This subclass is indented under subclass 240. Compounds in which there are two double bonds between the ring members of the oxazole ring.

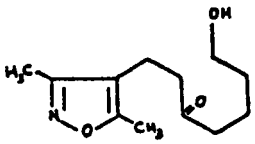
248 This subclass is indented under subclass 247. Compounds wherein a group, in which X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium), is bonded directly to a ring carbon of the oxazole ring and additionally directly to a chalcogen or nitrogen atom.

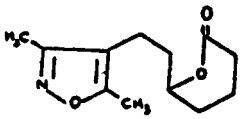
(1) Note.Examples of compounds provided for herein are:



249 This subclass is indented under subclass 247. Compounds wherein the substituent attached to the 4-position of the oxazole ring contains at least two chalcogens (i.e., oxygen, sulfur, selenium, or tellurium), each of which is attached indirectly to the oxazole ring by nonionic bonding and not one of which is bonded directly to a phenyl ring.

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



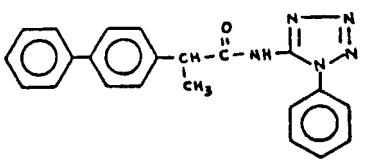


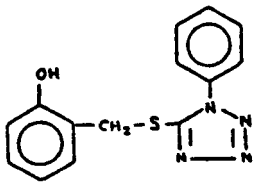
250 This subclass is indented under subclass 100. Compounds in which the five-membered hetero ring consists of four ring nitrogens and one ring carbon.

(1) Note. This subclass provides for compounds containing the following ring which may have double bonds between its members:

251 This subclass is indented under subclass 250. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) or nitrogen is attached directly to the tetrazole ring by nonionic bonding.

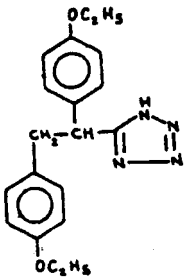
(1) Note. Examples of compounds provided for herein are:

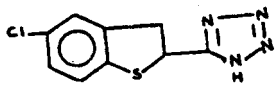




252 This subclass is indented under subclass 250. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is attached indirectly to the tetrazole ring by nonionic bonding.

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

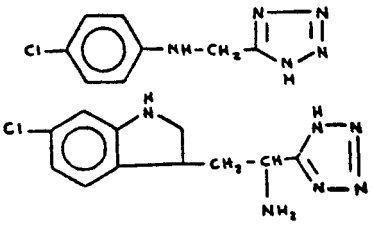




253 This subclass is indented under subclass 252. Compounds wherein the chalcogen, X (i.e., oxygen, sulfur, selenium, or tellurium) is in a group.

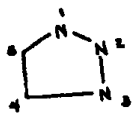
254 This subclass is indented under subclass 250. Compounds wherein nitrogen is attached indirectly to the tetrazole ring by nonionic bonding.

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



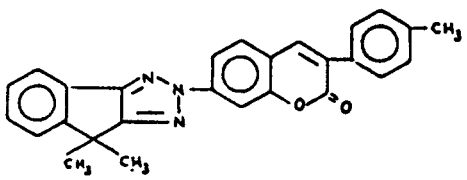
255 This subclass is indented under subclass 100. Compounds in which the five-membered hetero ring has nitrogens in the 1-, 2-, and 3-positions and carbons in the remaining two positions.

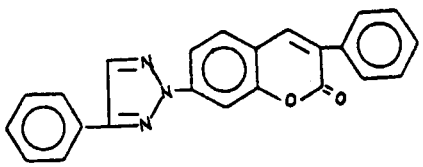
(1) Note. This subclass provided for compounds containing the following ring which may have double bonds between its members.



256 This subclass is indented under subclass 255. Compounds containing a polycyclo heterocyclic ring system which has oxygen as a ring hetero atom.

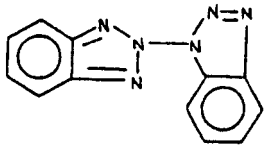
(1) Note. Examples of compounds provided for herein are:

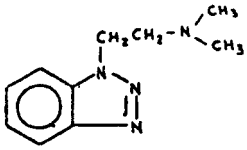




257 This subclass is indented under subclass 255. Compounds wherein the triazole ring is a cyclo in a polycyclo ring system.

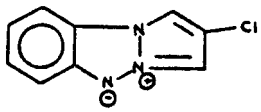
(1) Note. Examples of compounds provided for herein are:





258 This subclass is indented under subclass 257. Compounds wherein a ring nitrogen is a member of two of the cyclos of the polycyclo ring system.

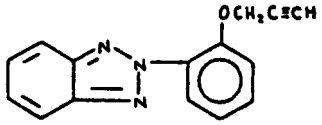
(1) Note. An example of a compound provided for herein is:

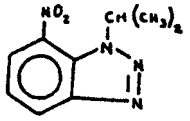


259 This subclass is indented under subclass 257. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is attached directly to the polycyclo ring system by nonionic bonding.

260 This subclass is indented under subclass 257. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is attached indirectly to the polycyclo ring system by nonionic bonding.

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

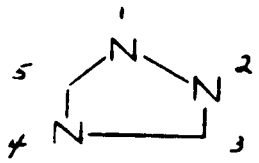




261 This subclass is indented under subclass 260. Compounds wherein the chalcogen, X (i.e., oxygen, sulfur, selenium, or tellurium), is in a group.

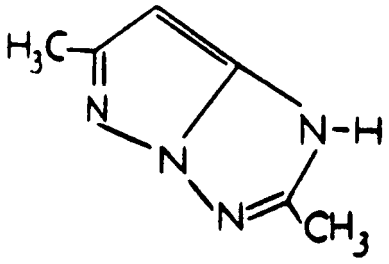
262.2 This subclass is indented under subclass 100. Compounds in which the five-membered hetero ring has nitrogens in the 1-, 2-, and 4- positions and carbons in the remaining two positions.

(1) Note. This subclass provides for compounds containing the following ring which may have double bonds between its members:



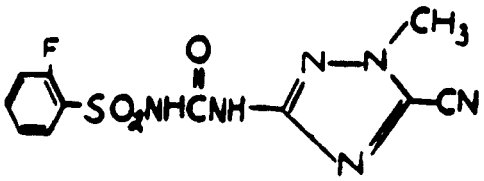
262.4 This subclass is indented under subclass 262.2. Compounds wherein the triazole ring is a cyclo in a polycyclo ring system.

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



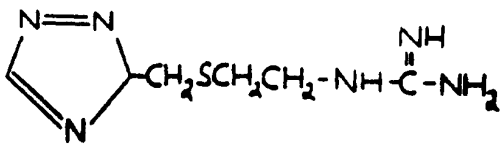
262.6 This subclass is indented under subclass 262.2. Compounds wherein the triazole ring is bonded directly to a -NH-(C=X)-NHH group, wherein X is =NH or chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) and substitution may be made for hydrogen only.

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



262.8 This subclass is indented under subclass 262.2. Compounds wherein the triazole ring is attached indirectly by acyclic nonionic bonding to plural nitrogens, two of which are bonded directly to the same acyclic carbon.

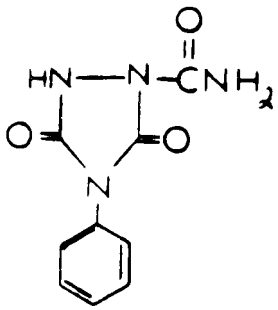
(1) Note. An example of a compound provided for herein is:



263.2 This subclass is indented under subclass 262.2. Compounds wherein ring carbon of the triazole ring is bonded directly to chalcogen (i.e., oxygen, sulfur, selenium, or tellurium).

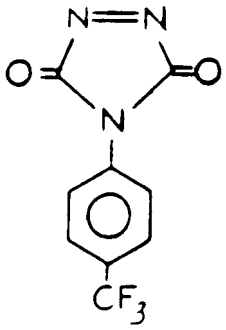
263.4 This subclass is indented under subclass 263.2. Compounds wherein at least two chalcogens are bonded directly to ring carbons of the triazole ring.

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



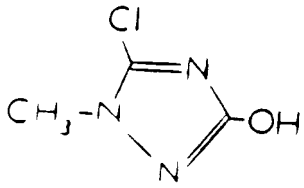
263.6 This subclass is indented under subclass 263.4. Compounds wherein the ring nitrogens in the 1- and 2- positions of the triazole ring are unsubstituted, or may be substituted by alkyl or cycloalkyl only.

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



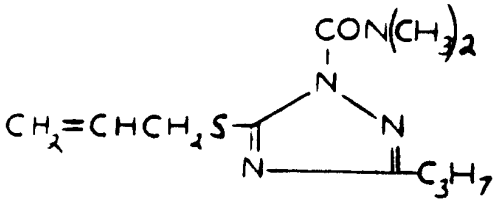
263.8 This subclass is indented under subclass 263.2. Compounds wherein the triazole ring is attached directly to nitrogen or to halogen by nonionic bonding.

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



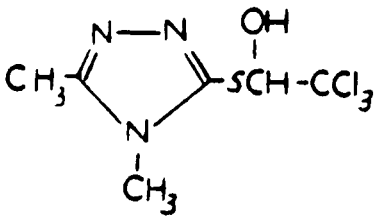
264.2 This subclass is indented under subclass 263.2. Compounds wherein the chalcogen is bonded directly to an additional carbon.

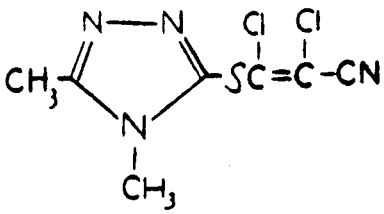
(1) Note. An example of a compound provided for herein is:



264.4 This subclass is indented under subclass 264.2. Compounds wherein the chalcogen is attached indirectly to nitrogen or additional chalcogen by acyclic nonionic bonding.

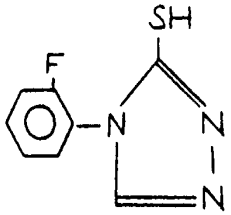
(1) Note. Examples of compounds provided for herein are:





264.6 This subclass is indented under subclass 263.2. Compounds wherein the 4-position nitrogen of the triazole ring is bonded directly to a benzene ring.

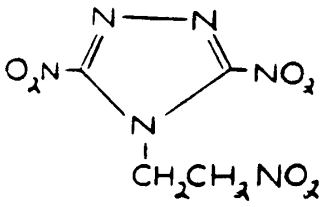
(1) Note. An example of a compound provided for herein is:



264.8 This subclass is indented under subclass 262.2. Compounds wherein the triazole ring is attached directly to nitrogen by nonionic bonding.

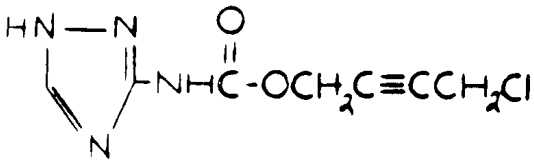
265.2 This subclass is indented under subclass 264.8. Compounds wherein at least two nitrogens are attached directly to the triazole ring by nonionic bonding.

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



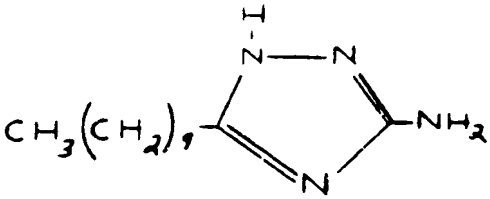
265.4 This subclass is indented under subclass 264.8. Compounds wherein the nitrogen is bonded directly to a -C(=X) group, wherein X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium).0z

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



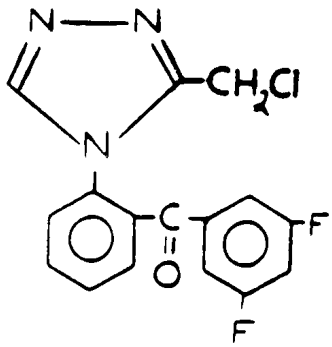
265.6 This subclass is indented under subclass 264.8. Compounds wherein the nitrogen is bonded additionally only to hydrogen.

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



265.8 This subclass is indented under subclass 262.2. Compounds wherein ring nitrogen of the triazole ring is bonded directly to a benzene ring, which benzene ring is further bonded directly to the acyclic carbon of a substituted or unsubstituted benzoyl or benzyl group.

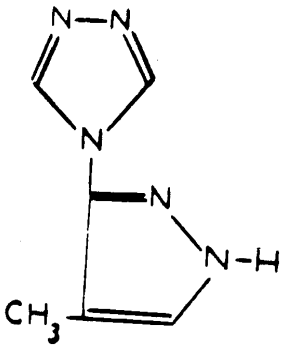
(1) Note. An example of a compound provided for herein is:



266.2 This subclass is indented under subclass 262.2. Compounds wherein the triazole ring is attached directly or indirectly to an additional unsaturated hetero ring by nonionic bonding.

(1) Note. The additional unsaturated hetero ring may itself be a 1,2,4- triazole ring.

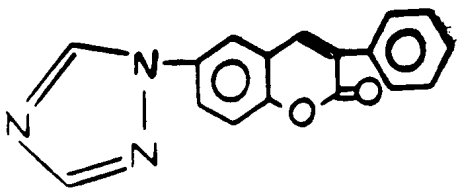
(2) Note. An example of a compound provided for herein is:



266.4 This subclass is indented under subclass 266.2. Compounds wherein a polycyclo ring system has the additional unsaturated hetero ring as one of its cyclos, except alkylenedioxyphenyl.

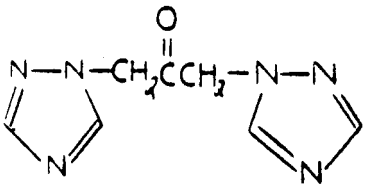
(1) Note. Compounds wherein the sole additional hetero ring present is alkylenedioxyphenyl are excluded from subclasses 266.2 and 266.4.

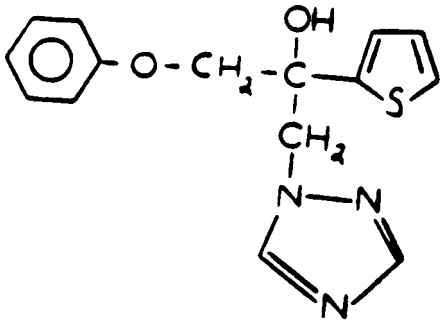
(2) Note. An example of a compound provided for herein is:



266.6 This subclass is indented under subclass 266.2. Compounds wherein the triazole ring and the additional unsaturated hetero ring are attached to the same acyclic atom or to the same acyclic chain.

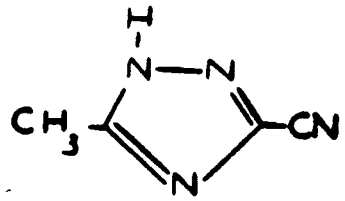
(1) Note. Examples of compounds provided for herein are:

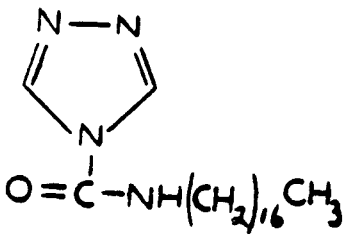




266.8 This subclass is indented under subclass 262.2. Compounds wherein the triazole ring is bonded directly to cyano or to -C(=X)-, wherein X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium).

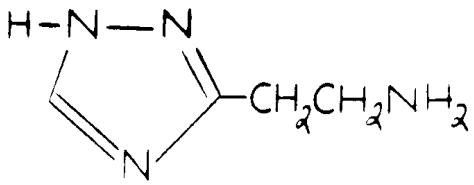
(1) Note. Examples of compounds provided for herein are:





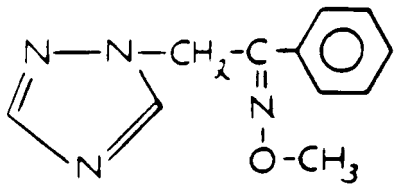
267.2 This subclass is indented under subclass 262.2. Compounds wherein the triazole ring is attached indirectly to nitrogen by acyclic non-ionic bonding.

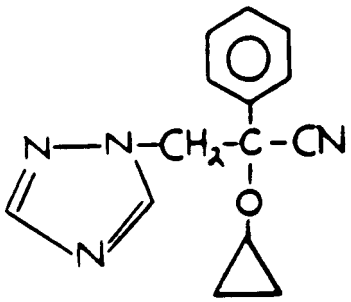
(1) Note. An example of a compound provided for herein is:



267.4 This subclass is indented under subclass 267.2. Compounds wherein carbon is double or triple bonded to the nitrogen.

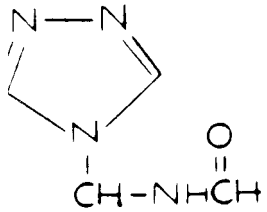
(1) Note. Examples of compounds provided for herein are:





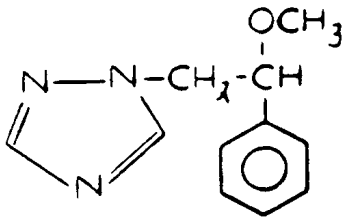
267.6 This subclass is indented under subclass 267.2. Compounds wherein the nitrogen is bonded directly to -C(=X)-, wherein X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium).

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



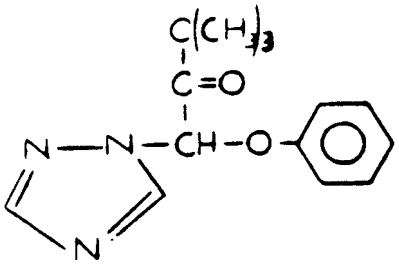
267.8 This subclass is indented under subclass 262.2. Compounds wherein the triazole ring is attached indirectly to chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) by acyclic nonionic bonding.

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



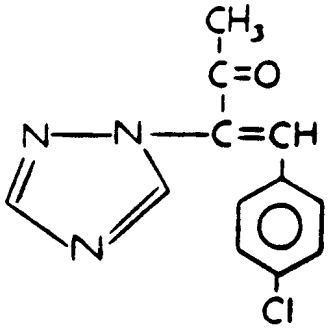
268.2 This subclass is indented under subclass 267.8. Compounds wherein the chalcogen and the triazole ring are bonded directly to the same acyclic carbon.

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



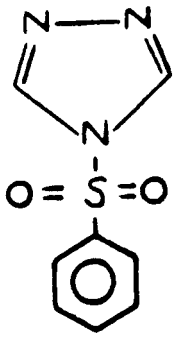
268.4 This subclass is indented under subclass 267.8. Compounds wherein the triazole ring is bonded directly to an acyclic carbon which is multiple bonded to an additional carbon.

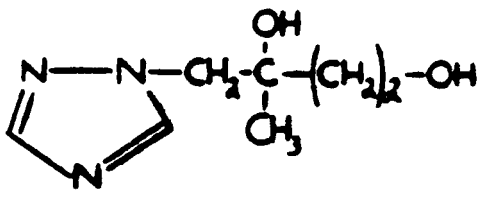
(1) Note. An example of a compound provided for herein is:



268.6 This subclass is indented under subclass 267.8. Compounds wherein the triazole ring is attached indirectly to plural chalcogens by acyclic nonionic bonding.

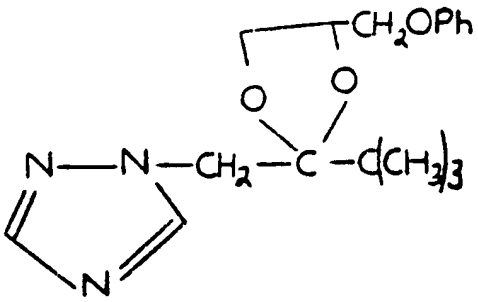
(1) Note. Examples of compounds provided for herein are:





268.8 This subclass is indented under subclass 262.2. Compounds wherein the same acyclic carbon is bonded directly to the triazole ring and to a hetero ring whose ring members are carbon and chalcogen (i.e., oxygen, sulfur, selenium, and tellurium).

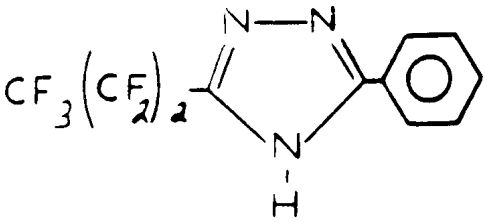
(1) Note. An example of a compound provided for herein is:



269.2 This subclass is indented under subclass 262.2. Process which involve the synthesis of the 1,2,4-triazole ring.

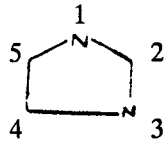
269.4 This subclass is indented under subclass 262.2. Compounds wherein the triazole ring is bonded directly to a benzene ring.

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

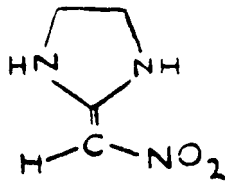


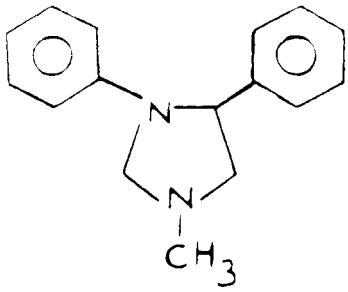
300.1 This subclass is indented under subclass 100. Compounds wherein nitrogen atoms occupy the 1 and 3 positions and carbon atoms occupy the remaining three positions of the five-membered hetero ring.

(1) Note. This subclass provides for compounds containing the following ring which may have double bonds between its members:



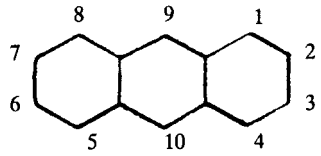
(2) Note. This subclass contains, for example:



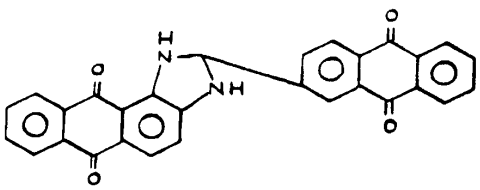


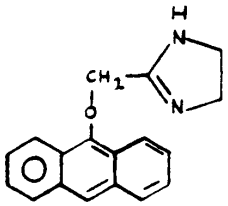
300.4 This subclass is indented under subclass 300.1. Compounds having a polycyclo ring system which is or contains the anthracene ring configuration with at least one double bond between ring members and having oxygen single bonded or any atom double bonded directly to the ring system at the 9- and 10- positions (e.g., anthraquinones, etc.) or at the 9- or 10- positions (e.g., anthrones, etc.).

(1) Note. The anthracene configured ring system is numbered as follows:



(2) Note. This subclass contains, for example:

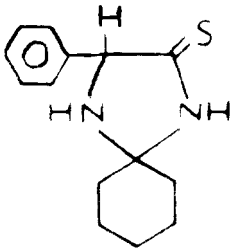


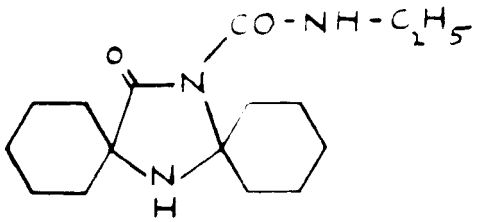


300.7 This subclass is indented under subclass 300.1. Compounds which contain a spiro ring system.

(1) Note. This subclass provides for compounds containing a 1,3-diazole ring and a spiro ring system whether or not the diazole ring is one of the cyclos in the spiro system.

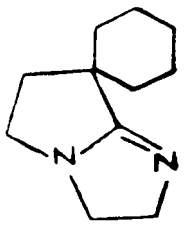
(2) Note. This subclass contains, for example:





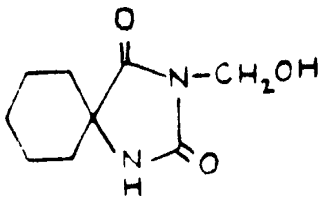
301.1 This subclass is indented under subclass 300.7. Compounds wherein one of the two rings that form the spiro is a cyclo in a polycyclo ring system.

(1) Note. This subclass contains, for example:



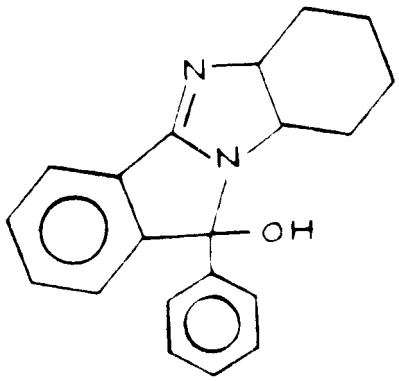
301.4 This subclass is indented under subclass 300.7. Compounds wherein the 1,3-diazole ring contains acyclic chalcogen bonded directly at the 2- and at the 4- or 5- positions thereof (e.g., 5-spirohydantoin, etc.).

(1) Note. This subclass contains, for example:



301.7 This subclass is indented under subclass 300.1. Compounds wherein the 1,3-diazole ring is a cyclo in a polycyclo ring system.

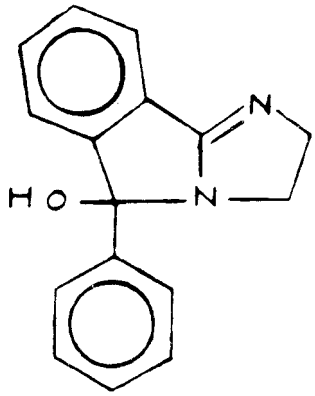
(1) Note. This subclass contains, for example:



302.1 This subclass is indented under subclass 301.7. Compounds in which the polycyclo ring system consists of exactly three rings.

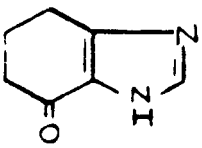
302.4 This subclass is indented under subclass 302.1. Compounds in which the tricyclo ring system contains a five-membered ring having one nitrogen and four carbons which nitrogen is shared with the 1,3-diazole ring.

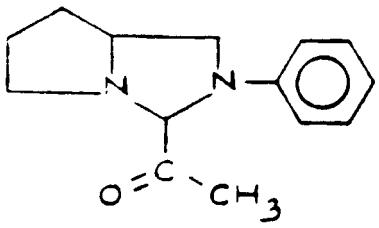
(1) Note. This subclass contains, for example:



302.7 This subclass is indented under subclass 301.7. Compounds in which the polycyclo ring system consists of exactly two rings.

