

## ECLA EUROPEAN CLASSIFICATION

**C07F** **ACYCLIC, CARBOCYCLIC OR HETEROCYCLIC COMPOUNDS CONTAINING ELEMENTS OTHER THAN CARBON, HYDROGEN, HALOGEN, OXYGEN, NITROGEN, SULFUR, SELENIUM OR TELLURIUM** ([metal-containing porphyrins C07D487/22](#))

[N:  
**WARNING**

]

**Notes** [C2010.02]

[N: [Notes on the Internal Classification of organo-phosphorus compounds](#)

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**C07F1/00** **Compounds containing elements of the 1st Group of the Periodic System**

C07F1/00B . [N: without C-Metal linkages]

C07F1/02 . Lithium compounds

C07F1/04 . Sodium compounds

C07F1/06 . Potassium compounds

C07F1/08 . Copper compounds

C07F1/10 . Silver compounds

C07F1/12 . Gold compounds

**C07F3/00** **Compounds containing elements of the 2nd Group of the Periodic System**

C07F3/00B . [N: without C-Metal linkages]

C07F3/00C . [N: Beryllium compounds]

C07F3/02 . Magnesium compounds

C07F3/04 . Calcium compounds

C07F3/06 . Zinc compounds

C07F3/08 . Cadmium compounds

C07F3/10 . Mercury compounds

- C07F3/10B . . [N: without C-Mercury linkages]
- C07F3/10C . . [N: Aliphatic substances containing mercury]
- C07F3/12 . . Aromatic substances containing mercury
- C07F3/14 . . Heterocyclic substances containing mercury

#### **C07F5/00                    Compounds containing elements of the 3rd Group of the Periodic System**

- C07F5/00B . [N: without C-Metal linkages]
- C07F5/00C . [N: Addition and condensation products with amines or phosphines]
- C07F5/02 . Boron compounds
- C07F5/02B . . [N: without C-boron linkages]
- C07F5/02C . . [N: Boronic and borinic acid compounds]
- C07F5/02D . . [N: Organoboranes and organoborohydrides]
- C07F5/04 . . Esters of boric acids
- C07F5/05 . . Cyclic compounds having at least one ring containing boron but no carbon in the ring
- C07F5/06 . Aluminium compounds
- C07F5/06A . . [N: with C-aluminium linkage]
- C07F5/06A3 . . . [N: Al linked exclusively to C]
- C07F5/06A3B . . . . [N: compounds containing only Al, C, H and Al is not a ring element]
- C07F5/06A5 . . . [N: compounds with an Al-Halogen linkage]
- C07F5/06A7 . . . [N: compounds with an Al-H linkage]
- C07F5/06A9 . . . [N: compounds with Al linked to an element other than Al, C, H or halogen (this includes Al-cyanide linkage)]
- C07F5/06A9C . . . . [N: compounds with Al also linked to H or halogen]
- C07F5/06A9E . . . . [N: preparation of alum(in)oxanes]
- C07F5/06B . . [N: without C-aluminium linkages]

#### **C07F7/00                    Compounds containing elements of the 4th Group of the Periodic System**

- C07F7/00B . [N: without C-Metal linkages]
- C07F7/00B2 . . [N: of group 4B of the Periodic System]
- C07F7/02 . Silicon compounds
- C07F7/02B . . [N: without C-silicon linkages]
- C07F7/04 . . Esters of silicic acids
- C07F7/04B . . . [N: Esters of monosilicic acid]
- C07F7/06 . . . with hydroxyaryl compounds
- C07F7/07 . . . Cyclic esters
- C07F7/08 . . Compounds having one or more C-Si linkages
- C07F7/08B . . . [N: General processes]

C07F7/08C	. . .	[N: Compounds with Si-C or Si-Si linkages]
C07F7/08C4	. . . .	[N: comprising only Si, C or H atoms]
C07F7/08C4B	. . . . .	[N: comprising Si as a ring atom]
C07F7/08C4D	. . . . .	[N: comprising no Si as a ring atom]
C07F7/08C6	. . . . .	[N: comprising at least one atom selected from the elements N, O, halogen, S, Se or Te]
C07F7/08C6B	. . . . .	[N: comprising a heterocyclic ring]
C07F7/08C6B4	. . . . .	[N: said ring is substituted at a C ring atom by Si]
C07F7/08C6B6	. . . . .	[N: said ring comprising Si as a ring atom]
C07F7/08C6D	. . . . .	[N: comprising no heterocyclic ring]
C07F7/08C8	. . . . .	[N: comprising at least one atom selected from elements other than Si, C, H, N, O, halogen, S, Se or Te]
C07F7/08C10	. . . . .	[N: comprising at least one Si-Si linkage]
C07F7/08C12	. . . . .	[N: comprising at least one Si-cyano linkage]
C07F7/08C14	. . . . .	[N: Preparations of compounds not comprising Si-Si or Si-cyano linkages]
C07F7/08C14B	. . . . .	[N: Syntheses with formation of a Si-C bond]
C07F7/08C14B4	. . . . .	[N: Hydrosilylation reactions]
C07F7/08C14D	. . . . .	[N: Syntheses without formation of a Si-C bond]
C07F7/08C14F	. . . . .	[N: Other preparations]
C07F7/08D	. . .	[N: Compounds having one or more O-Si linkage (for compounds with C-O-Si linkages see <a href="#">C07F7/18</a> )]
C07F7/08D2	. . . . .	[N: Compounds with one or more Si-OH or Si-O-metal linkage]
C07F7/08D4	. . . . .	[N: Compounds with one or more Si-O-Si sequences] [C9504]
C07F7/08D4E	. . . . .	[N: containing a ring comprising a Si-O-Si sequence (compounds with a ring containing only alternating Si and O atoms , i.e. cyclosiloxanes <a href="#">C07F7/21</a> )] [C9504]
C07F7/08D4E3	. . . . .	[N: also comprising a C atom] [C9504]
C07F7/08D4E3C	. . . . .	{7 dots} [N: also comprising an atom different from Si, O and C] [N9504]
C07F7/08D4H	. . . . .	[N: not containing a ring comprising a Si-O-Si sequence] [C9504]
C07F7/08D4H4	. . . . .	[N: a Si atom of a Si-O-Si sequence being attached only to -O-Si or to a C atom] [C9504]
C07F7/08D4H4B	. . . . .	{7 dots} [N: this C atom being part of a group which contains only C and H] [N9504]
C07F7/08D4H4D	. . . . .	{7 dots} [N: this C atom being part of a group which contains halogen] [N9504]
C07F7/08D4H4F	. . . . .	{7 dots} [N: this C atom being part of a group which contains O] [N9504]
C07F7/08D4H4H	. . . . .	{7 dots} [N: this C atom being part of a group which contains N] [N9504]
C07F7/08D4H4K	. . . . .	{7 dots} [N: this C atom being part of a group which contains an element other than C, H, O, N and halogen] [N9504]
C07F7/08D4H6	. . . . .	[N: a Si atom of a Si-O-Si sequence having linkages other than Si-O-Si or bonds other than Si-C] [C9504]
C07F7/08D4H6B	. . . . .	{7 dots} [N: Si-OX bond, X = H or C] [N9504]
C07F7/08D4H6D	. . . . .	{7 dots} [N: Si-Halogen bond] [N9504]

C07F7/08D4H6F	. . . . .	{7 dots} [N: Si-N bond] [N9504]
C07F7/08D4H6H	. . . . .	{7 dots} [N: Si-O-N bond] [N9504]
C07F7/08D4H6J	. . . . .	{7 dots} [N: Si-H bond] [N9504]
C07F7/08D4H6K	. . . . .	{7 dots} [N: Si-Q bond, Q different from O, N, H and halogen] [N9504]
C07F7/08D4J	. . . . .	[N: Compounds of unknown structure containing a Si-O-Si sequence] [N9504]
C07F7/08D4K	. . . . .	[N: Preparation and treatment thereof] [N9504]
C07F7/08D4K2	. . . . .	[N: Reactions involving a bond of the Si-O-Si linkage] [N9504]
C07F7/08D4K4	. . . . .	[N: Reactions involving the formation of bonds to a Si atom of a Si-O-Si sequence other than a bond of the Si-O-Si linkage] [N9504]
C07F7/08D4K4B	. . . . .	{7 dots} [N: Si-C bond] [N9504]
C07F7/08D4K4B2	. . . . .	{8 dots} [N: Hydrosilylation reactions] [N9504]
C07F7/08D4K4B4	. . . . .	{8 dots} [N: Other reactions] [N9504]
C07F7/08D4K4C	. . . . .	{7 dots} [N: Si-halogen bond] [N9504]
C07F7/08D4K4D	. . . . .	{7 dots} [N: Si-OX bond (X = C or H)] [N9504]
C07F7/08D4K4G	. . . . .	{7 dots} [N: Si-Q bond (Q different from O, C or halogen)] [N9504]
C07F7/08D4K6	. . . . .	[N: Reactions not involving the Si atom of the Si-O-Si sequence] [N9504]
C07F7/08D4K8	. . . . .	[N: Treatments not covered by a preceding group] [N9504]
C07F7/08D5	. . . . .	[N: Compounds with a Si-O-N linkage]
C07F7/08D6	. . . . .	[N: Compounds with a Si-O-O linkage]
C07F7/08H	. . . . .	[N: Compounds with a Si-H linkage]
C07F7/08S	. . . . .	[N: Compounds with a Si-S linkage]
C07F7/10	. . . . .	Containing nitrogen [N: having a Si-N linkage]
C07F7/12	. . . . .	Organo silicon halides
C07F7/12M	. . . . .	[N: Preparation or treatment not provided for in <a href="#">C07F7/14</a> , <a href="#">C07F7/16</a> or <a href="#">C07F7/20</a> ]
		[N: <b>Note</b> The silicon atom involved in the reaction that is attached or becomes attached to the highest number of halide atoms determines classification ]
C07F7/12M2	. . . . .	[N: by reactions involving the formation of Si-C linkages ( <b>hydrosilylation reactions</b> <a href="#">C07F7/14</a> ; <b>direct synthesis</b> <a href="#">C07F7/16</a> )]
C07F7/12M4	. . . . .	[N: by reactions involving the formation of Si-halogen linkages]
C07F7/12M6	. . . . .	[N: by reactions involving both Si-C and Si-halogen linkages, the Si-C and Si-halogen linkages can be to the same or to different Si atoms, e.g. redistribution reactions]
C07F7/12M8	. . . . .	[N: by reactions involving the formation of Si-Y linkages, where Y is not a carbon or halogen atom]
C07F7/12M10	. . . . .	[N: by reactions not affecting the linkages to the silicon atom]
C07F7/12M12	. . . . .	[N: by reactions covered by more than one of the groups <a href="#">C07F7/12M2</a> to <a href="#">C07F7/12M10</a> and of which the starting material is unknown or insufficiently determined]
C07F7/14	. . . . .	Preparation thereof from [N: optionally substituted] halogenated silanes and hydrocarbons [N: hydrosilylation reactions]

