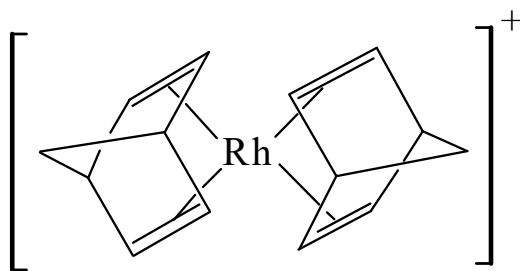




>>Entry Name: Bis[(2,3,5,6- $\eta$ )-bicyclo[2.2.1]hepta-2,4-diene]rhodium(1+), 12Cl, 11Cl, 10Cl

Synonym(s): Bis(2,5-norbornadiene)rhodium(1+), 8Cl



CAS Registry Number: 35015-46-4

Molecular Formula: C<sub>14</sub>H<sub>16</sub>Rh<sup>(+)</sup>

Molecular Weight: 287.186

Accurate Mass: 287.0307

Percentage Composition: C 58.55%; H 5.62%; Rh 35.83%

Use/Importance: Catalyst for alkene hydrogenation and disproportionation of 1,3-cyclohexadiene to cyclohexene and C<sub>6</sub>H<sub>6</sub>. Precursor for a range of cationic diene compds. containing group V donor ligands and of  $\eta^6$ -arene compds. Catalyses dimersation of nbd

>>Derivative: Tetrafluoroborate

CAS Registry Number: 36620-11-8

Molecular Formula: C<sub>14</sub>H<sub>16</sub>BF<sub>4</sub>Rh

Molecular Weight: 373.991

Percentage Composition: C 44.96%; H 4.31%; B 2.89%; F 20.32%; Rh 27.52%

Source/Synthesis: Synth. from Rh(acac)(nbd) + [Ph<sub>3</sub>C]BF<sub>4</sub> + nbd in CH<sub>2</sub>Cl<sub>2</sub> for 5 min. Alternatively from [Rh( $\eta^2$ -C<sub>2</sub>H<sub>4</sub>)<sub>2</sub>Cl]<sub>2</sub> + nbd in CH<sub>2</sub>Cl<sub>2</sub> for 30 min. followed by addn. of AgBF<sub>4</sub>

Physical Description: Red cryst. (CH<sub>2</sub>Cl<sub>2</sub>/Et<sub>2</sub>O)

Melting Point: Mp 157-159°

Solubility: Sol. CHCl<sub>3</sub>, CH<sub>2</sub>Cl<sub>2</sub>

>>Derivative: Perchlorate

CAS Registry Number: 60576-58-1

Molecular Formula: C<sub>14</sub>H<sub>16</sub>ClO<sub>4</sub>Rh

Molecular Weight: 386.636

Percentage Composition: C 43.49%; H 4.17%; Cl 9.17%; O 16.55%; Rh 26.62%

Source/Synthesis: Synth. from [Rh(nbd)Cl]<sub>2</sub> + AgClO<sub>4</sub> + nbd in CH<sub>2</sub>Cl<sub>2</sub>

Physical Description: Rust-brown cryst. (CH<sub>2</sub>Cl<sub>2</sub>/Et<sub>2</sub>O)

>>Derivative: Hexafluorophosphate

CAS Registry Number: 38816-56-7

Molecular Formula: C<sub>14</sub>H<sub>16</sub>F<sub>6</sub>PRh

Molecular Weight: 432.15

Percentage Composition: C 38.91%; H 3.73%; F 26.38%; P 7.17%; Rh 23.81%

Source/Synthesis: Synth. from [Rh(nbd)Cl]<sub>2</sub> + AgPF<sub>6</sub> + nbd in THF

Physical Description: Solid

#### References:

Osborn, J.A. *et al.*, *J.A.C.S.*, 1971, **93**, 3089, (*synth, use*)

Green, M. *et al.*, *J.C.S.(A)*, 1971, 2334, (*synth, ir, pmr*)

Green, M. *et al.*, *J.C.S. Dalton*, 1972, 832, (*use, dimerisation of nbd*)

Usón, R. *et al.*, *Transition Met. Chem. (Weinheim, Ger.)*, 1979, **4**, 55, (*synth, pmr, use, hydrogenation of alkenes*)

Schenck, T.G. *et al.*, *Inorg. Chem.*, 1985, **24**, 2334, (*synth, reactions*)