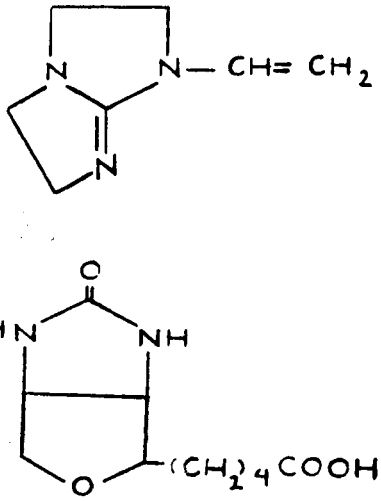
(1) Note. This subclass contains, for example:





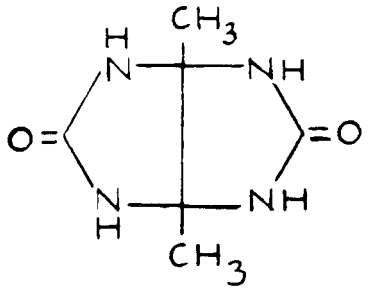
303.1 This subclass is indented under subclass 302.7. Compounds wherein the bicyclo ring system contains at least one ring hetero atom in addition to the two ring nitrogens of the diazole ring.

(1) Note. This subclass contains, for example:



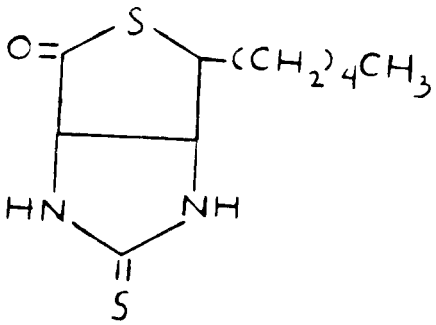
303.4 This subclass is indented under subclass 303.1. Compounds in which the bicyclo ring system contains two ring nitrogens in addition to the two ring nitrogens of the diazole ring.

(1) Note. This subclass contains, for example:



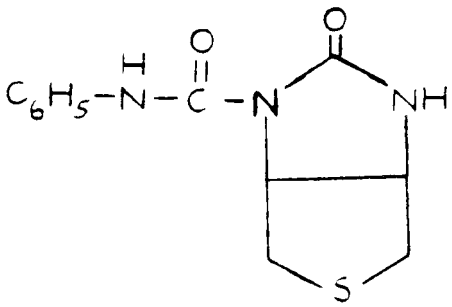
303.7 This subclass is indented under subclass 303.1. Compounds in which the bicyclo ring system consists of a five-membered ring having one sulfur and four carbons in addition to the diazole ring.

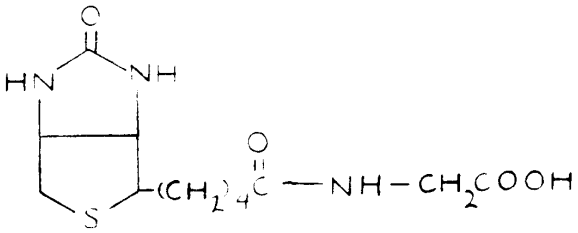
(1) Note. This subclass contains, for example:



304.1 This subclass is indented under subclass 303.7. Compounds wherein carboxamide (i.e.,--) is attached directly or indirectly to the bicyclo ring system by acyclic nonionic bonding.

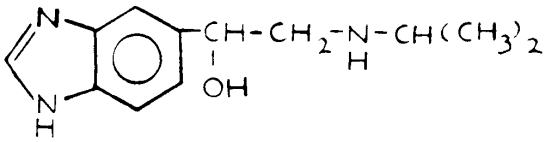
(1) Note. This subclass contains, for example:

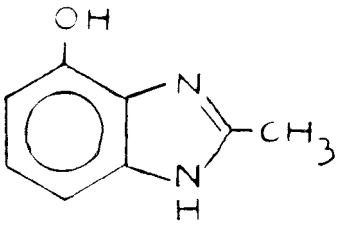


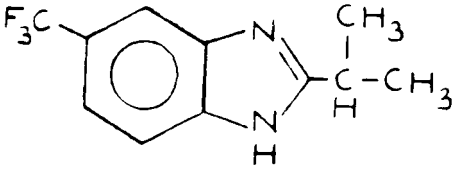


304.4 This subclass is indented under subclass 302.7. Compounds in which the bicyclo ring system contains a benzene ring in addition to the diazole ring.

(1) Note. This subclass contains, for example:





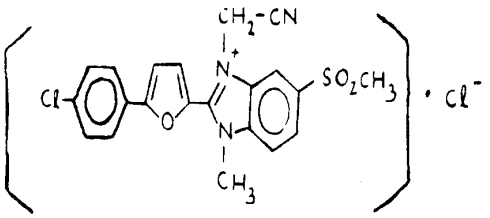


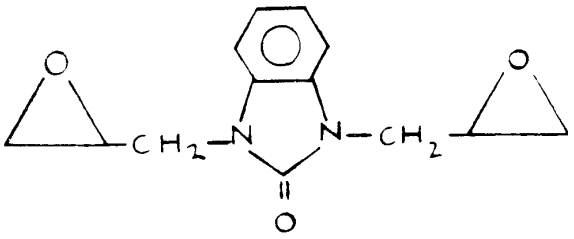
SEE OR SEARCH THIS CLASS, SUBCLASS:

302.7, for compounds wherein the benzene ring is partially or completely hydrogenated.

304.7 This subclass is indented under subclass 304.4. Compounds wherein an additional hetero ring is attached directly or indirectly to the 1,3-diazole ring by nonionic bonding.

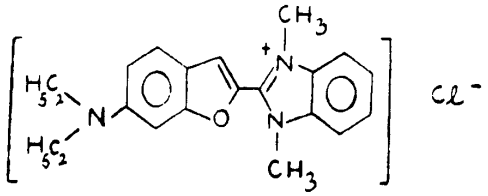
(1) Note. This subclass contains, for example:

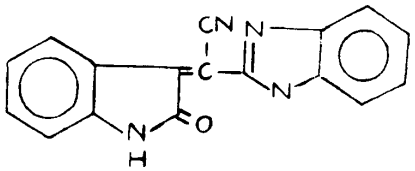




305.1 This subclass is indented under subclass 304.7. Compounds wherein the additional hetero ring is one of the cyclos in a polycyclo ring system.

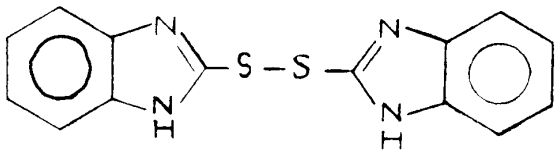
(1) Note. This subclass contains, for example:

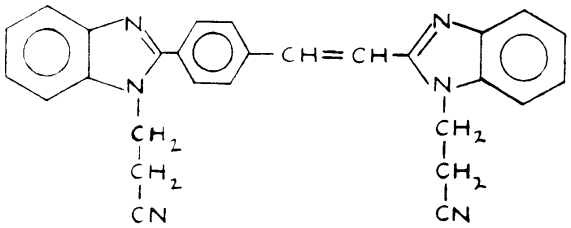




305.4 This subclass is indented under subclass 305.1. Compounds wherein the additional polycyclo ring system contains a 1,3- diazole ring as one of the cyclos.

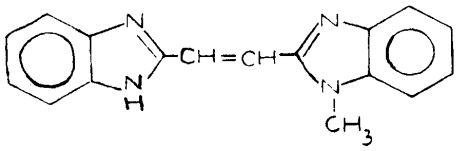
(1) Note. This subclass contains, for example:

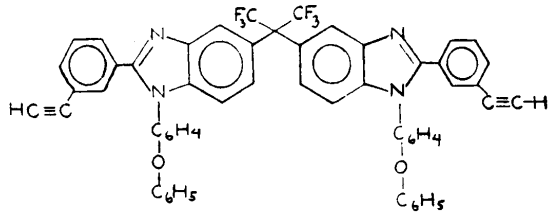




305.7 This subclass is indented under subclass 305.4. Compounds containing an acyclic carbon atom or an acyclic carbon chain linkage between the polycyclo ring systems.

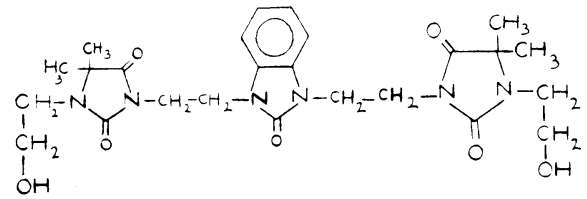
(1) Note. This subclass contains, for example:

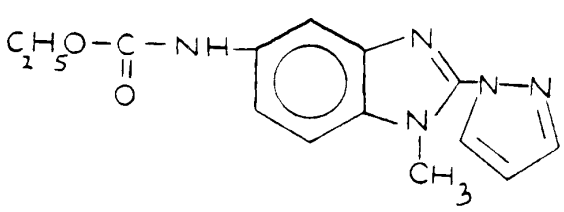




306.1 This subclass is indented under subclass 304.7. Compounds wherein nitrogen is the only ring hetero atom in the additional hetero ring.

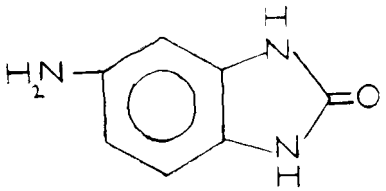
(1) Note. This subclass contains, for example:





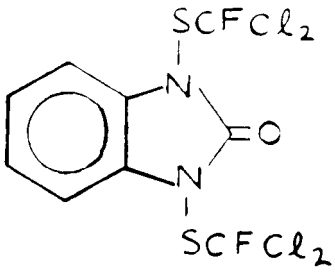
306.4 This subclass is indented under subclass 304.4. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly to ring carbon of the diazole ring.

(1) Note. This subclass contains, for example:



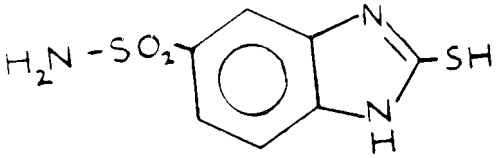
306.7 This subclass is indented under subclass 306.4. Compounds wherein at least two chalcogens (i.e., oxygen, sulfur, selenium, or tellurium) are attached directly to carbon only or to carbon and nitrogen of the diazole ring by nonionic bonding.

(1) Note. This subclass contains, for example:



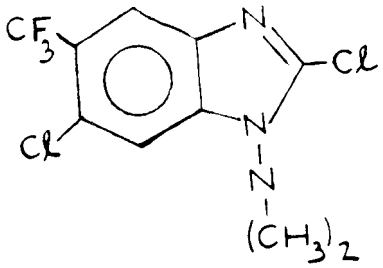
307.1 This subclass is indented under subclass 306.4. Compounds wherein sulfur is the chalcogen which is bonded directly to ring carbon of the diazole ring.

(1) Note. This subclass contains, for example:



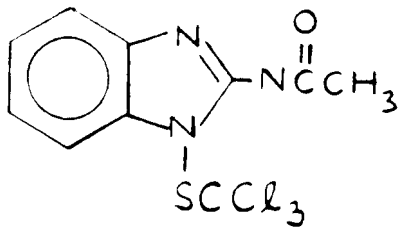
307.4 This subclass is indented under subclass 304.4. Compounds wherein nitrogen is attached directly to the diazole ring by nonionic bonding.

(1) Note. This subclass contains, for example:



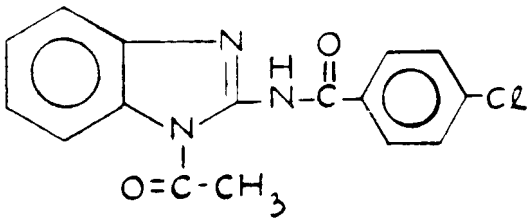
307.7 This subclass is indented under subclass 307.4. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is attached directly to ring nitrogen of the diazole ring by nonionic bonding.

(1) Note. This subclass contains, for example:



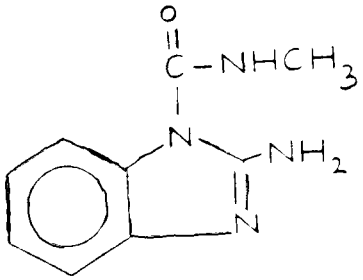
308.1 This subclass is indented under subclass 307.4. Compounds having a - group, in which X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium), bonded directly to the diazole ring by nonionic bonding.

(1) Note. This subclass contains, for example:



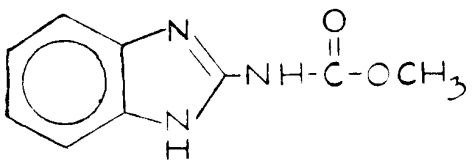
308.4 This subclass is indented under subclass 308.1. Compounds wherein an acyclic nitrogen is bonded directly to the - group.

(1) Note. This subclass contains, for example:



308.7 This subclass is indented under subclass 307.4. Compounds containing a -X group attached indirectly to the diazole ring by acyclic nonionic bonding, wherein X's are the same or diverse chalcogens (i.e., oxygen, sulfur, selenium, or tellurium).

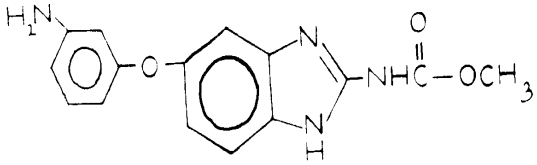
(1) Note. This subclass contains, for example:



309.1 This subclass is indented under subclass 308.7. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium), is bonded

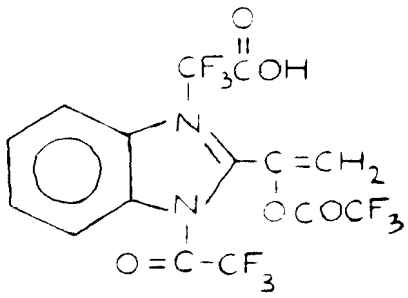
directly to the benzene ring of the bicyclo ring system.

(1) Note. This subclass contains, for example:



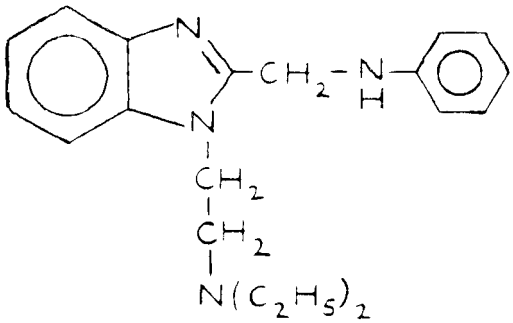
309.4 This subclass is indented under subclass 304.4. Compounds wherein a - group, in which X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium), is bonded directly to the diazole ring.

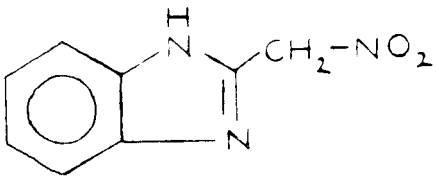
(1) Note. This subclass contains, for example:

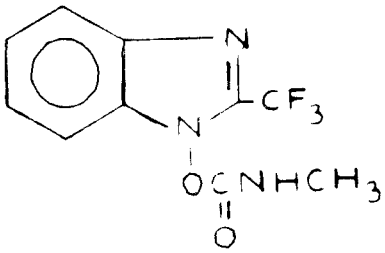


309.7 This subclass is indented under subclass 304.4. Compounds wherein nitrogen is attached indirectly to the diazole ring by acyclic nonionic bonding.

(1) Note. This subclass contains, for example:

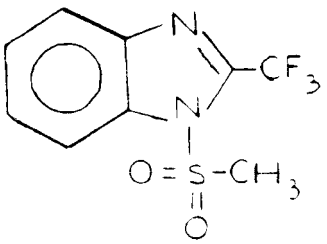


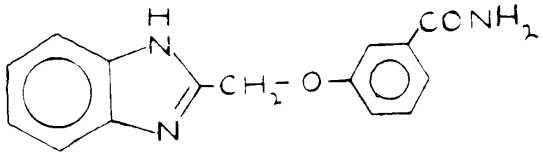




310.1 This subclass is indented under subclass 304.4. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is attached indirectly to the diazole ring by acyclic nonionic bonding.

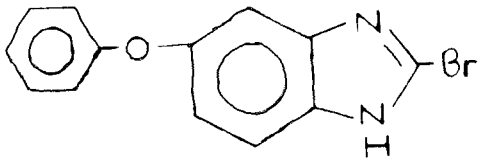
(1) Note. This subclass contains, for example:





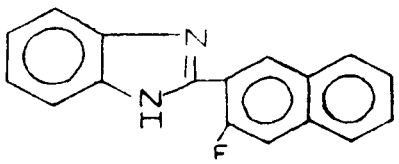
310.4 This subclass is indented under subclass 304.4. Compounds wherein halogen (i.e., F, Cl, Br, I, or At) is attached directly or indirectly to the diazole ring by acyclic nonionic bonding.

(1) Note. This subclass contains, for example:



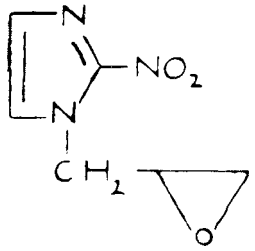
310.7 This subclass is indented under subclass 304.4. Compounds wherein a benzene ring is bonded directly to ring carbon at the 2-position of the diazole ring.

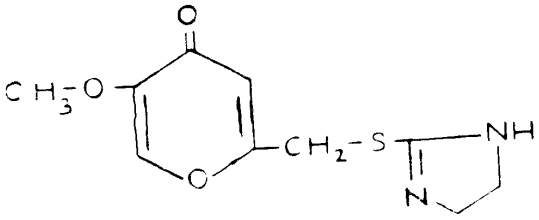
(1) Note. This subclass contains, for example:



311.1 This subclass is indented under subclass 300.1. Compounds wherein an additional hetero ring is attached directly or indirectly to the diazole ring by nonionic bonding.

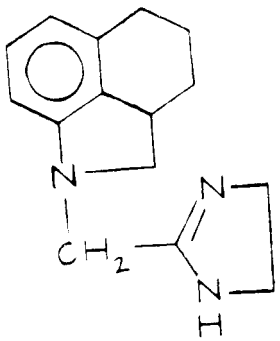
(1) Note. This subclass contains, for example:

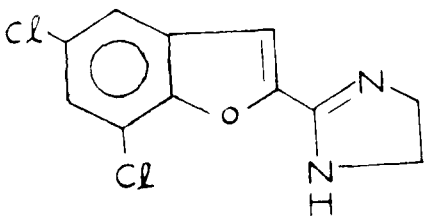




311.4 This subclass is indented under subclass 311.1. Compounds wherein the additional hetero ring is one of the cyclos in a polycyclo ring system.

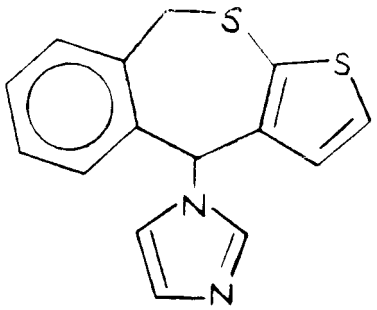
(1) Note. This subclass contains, for example:

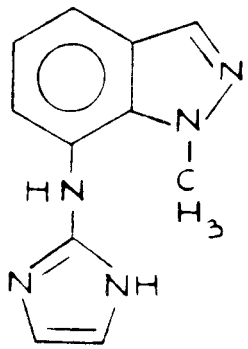




311.7 This subclass is indented under subclass 311.4. Compounds wherein the polycyclo ring system contains at least two ring hetero atoms.

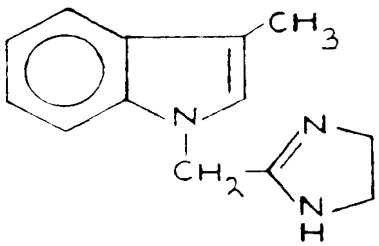
(1) Note. This subclass contains, for example:





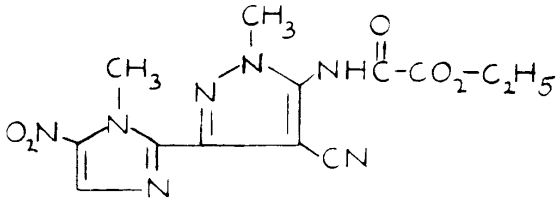
312.1 This subclass is indented under subclass 311.4. Compounds wherein the additional polycyclo ring system contains nitrogen as the only ring hetero atom and consists of exactly two cyclos.

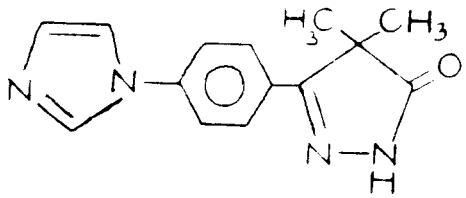
(1) Note. This subclass contains, for example:



312.4 This subclass is indented under subclass 311.1. Compounds wherein the additional hetero ring is also a five-membered hetero ring having two ring nitrogens and the remaining three positions are ring carbons.

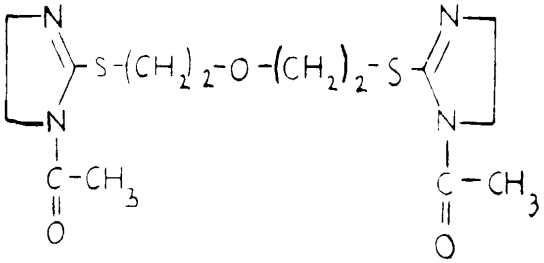
(1) Note. This subclass contains, for example:





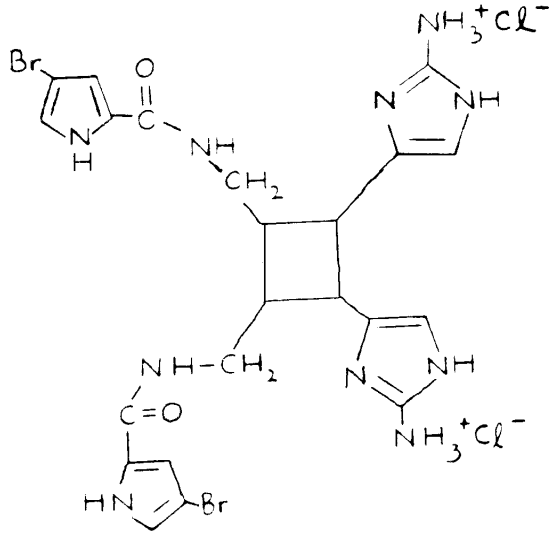
312.7 This subclass is indented under subclass 312.4. Compounds wherein the additional hetero ring is a diazole ring with nitrogen atoms occupying the 1 and 3 positions (i.e., plural 1,3-diazoles, and hydrogenated forms thereof).

(1) Note. This subclass contains, for example:



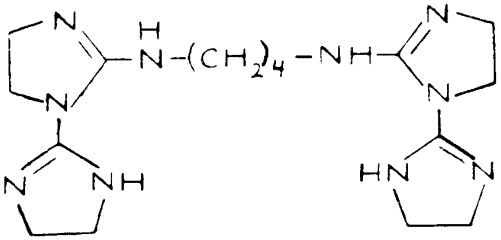
313.1 This subclass is indented under subclass 312.7. Compounds containing an additional hetero ring other than a diazole ring which is attached directly or indirectly to a 1,3- diazole ring by nonionic bonding.

(1) Note. This subclass contains, for example:



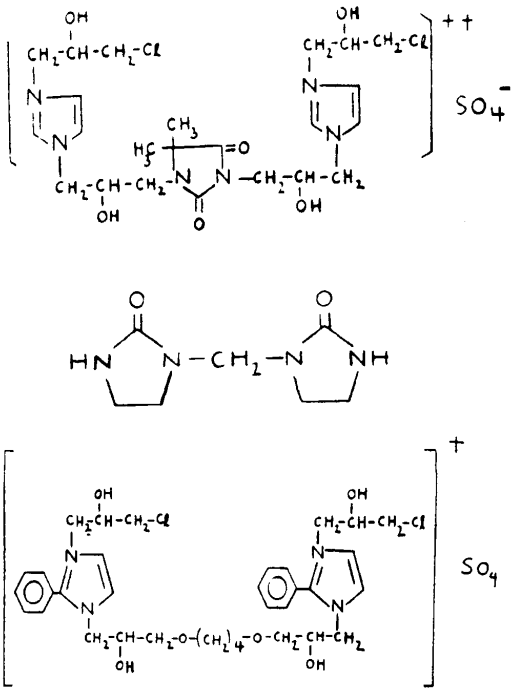
313.4 This subclass is indented under subclass 312.7. Compounds wherein the 1,3-diazole rings are bonded directly to each other.

(1) Note. This subclass contains, for example:



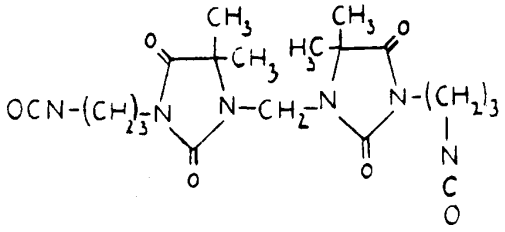
313.7 This subclass is indented under subclass 312.7. Compounds wherein a ring nitrogen of each of the two 1,3-diazole rings is attached directly to the same atom or chain, which chain may include a ring, by nonionic bonding.

(1) Note. This subclass contains, for example:



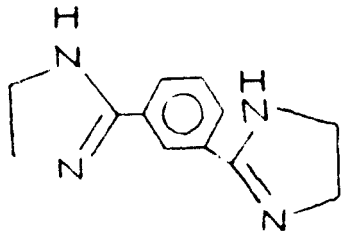
314.1 This subclass is indented under subclass 313.7. Compounds wherein acyclic chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly at the 2- and at the 4- or 5-positions of each of the two diazole rings.

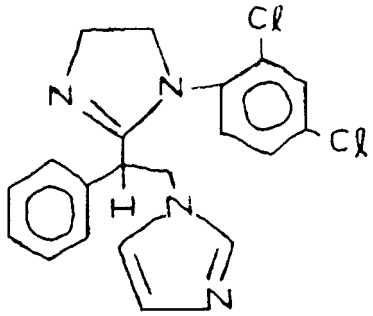
(1) Note. This subclass contains, for example:



314.4 This subclass is indented under subclass 312.7. Compounds wherein two 1,3-diazole rings are bonded directly to the same carbon atom or to a carbon chain, which chain may include a ring.