- C07F7/16 . . . . Preparation thereof from silicon and halogenated hydrocarbons [N: direct synthesis]
- C07F7/18 . . . . Compounds having one or more C-Si linkages as well as one or more C-O-Si linkages
- C07F7/18C . . . . [N: Compounds having Si-O-C linkages (Si-O-acyl linkages [C07F7/18D](#))]
- C07F7/18C2 . . . . . [N: the Si-C and Si-O-C linkages being at different Si atoms]
- C07F7/18C4 . . . . . [N: having (C1)a-Si-(OC2)b linkages, a and b being 1 and a+b = 4, C1 and C2 being hydrocarbon or substituted hydrocarbon radicals]
- C07F7/18C4A . . . . . [N: a and b being alternatively specified]
- C07F7/18C4A2 . . . . . {7 dots} [N: C1 containing aliphatic or cycloaliphatic unsaturated bonds or heteroatoms]
- C07F7/18C4A4 . . . . . {7 dots} [N: C2 containing aliphatic or cycloaliphatic unsaturated bonds or heteroatoms]
- C07F7/18C4A6 . . . . . {7 dots} [N: C1 and C2 containing aliphatic or cycloaliphatic unsaturated bonds or heteroatoms]
- C07F7/18C4A9 . . . . . {7 dots} [N: compounds not provided for in [C07F7/18C4A2](#) to [C07F7/18C4A4](#)]
- C07F7/18C4B . . . . . [N: a being 1, b being 3]
- C07F7/18C4C . . . . . [N: a being 2, b being 2]
- C07F7/18C4D . . . . . [N: a being 3, b being 1]
- C07F7/18C4D4 . . . . . {7 dots} [N: C1 being an unsubstituted acyclic saturated hydrocarbon radical containing less than six carbon atoms, a benzyl radical, a phenyl radical, or a methyl substituted phenyl radical]
- C07F7/18C4D4C . . . . . {8 dots} [N: C2 being an acyclic, arylaliphatic or a non-condensed aromatic radical containing only carbon, hydrogen, halogen, oxygen, nitrogen or sulfur]
- C07F7/18C4D4D . . . . . {8 dots} [N: C2 containing cycloaliphatic, heterocyclic or condensed aromatic rings]
- C07F7/18C4D4D2 . . . . . {9 dots} [N: C2 containing an azetidine radical or condensed azetidine radical]
- C07F7/18C4D4F . . . . . {8 dots} [N: C2 containing elements other than carbon, hydrogen, halogen, oxygen, nitrogen or sulfur]
- C07F7/18C6 . . . . . [N: having (C1)a-Si-(OC2)b linkages, a and b being 1 and a+b = 4 (C1 and C2 having the same meaning as in [C07F7/18C4](#))]
- C07F7/18C9 . . . . . [N: Preparation; Treatments not provided for in [C07F7/20](#)]
- C07F7/18C9A . . . . . [N: by reactions involving the formation of Si-C linkages]
- C07F7/18C9B . . . . . [N: by reactions involving the formation of Si-O linkages]
- C07F7/18C9D . . . . . [N: by dismutation]
- C07F7/18C9F . . . . . [N: by reactions involving the formation of other Si-linkages, e.g. Si-N]
- C07F7/18C9G . . . . . [N: by reactions not provided for in [C07F7/18C9A](#) to [C07F7/18C9F](#)]
- C07F7/18D . . . . . [N: Compounds having one or more Si-O-acyl linkages]
- C07F7/20 . . . . Purification, separation
- C07F7/21 . . . . Cyclic compounds having at least one ring containing silicon, but no carbon in the ring
- C07F7/22 . . . . Tin compounds
- C07F7/22B . . . . [N: Not belonging to the groups [C07F7/22C](#) to [C07F7/22H](#)]

- C07F7/22C . . [N: Compounds having tin linked only to carbon, hydrogen and/or halogen]
- C07F7/22C2 . . . [N: Compounds having only tin-carbon linkages]
- C07F7/22C3 . . . [N: Compounds having one or more tin-halogen linkages]
- C07F7/22C4 . . . [N: Compounds having one or more tin-hydrogen linkages]
- C07F7/22D . . [N: Compounds having one or more tin-oxygen linkages]
- C07F7/22D2 . . . [N: Compounds not belonging to the groups [C07F7/22D3](#) to [C07F7/22D7](#)]
- C07F7/22D3 . . . [N: Compounds having one or more Sn-O-R linkages (R=H or C, except if C belongs to a carboxyl group)]
- C07F7/22D4 . . . [N: Compounds with a Sn=O linkage]
- C07F7/22D4B . . . . [N: Stannic acids and their esters]
- C07F7/22D5 . . . [N: Tin esters of organic acids]
- C07F7/22D6 . . . [N: Tin esters of inorganic acids]
- C07F7/22D7 . . . [N: Compounds with a Sn-O-metal linkage]
- C07F7/22D7B . . . . [N: Compounds containing a Sn-O-Sn linkage]
- C07F7/22E . . [N: Compounds with one or more Sn-S linkages]
- C07F7/22E2 . . . [N: Compounds not belonging to group [C07F7/22E3](#) to [C07F7/22E5](#)]
- C07F7/22E3 . . . [N: Compounds having one or more Sn-S-R linkages (R=H or C, except if C belongs to a carboxyl group)]
- C07F7/22E4 . . . [N: Esters of thiocarboxylic acids and their derivatives]
- C07F7/22E5 . . . [N: Compounds with one or more Sn-S-metal linkages]
- C07F7/22E5B . . . . [N: Compounds with one or more Sn-S-Sn linkages]
- C07F7/22F . . [N: Compounds with one or more Sn-N linkages]
- C07F7/22G . . [N: Compounds with one or more Sn-metal linkages]
- C07F7/22G2 . . . [N: Compounds with one or more Sn-Sn linkages]
- C07F7/22H . . [N: Purification, stabilisation, isolation]
  
- C07F7/24 . [N: Lead compounds]
- C07F7/26 . . Tetra-alkyl lead compounds
  
- C07F7/28 . Titanium compounds
  
- C07F7/30 . Germanium compounds

### **C07F9/00 Compounds containing elements of the 5th Group of the Periodic System**

- C07F9/00B . [N: Compounds of elements of group 5B without metal-carbon linkages]
- C07F9/02 . Phosphorus compounds (sugar phosphates [C07H11/04](#); nucleotides [C07H19/00](#), [C07H21/00](#); nucleic acids [C07H21/00](#)) [C9512]
- C07F9/02K . . [N: Purification; Separation; Stabilisation; Desodorisation of organo-phosphorus compounds (of natural phosphatides [C07F9/10K](#); phosphines [C07F9/50Z12](#))] [C9502]
- C07F9/04 . . Reaction products of phosphorus sulfur compounds with hydrocarbons
- C07F9/06 . . without P-C bonds
- C07F9/06B . . . [N: Organo-phosphoranes without P-C bonds]

C07F9/06B2	. . . . .	[N: Phosphoranes containing the structure P=N-]
C07F9/06B2D	. . . . .	[N: Polyphosphazenes containing the structure [P=N] <sub>n</sub> (cyclic compounds 9/6581F)]
C07F9/08	. . . . .	Esters of oxyacids of phosphorus [N: (C07F9/06B takes precedence)]
C07F9/09	. . . . .	Esters of phosphoric acids
C07F9/09A1	. . . . .	[N: with hydroxyalkyl compounds with further substituents on alkyl]
C07F9/09A1W	. . . . .	[N: substituted by B, Si or a metal]
C07F9/09A6	. . . . .	[N: Polyol derivatives esterified at least twice by phosphoric rests]
C07F9/09A7	. . . . .	[N: with arylalkanols]
C07F9/09A9	. . . . .	[N: Compounds containing the structure P(=O)-O-acyl, P(=O)-O-heteroatom, P(=O)-O-CN]
C07F9/09A9Q	. . . . .	[N: Compounds containing the structure P(=O)-O-C(=X)- (X = O, S, Se)]
C07F9/09A9U	. . . . .	[N: Compounds containing the structure P(=O)-O-N]
C07F9/09B	. . . . .	[N: Esters of polyphosphoric acids or anhydrides]
C07F9/10	. . . . .	Phosphatides, e.g. lecithin
C07F9/10K	. . . . .	[N: Extraction or purification by physical or chemical treatment of natural phosphatides; Preparation of compositions containing phosphatides of unknown structure] [N9502]
C07F9/10Y	. . . . .	[N: Adducts, complexes, salts of phosphatides] [N9502]
C07F9/11	. . . . .	with hydroxyalkyl compounds without further substituents on alkyl
C07F9/113	. . . . .	with unsaturated acyclic alcohols
C07F9/117	. . . . .	with cycloaliphatic alcohols
C07F9/12	. . . . .	with hydroxyaryl compounds
C07F9/14	. . . . .	containing P(=O)-halide groups
C07F9/14B2	. . . . .	[N: containing the structure Hal-P(=O)-O-unsaturated acyclic rest]
C07F9/14B4	. . . . .	[N: containing the structure Hal-P(=O)-O-aryl]
C07F9/141	. . . . .	Esters of phosphorous acids
C07F9/141A1	. . . . .	[N: with hydroxyalkyl compounds with further substituents on alkyl]
C07F9/141A6	. . . . .	[N: Polyol derivatives esterified at least twice by phosphorous acid rests]
C07F9/141A7	. . . . .	[N: with arylalkanols]
C07F9/141A9	. . . . .	[N: Compounds containing the structure P-O-acyl, P-O-heteroatom, P-O-CN]
C07F9/141A9Q	. . . . .	[N: Compounds containing the structure P-O-C(=X)- (X = O, S, Se)]
C07F9/141A9U	. . . . .	[N: Compounds containing the structure P-O-N]
C07F9/142	. . . . .	with hydroxyalkyl compounds without further substituents on alkyl
C07F9/143	. . . . .	with unsaturated acyclic alcohols
C07F9/144	. . . . .	with cycloaliphatic alcohols
C07F9/145	. . . . .	with hydroxyaryl compounds
C07F9/146	. . . . .	containing P-halide groups
C07F9/16	. . . . .	Esters of thiophosphoric acids or thiophosphorous acids
C07F9/165	. . . . .	Esters of thiophosphoric acids
C07F9/165A1	. . . . .	[N: with hydroxyalkyl compounds with further substituents on alkyl]
C07F9/165A6	. . . . .	[N: Polyol derivatives esterified at least twice by (thio)phosphoric acid

		esters]
C07F9/165A7	. . . . .	[N: with arylalkanols]
C07F9/165A9	. . . . .	[N: Compounds containing the structure P(=X)n-X-acyl, P(=X)n-X-heteroatom, P(=X)n-X-CN (X = O, S, Se; n = 0, 1)]
C07F9/165A9M	. . . . .	[N: Compounds containing the structure P(=X)n-S-(S)x- (X = O, S, Se; n=0,1; x>=1]
C07F9/165A9Q	. . . . .	[N: Compounds containing the structure P(=X)n-X-C(=X)- (X = O, S, Se; n = 0, 1)]
C07F9/165A9U	. . . . .	[N: Compounds containing the structure P(=X)n-X-N (X = O, S, Se; n = 0, 1)]
C07F9/165B	. . . . .	[N: Esters of thiopolyphosphoric acids or anhydrides]
C07F9/17	. . . . .	with hydroxyalkyl compounds without further substituents on alkyl
C07F9/173	. . . . .	with unsaturated acyclic alcohols
C07F9/177	. . . . .	with cycloaliphatic alcohols
C07F9/18	. . . . .	with hydroxyaryl compounds
C07F9/20	. . . . .	containing P-halide groups
C07F9/20B2	. . . . .	[N: containing the structure Hal-P-X-unsaturated acyclic rest]
C07F9/20B4	. . . . .	[N: containing the structure Hal-P-X-aryl]
C07F9/201	. . . . .	Esters of thiophosphorus acids
C07F9/201A1	. . . . .	[N: with hydroxyalkyl compounds with further substituents on alkyl]
C07F9/202	. . . . .	with hydroxyl compounds without further substituents on alkyl
C07F9/203	. . . . .	with unsaturated acyclic alcohols
C07F9/204	. . . . .	with cycloaliphatic alcohols
C07F9/205	. . . . .	with hydroxyaryl compounds
C07F9/206	. . . . .	containing P-halide groups
C07F9/22	. . . . .	Amides of acids of phosphorus
C07F9/22A	. . . . .	[N: Amides of phosphoric acids]
C07F9/22C	. . . . .	[N: Phosphorus triamides]
C07F9/22D	. . . . .	[N: containing the structure P-isocyanates]
C07F9/22E	. . . . .	[N: containing the structure P-N-N, e.g. azides, hydrazides]
C07F9/24	. . . . .	Esteramides
C07F9/24A	. . . . .	[N: the ester moiety containing a substituent or a structure which is considered as characteristic]
C07F9/24A1	. . . . .	[N: of hydroxyalkyl compounds]
C07F9/24A2	. . . . .	[N: of unsaturated acyclic alcohols]
C07F9/24A3	. . . . .	[N: of cycloaliphatic alcohols]
C07F9/24A4	. . . . .	[N: of hydroxyaryl compounds]
C07F9/24A6	. . . . .	[N: containing the structure (RX)(RR'N)P(=Y)-Z-(C)n-Z'-P(=Y)(XR)2 (X = O, S, NR; Y = O, S, electron pair; Z = O, S; Z' = O, S)]
C07F9/24A7	. . . . .	[N: of arylalkanols]
C07F9/24A9	. . . . .	[N: Compounds containing the structure N-P(=X)n-X-acyl, N-P(=X)n-X-heteroatom, N-P(=X)n-X-CN (X = O, S, Se; n = 0, 1)]
C07F9/24A9M	. . . . .	{7 dots} [N: Compounds containing the structure N-P(=X)n-S-(S)x-(X = O, S, Se; n=0,1; x>=1)]

C07F9/24A9Q	. . . . .	{7 dots} [N: containing the structure N-P(=X)n-X-C(=X) (X = O, S, Se; n = 0, 1]
C07F9/24A9U	. . . . .	{7 dots} [N: containing the structure N-P(=X)n-X-N (X = O, S, Se; n = 0, 1]
C07F9/24A9W	. . . . .	{7 dots} [N: containing the structure N-P(=X)n-X-P (X = O, S, Se; n = 0, 1]
C07F9/24C	. . . . .	[N: the amide moiety containing a substituent or a structure which is considered as characteristic]
C07F9/24C1	. . . . .	[N: of aliphatic amines]
C07F9/24C2	. . . . .	[N: of unsaturated acyclic amines]
C07F9/24C3	. . . . .	[N: of cycloaliphatic amines]
C07F9/24C4	. . . . .	[N: of aromatic amines (N-C aromatic linkage)]
C07F9/24C7	. . . . .	[N: of aralkylamines]
C07F9/24C9	. . . . .	[N: Compounds containing the structure P(=X)n-N-acyl, P(=X)n-N-heteroatom, P(=X)n-N-CN (X = O, S, Se; n = 0, 1)]
C07F9/24C9M	. . . . .	{7 dots} [N: containing the structure P(=X)n-N-S (X = O, S, Se; n = 0, 1)]
C07F9/24C9Q	. . . . .	{7 dots} [N: containing the structure P(=X)n-N-C(=X) (X = O, S, Se; n = 0, 1]
C07F9/24C9U	. . . . .	{7 dots} [N: containing the structure P(=X)n-N-N (X = O, S, Se; n = 0, 1]
C07F9/24C9W	. . . . .	{7 dots} [N: containing the structure P(=X)n-N-P (X = O, S, Se; n = 0, 1]
C07F9/26	. . . . .	containing P-halide groups
C07F9/28	. . . . .	with one or more P-C bonds
C07F9/30	. . . . .	Phosphinic acids R <sub>2</sub> P(=O)(OH); Thiophosphinic acids [N: i.e. R <sub>2</sub> P(=X)(XH) (X = S, Se)]
C07F9/30A1	. . . . .	[N: Acyclic saturated acids which can have further substituents on alkyl]
C07F9/30A2	. . . . .	[N: Acyclic unsaturated acids]
C07F9/30A3	. . . . .	[N: Cycloaliphatic acids]
C07F9/30A4	. . . . .	[N: Aromatic acids (P-C aromatic linkage)]
C07F9/30A6	. . . . .	[N: Poly(thio)phosphinic acids]
C07F9/30A7	. . . . .	[N: Arylalkanephosphinic acids, e.g. Ar-(CH <sub>2</sub> ) <sub>n</sub> -P(=X)(R)(XH), (X = O, S, Se; n >= 1)]
C07F9/30A9	. . . . .	[N: Acids containing the structure -C(=X)-P(=X)(R)(XH) or NC-P(=X)(R)(XH), (X = O, S, Se)]
C07F9/30B	. . . . .	[N: Pyrophosphinic acids; Phosphinic acid anhydrides]
C07F9/32	. . . . .	Esters thereof
C07F9/32A	. . . . .	[N: the acid moiety containing a substituent or a structure which is considered as characteristic]
C07F9/32A1	. . . . .	[N: Esters of acyclic saturated acids which can have further substituents on alkyl)]
C07F9/32A2	. . . . .	[N: Esters of acyclic unsaturated acids]
C07F9/32A3	. . . . .	[N: Esters of cycloaliphatic acids]
C07F9/32A4	. . . . .	[N: Esters of aromatic acids (P-C aromatic linkage)]
C07F9/32A6	. . . . .	[N: Esters of poly(thio)phosphinic acids]

C07F9/32A7	. . . . .	[N: Esters of arylalkanephosphinic acids]
C07F9/32A9	. . . . .	[N: Esters of acids containing the structure -C(=X)-P(=X)(R)(XH) or NC-P(=X)(R)(XH), (X = O, S, Se)]
C07F9/32A9Q	. . . . .	{7 dots} [N: containing the structure -C(=X)-P(=X)(R)(XR), (X = O, S, Se)]
C07F9/32C	. . . . .	[N: the ester moiety containing a substituent or a structure which is considered as characteristic]
C07F9/32C1	. . . . .	[N: Esters with hydroxyalkyl compounds]
C07F9/32C2	. . . . .	[N: Esters with unsaturated acyclic alcohols]
C07F9/32C3	. . . . .	[N: Esters with cycloaliphatic alcohols]
C07F9/32C4	. . . . .	[N: Esters with hydroxyaryl compounds]
C07F9/32C7	. . . . .	[N: Esters with arylalkanols]
C07F9/32C9	. . . . .	[N: Compounds containing the structure R <sub>2</sub> P(=X)-X-acyl, R <sub>2</sub> P(=X)-X-heteroatom, R <sub>2</sub> P(=X)-X-CN (X = O, S, Se)]
C07F9/34	. . . . .	Halides thereof
C07F9/36	. . . . .	Amides thereof
C07F9/38	. . . . .	Phosphonic acids RP(=O)(OH) <sub>2</sub> ; Thiophosphonic acids [N: i.e. RP(=X)(XH) <sub>2</sub> (X = S, Se)]
C07F9/38A	. . . . .	[N: not used, see subgroups] [N9703]
C07F9/38A1	. . . . .	[N: Acyclic saturated acids which can have further substituents on alkyl]
C07F9/38A1U	. . . . .	[N: N-Phosphonomethylglycine; Salts or complexes thereof] [N1204]
C07F9/38A1V	. . . . .	[N: Acids containing the structure (RX) <sub>2</sub> P(=X)-alk-N...P (X = O, S, Se)] [N1204]
C07F9/38A1W	. . . . .	[N: substituted by B, Si, P or a metal ( <a href="#">C07F9/38A6</a> takes precedence)]
C07F9/38A2	. . . . .	[N: Acyclic unsaturated acids]
C07F9/38A3	. . . . .	[N: Cycloaliphatic acids]
C07F9/38A4	. . . . .	[N: Aromatic acids (P-C aromatic linkage)]
C07F9/38A6	. . . . .	[N: Polyphosphonic acids]
C07F9/38A6D	. . . . .	[N: containing no further substituents than -PO <sub>3</sub> H <sub>2</sub> groups] [N9703]
C07F9/38A6D2	. . . . .	{7 dots} [N: Acyclic unsaturated derivatives] [N9703]
C07F9/38A6D3	. . . . .	{7 dots} [N: Cycloaliphatic derivatives] [N9703]
C07F9/38A6F	. . . . .	[N: containing halogen or nitro(so) substituents] [N9703]
C07F9/38A6J	. . . . .	[N: containing hydroxy substituents in the hydrocarbon radicals] [C9703]
C07F9/38A6M	. . . . .	[N: containing sulfur substituents] [N9703]
C07F9/38A6Q	. . . . .	[N: containing carboxylic acid or carboxylic acid derivative substituents] [N9703]
C07F9/38A6U	. . . . .	[N: containing nitrogen substituents e.g. N.....H or N-hydrocarbon rest which can be substituted by halogen or nitro(so), N.....O, N.....S, N.....C(=X)- (X = O, S), N.....N, N...C(=X)...N (X = O, S)] [C1208]
C07F9/38A6W	. . . . .	[N: containing substituents selected from B, Si, P (other than -PO <sub>3</sub> H <sub>2</sub> groups) or a metal] [N9703]
C07F9/38A7	. . . . .	[N: Arylalkanephosphonic acids ( <a href="#">C07F9/38A6</a> takes precedence)]
C07F9/38A9	. . . . .	[N: Acids containing the structure -C(=X)-P(=X)(XH) <sub>2</sub> or NC-P(=X)(XH) <sub>2</sub> , (X = O, S, Se)]
C07F9/38A9Q	. . . . .	[N: Acids containing the structure -C(=X)-P(=X)(XH) <sub>2</sub> , (X = O, S, Se)]