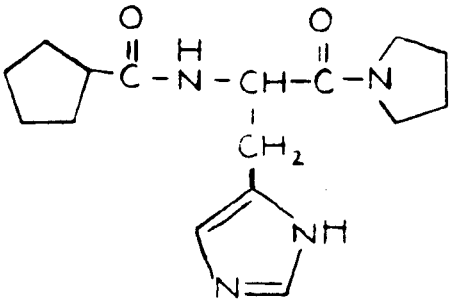
(1) Note. This subclass contains, for example:

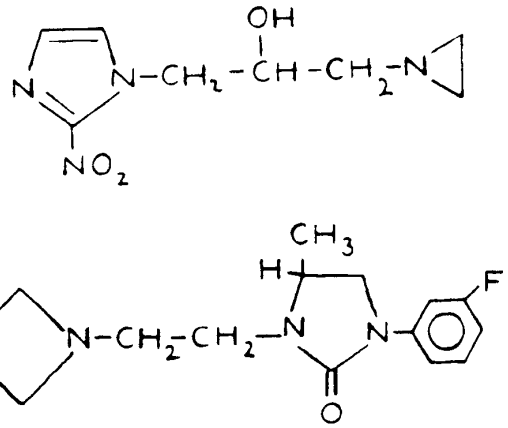




314.7 This subclass is indented under subclass 311.1. Compounds wherein nitrogen is the only ring hetero atom in the additional hetero ring.

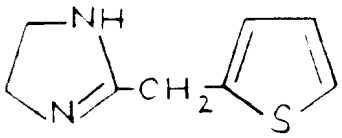
(1) Note. This subclass contains, for example:





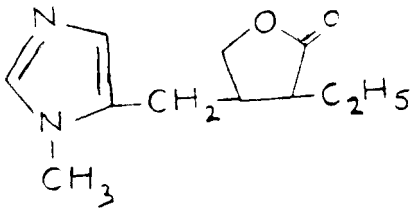
315.1 This subclass is indented under subclass 311.1. Compounds wherein sulfur is the only ring hetero atom in the additional hetero ring.

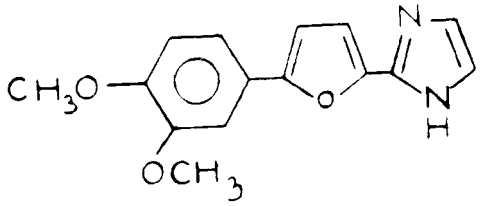
(1) Note. This subclass contains, for example:



315.4 This subclass is indented under subclass 311.1. Compounds wherein a five- membered ring having one oxygen and four carbons is the additional hetero ring.

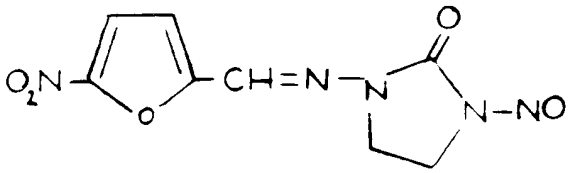
(1) Note. This subclass contains, for example:





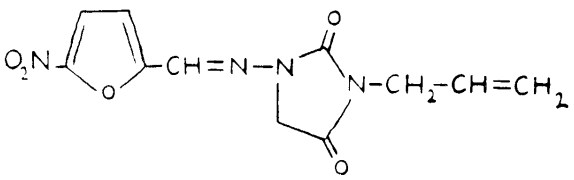
315.7 This subclass is indented under subclass 315.4. Compounds wherein acyclic chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly to ring carbon of the diazole ring.

(1) Note. This subclass contains, for example:



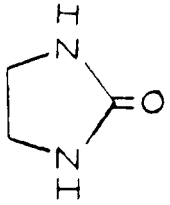
316.1 This subclass is indented under subclass 315.7. Compounds wherein plural acyclic chalcogens (i.e., oxygen, sulfur, selenium, or tellurium) are bonded directly at the 2- and at the 4- or 5-positions of the diazole ring.

(1) Note. This subclass contains, for example:



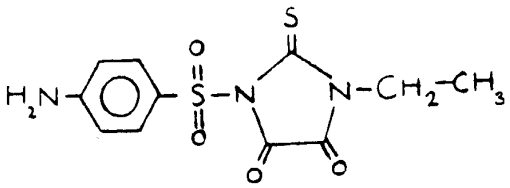
316.4 This subclass is indented under subclass 300.1. Compounds wherein chalcogen, (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly to ring carbon of the diazole ring.

(1) Note. This subclass contains, for example:



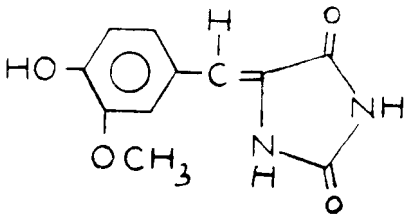
316.7 This subclass is indented under subclass 316.4. Compounds containing an additional chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) which is attached directly to ring nitrogen of the diazole ring by nonionic bonding.

(1) Note. This subclass contains, for example:



317.1 This subclass is indented under subclass 316.4. Compounds wherein at least two chalcogens (i.e., oxygen, sulfur, selenium, or tellurium) are bonded directly to ring carbons of the diazole ring.

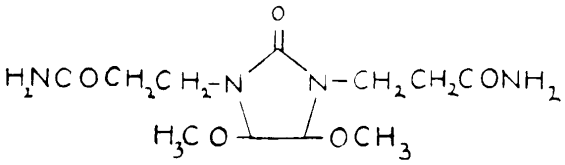
(1) Note. This subclass contains, for example:



(2) Note. Included in this subclass are compounds which have been commonly called hydantoins (i.e., 2,4-imidazolidinedione).

317.5 This subclass is indented under subclass 317.1. Compounds wherein three chalcogens (i.e., oxygen, sulfur, selenium, or tellurium) are bonded directly to ring carbons of the diazole ring.

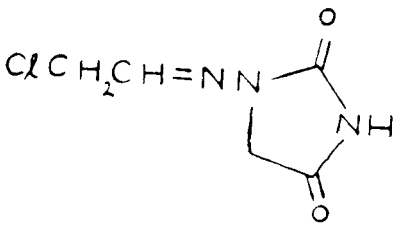
(1) Note. This subclass contains, for example:

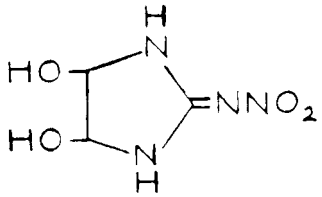


(2) Note. Included in this subclass are compounds which have been commonly called parabanic acids.

318.1 This subclass is indented under subclass 317.1. Compounds wherein nitrogen is attached directly to the diazole ring by nonionic bonding.

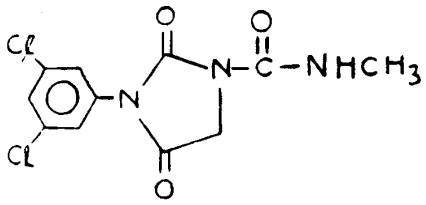
(1) Note. This subclass contains, for example:





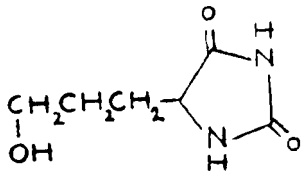
318.5 This subclass is indented under subclass 317.1. Compounds wherein a group, in which X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium), is bonded directly to the diazole ring.

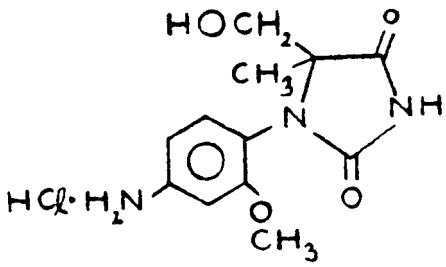
(1) Note. This subclass contains, for example:



319.1 This subclass is indented under subclass 317.1. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is attached indirectly to the diazole ring by acyclic nonionic bonding.

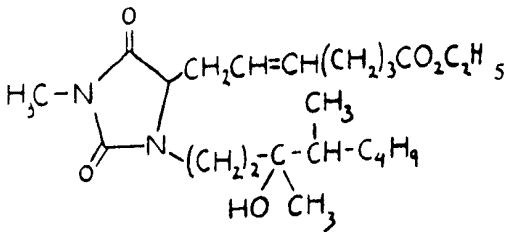
(1) Note. This subclass contains, for example:





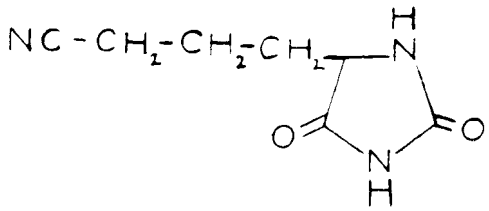
319.5 This subclass is indented under subclass 319.1. Compounds wherein the chalcogen, X (i.e., oxygen, sulfur, selenium, or tellurium), is in a group.

(1) Note. This subclass contains, for example:



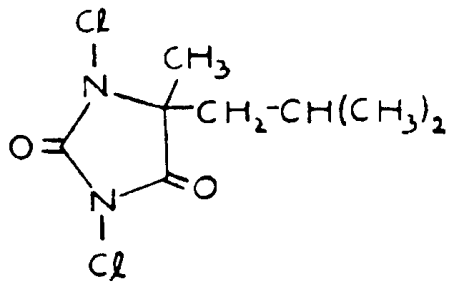
320.1 This subclass is indented under subclass 317.1. Compounds wherein nitrogen is attached indirectly to the diazole ring by acyclic nonionic bonding.

(1) Note. This subclass contains, for example:



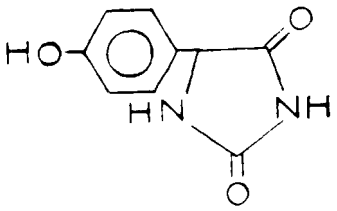
320.5 This subclass is indented under subclass 317.1. Compounds wherein halogen is attached directly or indirectly to the diazole ring by acyclic nonionic bonding.

(1) Note. This subclass contains, for example:



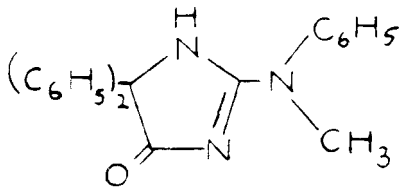
321.1 This subclass is indented under subclass 317.1. Compounds wherein the diazole ring is bonded directly to a benzene ring.

(1) Note. This subclass contains, for example:



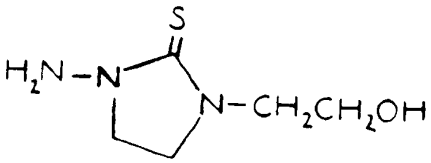
321.5 This subclass is indented under subclass 316.4. Compounds wherein nitrogen is attached directly to the diazole ring by nonionic bonding.

(1) Note. This subclass contains, for example:



322.1 This subclass is indented under subclass 321.5. Compounds wherein the nitrogen is attached directly to one of the nitrogens of the diazole ring by nonionic bonding.

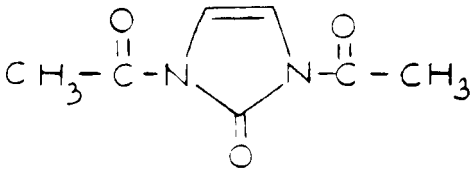
(1) Note. This subclass contains, for example:



322.5 This subclass is indented under subclass 316.4. Compounds wherein a group, in which X is chalcogen (i.e., oxygen, sulfur, selenium, or

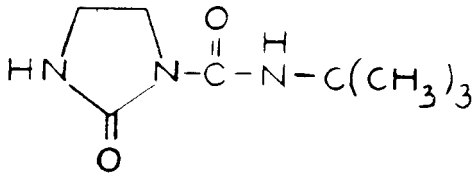
tellurium), is bonded directly to the diazole ring.

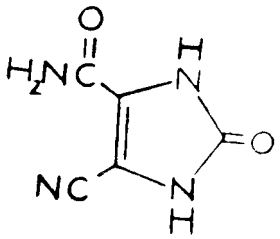
(1) Note. This subclass contains, for example:



323.1 This subclass is indented under subclass 322.5. Compounds wherein the group which is bonded directly to the diazole ring is additionally bonded directly to acyclic nitrogen.

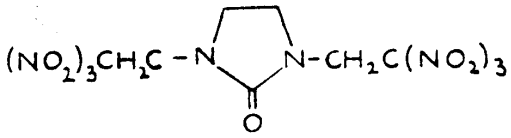
(1) Note. This subclass contains, for example:

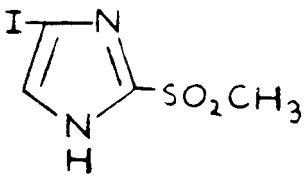




323.5 This subclass is indented under subclass 316.4. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium), is attached indirectly to the diazole ring by acyclic nonionic bonding.

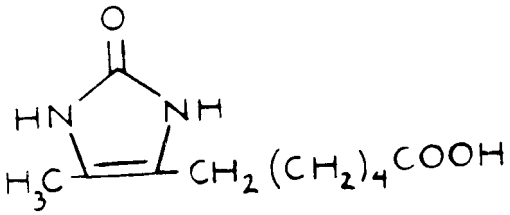
(1) Note. This subclass contains, for example:





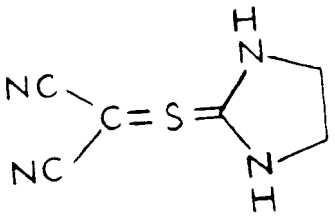
324.1 This subclass is indented under subclass 323.5. Compounds wherein the chalcogen, X (i.e., oxygen, sulfur, selenium, or tellurium), is in a group.

(1) Note. This subclass contains, for example:



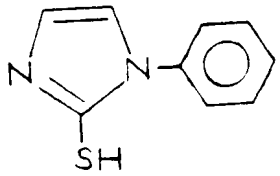
324.5 This subclass is indented under subclass 316.4. Compounds wherein nitrogen is attached indirectly to the diazole ring by acyclic nonionic bonding.

(1) Note. This subclass contains, for example:



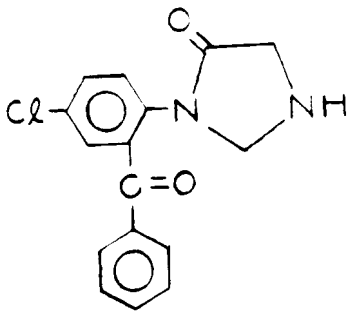
325.1 This subclass is indented under subclass 316.4. Compounds wherein the chalcogen which is bonded directly to diazole ring carbon is sulfur or selenium.

(1) Note. This subclass contains, for example:



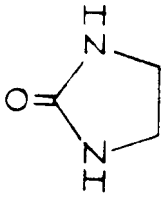
325.5 This subclass is indented under subclass 316.4. Compounds wherein the diazole ring is bonded directly to a benzene ring.

(1) Note. This subclass contains, for example:



326.1 This subclass is indented under subclass 316.4. Compounds wherein the diazole ring is not substituted except for the chalcogen (i.e., oxygen, sulfur, selenium, or tellurium).

(1) Note. This subclass contains, for example:

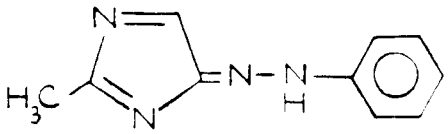


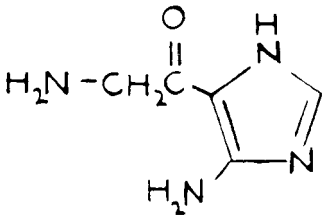
SEE OR SEARCH THIS CLASS, SUBCLASS:

316.4, for compounds containing alkyl substituted cyclic ethylene urea.

326.5 This subclass is indented under subclass 300.1. Compounds wherein nitrogen is attached directly to the diazole ring by nonionic bonding.

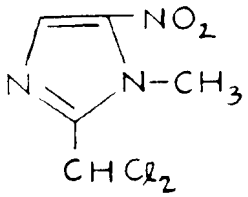
(1) Note. This subclass contains, for example:





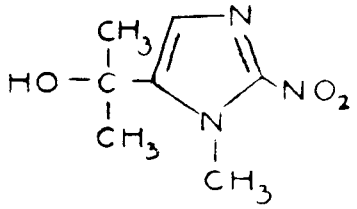
327.1 This subclass is indented under subclass 326.5. Compounds wherein the nitrogen is part of a nitro group (i.e., $-NO_2$).

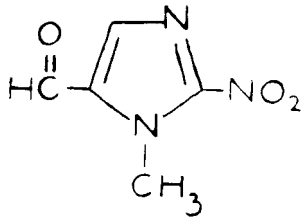
(1) Note. This subclass contains, for example:



327.5 This subclass is indented under subclass 327.1. Compounds wherein the nitro group (i.e., $-NO_2$) is bonded directly to the ring carbon in the 2- position of the diazole ring, i.e., the ring carbon between the two ring nitrogens.

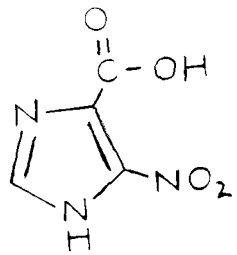
(1) Note. This subclass contains, for example:

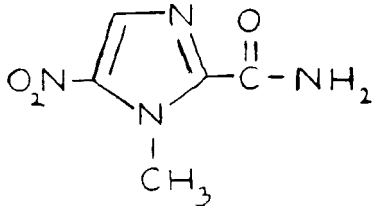




328.1 This subclass is indented under subclass 327.1. Compounds which contain a group, wherein X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium), bonded directly to the diazole ring.

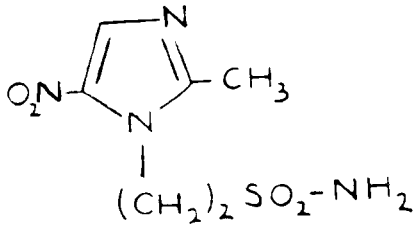
(1) Note. This subclass contains, for example:

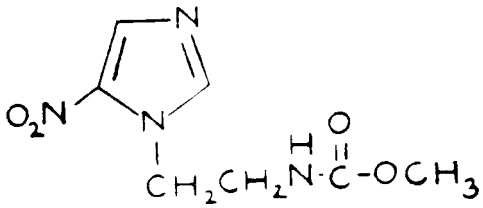




328.5 This subclass is indented under subclass 327.1. Compounds which contain nitrogen attached indirectly to the diazole ring by acyclic nonionic bonding.

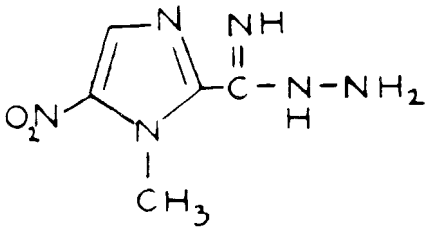
(1) Note. This subclass contains, for example:





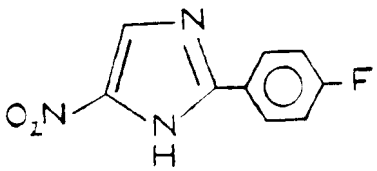
329.1 This subclass is indented under subclass 328.5. Compounds wherein the nitrogen is multiply bonded to carbon.

(1) Note. This subclass contains, for example:



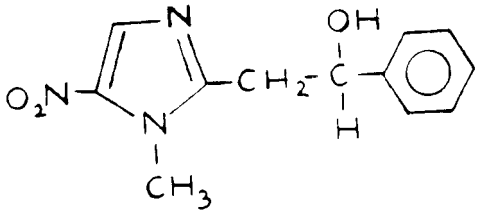
329.5 This subclass is indented under subclass 327.1. Compounds wherein a benzene ring is bonded directly to the ring carbon in the 2- position of the diazole ring.

(1) Note. This subclass contains, for example:



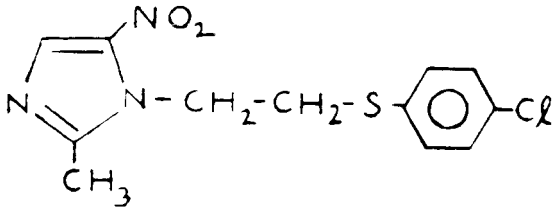
330.1 This subclass is indented under subclass 327.1. Compounds wherein an additional chalcogen (i.e., oxygen, sulfur, selenium, or tellurium), which is not part of the nitro group, is attached indirectly to the diazole ring by acyclic nonionic bonding.

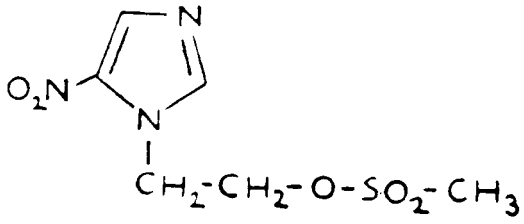
(1) Note. This subclass contains, for example:



330.5 This subclass is indented under subclass 330.1. Compounds wherein sulfur is the chalcogen that is attached indirectly to the diazole ring by acyclic nonionic bonding.

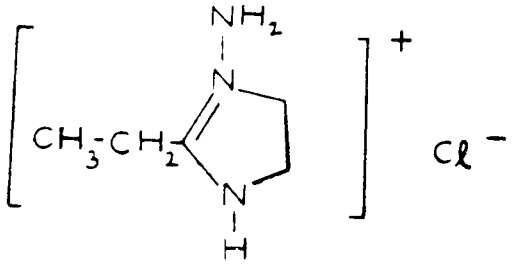
(1) Note. This subclass contains, for example:

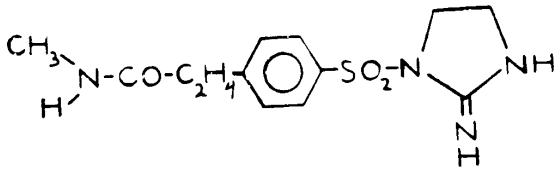




331.1 This subclass is indented under subclass 326.5. Compounds wherein the nitrogen or chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is attached directly to a diazole ring nitrogen by nonionic bonding.

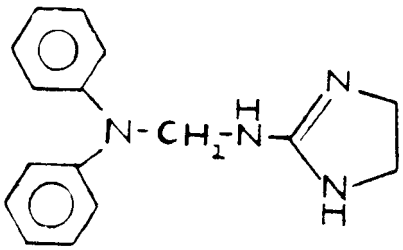
(1) Note. This subclass contains, for example:

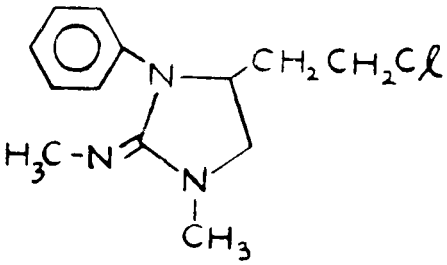




331.5 This subclass is indented under subclass 326.5. Compounds wherein the nitrogen is bonded directly to the ring carbon in the 2- position of the diazole ring, i.e., the ring carbon between the two ring nitrogens.

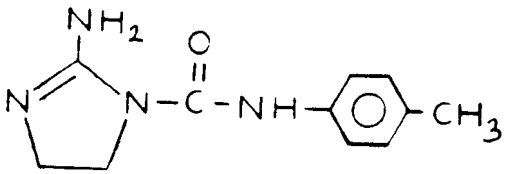
(1) Note. This subclass contains, for example:





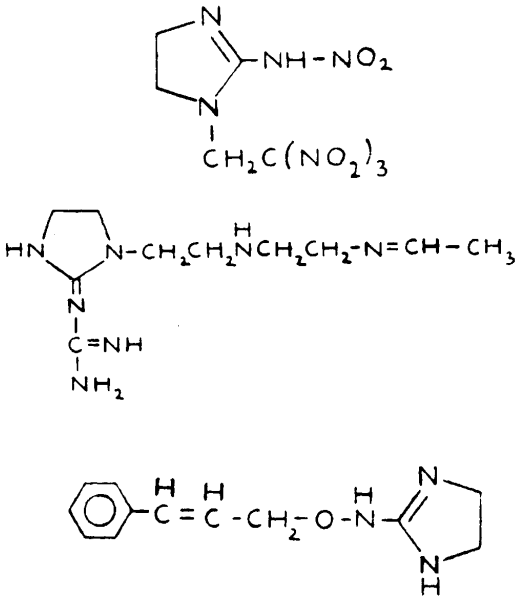
332.1 This subclass is indented under subclass 331.5. Compounds which contain a group, wherein X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium), bonded directly to the diazole ring.

(1) Note. This subclass contains, for example:



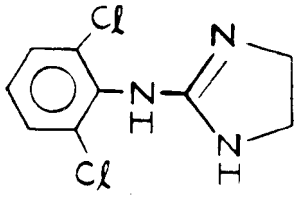
332.5 This subclass is indented under subclass 331.5. Compounds wherein the nitrogen is attached directly to chalcogen (i.e., oxygen, sulfur, selenium, or tellurium), an additional nitrogen or a group, in which X is chalcogen or nitrogen, by nonionic bonding.

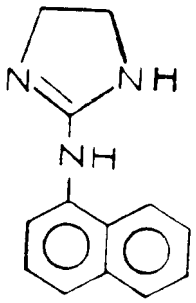
(1) Note. This subclass contains, for example:



333.1 This subclass is indented under subclass 331.5. Compounds wherein the nitrogen is bonded directly to a benzene ring.

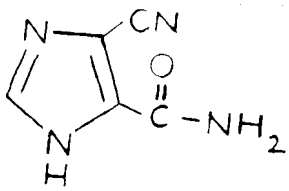
(1) Note. This subclass contains, for example:





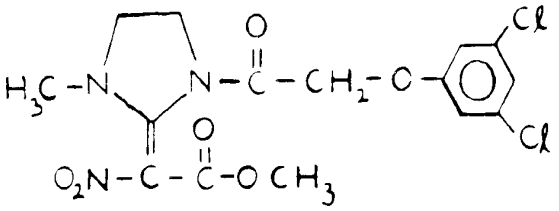
333.5 Compounds under 300.1 wherein a group, in which X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium), is bonded directly to the diazole ring.

(1) Note. This subclass contains, for example:



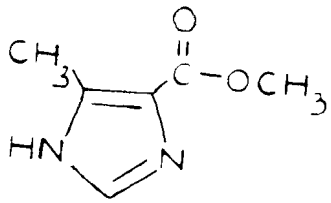
334.1 This subclass is indented under subclass 333.5. Compounds in which the group is bonded directly to a diazole ring nitrogen by nonionic bonding.