C07F9/38B	. . . . .	[N: Pyrophosphonic acids; phosphonic acid anhydrides]
C07F9/40	. . . . .	Esters thereof
C07F9/40A	. . . . .	[N: the acid moiety containing a substituent or a structure which is considered as characteristic]
C07F9/40A1	. . . . .	[N: Esters of acyclic acids which can have further substituents on alkyl]
C07F9/40A1V	. . . . .	{7 dots} [N: Esters containing the structure (RX) <sub>2</sub> P(=X)-alk-N...P (X = O, S, Se)] [N1204]
C07F9/40A1W	. . . . .	{7 dots} [N: substituted by B, Si, P or a metal ( <a href="#">C07F9/40A6</a> takes precedence)]
C07F9/40A2	. . . . .	[N: Esters of acyclic unsaturated acids]
C07F9/40A3	. . . . .	[N: Esters of cycloaliphatic acids]
C07F9/40A4	. . . . .	[N: Esters of aromatic acids (P-C aromatic linkage)]
C07F9/40A6	. . . . .	[N: Esters of poly(thio)phosphonic acids]
C07F9/40A6D	. . . . .	{7 dots} [N: containing no further substituents than -PO <sub>3</sub> H <sub>2</sub> groups in free or esterified form] [N9703]
C07F9/40A6D2	. . . . .	{8 dots} [N: Acyclic unsaturated derivatives] [N9703]
C07F9/40A6D3	. . . . .	{8 dots} [N: Cycloaliphatic derivatives] [N9703]
C07F9/40A6F	. . . . .	{7 dots} [N: containing halogen or nitro(so) substituents] [N9703]
C07F9/40A6J	. . . . .	{7 dots} [N: containing hydroxy substituents in the hydrocarbon radicals] [C9703]
C07F9/40A6M	. . . . .	{7 dots} [N: containing sulfur substituents] [N9703]
C07F9/40A6Q	. . . . .	{7 dots} [N: containing carboxylic acid or carboxylic acid derivative substituents] [N9703]
C07F9/40A6U	. . . . .	{7 dots} [N: containing nitrogen substituents e.g. N.....H or N-hydrocarbon rest which can be substituted by halogen or nitro(so), N.....O, N.....S, N.....C(=X)- (X =O, S), N.....N, N...C(=X)...N (X =O, S)] [C1208]
C07F9/40A6W	. . . . .	{7 dots} [N: containing substituents selected from B, Si, P (other than -PO <sub>3</sub> H <sub>2</sub> groups in free or esterified form), or a metal] [N9703]
C07F9/40A7	. . . . .	[N: Esters of arylalkanephosphonic acids ( <a href="#">C07F9/40A6</a> takes precedence)] [C0912]
C07F9/40A7P	. . . . .	{7 dots} [N: Compounds containing the structure (RY) <sub>2</sub> P(=X)-CH <sub>2</sub> ] <sub>n</sub> -C(=O)-(CH <sub>2</sub> ) <sub>m</sub> -Ar, (X, Y = O, S, Se; n>=1, m>=0)]
C07F9/40A9	. . . . .	[N: Esters of acids containing the structure -C(=X)-P(=X)(XR) <sub>2</sub> or NC-P(=X)(XR) <sub>2</sub> , (X = O, S, Se)]
C07F9/40A9Q	. . . . .	{7 dots} [N: Esters of acids containing the structure -C(=X)-P(=X)(XR) <sub>2</sub> , (X = O, S, Se)]
C07F9/40B	. . . . .	[N: Esters of pyrophosphonic acids; Esters of phosphonic acid anhydrides]
C07F9/40C	. . . . .	[N: the ester moiety containing a substituent or a structure which is considered as characteristic]
C07F9/40C1	. . . . .	[N: Esters with hydroxyalkyl compounds]
C07F9/40C2	. . . . .	[N: Esters with unsaturated acyclic alcohols]
C07F9/40C3	. . . . .	[N: Esters with cycloaliphatic alcohols]
C07F9/40C4	. . . . .	[N: Esters with hydroxyaryl compounds]
C07F9/40C7	. . . . .	[N: Esters with arylalkanols]

C07F9/40C9	. . . . .	[N: Compounds containing the structure P(=X)-X-acyl, P(=X)-X-heteroatom, P(=X)-X-CN (X = O, S, Se)]
C07F9/40C9Q	. . . . .	{7 dots} [N: Compounds containing the structure P(=X)-X-C(=X)- (X = O, S, Se)]
C07F9/40C9U	. . . . .	{7 dots} [N: Compounds containing the structure P(=X)-X-N (X = O, S, Se)]
C07F9/42	. . . . .	Halides thereof
C07F9/42H	. . . . .	[N: Acid or estermonohalides thereof, e.g. RP(=X)(YR)(Hal) (X, Y = O, S; R = H, or hydrocarbon group)
C07F9/44	. . . . .	Amides thereof
C07F9/44A	. . . . .	[N: the acid moiety containing a substituent or a structure which is considered as characteristic]
C07F9/44A1	. . . . .	[N: Amides of acyclic saturated acids which can have further substituents on alkyl]
C07F9/44A2	. . . . .	[N: Amides of acyclic unsaturated acids]
C07F9/44A3	. . . . .	[N: Amides of cycloaliphatic acids]
C07F9/44A4	. . . . .	[N: Amides of aromatic acids (P-C aromatic linkage)]
C07F9/44A6	. . . . .	[N: Amides of poly (thio)phosphonic acids]
C07F9/44A7	. . . . .	[N: Amides of arylalkanephosphonic acids]
C07F9/44A9	. . . . .	[N: Amides of acids containing the structure -C(=Y)-P(=X)(XR)-N or NC-(P(=X)(XR)-N (X, Y = O, S)]
C07F9/44B	. . . . .	[N: the ester moiety containing a substituent or a structure which is considered as characteristic]
C07F9/44B1	. . . . .	[N: Ester with hydroxyalkyl compounds]
C07F9/44B2	. . . . .	[N: Esters with unsaturated acyclic alcohols]
C07F9/44B3	. . . . .	[N: Esters with cycloaliphatic alcohols]
C07F9/44B4	. . . . .	[N: Esters with hydroxyaryl compounds]
C07F9/44B7	. . . . .	[N: Esters with arylalkanols]
C07F9/44B9	. . . . .	[N: Compounds containing the structure C-P(=X)(X-acyl)-N, C-P(=X)(X-heteroatom)-N or C-P(=X)(X-CN)-N (X, Y = O, S)]
C07F9/44C	. . . . .	[N: the amide moiety containing a substituent or a structure which is considered as characteristic]
C07F9/44C1	. . . . .	[N: of aliphatic amines]
C07F9/44C2	. . . . .	[N: of unsaturated acyclic amines]
C07F9/44C3	. . . . .	[N: of cycloaliphatic amines]
C07F9/44C4	. . . . .	[N: of aromatic amines (N-C aromatic linkage)]
C07F9/44C7	. . . . .	[N: of aralkylamines]
C07F9/44C9	. . . . .	[N: Compounds containing the structure C-P(=X)(N-acyl)-X, C-P(=X)(N-heteroatom)-X or C-P(=X)(N-CN)-X (X = O, S, Se)]
C07F9/44C9M	. . . . .	{7 dots} [N: Compounds containing the structure P(=X)(N-S-) (X = O, S, Se)]
C07F9/44C9Q	. . . . .	{7 dots} [N: Compounds containing the structure P(=X)(N-C(=X)-) (X = O, S, Se)]
C07F9/44C9U	. . . . .	{7 dots} [N: Compounds containing the structure P(=X)(N-N-) (X = O, S, Se)]
C07F9/46	. . . . .	Phosphinous acids R <sub>2</sub> -P-OH; Thiophosphinous acids; Aminophosphines R <sub>2</sub> -P-NH <sub>2</sub> [N: including R <sub>2</sub> P(=O)H; derivatives thereof]