(1) Note. This subclass contains, for example:



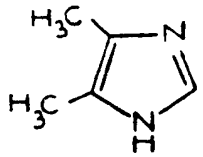
334.5 This subclass is indented under subclass 333.5. Compounds in which the group is part of a X-group, wherein the X's are the same or diverse chalcogens (i.e., oxygen, sulfur, selenium, or tellurium).

(1) Note. This subclass contains, for example:



335.1 This subclass is indented under subclass 300.1. Compounds wherein the 1,3-diazole ring contains two double bonds between its ring members.

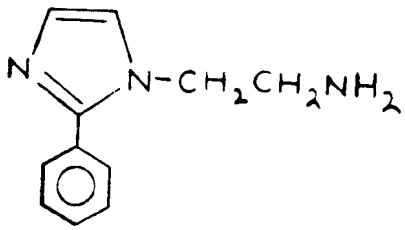
(1) Note. This subclass contains, for example:



(2) Note. Compounds within this subclass are referred to as imidazoles, glyoxalines, imineazoles, imideazoles, iminazoles, pyrro[b]monazoles, or 1,3-diaza-2,4- cyclopentadienes.

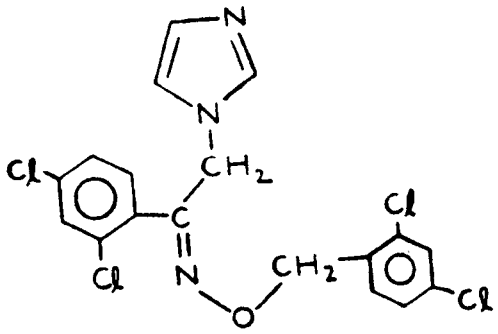
335.5 This subclass is indented under subclass 335.1. Compounds wherein nitrogen is attached indirectly to the diazole ring by acyclic nonionic bonding.

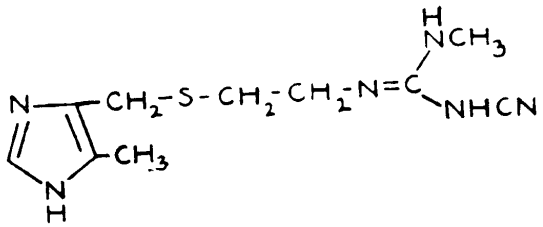
(1) Note. This subclass contains, for example:



336.1 This subclass is indented under subclass 335.5. Compounds wherein carbon is multiply bonded to the nitrogen.

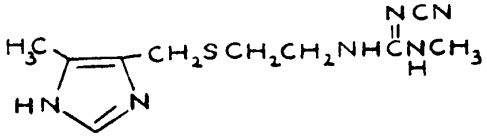
(1) Note. This subclass contains, for example:





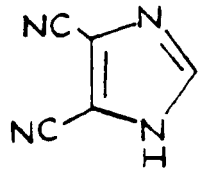
336.5 This subclass is indented under subclass 336.1. Compounds wherein the nitrogen is bonded directly to a -CN group.

(1) Note. This subclass contains, for example:



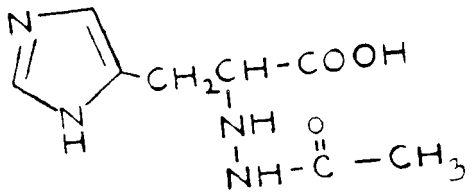
337.1 This subclass is indented under subclass 336.1. Compounds containing a -CN group bonded directly to the diazole ring.

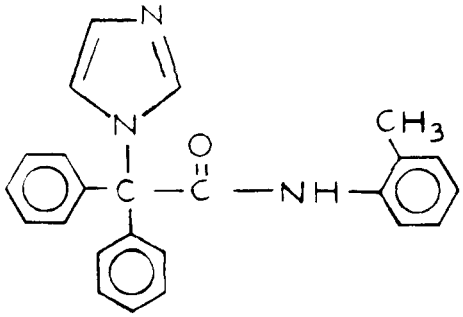
(1) Note. This subclass contains, for example:



338.1 This subclass is indented under subclass 335.5. Compounds wherein the nitrogen is bonded directly to a group, wherein X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium).

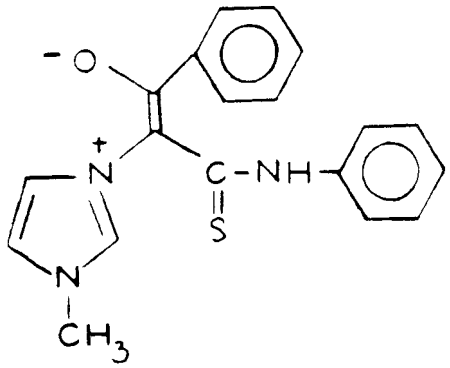
(1) Note. This subclass contains, for example:





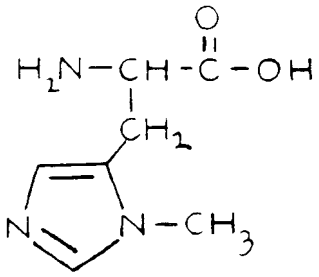
338.5 This subclass is indented under subclass 338.1. Compounds in which sulfur is attached indirectly to the group by acyclic nonionic bonding or the chalcogen of the group is sulfur.

(1) Note. This subclass contains, for example:



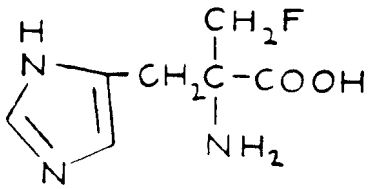
339.1 This subclass is indented under subclass 335.5. Compounds wherein a X- group, in which the X's are the same or diverse chalcogens (i.e., oxygen, sulfur, selenium, or tellurium), and the nitrogen are bonded directly to the same acyclic carbon atom.

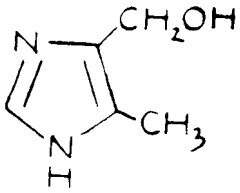
(1) Note. This subclass contains, for example:



339.5 This subclass is indented under subclass 339.1. Compounds in which halogen (i.e., F, Cl, Br, I, or At) is attached indirectly to the diazole ring by acyclic nonionic bonding.

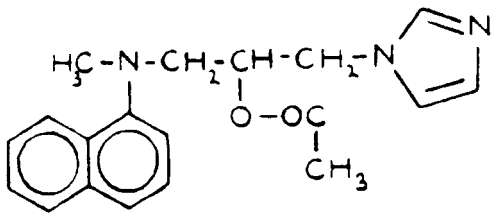
(1) Note. This subclass contains, for example:

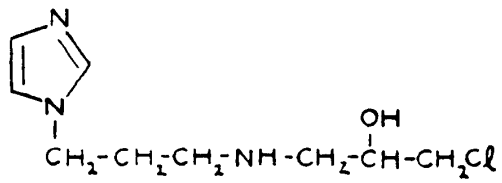




340.1 This subclass is indented under subclass 335.5. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is attached indirectly to the nitrogen by acyclic nonionic bonding.

(1) Note. This subclass contains, for example:



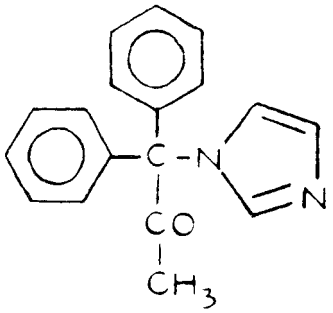


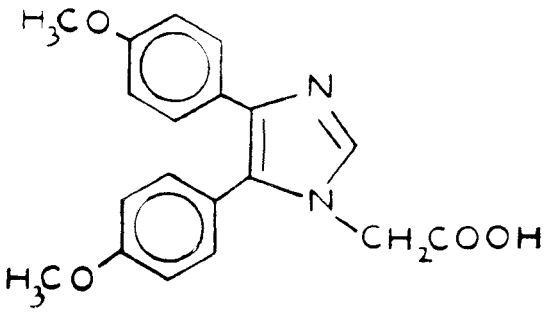
341.1 This subclass is indented under subclass 335.1. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is attached indirectly to the diazole ring by acyclic nonionic bonding.

(1) Note. This subclass contains, for example:

341.5 This subclass is indented under subclass 341.1. Compounds wherein the chalcogen, X (i.e., oxygen, sulfur, selenium, or tellurium), is in a group.

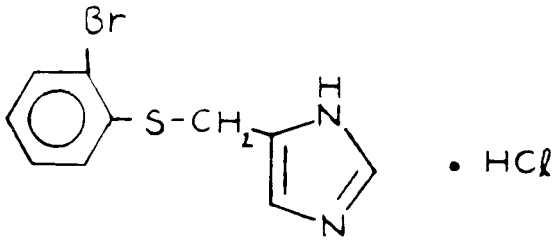
(1) Note. This subclass contains, for example:

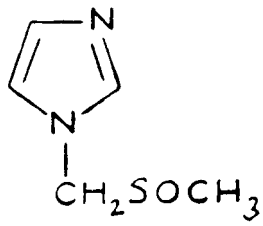




342.1 This subclass is indented under subclass 341.1. Compounds wherein sulfur is the chalcogen.

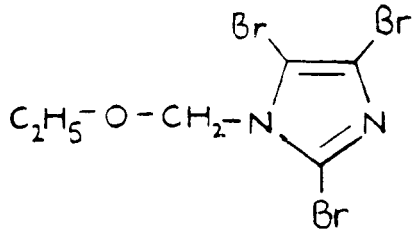
(1) Note. This subclass contains, for example:

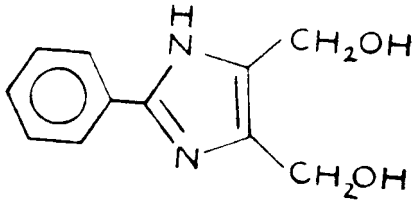




342.5 This subclass is indented under subclass 341.1. Compounds wherein halogen (i.e., F, Cl, Br, I, or At) or benzene ring is attached directly to the diazole ring by nonionic bonding.

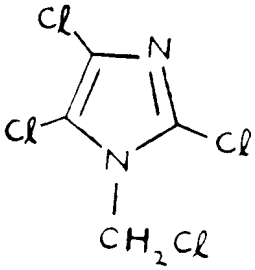
(1) Note. This subclass contains, for example:





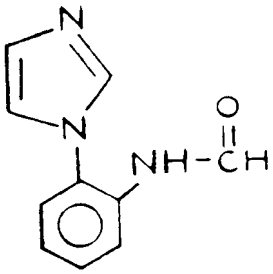
343.1 This subclass is indented under subclass 335.1. Compounds wherein halogen (i.e., F, Cl, Br, I, or At) is attached directly or indirectly to the diazole ring by acyclic nonionic bonding.

(1) Note. This subclass contains, for example:



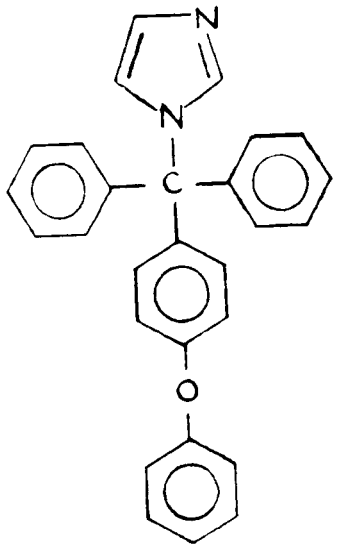
343.5 This subclass is indented under subclass 335.1. Compounds wherein the diazole ring is bonded directly to a benzene ring.

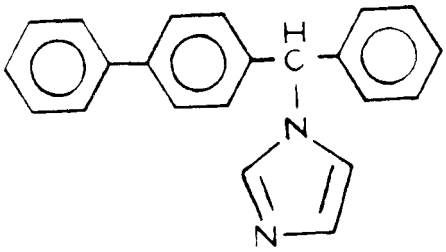
(1) Note. This subclass contains, for example:



344.1 This subclass is indented under subclass 335.1. Compounds wherein two benzene rings and the diazole ring are bonded directly to the same acyclic carbon.

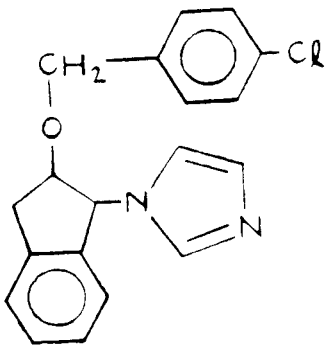
(1) Note. This subclass contains, for example:

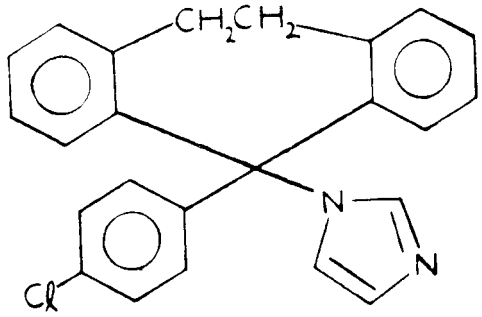




345.1 This subclass is indented under subclass 335.1. Compounds wherein the diazole ring is bonded directly to a cycloaliphatic ring.

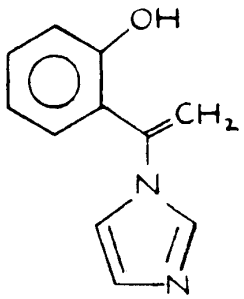
(1) Note. This subclass contains, for example:

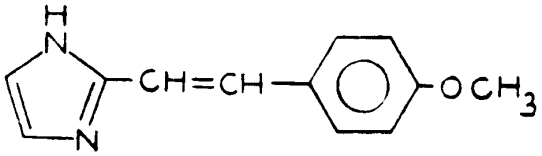




346.1 This subclass is indented under subclass 335.1. Compounds wherein a benzene ring is attached indirectly to the diazole ring by acyclic non-ionic bonding.

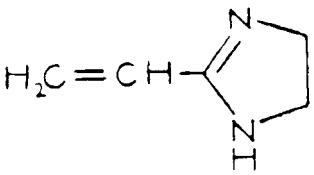
(1) Note. This subclass contains, for example:

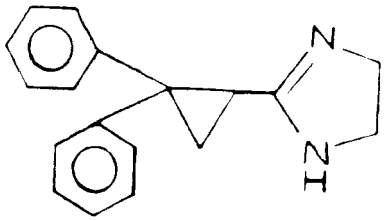




347.1 This subclass is indented under subclass 300.1. Compounds wherein the 1,3-diazole contains one double bond between its ring members.

(1) Note. This subclass contains, for example:

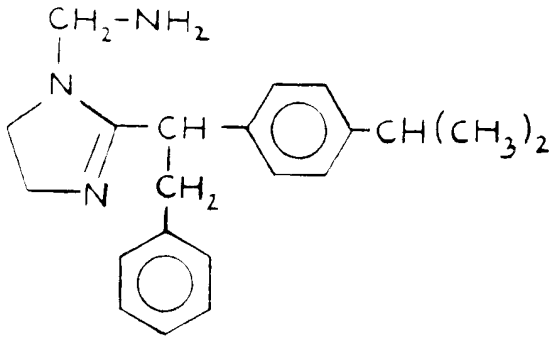


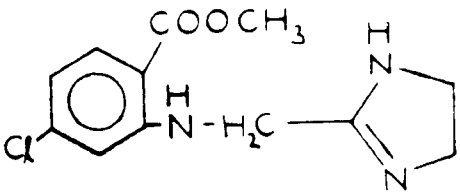


(2) Note. The 1,3-diazoles provided for in this subclass are generally referred to as 2- imidazolines, 4,5-dihydroimidazoles, or dihydroglyoxalines.

348.1 This subclass is indented under subclass 347.1. Compounds wherein nitrogen is attached indirectly to the diazole ring by acyclic nonionic bonding.

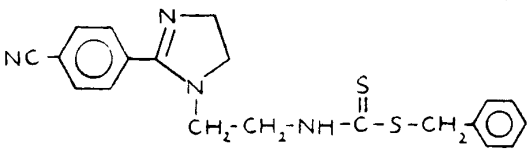
(1) Note. This subclass contains, for example:

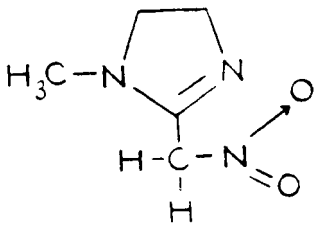




349.1 This subclass is indented under subclass 348.1. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is attached indirectly to the diazole ring by acyclic nonionic bonding.

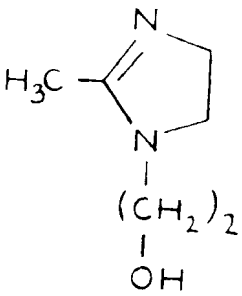
(1) Note. This subclass contains, for example:





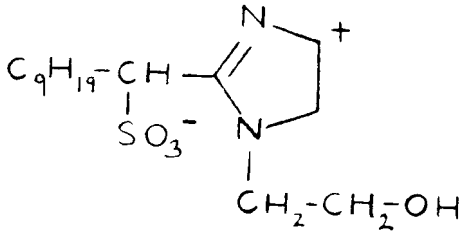
350.1 This subclass is indented under subclass 347.1. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is attached indirectly to the diazole ring by acyclic nonionic bonding.

(1) Note. This subclass contains, for example:



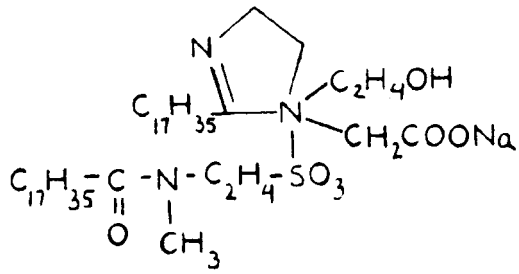
351.1 This subclass is indented under subclass 350.1. Compounds wherein sulfur is the chalcogen.

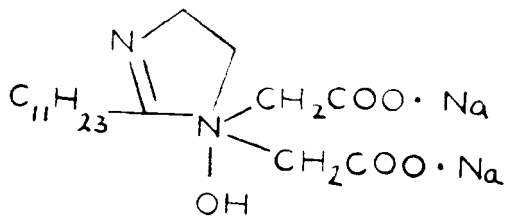
(1) Note. This subclass contains, for example:



352.1 This subclass is indented under subclass 350.1. Compounds in which the chalcogen, X, is in a X- group, wherein X's are the same or diverse chalcogens.

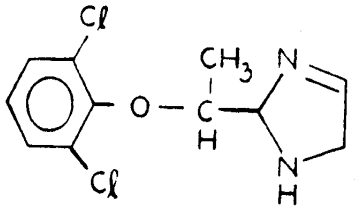
(1) Note. This subclass contains, for example:





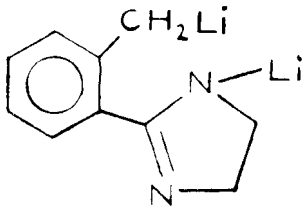
353.1 This subclass is indented under subclass 350.1. Compounds in which the chalcogen is bonded directly to a benzene ring.

(1) Note. This subclass contains, for example:



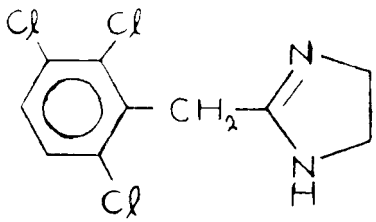
354.1 This subclass is indented under subclass 347.1. Compounds wherein the diazole ring is bonded directly to a benzene ring.

(1) Note. This subclass contains, for example:



355.1 This subclass is indented under subclass 347.1. Compounds wherein the diazole ring and a benzene ring are bonded to the same acyclic carbon atom or carbon chain.

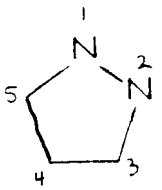
(1) Note. This subclass contains, for example:



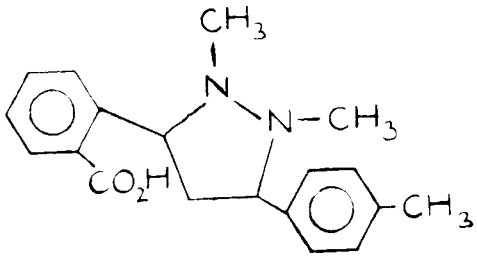
356.1 This subclass is indented under subclass 100. Compounds wherein nitrogen atoms occupy the 1 and 2 positions and carbon atoms occupy the remaining three positions of the five-membered hetero ring.

(1) Note. This subclass provides for compounds containing the following ring

which may have double bonds between its members.



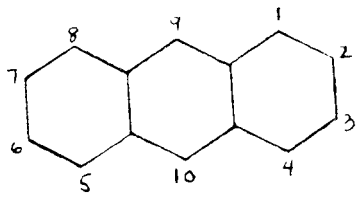
(2) Note. This subclass contains, for example:



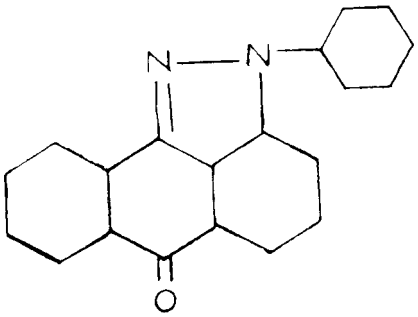
(3) Note. Compounds within this subclass are generally referred to as tetrahydropyrazoles or pyrazolidines.

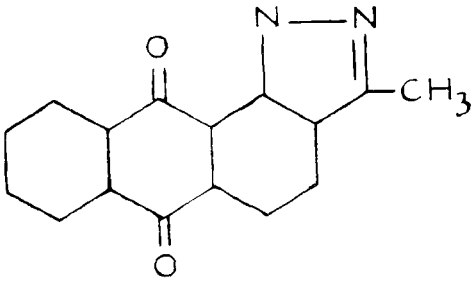
356.5 This subclass is indented under subclass 356.1. Compounds having a polycyclo ring system which is or contains the anthracene ring configuration with at least one double bond between ring members and having oxygen single bonded or any atom double bonded directly to the ring system at the 9- and 10- positions (e.g., anthraquinones, etc.) or at the 9- or 10- positions (e.g., anthrones, etc.).

(1) Note. The anthracene configured ring system is numbered as follows:



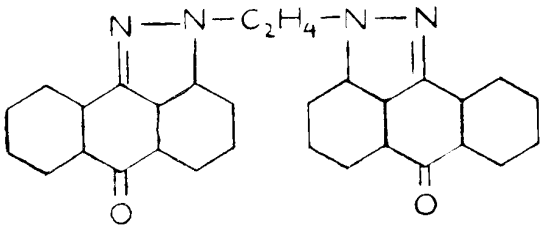
(2) Note. This subclass contains, for example:

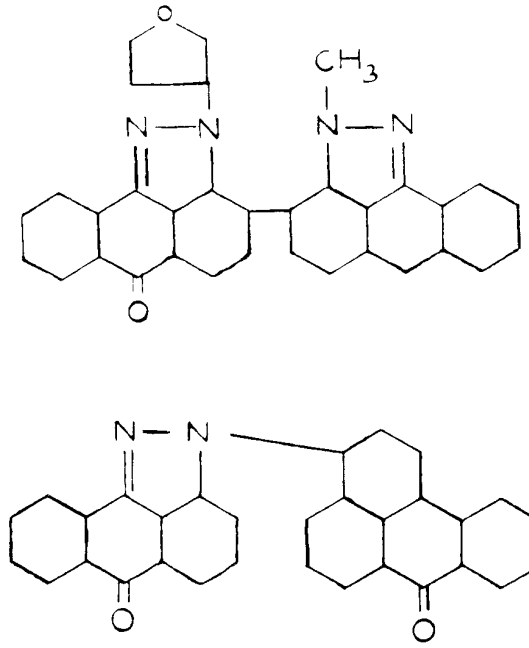




357.1 This subclass is indented under subclass 356.5. Compounds wherein the anthrone or the anthraquinone is attached directly or indirectly to an additional polycyclo ring system having at least three cyclos by nonionic bonding.

(1) Note. This subclass contains, for example:

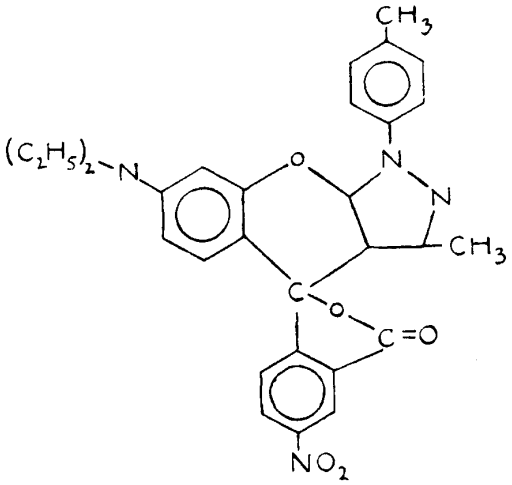


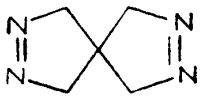


357.5 This subclass is indented under subclass 356.1. Compounds which are or contain a spiro ring system.

(1) Note. This subclass provides for compounds containing a 1,2-diazole ring and a spiro ring system whether or not the diazole ring is one of the cyclos in the spiro system.

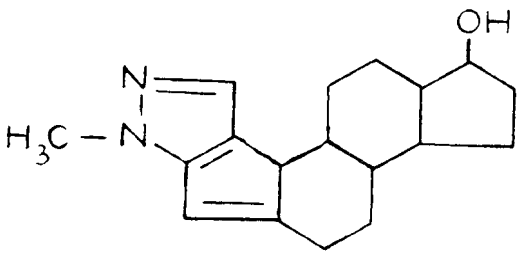
(2) Note. This subclass contains, for example:





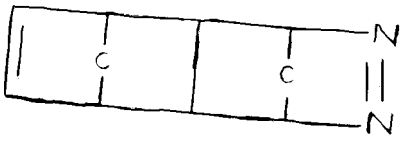
358.1 This subclass is indented under subclass 356.1. Compounds wherein the 1,2-diazole ring is a cyclo in a polycyclo ring system.

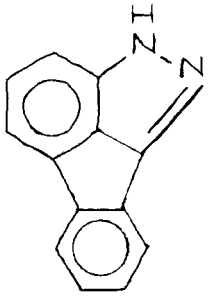
(1) Note. This subclass contains, for example:



358.5 This subclass is indented under subclass 358.1. Compounds in which the polycyclo ring system consists of exactly four rings.