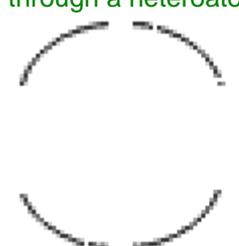
C07F9/48	. . .	Phosphonous acids $\text{RP}(\text{OH})_2$ ; Thiophosphonous acids [N: including $\text{RHP}(\text{=O})(\text{OH})$ ; Derivatives thereof]
C07F9/48A	. . . .	[N: the acid moiety containing a substituent or structure which is considered as characteristic]
C07F9/48A1	. . . . .	[N: Acyclic saturated acids or derivatives which can have further substituents on alkyl]
C07F9/48A2	. . . . .	[N: Acyclic unsaturated acids or derivatives]
C07F9/48A3	. . . . .	[N: Cycloaliphatic acids or derivatives]
C07F9/48A4	. . . . .	[N: Aromatic acids or derivatives (P-C aromatic linkage)] [C9512]
C07F9/48A6	. . . . .	[N: Polyphosphonous acids or derivatives]
C07F9/48A9	. . . . .	[N: Acids or derivatives containing the structure $-\text{C}(\text{=X})-\text{P}(\text{XR})_2$ or $\text{NC}-\text{P}(\text{XR})_2$ (X = O, S, Se)]
C07F9/48C	. . . . .	[N: the ester moiety containing a substituent or structure which is considered as characteristic]
C07F9/48C4	. . . . .	[N: Esters with hydroxy aryl compounds]
C07F9/48F	. . . . .	[Amides or esteramides thereof, e.g. $\text{RP}(\text{NR}'_2)_2$ or $\text{RP}(\text{XR}')(\text{NR}''_2)$ (X = O, S)]
C07F9/48H	. . . . .	[N: Monohalide derivatives $\text{RP}(\text{XR}')(\text{Hal})$ (X = O, S, N) (dihalide derivatives <a href="#">C07F9/52</a> )]
C07F9/50	. . .	Organo-phosphines
C07F9/50A1	. . . . .	[N: Acyclic saturated phosphines]
C07F9/50A1W	. . . . .	[N: substituted by B, Si, P or a metal ( <a href="#">C07F9/50A6</a> takes precedence)]
C07F9/50A2	. . . . .	[N: Acyclic unsaturated phosphines]
C07F9/50A3	. . . . .	[N: Cycloaliphatic phosphines]
C07F9/50A4	. . . . .	[N: Aromatic phosphines (P-C aromatic linkage)] [C9512]
C07F9/50A6	. . . . .	[N: Polyphosphines]
C07F9/50A7	. . . . .	[N: Arylalkane phosphines ( <a href="#">C07F9/50A6</a> takes precedence)]
C07F9/50A9	. . . . .	[N: Phosphines containing the structure $-\text{C}(\text{=X})-\text{P}$ or $\text{NC}-\text{P}$ ]
C07F9/50P	. . . . .	[N: Organo-phosphines containing a P-P bond]
C07F9/50Y	. . . . .	[N: Complexes or chelates of phosphines with metallic compounds or metals]
C07F9/50Z	. . . . .	[N: Preparation; Separation; Purification; Stabilisation]
C07F9/50Z1	. . . . .	[N: by a process in which the phosphorus atom is not involved] [N9410]
C07F9/50Z2	. . . . .	[N: by addition of phosphorus compounds to alkenes or alkynes]
C07F9/50Z4	. . . . .	[N: from compounds having the structure P-H or P-Heteroatom, in which one or more of such bonds are converted into P-C bonds] [C9608] ( <a href="#">C07F9/50Z2</a> takes precedence)
C07F9/50Z4F	. . . . .	[N: from starting materials having the structure $>\text{P}-\text{Hal}$ ] [N9608]
C07F9/50Z4H	. . . . .	[N: from starting materials having the structure P-H] [N9608] ( <a href="#">C07F9/50Z2</a> takes precedence)
C07F9/50Z4K	. . . . .	[N: from starting materials having the structure P-Metal, including $\text{R}_2\text{P}-\text{M}^+$ ]
C07F9/50Z4N	. . . . .	[N: from starting materials having the structure $>\text{P}-\text{Het}$ , Het being an heteroatom different from Hal or Metal] [N9608]
C07F9/50Z6	. . . . .	[N: from phosphonium salts as starting materials]
C07F9/50Z8	. . . . .	[N: by reduction of pentavalent phosphorus derivatives, e.g. $-\text{P}=\text{X}$ with X]

		= O, S, Se or -P-Hal <sub>2</sub> ] [C9412]
C07F9/50Z12	. . . . .	[N: Separation; Purification; Stabilisation] [N9410]
C07F9/52	. . . . .	Halophosphines
C07F9/53	. . . . .	Organo-phosphine oxides; Organo-phosphine thioxides
C07F9/53A1	. . . . .	[N: Acyclic saturated phosphine oxides or thioxides]
C07F9/53A1W	. . . . .	[N: substituted by B, Si, P or a metal]
C07F9/53A1W2	. . . . .	{7 dots} [N: substituted by a phosphorus atom ( <a href="#">C07F9/53A6</a> takes precedence)]
C07F9/53A2	. . . . .	[N: Unsaturated acyclic phosphine oxides or thioxides]
C07F9/53A3	. . . . .	[N: Cycloaliphatic phosphine oxides or thioxides]
C07F9/53A4	. . . . .	[N: Aromatic phosphine oxides or thioxides (P-C aromatic linkage)] [C9512]
C07F9/53A6	. . . . .	[N: Polyphosphine oxides or thioxides]
C07F9/53A7	. . . . .	[N: Arylalkane phosphine oxides or thioxides ( <a href="#">C07F9/53A6</a> takes precedence)]
C07F9/53A9	. . . . .	[N: Phosphine oxides or thioxides containing the structure -C(=X)-P(=X) or NC-P(=X) (X = O, S, Se)]
C07F9/53P	. . . . .	[N: Organo-phosphine oxides or thioxides containing a P-P bond]
C07F9/53Y	. . . . .	[N: Complexes or chelates of phosphine-oxides or thioxides with metallic compounds or metals]
C07F9/535	. . . . .	Organo-phosphoranes
C07F9/535B	. . . . .	[N: Phosphoranes containing the structure P=C-]
C07F9/535D	. . . . .	[N: Phosphoranes containing the structure P=N-]
C07F9/535D2	. . . . .	[N: Polyphosphazenes containing the structure [P=N-] <sub>n</sub> (cyclic compounds 9/6581F)]
C07F9/54	. . . . .	Quarternary phosphonium compounds
C07F9/54A1	. . . . .	[N: Acyclic saturated phosphonium compounds]
C07F9/54A1W	. . . . .	[N: substituted by B, Si, P or a metal]
C07F9/54A1W2	. . . . .	[N: substituted by a phosphorus atom ( <a href="#">C07F9/54A6</a> takes precedence)]
C07F9/54A2	. . . . .	[N: Acyclic unsaturated phosphonium compounds]
C07F9/54A3	. . . . .	[N: Cycloaliphatic phosphonium compounds]
C07F9/54A4	. . . . .	[N: Aromatic phosphonium compounds (P-C aromatic linkage)] [C9512]
C07F9/54A6	. . . . .	[N: Polyphosphonium compounds]
C07F9/54A7	. . . . .	[N: Arylalkanephosphonium compounds]
C07F9/54K	. . . . .	[N: Compounds of the type "quasi-phosphonium" e.g. (C) <sub>a</sub> -P-(Y) <sub>b</sub> wherein a+b=4, b>=1 and Y=heteroatom, generally N or O]
C07F9/547	. . . . .	Heterocyclic compounds, e.g. containing phosphorus as a ring hetero atom
C07F9/547T	. . . . .	[N: having nitrogen and selenium with or without oxygen or sulfur as ring hetero atoms; having nitrogen and tellurium with or without oxygen or sulfur as ring hetero atoms]
C07F9/553	. . . . .	having one nitrogen atom as the only ring hetero atom
C07F9/553A7	. . . . .	[N: Seven-(or more) membered rings]
C07F9/553A7V	. . . . .	[N: condensed with carbocyclic rings or ring systems]
C07F9/553A9	. . . . .	[N: the heteroring containing the structure -C(=O)-N-C(=O)- (both carbon

- atoms belong to the heteroring]
- C07F9/564 . . . . Three-membered rings
- C07F9/568 . . . . Four-membered rings
- C07F9/568E . . . . [N: the phosphorus atom is bonded to a cyclic nitrogen atom, directly, through one or more heteroatoms or through a hydrocarbon chain which may be broken by one or more heteroatoms]
- C07F9/568V . . . . [N: condensed with carbocyclic rings or ring systems]
- C07F9/572 . . . . Five-membered rings
- C07F9/572E . . . . [N: the phosphorus atom is bonded to a cyclic nitrogen atom, directly, through one or more heteroatoms or through a hydrocarbon chain which may be broken by one or more heteroatoms]
- C07F9/572G . . . . [N: the phosphorus atom is bonded to a cyclic carbon atom, other than directly, through a heteroatom, or through a hydrocarbon chain which may be broken by at least one nitrogen atom, e.g.
- 

or

$$\text{N} \text{---} \text{C} \text{---} (\text{CH}_2)_n \text{---} \text{C} \text{=} \text{O} \text{---} \text{O} \text{---} (\text{CH}_2)_n \text{---} \text{P}$$

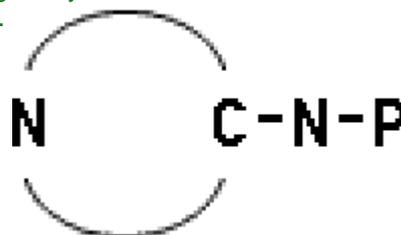
]
- C07F9/572K . . . . [N: the phosphorus atom is bonded to a cyclic carbon atom, directly or through a heteroatom other than nitrogen, e.g.
- 

or



]
- C07F9/572K2 . . . . [N: bonded through a heteroatom]
- C07F9/572K4 . . . . [N: directly bonded]

C07F9/572R . . . . . [N: the phosphorus atom is bonded to a cyclic carbon atom, through a nitrogen atom or through a hydrocarbon chain which is broken by at least one nitrogen atom, e.g. or



C07F9/572V . . . . . [N: condensed with carbocyclic rings or carbocyclic ring systems]

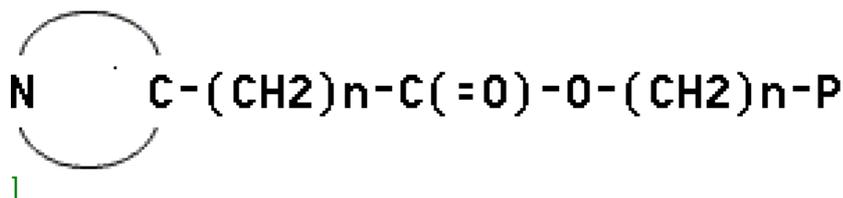
C07F9/576 . . . . . Six-membered rings

C07F9/576V . . . . . [N: condensed with carbocyclic rings or carbocyclic ring systems]