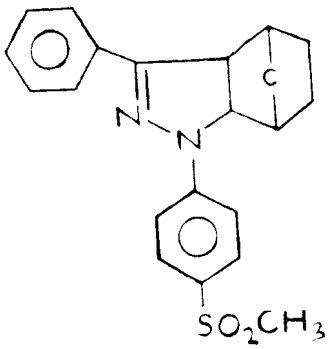
(1) Note. This subclass contains, for example:





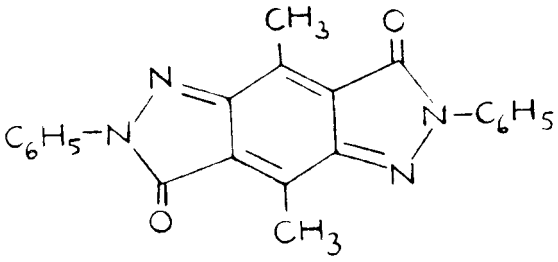
359.1 This subclass is indented under subclass 358.1. Compounds in which the polycyclo ring system consists of exactly three rings.

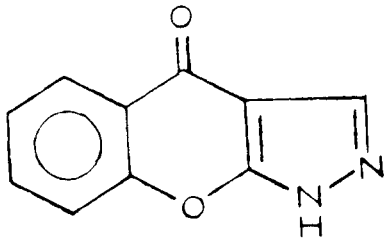
(1) Note. This subclass contains, for example:



359.5 This subclass is indented under subclass 359.1. Compounds wherein the tricyclo ring system contains at least one ring hetero atom in addition to the two ring nitrogens of the diazole ring.

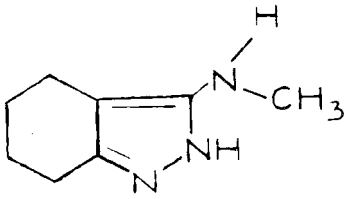
(1) Note. This subclass contains, for example:

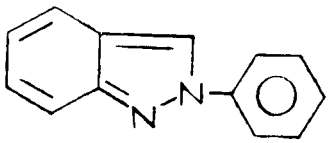


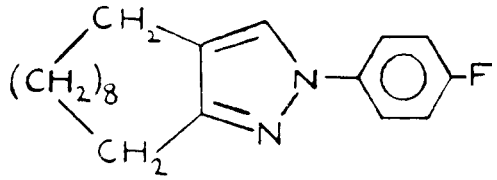


360.1 This subclass is indented under subclass 358.1. Compounds in which the polycyclo ring system consists of exactly two rings.

(1) Note. This subclass contains, for example:

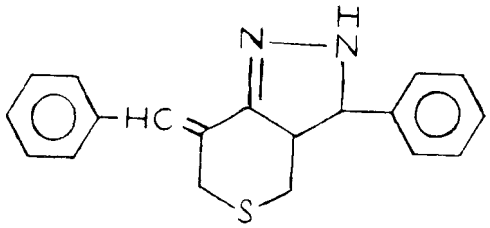






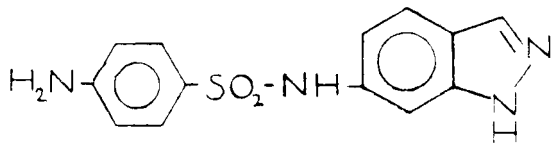
360.5 This subclass is indented under subclass 360.1. Compounds wherein the bicyclo ring system contains at least one ring hetero atom in addition to the two ring nitrogens of the diazole ring.

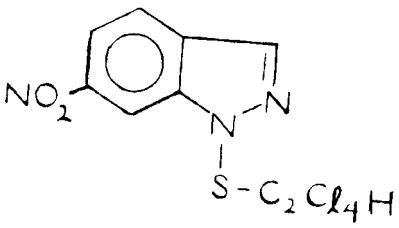
(1) Note. This subclass contains, for example:



361.1 This subclass is indented under subclass 360.1. Compounds in which the bicyclo ring system consists of a benzene ring and the diazole ring.

(1) Note. This subclass contains, for example:



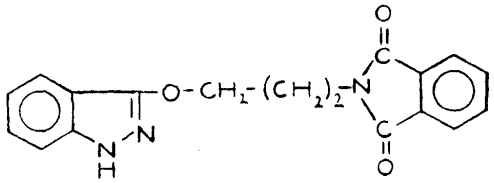


SEE OR SEARCH THIS CLASS, SUBCLASS:

360.1+, for compounds wherein the benzene ring is partially or completely hydrogenated.

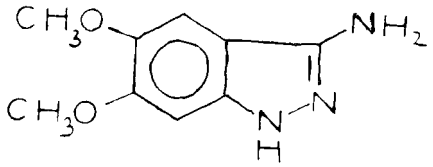
361.5 This subclass is indented under subclass 361.1. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly to ring carbon of the diazole ring.

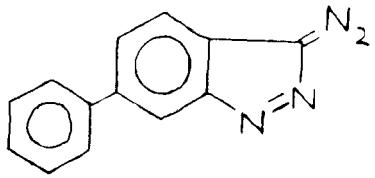
(1) Note. This subclass contains, for example:



362.1 This subclass is indented under subclass 361.1. Compounds wherein nitrogen is attached directly to the diazole ring by nonionic bonding.

(1) Note. This subclass contains, for example:

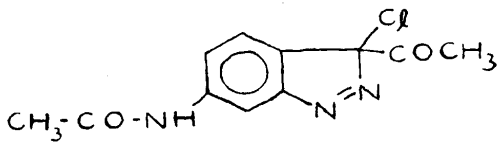




362.5 This subclass is indented under subclass 361.1. Compounds wherein nitrogen or chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is

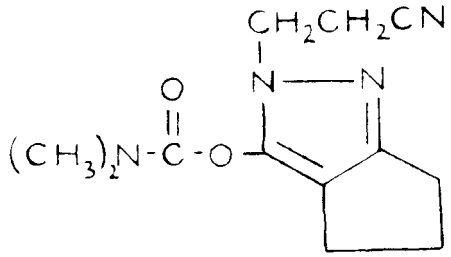
attached indirectly to the diazole ring by acyclic nonionic bonding.

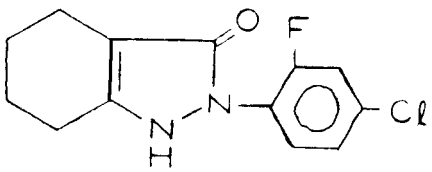
(1) Note. This subclass contains, for example:



363.1 This subclass is indented under subclass 360.1. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly to ring carbon of the diazole ring.

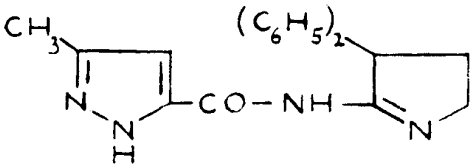
(1) Note. This subclass contains, for example:





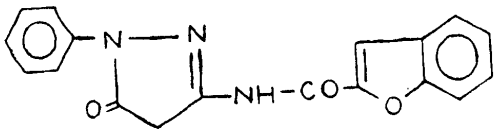
364.1 This subclass is indented under subclass 356.1. Compounds containing an additional hetero ring which is attached directly or indirectly to the five-membered hetero ring by nonionic bonding.

(1) Note. This subclass contains, for example:



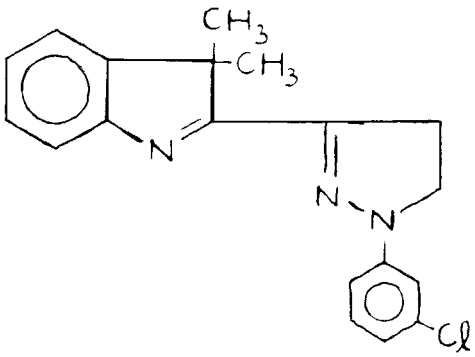
364.4 This subclass is indented under subclass 364.1. Compounds wherein the additional hetero ring is one of the cyclos in a polycyclo ring system.

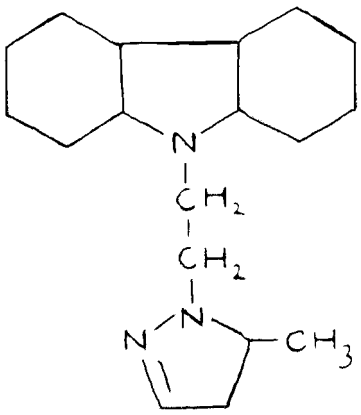
(1) Note. This subclass contains, for example:



364.7 This subclass is indented under subclass 364.4. Compounds containing nitrogen as the only ring hetero atom in the polycyclo ring system.

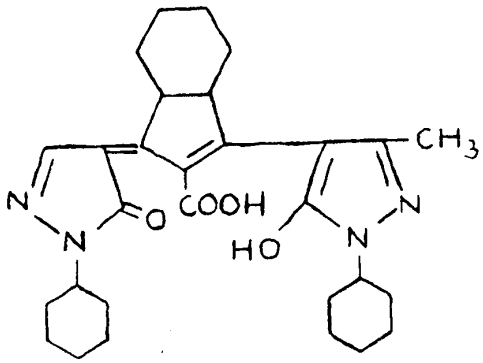
(1) Note. This subclass contains, for example:

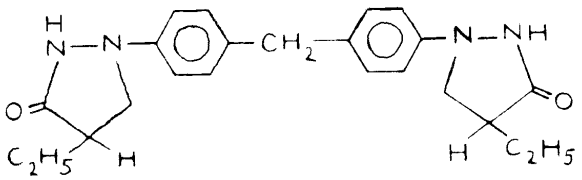




365.1 This subclass is indented under subclass 364.1. Compounds wherein the additional hetero ring is a five membered hetero ring having two ring nitrogens occupying the 1 and 2 positions (i.e., plural 1,2-diazoles and hydrogenated forms thereof).

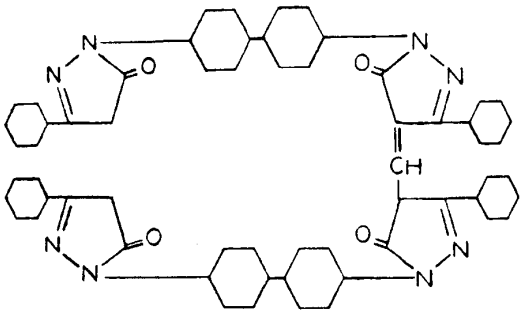
(1) Note. This subclass contains, for example:

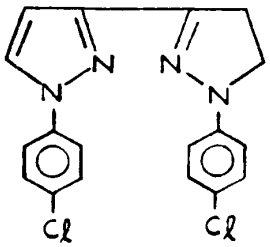




365.4 This subclass is indented under subclass 365.1. Compounds wherein two diazole rings are bonded directly to the same acyclic carbon atom, to the same acyclic carbon chain or are bonded directly to each other.

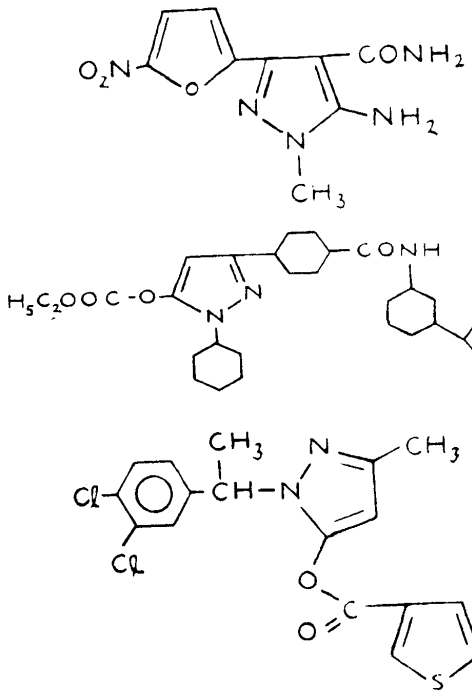
(1) Note. This subclass contains, for example:





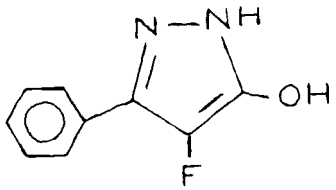
365.7 This subclass is indented under subclass 364.1. Compounds containing chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) as the only ring hetero atom in the additional hetero ring.

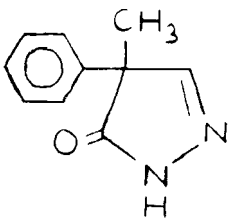
(1) Note. This subclass contains, for example:



366.1 This subclass is indented under subclass 356.1. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly to ring carbon of the diazole ring.

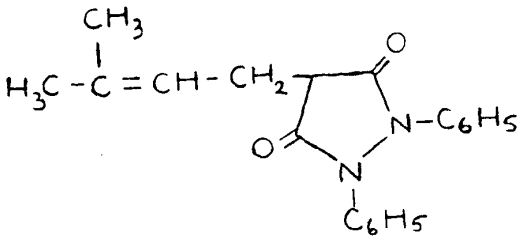
(1) Note. This subclass contains, for example:

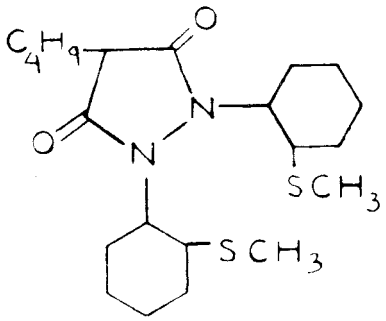




366.4 This subclass is indented under subclass 366.1. Compounds wherein at least two chalcogens (i.e., oxygen, sulfur, selenium, or tellurium) are bonded directly to ring carbons of the diazole ring.

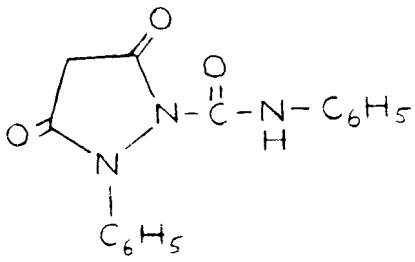
(1) Note. This subclass contains, for example:





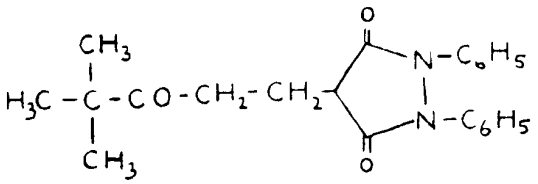
366.7 This subclass is indented under subclass 366.4. Compounds wherein nitrogen is attached indirectly to the diazole ring by acyclic nonionic bonding.

(1) Note. This subclass contains, for example:



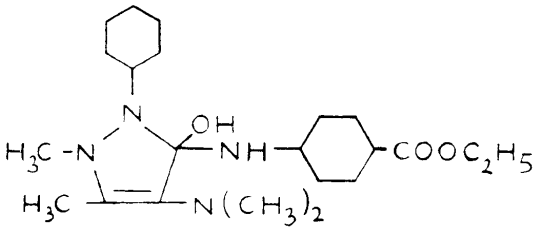
367.1 This subclass is indented under subclass 366.4. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is attached indirectly to the diazole ring by acyclic nonionic bonding.

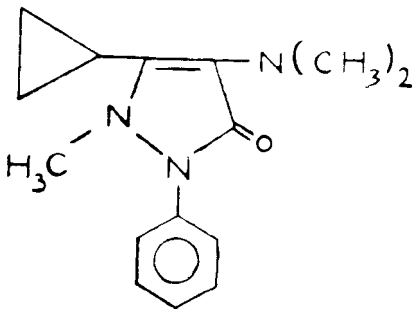
(1) Note. This subclass contains, for example:



367.4 This subclass is indented under subclass 366.1. Compounds wherein nitrogen is attached directly to the diazole ring by nonionic bonding.

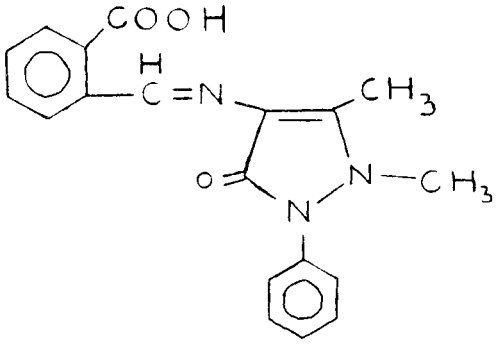
(1) Note. This subclass contains, for example:

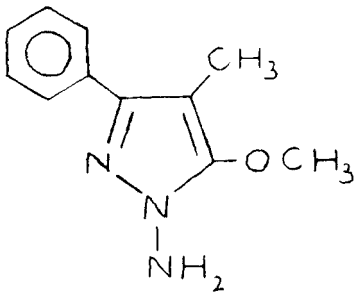




367.7 This subclass is indented under subclass 367.4. Compounds wherein the nitrogen is bonded directly to diazole ring nitrogen or acyclic carbon is multiply bonded to the nitrogen.

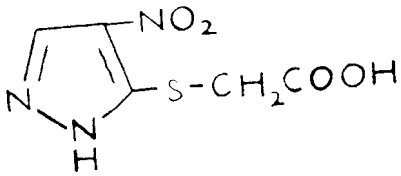
(1) Note. This subclass contains, for example:





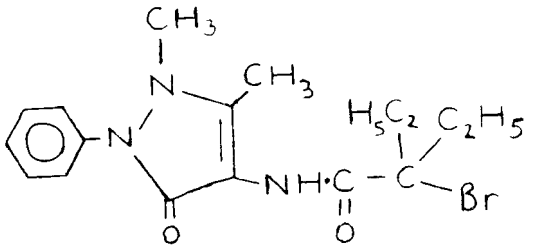
368.1 This subclass is indented under subclass 367.4. Compounds wherein the nitrogen is attached directly to chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) by nonionic bonding.

(1) Note. This subclass contains, for example:



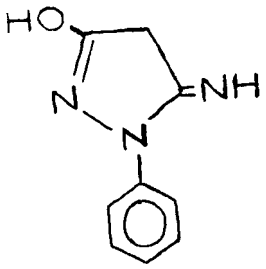
368.4 This subclass is indented under subclass 367.4. Compounds wherein the nitrogen is bonded directly to a group, wherein X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium).

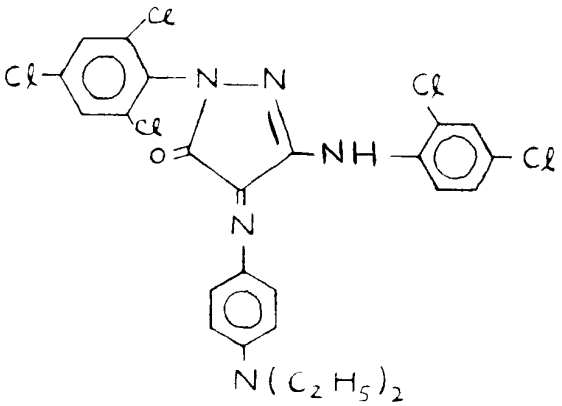
(1) Note. This subclass contains, for example:



368.7 This subclass is indented under subclass 367.4. Compounds wherein the chalcogen and the nitrogen are bonded directly to diazole ring carbons which are nonadjacent to each other.

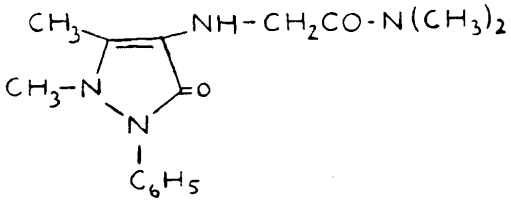
(1) Note. This subclass contains, for example:





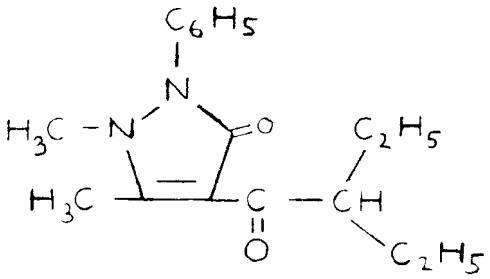
369.1 This subclass is indented under subclass 367.4. Compounds wherein the nitrogen is attached indirectly to chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) by acyclic nonionic bonding.

(1) Note. This subclass contains, for example:



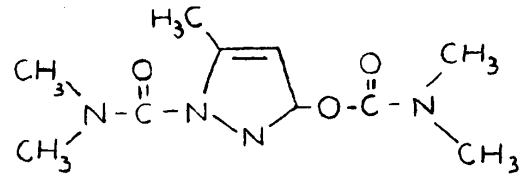
369.4 This subclass is indented under subclass 366.1. Compounds in which a group, wherein X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium), is bonded directly to the diazole ring.

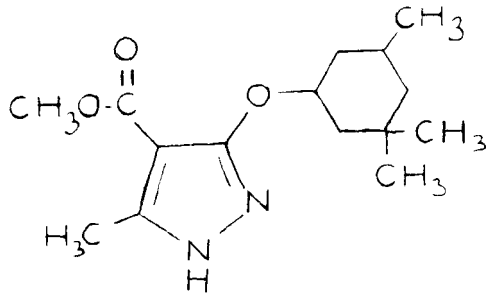
(1) Note. This subclass contains, for example:

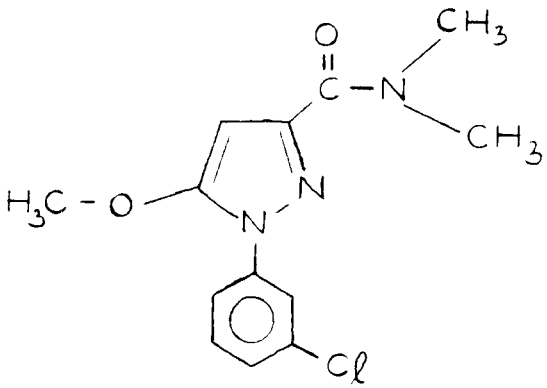


369.7 This subclass is indented under subclass 369.4. Compounds wherein the -C(=X)- group is bonded directly to chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) or acyclic nitrogen.

(1) Note. This subclass contains, for example:

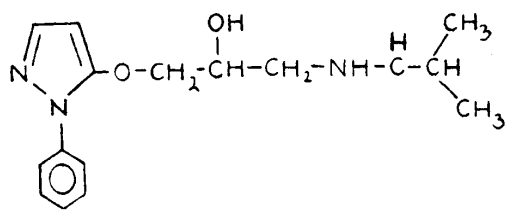






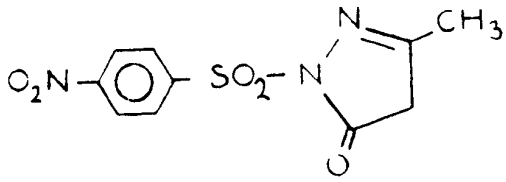
370.1 This subclass is indented under subclass 366.1. Compounds wherein nitrogen is attached indirectly to the diazole ring by acyclic nonionic bonding.

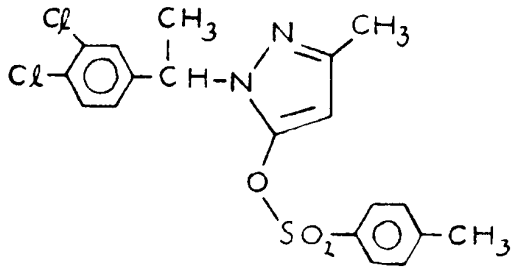
(1) Note. This subclass contains, for example:



370.4 This subclass is indented under subclass 366.1. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is attached indirectly to the diazole ring by acyclic nonionic bonding.

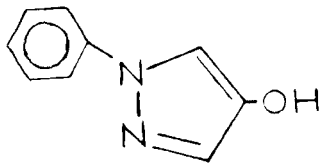
(1) Note. This subclass contains, for example:

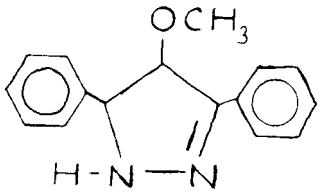




370.7 This subclass is indented under subclass 366.1. Compounds wherein the chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly to ring carbon at the 4- position of the diazole ring.

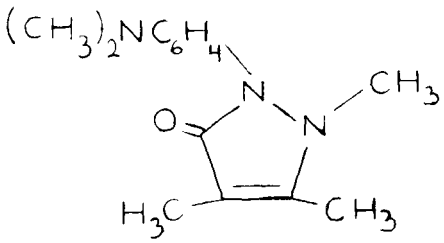
(1) Note. This subclass contains, for example:

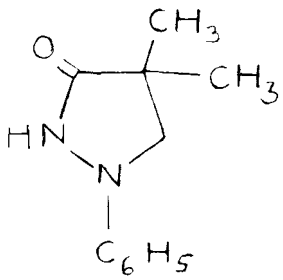


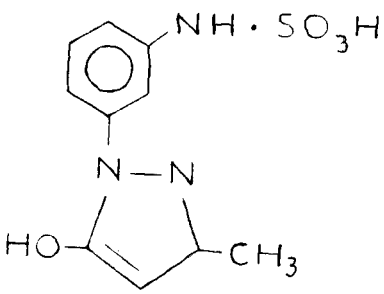


371.1 This subclass is indented under subclass 366.1. Compounds wherein benzene ring is bonded directly to ring nitrogen of the diazole ring.

(1) Note. This subclass contains, for example:

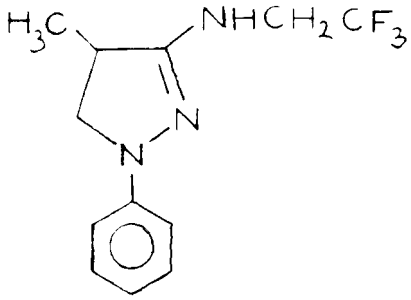






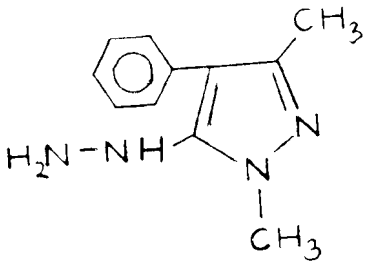
371.4 This subclass is indented under subclass 356.1. Compounds wherein nitrogen is attached directly to the ring by nonionic bonding.

(1) Note. This subclass contains, for example:



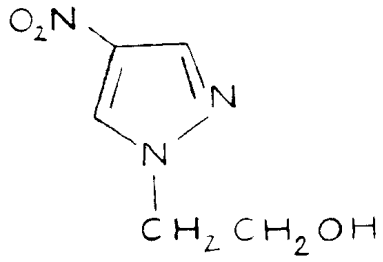
371.7 This subclass is indented under subclass 371.4. Compounds wherein nitrogen is attached indirectly to the diazole ring by acyclic nonionic bonding.

(1) Note. This subclass contains, for example:



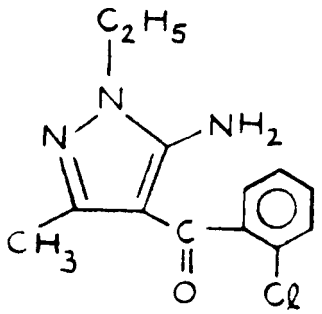
372.1 This subclass is indented under subclass 371.4. Compounds wherein the nitrogen is attached directly to chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) by nonionic bonding.

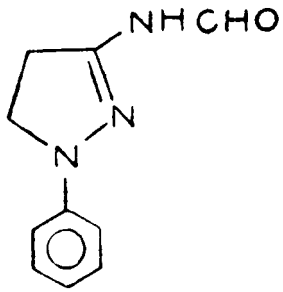
(1) Note. This subclass contains, for example:



372.5 This subclass is indented under subclass 371.4. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is attached indirectly to the diazole ring by acyclic nonionic bonding.

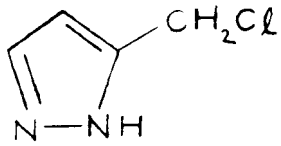
(1) Note. This subclass contains, for example:

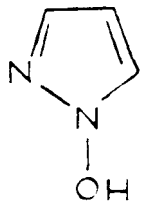


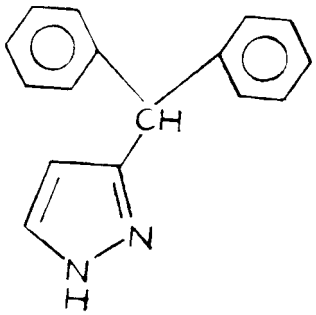


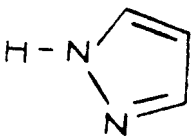
373.1 This subclass is indented under subclass 356.1. Compounds wherein the 1,2-diazole ring contains two double bonds between ring members.

(1) Note. This subclass contains, for example:



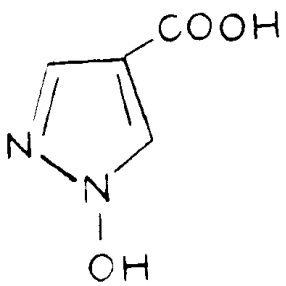






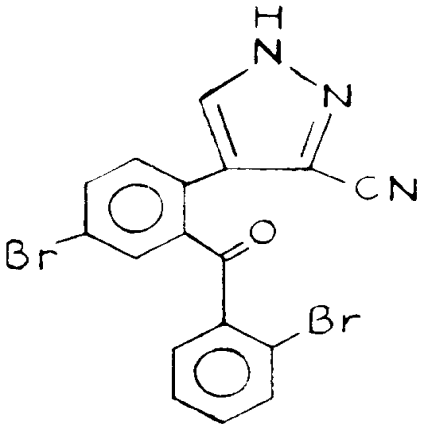
374.1 This subclass is indented under subclass 373.1. Compounds wherein, wherein X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium), is bonded directly to the diazole ring.

(1) Note. This subclass contains, for example:



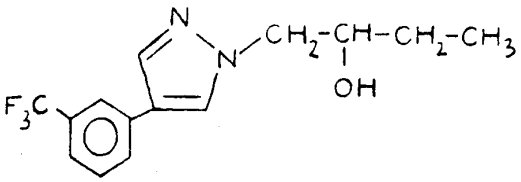
375.1 This subclass is indented under subclass 373.1. Compounds wherein nitrogen is attached indirectly to the diazole ring by acyclic nonionic bonding.

(1) Note. This subclass contains, for example:



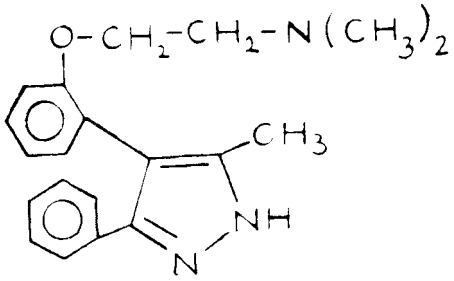
376.1 This subclass is indented under subclass 373.1. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is attached indirectly to the diazole ring by acyclic nonionic bonding.

(1) Note. This subclass contains, for example:



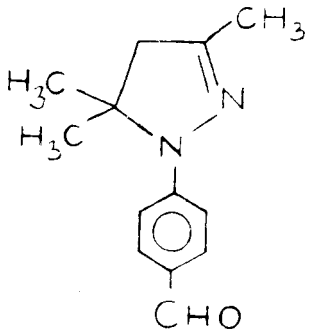
377.1 This subclass is indented under subclass 373.1. Compounds wherein the diazole ring is bonded directly to a benzene ring.

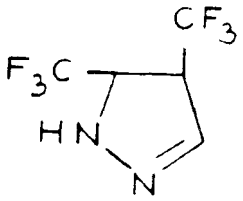
(1) Note. This subclass contains, for example:



379.1 This subclass is indented under subclass 356.1. Compounds wherein the 1,2-diazole ring contains one double bond between ring members.

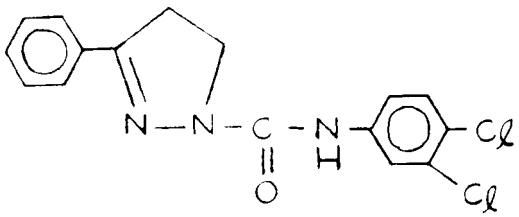
(1) Note. This subclass contains, for example:

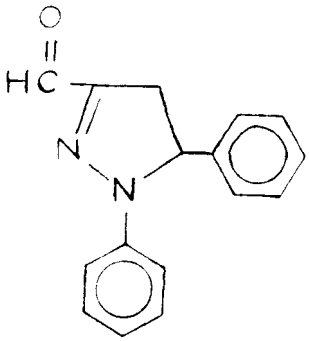




379.4 This subclass is indented under subclass 379.1. Compounds wherein nitrogen or chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is attached indirectly to the diazole ring by acyclic nonionic bonding.

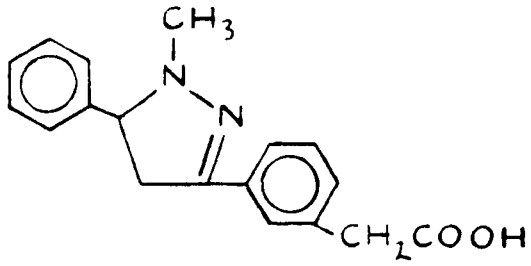
(1) Note. This subclass contains, for example:

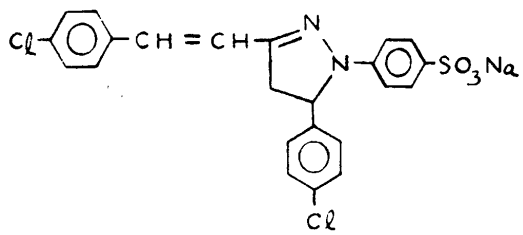




379.7 This subclass is indented under subclass 379.1. Compounds containing at least two benzene rings bonded directly to the diazole ring.

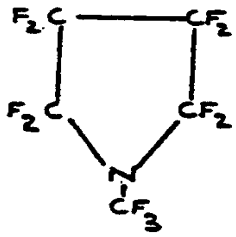
(1) Note. This subclass ring contains, for example:





400 This subclass is indented under subclass 1. Compounds under Class 540, which contain a five-membered hetero ring consisting of one nitrogen atom and four carbon atoms.

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

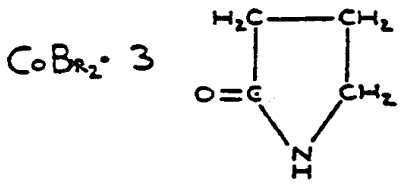


401 This subclass is indented under subclass 400. Products which contain a compound having a hetero ring consisting of one nitrogen and four carbon atoms in admixture with a preserving or stabilizing agent whose sole function is to prevent physical or chemical change.

402 This subclass is indented under subclass 400. Compounds which include aluminum or a metal having a specific gravity greater than four.

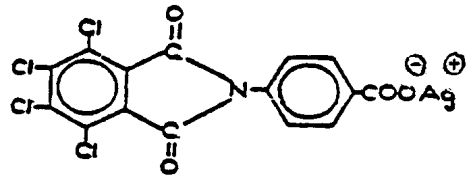
(1) Note. Arsenic is considered a metal.

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



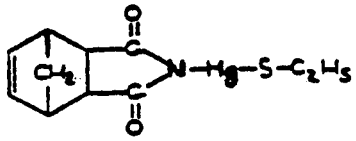
403 This subclass is indented under subclass 402. Compounds wherein the metal /is bonded directly to chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) which is attached directly or indirectly to the five-membered hetero ring by nonionic bonding.

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



404 This subclass is indented under subclass 402. Compounds wherein at least two chalcogens (i.e., oxygen, sulfur, selenium, or tellurium) are bonded to ring carbons of the five-membered hetero ring.

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

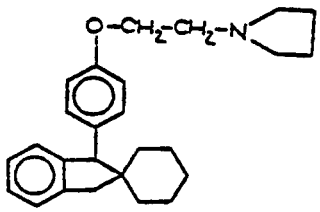


405 This subclass is indented under subclass 400. Compounds which contain boron.

406 This subclass is indented under subclass 400. Compounds which contain silicon.

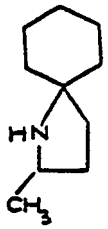
407 This subclass is indented under subclass 400. Compounds which contain a spiro ring system.

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



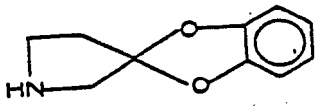
408 This subclass is indented under subclass 407. Compounds wherein the five-membered hetero ring is one of the rings in the spiro ring system.

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



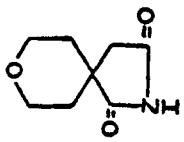
409 This subclass is indented under subclass 408. Compounds wherein both rings in the spiro ring system are hetero rings.

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



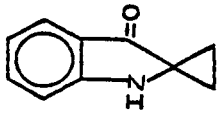
410 This subclass is indented under subclass 409. Compounds wherein acyclic chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is attached directly to the five-membered nitrogen containing spiro hetero ring by nonionic bonding.

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



411 This subclass is indented under subclass 408. Compounds wherein one of the two rings which form the spiro ring system is additionally one of the cyclos of a polycyclo ring system.

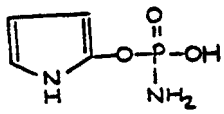
(1) Note. An example of a compound provided for herein is:



412 This subclass is indented under subclass 400. Compounds wherein phosphorus is attached directly to the five-membered hetero ring by nonionic bonding.

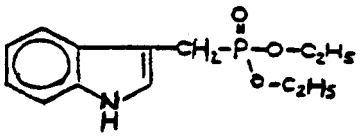
413 This subclass is indented under subclass 400. Compounds wherein phosphorus is attached indirectly to the five-membered hetero ring by nonionic bonding.

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



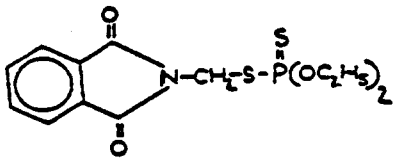
414 This subclass is indented under subclass 413. Compounds wherein the five-membered hetero ring is a cyclo in a polycyclo ring system.

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



415 This subclass is indented under subclass 414. Compounds wherein at least two chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) atoms are bonded directly to ring carbons of the five-membered hetero ring.

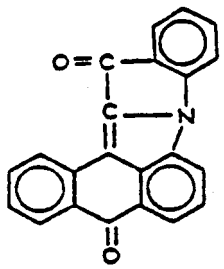
(1) Note. An example of a compound provided for herein is:

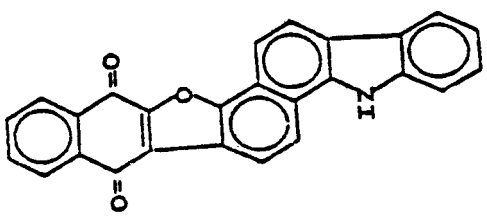


416 This subclass is indented under subclass 400. Compounds wherein the five-membered hetero ring is one of the cyclos of a polycyclo ring system.

417 This subclass is indented under subclass 416. Compounds wherein the polycyclo ring system contains at least six cyclos and has either a ring carbon that is shared by three of the cyclos of the polycyclo ring system, or has a ring chalcogen.

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

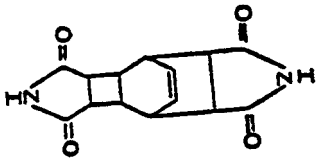


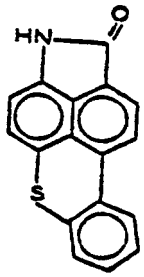


418 This subclass is indented under subclass 416. Compounds wherein the polycyclo ring system consists of exactly five cyclos.

419 This subclass is indented under subclass 418. Compounds wherein at least three ring members of one cyclo are ring members of an additional cyclo in the pentacyclo ring system, or wherein one ring carbon is a member of three of the cyclos in the pentacyclo system.

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



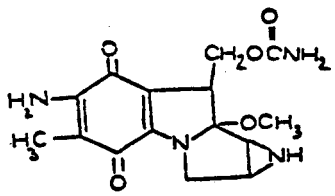


420 This subclass is indented under subclass 416. Compounds wherein the polycyclo ring system consists of exactly four cyclos.

421 This subclass is indented under subclass 420. Compounds wherein the tetracyclo ring system contains at least one ring hetero atom in addition to the ring nitrogen of the five-membered hetero ring.

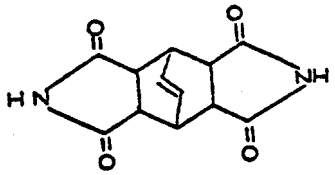
422 This subclass is indented under subclass 421. Compounds wherein one of the cyclos of the tetracyclo ring system is a three-membered hetero ring which contains ring nitrogen.

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



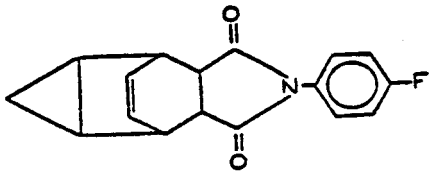
423 This subclass is indented under subclass 421. Compounds wherein at least two chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) atoms are bonded directly to ring carbons of the five-membered hetero ring.

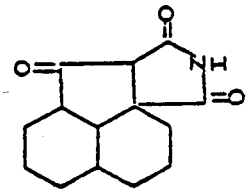
(1) Note. An example of a compound provided for herein is:



424 This subclass is indented under subclass 420. Compounds wherein at least three ring members of one cyclo are ring members of an additional cyclo in the tetracyclo ring system, or wherein one ring carbon is a member of three of the cyclos in the tetracyclo ring system.

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

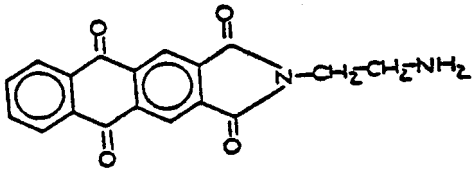




425 This subclass is indented under subclass 424. Compounds wherein one of the cyclos of the tetracyclo ring system is a benzene ring.

426 This subclass is indented under subclass 420. Compounds wherein ring members of the five-membered hetero ring are ring members of one additional cyclo only in the tetracyclo ring system.

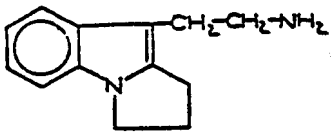
(1) Note. An example of a compound provided for herein is:



427 This subclass is indented under subclass 416. Compounds wherein the polycyclo ring system consists of exactly three cyclos.

428 This subclass is indented under subclass 427. Compounds wherein two of the cyclos in the tricyclo ring system share a ring nitrogen.

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

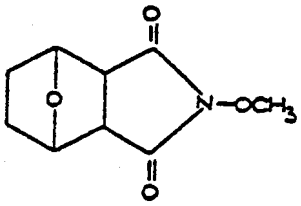


429 This subclass is indented under subclass 427. Compounds wherein the tricyclo ring system contains at least one ring hetero atom in addition to the ring nitrogen of the five-membered hetero ring.

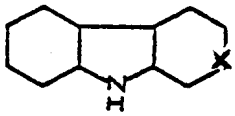
430 This subclass is indented under subclass 429. Compounds wherein the tricyclo ring system contains ring chalcogen (i.e., oxygen, sulfur, selenium, or tellurium).

431 This subclass is indented under subclass 430. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly to ring carbon of the five-membered hetero ring.

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

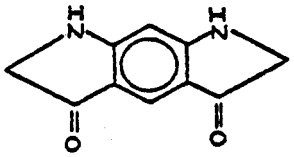


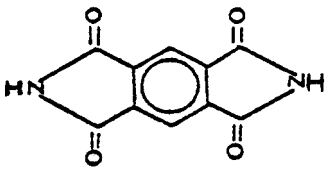
432 This subclass is indented under subclass 430. Compounds wherein the tricyclo ring system has the following basic structure, which may contain double bonds between ring members and wherein X is oxygen or sulfur:



433 This subclass is indented under subclass 429. Compounds wherein the tricyclo ring system consists of a benzene ring which shares ring carbons with two nitrogen containing hetero rings.

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

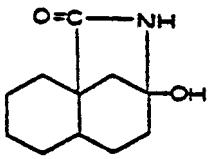


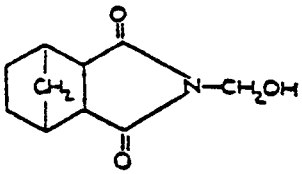


434 This subclass is indented under subclass 427. Compounds wherein at least three ring members of one cyclo are ring members of an additional cyclo in the tricyclo ring system.

435 This subclass is indented under subclass 434. Compounds wherein at least two chalcogen atoms (i.e., oxygen, sulfur, selenium, or tellurium) are bonded directly to ring carbons of the five-membered hetero ring.

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

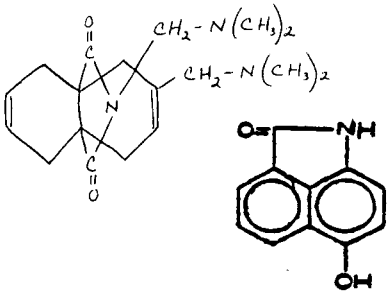




436 This subclass is indented under subclass 427. Compounds wherein the same ring carbon is a member of each of the three cyclos of the tricyclo ring system.

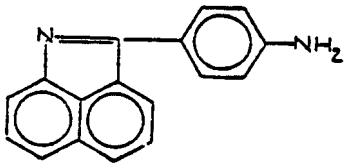
437 This subclass is indented under subclass 436. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly to ring carbon of the five-membered hetero ring.

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



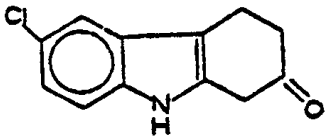
438 This subclass is indented under subclass 436. Compounds wherein a benzene ring, which is not a cyclo in the tricyclo ring system, is bonded directly to ring carbon of the five-membered hetero ring.

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



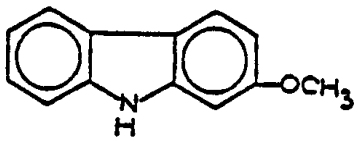
439 This subclass is indented under subclass 427. Compounds wherein each of the two carbocyclic rings in the tricyclo ring system share ring carbons with the five-membered hetero ring.

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



440 This subclass is indented under subclass 439. Compounds wherein each of two benzene rings in the tricyclo ring system shares ring carbons with the five-membered hetero ring.

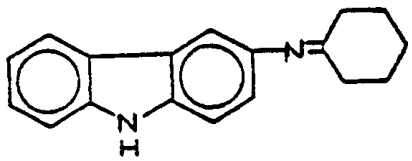
(1) Note. An example of a compound provided for herein is:



441 This subclass is indented under subclass 440. Compounds wherein a group, in which X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium), is bonded directly to the tricyclo ring system.

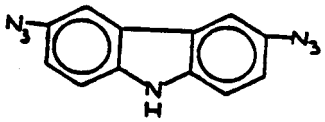
442 This subclass is indented under subclass 440. Compounds wherein an additional carbocyclic ring and one of the benzene rings of the tricyclo ring system are bonded directly to the same acyclic nitrogen.

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



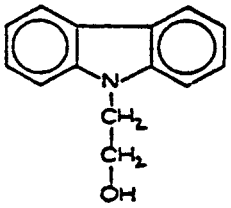
443 This subclass is indented under subclass 440. Compounds wherein $-N_3$, or is attached directly to the tricyclo ring system by nonionic bonding.

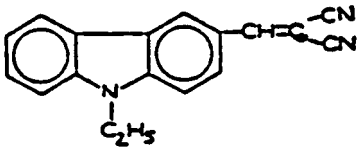
(1) Note. Examples of compounds provided for herein are:



444 This subclass is indented under subclass 440. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) or nitrogen is attached indirectly to the tricyclo ring system by acyclic nonionic bonding.

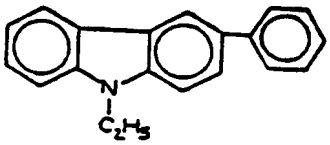
(1) Note. Examples of compounds provided for herein are:



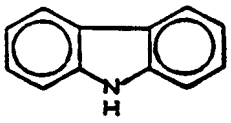


445 This subclass is indented under subclass 440. Compounds wherein the tricyclo ring system is either unsubstituted or substituted by hydrocarbyl groups only.

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



446 This subclass is indented under subclass 445. Compounds which have the following structure, and which may contain alkyl substitution only:



447 This subclass is indented under subclass 446. Processes of preparing unsubstituted carbazole or alkyl substituted carbazoles only, by cyclization or by alkylation.

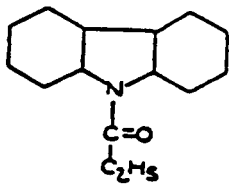
(1) Note. The unsubstituted carbazole is prepared by cyclization (e.g., of o-aminobiphenyl). The alkyl carbazoles are prepared either by cyclization (e.g., of an

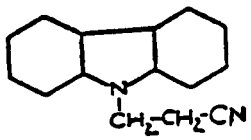
alkyl substituted o-aminobiphenyl), or by alkylation of carbazole.

448 This subclass is indented under subclass 439. Compounds wherein a group, in which X is chalcogen (i.e. oxygen, sulfur, selenium, or tellurium), is bonded directly to ring carbon of the tricyclo ring system.

449 This subclass is indented under subclass 439. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) or nitrogen is attached indirectly to ring nitrogen of the five-membered hetero ring by acyclic nonionic bonding.

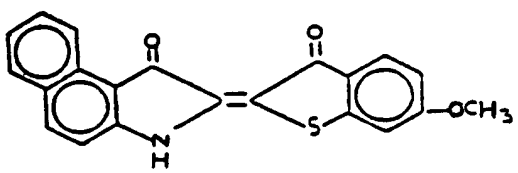
(1) Note. Examples of compounds provided for herein are:





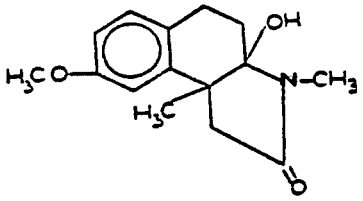
450 This subclass is indented under subclass 427. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly to ring carbon of the five-membered hetero ring.

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



451 This subclass is indented under subclass 450. Compounds wherein at least two chalcogens (i.e., oxygen, sulfur, selenium, or tellurium) are bonded directly to ring carbons of the five-membered hetero ring.

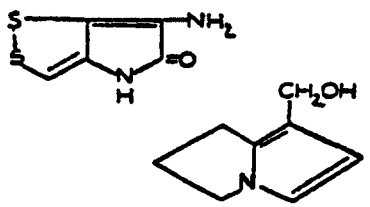
(1) Note. Examples of compounds provided for herein are:



452 This subclass is indented under subclass 416. Compounds wherein the polycyclo ring system consists of exactly two cyclos.

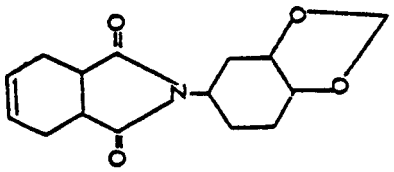
453 This subclass is indented under subclass 452. Compounds wherein the bicyclo ring system contains at least one ring hetero atom in addition to the ring nitrogen of the five-membered hetero ring, or wherein the ring nitrogen is additionally a member of the other cyclo of the bicyclo ring system.

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



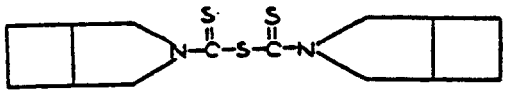
454 This subclass is indented under subclass 452. Compounds wherein an additional polycyclo heterocyclic ring system is attached directly or indirectly to the bicyclo ring system by nonionic bonding.

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



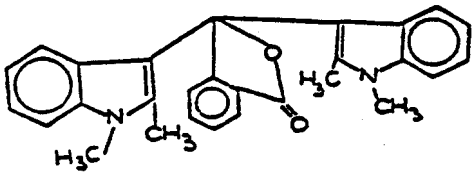
455 This subclass is indented under subclass 454. Compounds wherein a five-membered nitrogen containing hetero ring is a cyclo in the additional polycyclo ring system.

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



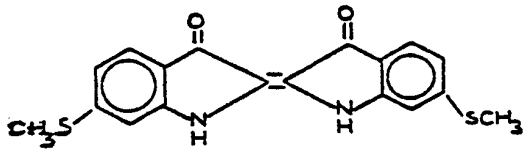
456 This subclass is indented under subclass 455. Compounds which contain a lactone ring, (i.e., a cyclic inner ester wherein -C(=X)O- is part of the ring and X represents chalcogen, i.e., oxygen, sulfur, selenium, tellurium).

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



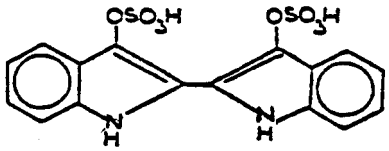
457 This subclass is indented under subclass 455. Compounds wherein a ring carbon of one of the five-membered hetero rings is bonded directly to a ring carbon of the other five-membered hetero ring.

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



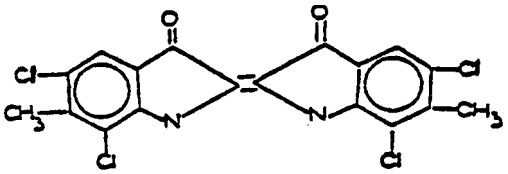
458 This subclass is indented under subclass 457. Compounds wherein the ring carbons are bonded to each other by a single bond.