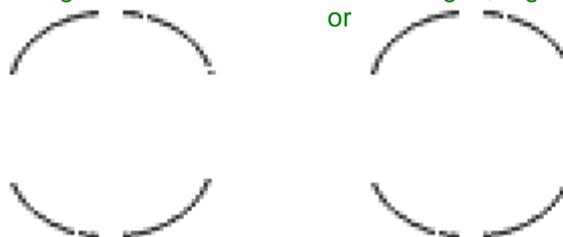
C07F9/58 . . . . . Pyridine rings

C07F9/58E . . . . . [N: the phosphorus atom is bonded to a cyclic nitrogen atom, directly, through one or more heteroatoms or through a hydrocarbon chain which may be broken by one or more heteroatoms]

C07F9/58G . . . . . [N: the phosphorus atom is bonded to a cyclic carbon atom, other than directly, through a heteroatom, or through a hydrocarbon chain which may be broken by at least one nitrogen atom, e.g. or



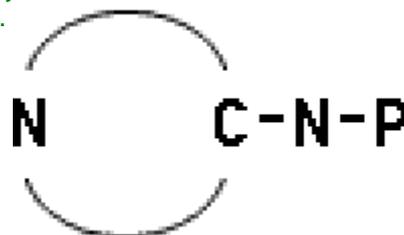
C07F9/58K . . . . . [N: the phosphorus atom is bonded to a cyclic carbon atom, directly or through a heteroatom other than nitrogen, e.g. or ]



C07F9/58K2 . . . . . {7 dots} [N: bonded through a heteroatom]

C07F9/58K4 . . . . . {7 dots} [N: directly bonded]

C07F9/58R . . . . . [N: the phosphorus atom is bonded to a cyclic carbon atom, through a nitrogen atom or through a hydrocarbon chain which is broken by at least one nitrogen atom, e.g. or

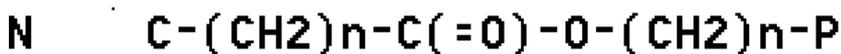


]

C07F9/59 . . . . . Hydrogenated pyridine rings

C07F9/59E . . . . . [N: the phosphorus atom is bonded to a cyclic nitrogen atom, directly, through one or more heteroatoms or through a hydrocarbon chain which may be broken by one or more heteroatoms]

C07F9/59G . . . . . [N: the phosphorus atom is bonded to a cyclic carbon atom, other than directly, through a heteroatom, or through a hydrocarbon chain which may be broken by at least one nitrogen atom, e.g. or



]

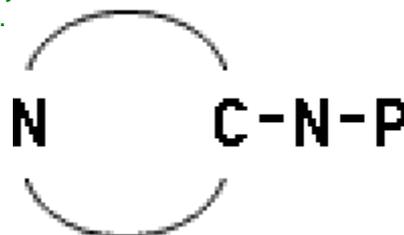
C07F9/59K . . . . . [N: the phosphorus atom is bonded to a cyclic carbon atom, directly or through a heteroatom other than nitrogen, e.g. or ]



C07F9/59K2 . . . . . {7 dots} [N: bonded through a heteroatom]

C07F9/59K4 . . . . . {7 dots} [N: directly bonded]

C07F9/59R . . . . . [N: the phosphorus atom is bonded to a cyclic carbon atom, through a nitrogen atom or through a hydrocarbon chain which is broken by at least one nitrogen atom, e.g. or



]

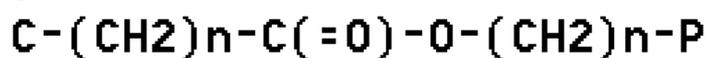
C07F9/60 . . . . . Quinoline or hydrogenated quinoline ring systems  
 C07F9/62 . . . . . Isoquinoline or hydrogenated isoquinoline ring systems  
 C07F9/64 . . . . . Acridine or hydrogenated acridine ring systems  
 C07F9/645 . . . . . having two nitrogen atoms as the only ring hetero atoms

C07F9/6503 . . . . . Five-membered rings

C07F9/6503B2 . . . . . [N: having the nitrogen atoms in the positions 1 and 2]

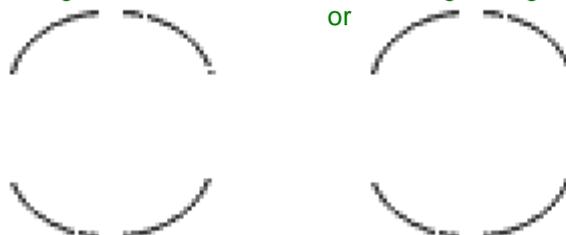
C07F9/6503B2E . . . . . [N: the phosphorus atom is bonded to a cyclic nitrogen atom, directly, through one or more heteroatoms or through a hydrocarbon chain which may be broken by one or more heteroatoms]

C07F9/6503B2G . . . . . [N: the phosphorus atom is bonded to a cyclic carbon atom, other than directly, through a heteroatom, or through a hydrocarbon chain which may be broken by at least one nitrogen atom, e.g. or

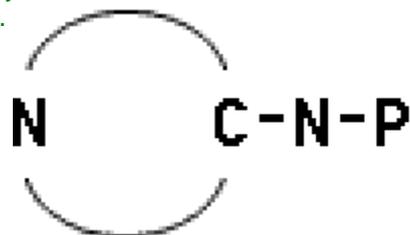


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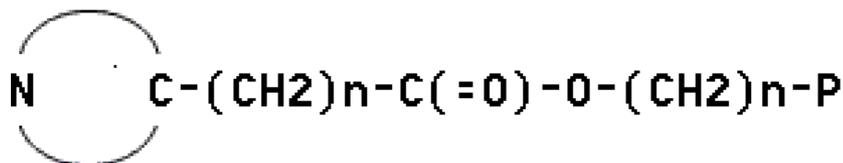
C07F9/6503B2K . . . . . [N: the phosphorus atom is bonded to a cyclic carbon atom, directly or through a heteroatom other than nitrogen, e.g. or ]



- C07F9/6503B2K2 . . . . . {7 dots} [N: bonded through a heteroatom]
- C07F9/6503B2K4 . . . . . {7 dots} [N: directly bonded]
- C07F9/6503B2R . . . . . [N: the phosphorus atom is bonded to a cyclic carbon atom, through a nitrogen atom or through a hydrocarbon chain which is broken by at least one nitrogen atom, e.g. or



- C07F9/6503B2V . . . . . [N: condensed with carbocyclic rings or carbocyclic ring systems]
- C07F9/6506 . . . . . having the nitrogen atoms in positions 1 and 3
- C07F9/6506E . . . . . [N: the phosphorus atom is bonded to a cyclic nitrogen atom, directly, through one or more heteroatoms or through a hydrocarbon chain which may be broken by one or more heteroatoms]
- C07F9/6506G . . . . . [N: the phosphorus atom is bonded to a cyclic carbon atom, other than directly, through a heteroatom, or through a hydrocarbon chain which may be broken by at least one nitrogen atom, e.g. or

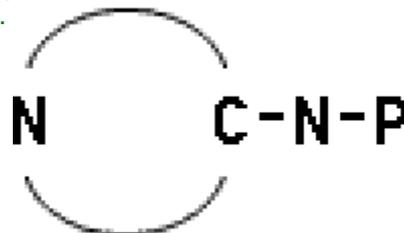


- C07F9/6506K . . . . . [N: the phosphorus atom is bonded to a cyclic carbon atom, directly or through a heteroatom other than nitrogen, e.g. or ]



- C07F9/6506K2 . . . . . {7 dots} [N: bonded through a heteroatom]
- C07F9/6506K4 . . . . . {7 dots} [N: directly bonded]

C07F9/6506R . . . . . [N: the phosphorus atom is bonded to a cyclic carbon atom, through a nitrogen atom or through a hydrocarbon chain which is broken by at least one nitrogen atom, e.g. or



]

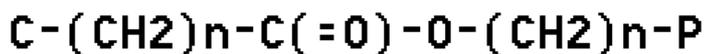
C07F9/6506V . . . . . [N: condensed with carbocyclic rings or carbocyclic ring systems]

C07F9/6509 . . . . . Six-membered rings

C07F9/6509B2 . . . . . [N: having the nitrogen atoms in the positions 1 and 2]

C07F9/6509B2E . . . . . [N: the phosphorus atom is bonded to a cyclic nitrogen atom, directly, through one or more heteroatoms or through a hydrocarbon chain which may be broken by one or more heteroatoms]

C07F9/6509B2G . . . . . [N: the phosphorus atom is bonded to a cyclic carbon atom, other than directly, through a heteroatom, or through a hydrocarbon chain which may be broken by at least one nitrogen atom, e.g. or



]

C07F9/6509B2K . . . . . [N: the phosphorus atom is bonded to a cyclic carbon atom, directly or through a heteroatom other than nitrogen, e.g. or ]



or



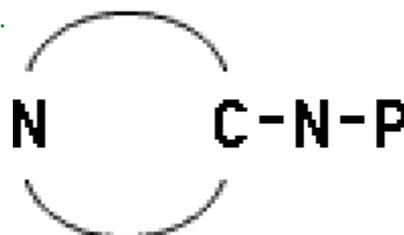
C07F9/6509B2K2 . . . . . {7 dots} [N: bonded through a heteroatom]

C07F9/6509B2K4 . . . . . {7 dots} [N: directly bonded]

C07F9/6509B2R . . . . . [N: the phosphorus atom is bonded to a cyclic carbon atom, through a nitrogen atom or through a hydrocarbon chain which is broken by at

least one nitrogen atom, e.g.

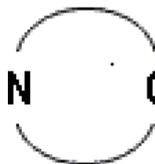
or



]

- C07F9/6509B2V . . . . . [N: condensed with carbocyclic rings or carbocyclic ring systems]
- C07F9/6509B4 . . . . . [N: having the nitrogen atoms in the position 1 and 4]
- C07F9/6509B4E . . . . . [N: the phosphorus atom is bonded to a cyclic nitrogen atom, directly, through one or more heteroatoms or through a hydrocarbon chain which may be broken by one or more heteroatoms]
- C07F9/6509B4G . . . . . [N: the phosphorus atom is bonded to a cyclic carbon atom, other than directly, through a heteroatom, or through a hydrocarbon chain which may be broken by at least one nitrogen atom, e.g.

or



]

- C07F9/6509B4K . . . . . [N: the phosphorus atom is bonded to a cyclic carbon atom, directly or through a heteroatom other than nitrogen, e.g.