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



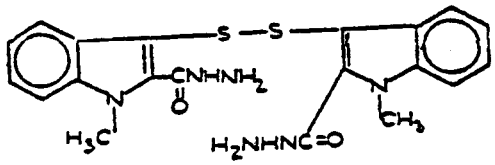
459 This subclass is indented under subclass 457. Compounds wherein halogen is attached directly or indirectly to the bicyclo ring system ring by nonionic bonding.

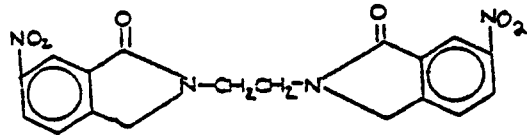
(1) Note. An example of a compound provided for herein is:

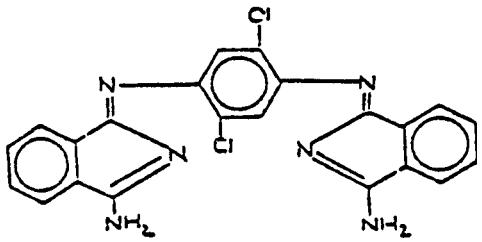


460 This subclass is indented under subclass 455. Compounds wherein a ring carbon of each of the two five-membered hetero rings is bonded directly to chalcogen (i.e., oxygen, sulfur, selenium, or tellurium), or nitrogen.

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

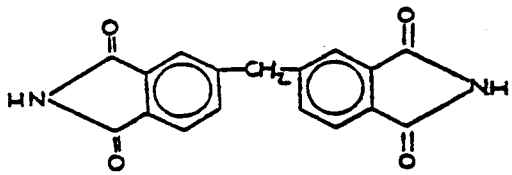


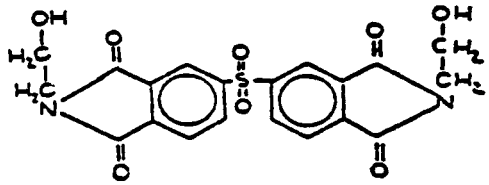




461 This subclass is indented under subclass 460. Compounds wherein at least two chalcogens (i.e., oxygen, sulfur, selenium, or tellurium) are bonded directly to ring carbons of each of the two five-membered hetero rings.

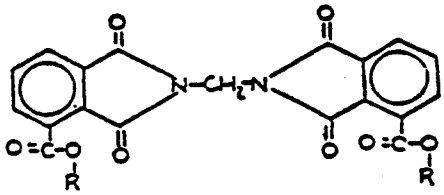
(1) Note. Examples of compounds provided for herein are:

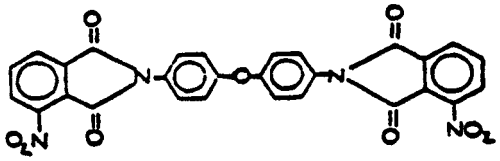




462 This subclass is indented under subclass 461. Compounds wherein the ring nitrogen of each of the two five-membered hetero rings is bonded directly to the same atom or chain, which chain may include a ring.

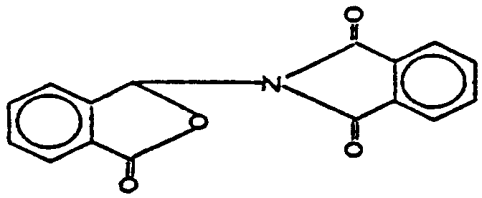
(1) Note. Examples of compounds provided for herein are:





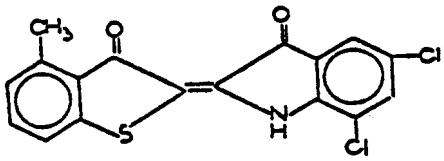
463 This subclass is indented under subclass 454. Compounds wherein one of the cyclos of the additional polycyclo heterocyclic ring system is a lactone ring, (i.e., a cyclic inner ester wherein -C(+X)O- is part of the ring and X represents chalcogen, i.e., oxygen, sulfur, selenium, or tellurium).

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



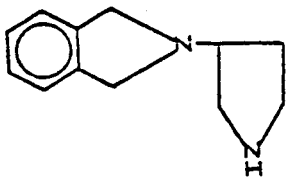
464 This subclass is indented under subclass 454. Compounds wherein a ring carbon of the hetero ring which is a cyclo in the additional polycyclo heterocyclic ring system is bonded directly to a ring carbon of the five-membered hetero ring.

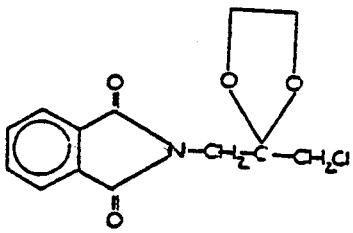
(1) Note. An example of a compound provided for herein is:



465 This subclass is indented under subclass 452. Compounds wherein an additional hetero ring is attached directly or indirectly to the bicyclo ring system by nonionic bonding.

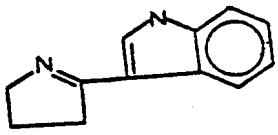
(1) Note. Examples of compounds provided for herein are:





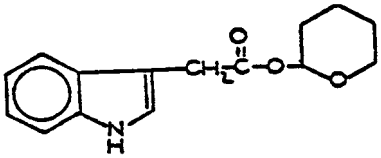
466 This subclass is indented under subclass 465. Compounds wherein the additional hetero ring is bonded directly to a ring carbon of the bicyclo ring system.

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



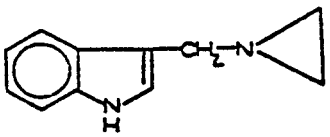
467 This subclass is indented under subclass 465. Compounds wherein the additional hetero ring is in a substituent on a ring carbon of the bicyclo ring system.

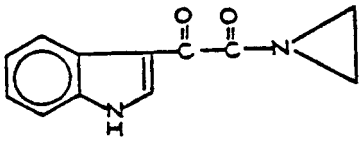
(1) Note. An example of a compound provided for herein is:



468 This subclass is indented under subclass 467. Compounds wherein the bicyclo ring system and the additional hetero ring are attached directly to the same acyclic carbon or acyclic carbon chain.

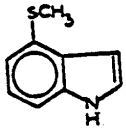
(1) Note. Examples of compounds provided for herein are:





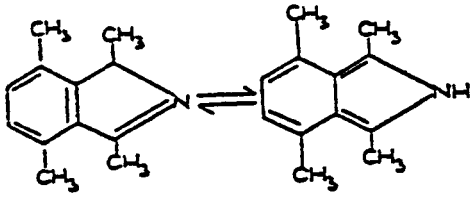
469 This subclass is indented under subclass 452. Compounds wherein the five-membered hetero ring and a benzene ring are the cyclos of the bicyclo ring system.

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

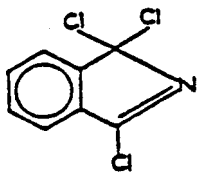


470 This subclass is indented under subclass 469. Compounds wherein the ring nitrogen is bonded directly to two ring carbons of the same cyclo, which carbons are members of one cyclo only.

(1) Note. There exists a tautomeric equivalence between isoindoles and insoindolenines, as is shown below. This subclass provided for both isoindoles and isoindolenines.

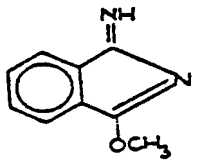


(2) Note. An example of a compound provided for herein is:



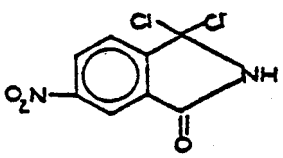
471 This subclass is indented under subclass 470. Compounds wherein nitrogen is bonded directly to ring carbon of the five-membered hetero ring.

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



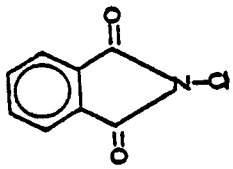
472 This subclass is indented under subclass 470. Compounds wherein chalcogen (oxygen, sulfur, selenium, or tellurium) is bonded directly to ring carbon of the five-membered hetero ring.

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



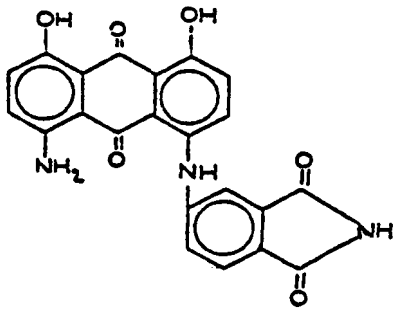
473 This subclass is indented under subclass 472. Compounds wherein at least two chalcogens (i.e., oxygen, sulfur, selenium, or tellurium) are bonded directly to ring carbons of the five-membered hetero ring.

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



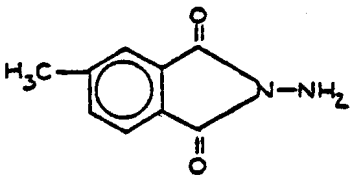
474 This subclass is indented under subclass 473. Compounds which contain a polycyclo carbocyclic ring system having at least three cyclos.

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



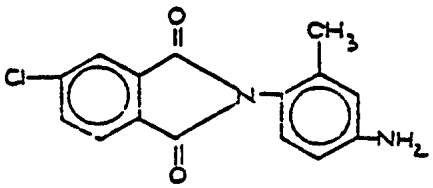
475 This subclass is indented under subclass 473. Compounds wherein the ring nitrogen of the five-membered hetero ring is bonded directly to chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) or nitrogen by nonionic bonding.

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



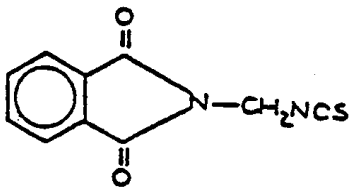
476 This subclass is indented under subclass 473. Compounds wherein the ring nitrogen of the five-membered hetero ring is bonded directly to a benzene ring.

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



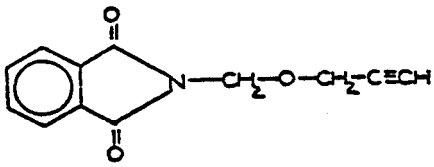
477 This subclass is indented under subclass 473. Compounds wherein nitrogen is attached indirectly to the ring nitrogen of the five-membered hetero ring by acyclic nonionic bonding.

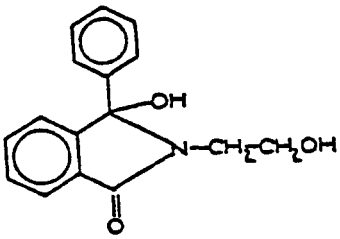
(1) Note. An example of a compound provided for herein is:



478 This subclass is indented under subclass 473. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is attached indirectly to the ring nitrogen of the five-membered hetero ring by acyclic nonionic bonding.

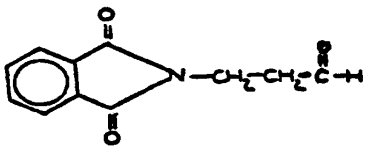
(1) Note. Examples of compounds provided for herein are:





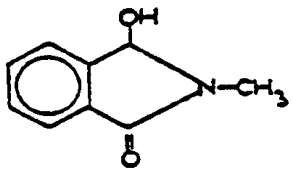
479 This subclass is indented under subclass 478. Compounds wherein the chalcogen, X (i.e., oxygen, sulfur, selenium, or tellurium), is in a group.

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



480 This subclass is indented under subclass 473. Compounds wherein the substituent on the ring nitrogen of the five-membered hetero ring is hydrogen or hydrocarbyl only.

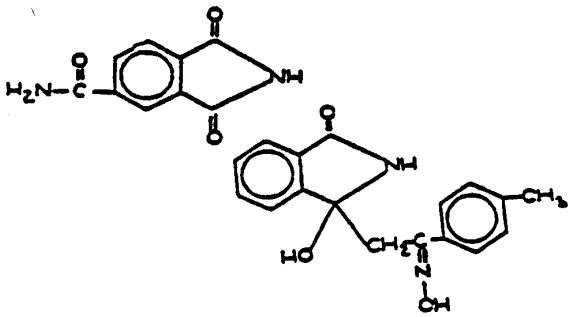
(1) Note. Examples of compounds provided for herein are:



481 This subclass is indented under subclass 480. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) or nitrogen is

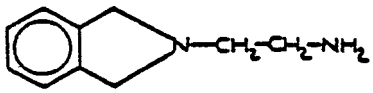
attached indirectly to ring carbon of the bicyclo ring system by acyclic nonionic bonding.

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



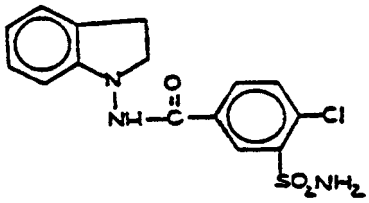
482 This subclass is indented under subclass 470. Compounds wherein there is only one double bond between ring members of the five-membered hetero ring.

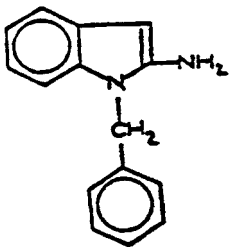
(1) Note. An example of a compound provided for herein is:



483 This subclass is indented under subclass 469. Compounds wherein nitrogen is attached directly to the five-membered hetero ring by nonionic bonding.

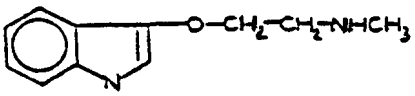
(1) Note. Examples of compounds provided for herein are:





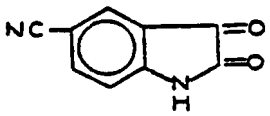
484 This subclass is indented under subclass 469. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly to ring carbon of the five-membered hetero ring.

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



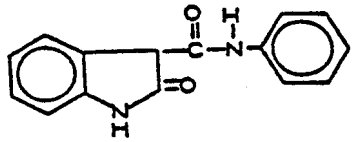
485 This subclass is indented under subclass 484. Compounds wherein at least two chalcogens (i.e., oxygen, sulfur, selenium, or tellurium) are bonded directly to ring carbons of the five-membered hetero ring.

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



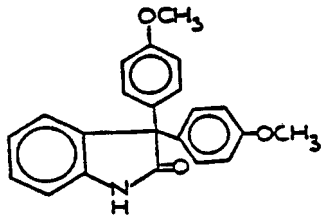
486 This subclass is indented under subclass 484. Compounds wherein the chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly to ring carbon of the five-membered hetero ring which is adjacent to the ring nitrogen.

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



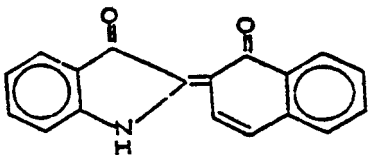
487 This subclass is indented under subclass 486. Compounds wherein a ring carbon of the five-membered hetero ring is bonded directly to two benzene rings.

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



488 This subclass is indented under subclass 484. Compounds wherein a ring carbon of the five-membered hetero ring is bonded directly to a polycyclo carbocyclic ring system.

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

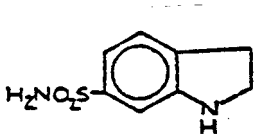


489 This subclass is indented under subclass 484. Processes wherein the bicyclo ring system is formed directly from a reactant which contains a benzene ring bonded directly to an acyclic nitrogen.

(1) Note. This subclass provides for such processes as: the reaction of N-methyl anthranilic acid with sodium amide to form indoxyl, and the reaction of phenylglycine with alkali to form indoxyl.

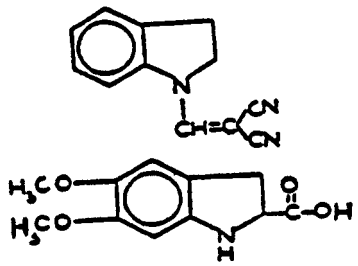
490 This subclass is indented under subclass 469. Compounds wherein there is only one double bond between ring members of the five-membered hetero ring.

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



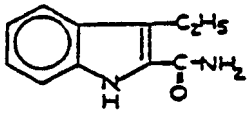
491 This subclass is indented under subclass 490. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) or nitrogen is attached indirectly to the five-membered hetero ring by acyclic nonionic bonding.

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



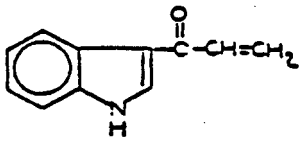
492 This subclass is indented under subclass 469. Compounds wherein a ring carbon of the five-membered hetero ring is bonded directly to a group, in which X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium).

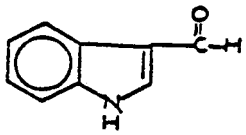
(1) Note. An example of a compound provided for herein is:



493 This subclass is indented under subclass 492. Compounds wherein the group is bonded directly to hydrogen, or to an additional carbon.

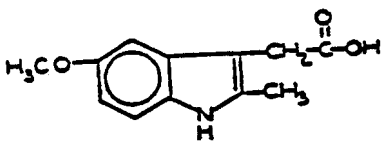
(1) Note. Examples of compounds provided for herein are:





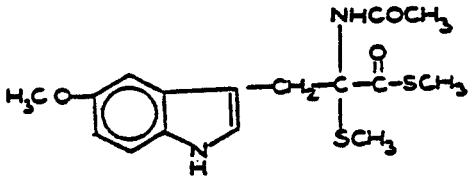
494 This subclass is indented under subclass 469. Compounds wherein a group, in which X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium), is attached indirectly to a ring carbon of the five-membered hetero ring by an acyclic carbon or an acyclic carbon chain.

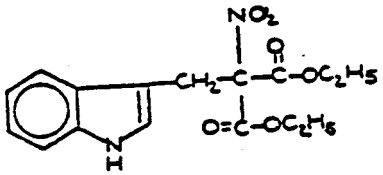
(1) Note. An example of a compound provided for herein is:



495 This subclass is indented under subclass 494. Compounds wherein an acyclic nitrogen is bonded directly to the acyclic carbon or acyclic carbon chain.

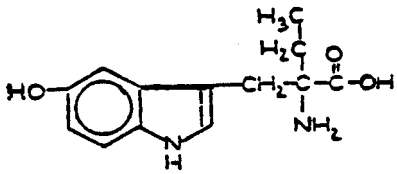
(1) Note. Examples of compounds provided for herein are:

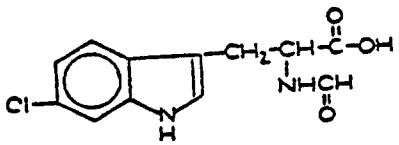




496 This subclass is indented under subclass 495. Compounds wherein the acyclic carbon or acyclic carbon chain is further unsubstituted or alkyl substituted only.

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





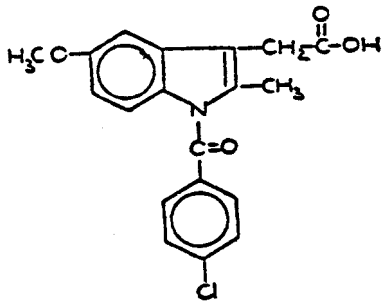
497 This subclass is indented under subclass 496. Processes for preparing the compound, or for separating the compound from impurities or from the reaction mixture.

498 This subclass is indented under subclass 497. Processes for (a) the formation of a racemic mixture from an enantiomer (optical isomer), or (b) for the resolution (separation) of optical isomers, which may be diastereomers or enantiomers.

499 This subclass is indented under subclass 497. Processes wherein hydantoins or proteins are utilized as reactants in processes of preparation.

500 This subclass is indented under subclass 494. Compounds wherein a group, in which X is chalcogen (i.e. oxygen, sulfur, selenium, or tellurium), is bonded directly to ring nitrogen of the five-membered hetero ring.

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

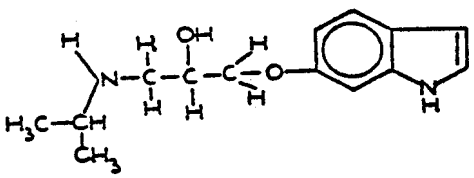


501 This subclass is indented under subclass 500. Processes for preparing the compound, or for separating the compound from impurities or from the reaction mixture.

502 This subclass is indented under subclass 494. Processes for preparing the compound, or for separating the compound from impurities, or from the reaction mixture.

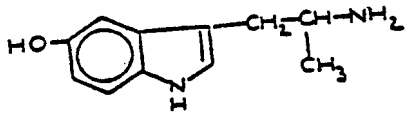
503 This subclass is indented under subclass 469. Compounds wherein nitrogen is attached indirectly to ring carbon of the bicyclo ring system by acyclic nonionic bonding.

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



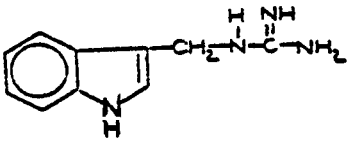
504 This subclass is indented under subclass 503. Compounds wherein nitrogen is attached indirectly to a ring carbon of the five-membered hetero ring by acyclic nonionic bonding.

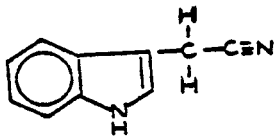
(1) Note. An example of a compound provided for herein is:



505 This subclass is indented under subclass 504. Compounds wherein the nitrogen is double or triple bonded directly to carbon.

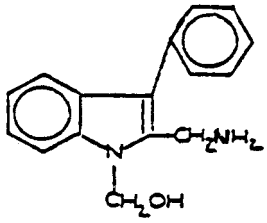
(1) Note. Examples of compounds provided for herein are:

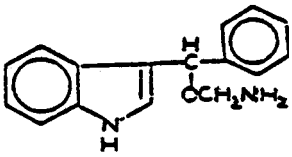




506 This subclass is indented under subclass 504. Compounds wherein a benzene ring is bonded directly to a ring carbon of the five-membered hetero ring, or a benzene ring is attached indirectly to a ring carbon of the five-membered hetero ring by an acyclic carbon atom or acyclic carbon chain.

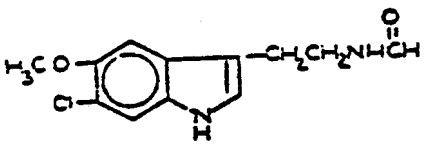
(1) Note. Examples of compounds provided for herein are:





507 This subclass is indented under subclass 504. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) or an additional nitrogen is attached indirectly to ring carbon of the five-membered hetero ring by nonionic bonding.

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

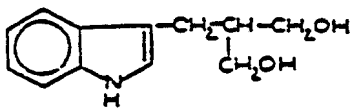


508 This subclass is indented under subclass 469. Processes wherein the bicyclo ring system is formed by ring closure.

(1) Note. Examples of processes provided for herein are: cyclization of o-ethyl aniline to form indole, and cyclization of 3-butyl pyrrole to form indole.

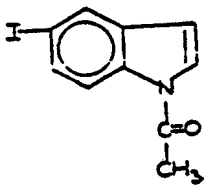
509 This subclass is indented under subclass 469. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is attached indirectly to the bicyclo ring system by acyclic nonionic bonding.

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



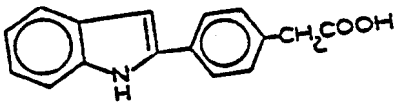
510 This subclass is indented under subclass 509. Compounds wherein the chalcogen, X (i.e., oxygen, sulfur, selenium, or tellurium), is in a group.

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



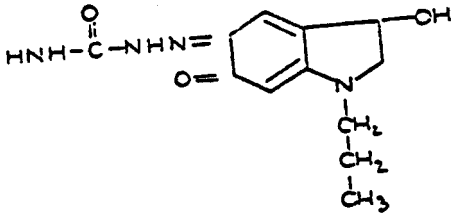
511 This subclass is indented under subclass 469. Compounds wherein a benzene ring is bonded directly to a ring carbon of the five-membered hetero ring, or a benzene ring is attached indirectly to a ring carbon of the five-membered hetero ring by an acylic carbon atom or acyclic carbon chain.

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



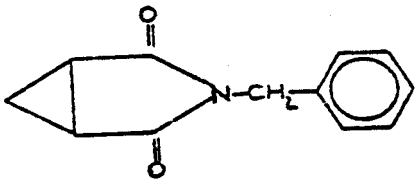
512 This subclass is indented under subclass 452. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly to ring carbon of the five-membered hetero ring.

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



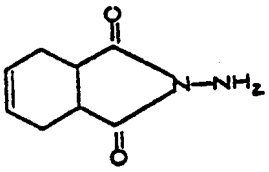
513 This subclass is indented under subclass 512. Compounds wherein at least two chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) atoms are bonded directly to ring carbons of the five-membered hetero ring.

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



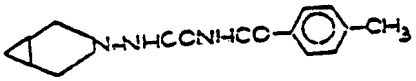
514 This subclass is indented under subclass 513. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) or nitrogen is attached directly to ring nitrogen of the five-membered hetero ring by nonionic bonding

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



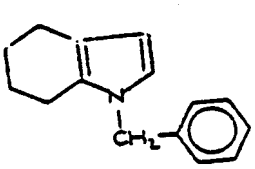
515 This subclass is indented under subclass 452. Compounds wherein the ring nitrogen is bonded to two ring carbons of the same cyclo, which carbons are members of one cyclo only.

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



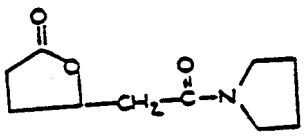
516 This subclass is indented under subclass 452. Compounds wherein there are two double bonds between ring members of the five-membered hetero ring.

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



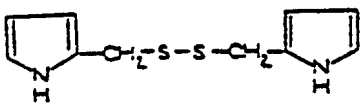
517 This subclass is indented under subclass 400. Compounds wherein an additional hetero ring is attached directly or indirectly to the five-membered hetero ring by nonionic bonding.

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



518 This subclass is indented under subclass 517. Compounds wherein nitrogen is a ring member of the additional hetero ring.

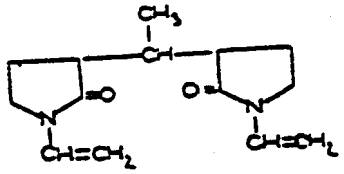
(1) Note. An example of a compound provided for herein is:



519 This subclass is indented under subclass 518. Compounds wherein a ring carbon of each of the two nitrogen containing hetero rings is

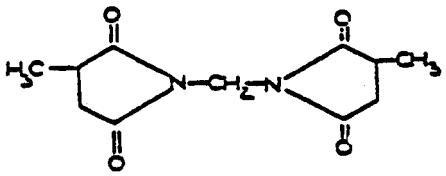
bonded directly to chalcogen (i.e., oxygen, sulfur, selenium, or tellurium).

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



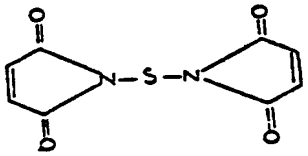
520 This subclass is indented under subclass 519. Compounds wherein at least two chalcogens (i.e., oxygen, sulfur, selenium, or tellurium) are bonded directly to ring carbons of each of the two nitrogen containing hetero ring.

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



521 This subclass is indented under subclass 520. Compounds wherein there is a double bond between ring carbons in each of the two nitrogen containing hetero rings.

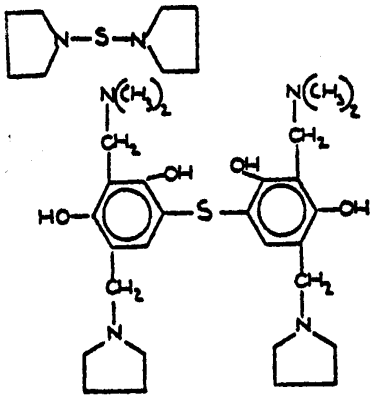
(1) Note. An example of a compound provided for herein is:



522 This subclass is indented under subclass 521. Processes for preparing the compound, or for separating the compound from impurities or from the reaction mixture.

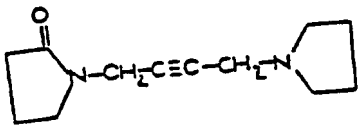
523 This subclass is indented under subclass 518. Compounds wherein the ring nitrogen of each of the two nitrogen containing hetero rings is bonded to the same atom or chain, which chain may include a ring.

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



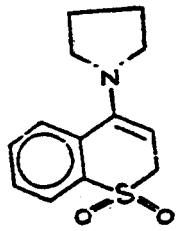
524 This subclass is indented under subclass 523. Compounds wherein the atom is carbon, or the chain consists of carbon atoms.

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



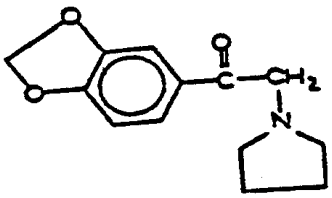
525 This subclass is indented under subclass 517. Compounds which contain a polycyclo ring system which has a ring chalcogen (i.e., oxygen, sulfur, selenium, or tellurium).

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



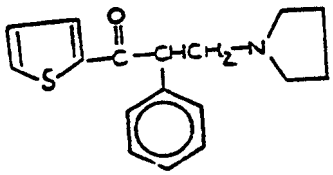
526 This subclass is indented under subclass 525. Compounds wherein at least two ring chalcogens (i.e., oxygen, sulfur, selenium, or tellurium) are in the polycyclo ring system.

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



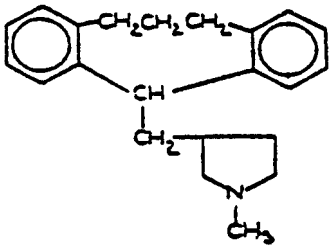
527 This subclass is indented under subclass 517. Compounds which contain a hetero ring having ring sulfur.

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



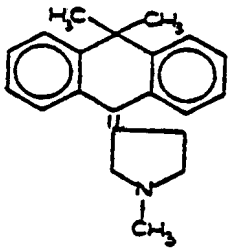
528 This subclass is indented under subclass 400. Compounds which contain a polycyclo carbocyclic ring system having at least three cyclos.

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



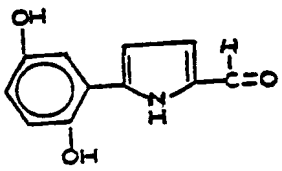
529 This subclass is indented under subclass 528. Compounds wherein the polycyclo carbocyclic ring system is attached directly to the five-membered hetero ring.

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



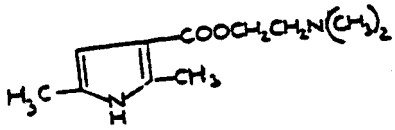
530 This subclass is indented under subclass 400. Compounds wherein a group, in which X is chalcogen (i.e., oxygen, sulfur, selenium, or tellurium), is bonded directly to the five-membered hetero ring.

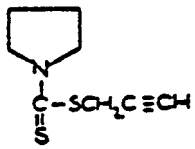
(1) Note. An example of a compound provided for herein is:



531 This subclass is indented under subclass 530. Compounds wherein the is part of a X group, in which the X's are the same or diverse chalcogens (i.e., oxygen, sulfur, selenium, or tellurium).

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



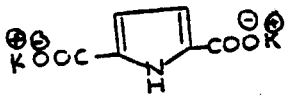


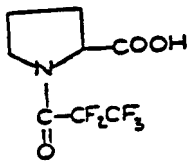
532 This subclass is indented under subclass 531. Compounds wherein the X group is bonded directly to a ring carbon of the five-membered hetero ring which is adjacent to the ring nitrogen.

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

533 This subclass is indented under subclass 532. Compounds wherein an additional group is bonded directly to the five-membered hetero ring.

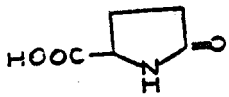
(1) Note. Examples of compounds provided for herein are:





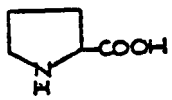
534 This subclass is indented under subclass 532. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly to the other ring carbon of the five-membered hetero ring which is adjacent to the ring nitrogen.

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



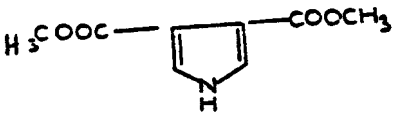
535 This subclass is indented under subclass 532. Compounds wherein the five-membered hetero ring is further unsubstituted, or alkyl substituted only.

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



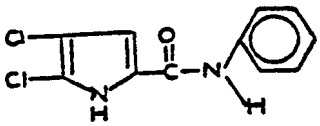
536 This subclass is indented under subclass 531. Compounds wherein an additional group is bonded directly to the five-membered hetero ring.

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



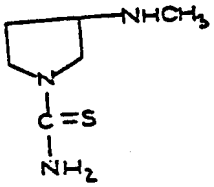
537 This subclass is indented under subclass 530. Compounds wherein the group is bonded directly to acyclic nitrogen.

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



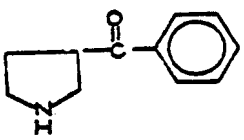
538 This subclass is indented under subclass 537. Compounds wherein the group is bonded directly to the ring nitrogen of the five-membered hetero ring.

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



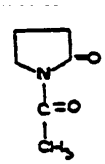
539 This subclass is indented under subclass 530. Compounds wherein the group is bonded directly to a carbocyclic ring.

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



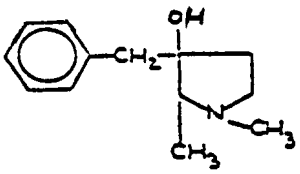
540 This subclass is indented under subclass 530. Compounds wherein the group is bonded directly to an acyclic carbon.

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



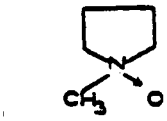
541 This subclass is indented under subclass 400. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is attached directly to the five-membered hetero ring by nonionic bonding.

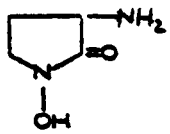
(1) Note. An example of a compound provided for herein is:



542 This subclass is indented under subclass 541. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is attached directly to ring nitrogen of the five-membered hetero ring by nonionic bonding.

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

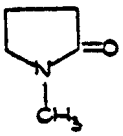




(2) Note. The oxide oxygen of an hetero N-oxide compound is considered to be attached to the ring nitrogen by nonionic bonding.

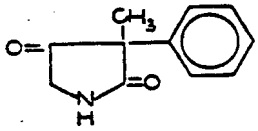
543 This subclass is indented under subclass 541. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is bonded directly to a ring carbon of the five-membered hetero ring which is adjacent to the ring nitrogen.

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



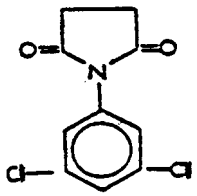
544 This subclass is indented under subclass 543. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is also bonded to a ring carbon of the five-membered hetero ring which is not adjacent to the ring nitrogen.

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



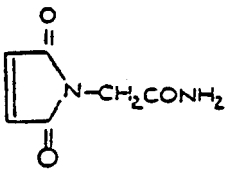
545 This subclass is indented under subclass 543. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is also bonded to the other ring carbon of the five-membered hetero ring which is adjacent to the ring nitrogen.

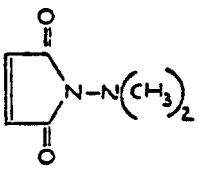
(1) Note. An example of a compound provided for herein is:



546 This subclass is indented under subclass 545. Compounds wherein nitrogen is attached to the five-membered hetero ring directly or indirectly by acyclic nonionic bonding.

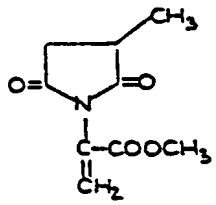
(1) Note. Examples of compounds provided for herein are:





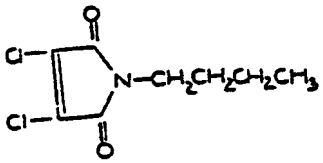
547 This subclass is indented under subclass 545. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is attached indirectly to the five-membered hetero ring by acyclic nonionic bonding.

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



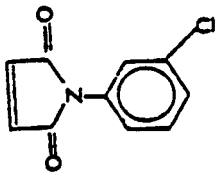
548 This subclass is indented under subclass 545. Compounds wherein there is a double bond between ring carbons of the five-membered hetero ring.

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



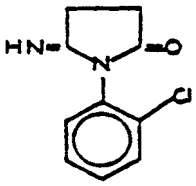
549 This subclass is indented under subclass 548. Compounds wherein a benzene ring is bonded directly to ring nitrogen of the five-membered hetero ring.

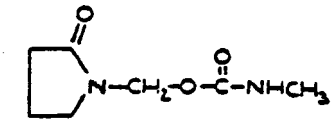
(1) Note. An example of a compound provided for herein is:



550 This subclass is indented under subclass 543. Compounds wherein nitrogen is attached to the five-membered hetero ring directly, or indirectly by acyclic nonionic bonding.

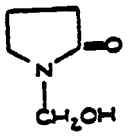
(1) Note. Examples of compounds provided for herein are:



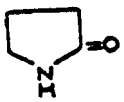


551 This subclass is indented under subclass 543. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is attached indirectly to the five-membered hetero ring by acyclic nonionic bonding.

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



552 This subclass is indented under subclass 543. Processes for forming 2-pyrrolidone, which has the following formula, or its alkyl or alkenyl substitution products:



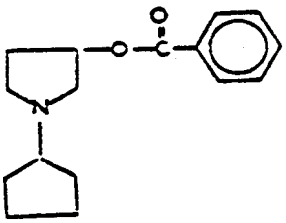
553 This subclass is indented under subclass 552. Processes wherein the 2-pyrrolidone compound is prepared directly from a compound which contains the cyano group, -C-N.

554 This subclass is indented under subclass 552. Processes wherein the 2-pyrrolidone compound is prepared directly from a compound which contains the -COO- group.

555 This subclass is indented under subclass 543. Processes wherein 2-pyrrolidone, which is unsubstituted or alkyl substituted only, is separated from impurities, or from the reaction medium.

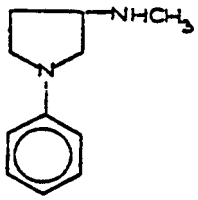
556 This subclass is indented under subclass 541. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is attached indirectly to the five-membered hetero ring by acyclic nonionic bonding.

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



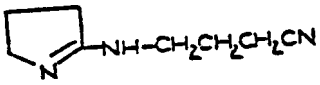
557 This subclass is indented under subclass 400. Compounds wherein nitrogen is attached directly to the five-membered hetero ring by nonionic bonding.

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



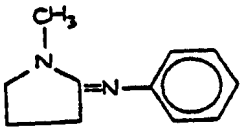
558 This subclass is indented under subclass 557. Compounds wherein the nitrogen is bonded directly to a ring carbon of the five-membered hetero ring which is adjacent to the ring nitrogen.

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



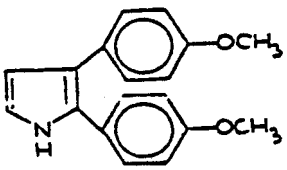
559 This subclass is indented under subclass 558. Compounds wherein a carbocyclic ring is bonded directly to the nitrogen which is bonded directly to the ring carbon.

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



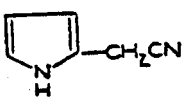
560 This subclass is indented under subclass 400. Compounds wherein there are two double bonds between ring members of the five-membered hetero ring.

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



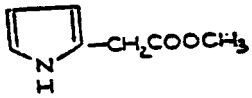
561 This subclass is indented under subclass 560. Compounds wherein nitrogen is attached indirectly to the five-membered hetero ring by acyclic nonionic bonding.

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



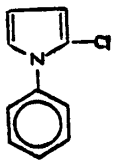
562 This subclass is indented under subclass 560. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) is attached indirectly to the five-membered hetero ring by acyclic nonionic bonding.

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



563 This subclass is indented under subclass 560. Compounds wherein a benzene ring is bonded directly to the ring nitrogen of the five-membered hetero ring.

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



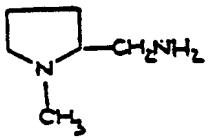
564 This subclass is indented under subclass 560. Compounds wherein the five-membered hetero ring is unsubstituted, or alkyl substituted only.

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

565 This subclass is indented under subclass 400. Compounds wherein there is one double bond only between ring members of the five-membered hetero ring.

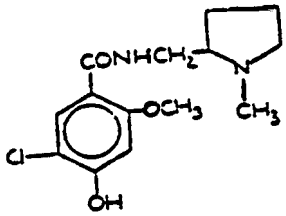
566 This subclass is indented under subclass 400. Compounds wherein nitrogen is attached indirectly to the five-membered hetero ring by acyclic nonionic bonding.

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



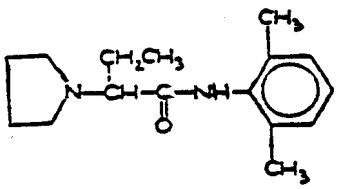
567 This subclass is indented under subclass 566. Compounds wherein a group, in which X is chalcogen (i.e. oxygen, sulfur, selenium, or tellurium), is bonded directly to the nitrogen.

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



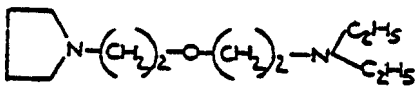
568 This subclass is indented under subclass 567. Compounds wherein the group is additionally bonded to hydrogen, or to acyclic carbon.

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



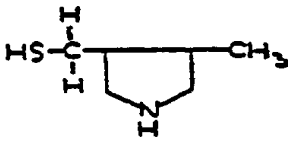
569 This subclass is indented under subclass 566. Compounds wherein the nitrogen is part of a substituent that is attached to the ring nitrogen of the five-membered hetero ring.

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



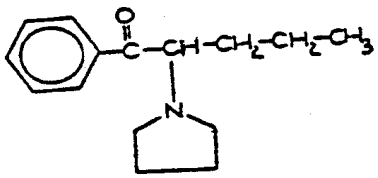
570 This subclass is indented under subclass 400. Compounds wherein chalcogen (i.e. oxygen, sulfur, selenium, or tellurium) is attached indirectly to the five-membered hetero ring by acyclic nonionic bonding.

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



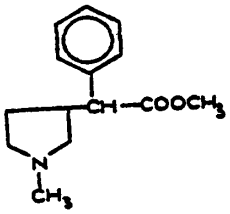
571 This subclass is indented under subclass 570. Compounds wherein the chalcogen, X (i.e. oxygen, sulfur, selenium, or tellurium), is in a group.

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



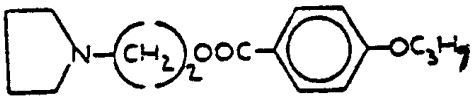
572 This subclass is indented under subclass 571. Compounds wherein is part of a X group, in which the X's are the same, or diverse chalcogens (i.e. oxygen, sulfur, selenium, or tellurium).

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



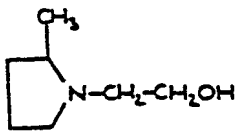
573 This subclass is indented under subclass 572. Compounds wherein the X group is part of a substituent attached to the ring nitrogen of the five-membered hetero ring.

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



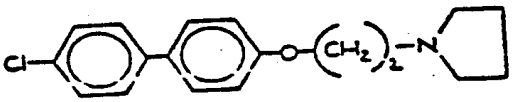
574 This subclass is indented under subclass 570. Compounds wherein the chalcogen (i.e. oxygen, sulfur, selenium, or tellurium) is part of a substituent which is attached to the ring nitrogen of the five-membered hetero ring.

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



575 This subclass is indented under subclass 574. Compounds wherein the chalcogen (i.e. oxygen, sulfur, selenium, or tellurium) is bonded directly to a carbocyclic ring.

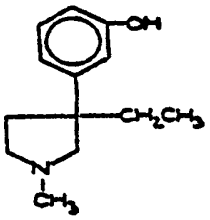
(1) Note. An example of a compound provided for herein is:



576 This subclass is indented under subclass 575. Compounds wherein a bicyclo carbocyclic ring system is part of the substituent on the ring nitrogen of the five-membered hetero ring.

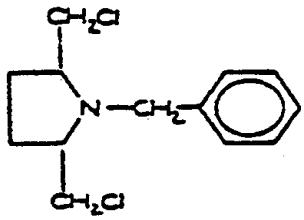
577 This subclass is indented under subclass 400. Compounds wherein a benzene ring is bonded directly to the five-membered hetero ring.

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



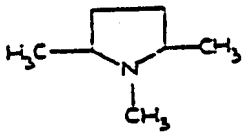
578 This subclass is indented under subclass 400. Compounds wherein a benzene ring is part of a substituent attached to the ring nitrogen of the five-membered hetero ring by nonionic bonding.

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



579 This subclass is indented under subclass 400. Compounds wherein the five-membered hetero ring is unsubstituted, or is alkyl substituted only.

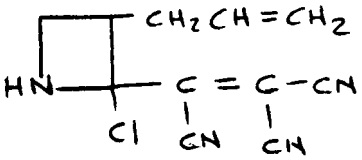
(1) Note. An example of a compound provided for herein is:



950 This subclass is indented under subclass 1. Compounds under Class 540, wherein the hetero ring contains four members and has nitrogen and carbon as ring members.

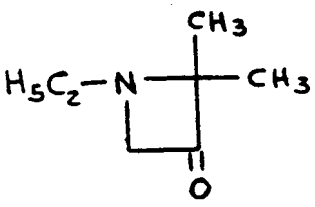
951 This subclass is indented under subclass 950. Compounds in which the hetero ring contains at least two hetero atoms

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



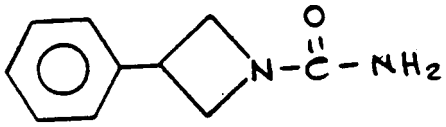
952 This subclass is indented under subclass 950. Compounds wherein chalcogen (i.e., oxygen, sulfur, selenium or tellurium) is bonded directly to ring carbon of the hetero ring.

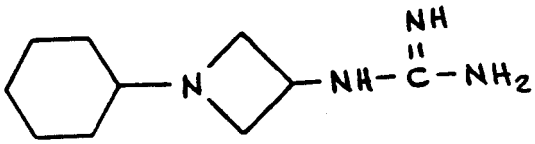
(1) Note. An example of a compound provided for herein is:



953 This subclass is indented under subclass 950. Compounds in which nitrogen or -C(=X)-, wherein X is chalcogen (i.e., oxygen, sulfur, selenium or tellurium) is bonded directly to the hetero ring.

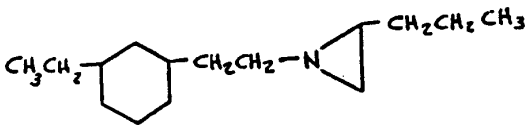
(1) Note. Examples of compounds provided for herein are:





954 This subclass is indented under subclass 1. Compounds under Class 540, wherein the hetero ring contains three members and has nitrogen and carbon as ring members.

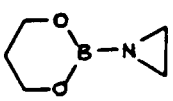
(1) Note. An example of a compound provided for herein:

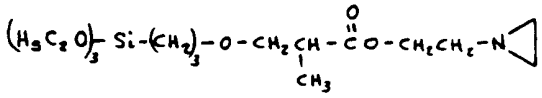


955 This subclass is indented under subclass 954. Compounds which contain boron, silicon or a metal having a specific gravity greater then four.

(1) Note. Arsenic is considered a metal for purposes of this subclass.

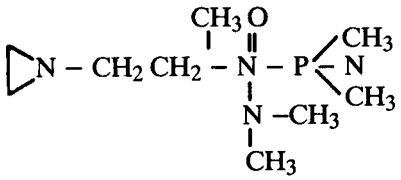
(2) Note. Examples of compounds provided for herein are:

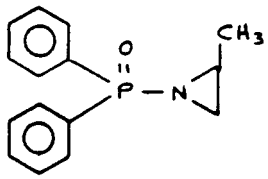




956 This subclass is indented under subclass 954. Compounds in which phosphorus is attached directly or indirectly to the hetero ring by non-ionic bonding.

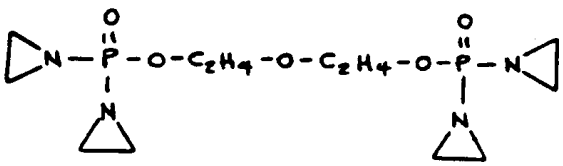
(1) Note. Example of compounds provided for herein are:





957 This subclass is indented under subclass 956. Compounds which contain at least two phosphorus atoms.

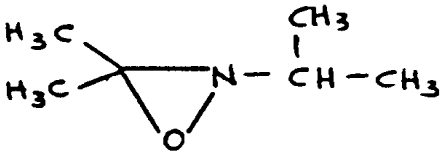
(1) Note. An example of a compound provided for herein is:



958 This subclass is indented under subclass 954. Compounds which contain a spiro ring system.

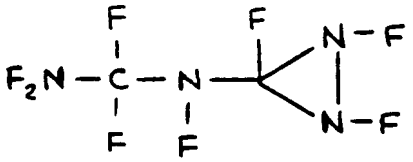
959 This subclass is indented under subclass 954. Compounds wherein the hereto ring contains two hetero atoms.

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



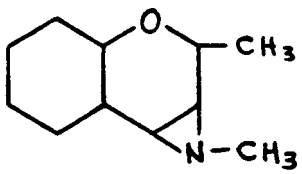
960 Compounds under subclass 959 wherein the hetero ring consists of two nitrogens and one carbon.

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



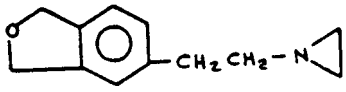
961 This subclass is indented under subclass 954. Compounds wherein the hetero ring is one of the cyclos of a polycyclo ring system.

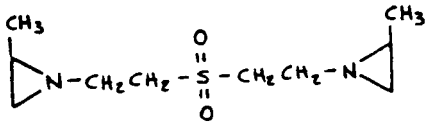
(1) Note. An example of a compound provided for herein is:



962 This subclass is indented under subclass 954. Compounds which contain an additional hetero ring.

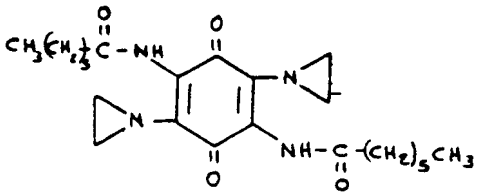
(1) Note. Examples of compounds provided for herein are:





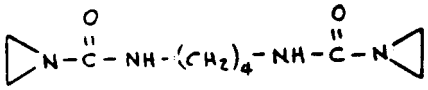
963 This subclass is indented under subclass 962. Compounds wherein at least two three-membered nitrogen containing hetero rings are bonded directly to the same ring.

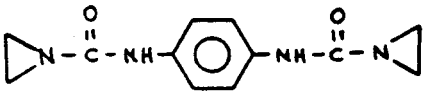
(1) Note. An example of a compound provided for herein is:



964 This subclass is indented under subclass 962. Compounds in which a group, wherein X is chalcogen (i.e., oxygen, sulfur, selenium or tellurium) is in a chain between the hetero rings.

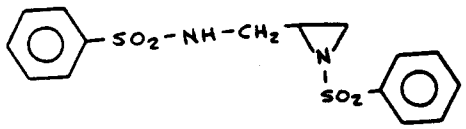
(1) Note. Examples of compounds provided for herein are:

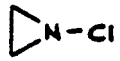




965 This subclass is indented under subclass 954. Compounds wherein nitrogen, halogen or chalcogen (i.e., oxygen, sulfur, selenium or tellurium) is attached directly to the hetero ring by nonionic bonding.

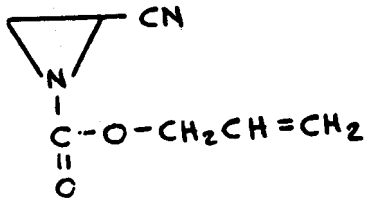
(1) Note. Examples of compounds provided for herein are:





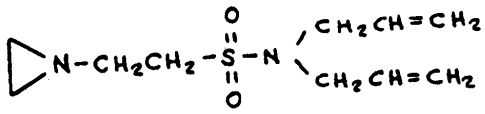
966 This subclass is indented under subclass 954. Compounds in which, wherein X is chalcogen (i.e., oxygen, sulfur, selenium or tellurium) is bonded directly to the hetero ring.

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



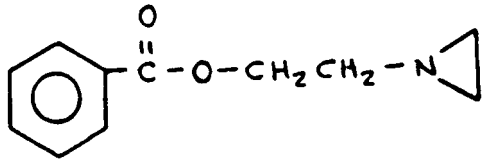
967 This subclass is indented under subclass 954. Compounds wherein nitrogen, other than as nitro (-NO_2) for nitroso (-NO), is attached indirectly to the hetero ring by nonionic bonding.

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



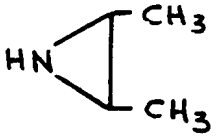
968 This subclass is indented under subclass 954. Compounds in which chalcogen (i.e., oxygen, sulfur, selenium or tellurium) is attached indirectly to the hetero ring by nonionic bonding.

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



969 This subclass is indented under subclass 954. Compounds wherein the hetero ring is either unsubstituted or alkyl substituted only.

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



END