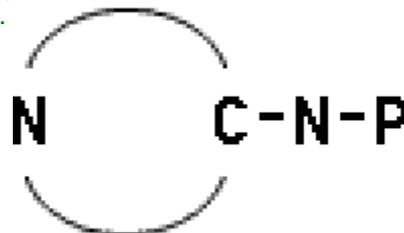
or

]



- C07F9/6509B4K2 . . . . . {7 dots} [N: bonded through a heteroatom]
- C07F9/6509B4K4 . . . . . {7 dots} [N: directly bonded]

C07F9/6509B4R . . . . . [N: the phosphorus atom is bonded to a cyclic carbon atom, through a nitrogen atom or through a hydrocarbon chain which is broken by at least one nitrogen atom, e.g. or



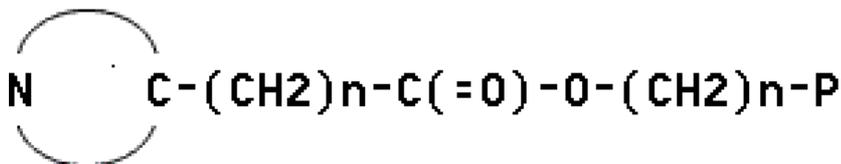
]

C07F9/6509B4V . . . . . [N: condensed with carbocyclic rings or carbocyclic ring systems]

C07F9/6512 . . . . . having the nitrogen atoms in positions 1 and 3

C07F9/6512E . . . . . [N: the phosphorus atom is bonded to a cyclic nitrogen atom, directly, through one or more heteroatoms or through a hydrocarbon chain which may be broken by one or more heteroatoms]

C07F9/6512G . . . . . [N: the phosphorus atom is bonded to a cyclic carbon atom, other than directly, through a heteroatom, or through a hydrocarbon chain which may be broken by at least one nitrogen atom, e.g. or



]

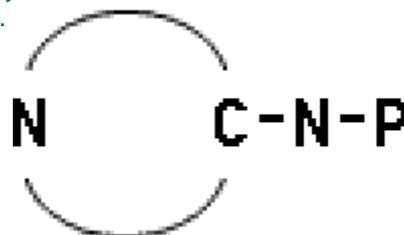
C07F9/6512K . . . . . [N: the phosphorus atom is bonded to a cyclic carbon atom, directly or through a heteroatom other than nitrogen, e.g. or ]



C07F9/6512K2 . . . . . {7 dots} [N: bonded through a heteroatom]

C07F9/6512K4 . . . . . {7 dots} [N: directly bonded]

C07F9/6512R . . . . . [N: the phosphorus atom is bonded to a cyclic carbon atom, through a nitrogen atom or through a hydrocarbon chain which is broken by at least one nitrogen atom, e.g. or



]

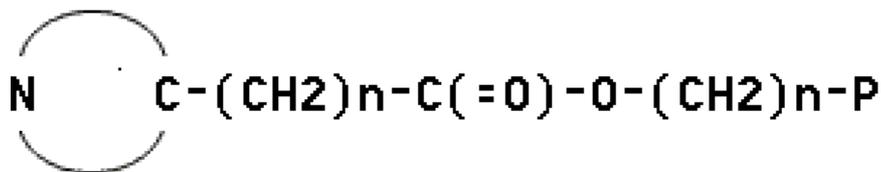
C07F9/6512V . . . . . [N: condensed with carbocyclic rings or carbocyclic ring systems]

C07F9/6515 . . . . . having three nitrogen atoms as the only ring hetero atoms

C07F9/6518 . . . . . Five-membered rings

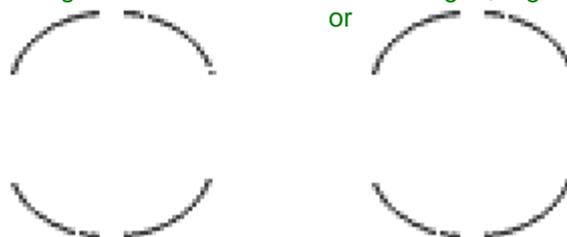
C07F9/6518E . . . . . [N: the phosphorus atom is bonded to a cyclic nitrogen atom, directly, through one or more heteroatoms or through a hydrocarbon chain which may be broken by one or more heteroatoms]

C07F9/6518G . . . . . [N: the phosphorus atom is bonded to a cyclic carbon atom, other than directly, through a heteroatom, or through a hydrocarbon chain which may be broken by at least one nitrogen atom, e.g. or



]

C07F9/6518K . . . . . [N: the phosphorus atom is bonded to a cyclic carbon atom, directly or through a heteroatom other than nitrogen, e.g. or ]



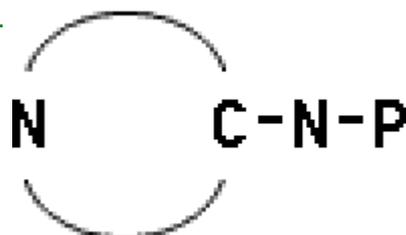
C07F9/6518K2 . . . . . [N: bonded through a heteroatom]

C07F9/6518K4 . . . . . [N: directly bonded]

C07F9/6518R . . . . . [N: the phosphorus atom is bonded to a cyclic carbon atom, through a nitrogen atom or through a hydrocarbon chain which is broken by at least

one nitrogen atom, e.g.

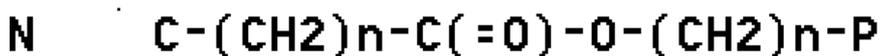
or



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- C07F9/6518V . . . . . [N: condensed with carbocyclic rings or carbocyclic ring systems]
- C07F9/6521 . . . . . Six-membered rings
- C07F9/6521E . . . . . [N: the phosphorus atom is bonded to a cyclic nitrogen atom, directly, through one or more heteroatoms or through a hydrocarbon chain which may be broken by one or more heteroatoms]
- C07F9/6521G . . . . . [N: the phosphorus atom is bonded to a cyclic carbon atom, other than directly, through a heteroatom, or through a hydrocarbon chain which may be broken by at least one nitrogen atom, e.g.

or



]

- C07F9/6521K . . . . . [N: the phosphorus atom is bonded to a cyclic carbon atom, directly or through a heteroatom other than nitrogen, e.g.

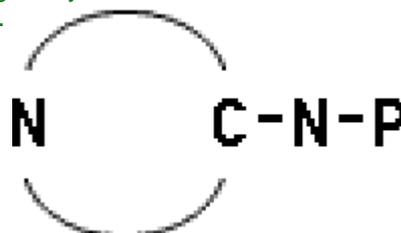
or

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- C07F9/6521K2 . . . . . [N: bonded through a heteroatom]
- C07F9/6521K4 . . . . . [N: directly bonded]

C07F9/6521R . . . . . [N: the phosphorus atom is bonded to a cyclic carbon atom, through a nitrogen atom or through a hydrocarbon chain which is broken by at least one nitrogen atom, e.g. or



C07F9/6521V . . . . . [N: condensed with carbocyclic rings or carbocyclic ring systems]

C07F9/6524 . . . . . having four or more nitrogen atoms as the only ring hetero atoms

C07F9/6527 . . . . . having nitrogen and oxygen atoms as the only ring hetero atoms

C07F9/653 . . . . . Five-membered rings

C07F9/653B . . . . . [N: containing two nitrogen atoms]

C07F9/653B52 . . . . . [N: having the two nitrogen atoms in positions 1 and 2]

C07F9/653B53 . . . . . [N: having the two nitrogen atoms in positions 1 and 3]

C07F9/653V . . . . . [N: condensed with carbocyclic rings or carbocyclic ring systems]

C07F9/6533 . . . . . Six-membered rings

C07F9/6533V . . . . . [N: condensed with carbocyclic rings or carbocyclic ring systems]

C07F9/6536 . . . . . having nitrogen and sulfur atoms with or without oxygen atoms, as the only ring hetero atoms

C07F9/6539 . . . . . Five-membered rings

C07F9/6539B . . . . . [N: containing two nitrogen atoms]

C07F9/6539B52 . . . . . [N: having the two nitrogen atoms in positions 1 and 2]

C07F9/6539B53 . . . . . [N: having the two nitrogen atoms in positions 1 and 3]

C07F9/6541 . . . . . [N: condensed with carbocyclic rings or carbocyclic ring systems]

C07F9/6544 . . . . . Six-membered rings

C07F9/6547 . . . . . [N: condensed with carbocyclic rings or carbocyclic ring systems]

C07F9/655 . . . . . having oxygen atoms, with or without sulfur, selenium, or tellurium atoms, as the only ring hetero atoms

C07F9/655J . . . . . [N: the oxygen atom being part of a three-membered ring]

C07F9/655J38 . . . . . [N: Phosphonic acids containing oxirane groups; esters thereof]

C07F9/655J60 . . . . . [N: condensed with carbocyclic rings or carbocyclic ring systems]

C07F9/655L . . . . . [N: the oxygen atom being part of a four-membered ring]

C07F9/655L60 . . . . . [N: condensed with carbocyclic rings or carbocyclic ring systems]

C07F9/655M . . . . . [N: the oxygen atom being part of a five-membered ring]

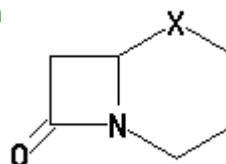
C07F9/655M60 . . . . . [N: condensed with carbocyclic rings or carbocyclic ring systems]

C07F9/655P . . . . . [N: the oxygen atom being part of a six-membered ring]

- C07F9/655P60 . . . . . [N: condensed with carbocyclic rings or carbocyclic ring systems]  
 C07F9/655R . . . . . [N: the oxygen atom being part of a seven-(or more)membered ring]  
 C07F9/655R60 . . . . . [N: condensed with carbocyclic rings or carbocyclic ring systems]  
 C07F9/6553 . . . . . having sulfur atoms, with or without selenium or tellurium atoms, as the only ring hetero atoms  
 C07F9/6553J . . . . . [N: the sulfur atom being part of a three-membered ring]  
 C07F9/6553J60 . . . . . [N: condensed with carbocyclic rings or carbocyclic ring systems]  
 C07F9/6553L . . . . . [N: the sulfur atom being part of a four-membered ring]  
 C07F9/6553L60 . . . . . [N: condensed with carbocyclic rings or carbocyclic ring systems]  
 C07F9/6553M . . . . . [N: the sulfur atom being part of a five-membered ring]  
 C07F9/6553M60 . . . . . [N: condensed with carbocyclic rings or carbocyclic ring systems]  
 C07F9/6553P . . . . . [N: the sulfur atom being part of a six-membered ring]  
 C07F9/6553P60 . . . . . [N: condensed with carbocyclic rings or carbocyclic ring systems]  
 C07F9/6553R . . . . . [N: the sulfur atom being part of a seven-(or more)membered ring]  
 C07F9/6553R60 . . . . . [N: condensed with carbocyclic rings or carbocyclic ring systems]  
 C07F9/6558 . . . . . containing at least two different or differently substituted hetero rings neither condensed among themselves nor condensed with a common carbocyclic ring or ring system  
 C07F9/6558B . . . . . [N: each of the hetero rings containing nitrogen as ring hetero atom]  
 C07F9/6558C . . . . . [N: at least one of the hetero rings does not contain nitrogen as ring hetero atom]  
 C07F9/6561 . . . . . containing systems of two or more relevant hetero rings condensed among themselves or condensed with a common carbocyclic ring or ring system, with or without other non-condensed hetero rings  
 C07F9/6561A . . . . . [N: containing the ring system (X = CH<sub>2</sub>, O, S, NH)

optionally with an additional double bond and/or substituents e.g. penicillins and analogs]

- C07F9/6561B . . . . . [N: containing the ring system (X = CH<sub>2</sub>, O, S, NH)



optionally with an additional double bond and/or substituents e.g. cephalosporins and analogs]

- C07F9/6561C . . . . . [N: containing a spiro condensed ring system of the formula



where at least one of the atoms X or Y is a hetero atom, e.g. S]

C07F9/6561E	. . . .	[N: containing the ring system	having three or more
			than three double bonds between ring members or between ring members and non-ring members, e.g. purine or analogs]
C07F9/6561F	. . . .	[N: containing the ring system,	
			e.g. flavins or analogues]
C07F9/6564	. . . .	having phosphorus atoms, with or without nitrogen, oxygen, sulfur, selenium or tellurium atoms, as ring hetero atoms	
C07F9/6568	. . . .	having phosphorus atoms as the only ring hetero atoms	
C07F9/6568B	. . . . .	[N: the ring phosphorus atom being part of a (thio)phosphinic acid or ester thereof]	
C07F9/6568C	. . . . .	[N: the ring phosphorus atom being part of a phosphine]	
C07F9/6568D	. . . . .	[N: the ring phosphorus atom being part of a phosphine oxide or thioxide]	
C07F9/6568E	. . . . .	[N: the ring phosphorus atom being part of an organo-phosphorane]	
C07F9/6568F	. . . . .	[N: the ring phosphorus atom being part of a phosphonium compound]	
C07F9/6571	. . . . .	having phosphorus and oxygen atoms as the only ring hetero atoms	
C07F9/6571A	. . . . .	[N: esters of oxyacids of phosphorus in which one or more exocyclic oxygen atoms have been replaced by (a) sulfur atom(s)]	
C07F9/6571A1	. . . . .	[N: non-condensed with carbocyclic rings or heterocyclic rings or ring systems]	
C07F9/6571A4	. . . . .	[N: condensed with carbocyclic or heterocyclic rings or ring systems]	
C07F9/6571A6	. . . . .	[N: the molecule containing more than one cyclic phosphorus atom]	
C07F9/6571A8	. . . . .	[N: the cyclic phosphorus atom belonging to more than one ring system]	
C07F9/6571B	. . . . .	[N: Cyclic esteramides of oxyacids of phosphorus]	
C07F9/6571L	. . . . .	[N: the ring phosphorus atom being bound to at least one carbon atom]	
C07F9/6571L2	. . . . .	[N: the ring phosphorus atom and one oxygen atom being part of a (thio)phosphinic acid ester:	(X = O, S)]
C07F9/6571L4	. . . . .	[N: the ring phosphorus atom and, at least, one ring oxygen atom being part of a (thio)phosphonic acid derivative]	
C07F9/6571L6	. . . . .	[N: the ring phosphorus atom and, at least, one ring oxygen atom being part of a (thio)phosphonous acid derivative]	
C07F9/6574	. . . . .	Esters of oxyacids of phosphorus [N: (C07F9/6571L takes precedence)]	
C07F9/6574A1	. . . . .	[N: non-condensed with carbocyclic rings or heterocyclic rings or ring systems]	

- C07F9/6574A4 . . . . . [N: condensed with carbocyclic or heterocyclic rings or ring systems]
- C07F9/6574A6 . . . . . [N: the molecule containing more than one cyclic phosphorus atom]
- C07F9/6574A8 . . . . . [N: the cyclic phosphorus atom belonging to more than one ring system]
- C07F9/6578 . . . . . having phosphorus and sulfur atoms with or without oxygen atoms, as ring hetero atoms
- C07F9/6578D . . . . . [N: the ring phosphorus atom and , at least, one ring sulfur atom being part of a thiophosphonic acid derivative]
- C07F9/6581 . . . . . having phosphorus and nitrogen atoms with or without oxygen or sulfur atoms, as ring hetero atoms
- C07F9/6581D . . . . . [N: having four or more phosphorus atoms as ring hetero atoms]
- C07F9/6581F . . . . . [N: Cyclic phosphazenes [P=N-]<sub>n</sub>, n>=3]
- C07F9/6581F2 . . . . . [N: n = 3 or 4]
- C07F9/6581F3 . . . . . [N: n = 3]
- C07F9/6581F4 . . . . . [N: n = 4]
- C07F9/6581F5 . . . . . [N: n > 4]
- C07F9/6584 . . . . . having one phosphorus atom as ring hetero atom
- C07F9/6584A . . . . . [N: Cyclic amide derivatives of acids of phosphorus, in which one nitrogen atom belongs to the ring]
- C07F9/6584A1 . . . . . {7 dots} [N: the phosphorus atom being part of a five-membered ring which may be condensed with another ring system]
- C07F9/6584A2 . . . . . {7 dots} [N: the phosphorus atom being part of a six-membered ring which may be condensed with another ring system]
- C07F9/6584C . . . . . [N: Cyclic amide derivatives of acids of phosphorus, in which two nitrogen atoms belong to the ring]
- C07F9/6587 . . . . . having two phosphorus atoms as ring hetero atoms in the same ring
- C07F9/659 . . . . . having three phosphorus atoms as ring hetero atoms in the same ring [(N: [C07F9/6581F](#) takes precedence)]
- C07F9/6596 . . . . . having atoms other than oxygen, sulfur, selenium, tellurium, nitrogen or phosphorus as ring hetero atoms
- C07F9/66 . . . . . Arsenic compounds
- C07F9/68 . . . . . without As-C bonds
- C07F9/70 . . . . . Organo-arsenic compounds
- C07F9/70B . . . . . [N: Complex metallic compounds]
- C07F9/70C . . . . . [N: Heterocyclic compounds containing As in the ring]
- C07F9/72 . . . . . Aliphatic compounds
- C07F9/72B . . . . . [N: As bound only to carbon, hydrogen and/or oxygen]
- C07F9/72C . . . . . [N: Compounds with chains of As]
- C07F9/74 . . . . . Aromatic compounds
- C07F9/74B . . . . . [N: As bound only to carbon, hydrogen and/or oxygen]
- C07F9/74C . . . . . [N: Compounds with chains of As]
- C07F9/76 . . . . . containing hydroxyl groups
- C07F9/78 . . . . . containing amino groups
- C07F9/80 . . . . . Heterocyclic compounds

- C07F9/80B . . . . [N: As bound only to carbon, hydrogen and/or oxygen]
- C07F9/80C . . . . [N: Compounds with chains of As]
- C07F9/82 . . . . Arsenic compounds containing one or more pyridine rings
- C07F9/84 . . . . Arsenic compounds containing one or more quinoline ring systems
- C07F9/86 . . . . Arsenic compounds containing one or more isoquinoline ring systems
- C07F9/88 . . . . Arsenic compounds containing one or more acridine ring systems
  
- C07F9/90 . Antimony compounds
- C07F9/90B . . [N: Compounds without antimony-carbon linkages]
- C07F9/90C . . [N: Aliphatic compounds]
- C07F9/90D . . [N: Heterocyclic compounds]
- C07F9/90E . . [N: Complex compounds]
- C07F9/92 . . Aromatic compounds
  
- C07F9/94 . Bismuth compounds

**C07F11/00            Compounds containing elements of the 6th Group of the Periodic System**

- C07F11/00B . [N: compounds without a metal-carbon linkage]

**C07F13/00            Compounds containing elements of the 7th Group of the Periodic System**

- C07F13/00B . [N: Compounds without a metal-carbon linkage]

**C07F15/00            Compounds containing elements of the 8th Group of the Periodic System; [N: General methods of preparation]**

- C07F15/00N . [N: compounds of the platinum group]
- C07F15/00N1 . . [N: without a metal-carbon linkage]
- C07F15/00N2 . . [N: Osmium compounds]
- C07F15/00N2B . . . [N: without a metal-carbon linkage]
- C07F15/00N3 . . [N: Iridium compounds]
- C07F15/00N3B . . . [N: without a metal-carbon linkage]
- C07F15/00N4 . . [N: Ruthenium compounds]
- C07F15/00N4B . . . [N: without a metal-carbon linkage]
- C07F15/00N5 . . [N: Palladium compounds]
- C07F15/00N5B . . . [N: without a metal-carbon linkage]
- C07F15/00N6 . . [N: Rhodium compounds]
- C07F15/00N6B . . . [N: without a metal-carbon linkage]
- C07F15/00N7 . . [N: Platinum compounds]
- C07F15/00N7B . . . [N: without a metal-carbon linkage]
  
- C07F15/02 . Iron compounds
- C07F15/02B . . [N: without a metal-carbon linkage]

C07F15/03 . . Sideramines; The corresponding desferri compounds

C07F15/04 . Nickel compounds

C07F15/04B . . [N: without a metal-carbon linkage]

C07F15/06 . Cobalt compounds

C07F15/06B . . [N: without a metal-carbon linkage]

**C07F17/00 Metalloenes**

C07F17/02 . of metals of the iron group or the platinum group

**C07F19/00 Metal compounds according to more than one of the preceding main groups**

C07F19/00B . [N: without metal-C linkages]