>>**Entry Name: Di-μ-chlorobis[(1,2,5,6-η)-1,5-cyclooctadiene]dirhodium,** 12Cl, 11Cl, 10Cl, 9Cl
Synonym(s): Bis(1,5-cyclooctadiene-μ-chlororhodium)

CAS Registry Number: 12092-47-6

As Di-μ-bromobis[(1,2,5,6-η)-1,5-cyclooctadiene]dirhodium, GKX53-G with
X = Cl

Molecular Formula: $C_{16}H_{24}Cl_2Rh_2$
Molecular Weight: 493.082
Accurate Mass: 491.936504
Percentage Composition: C 38.97%; H 4.91%; Cl 14.38%; Rh 41.74%
Source/Synthesis: Synth. from $RhCl_3.xH_2O$ + $Na_2CO_3.10H_2O$ + C_8H_{12} in EtOH aq. (5:1) either under reflux for 18h or, without $Na_2CO_3.10H_2O$, in a microwave oven for 35s. Also commercially available
Use/Importance: Useful catalyst precursor for asymmetric hydrogenation of olefins (in the presence of a chiral phosphine). Catalyses the reduction of benzal acetone with CO and H_2O; catalyst for CO oxidn.; catalyst precursor for MeOH carbonylation (iodo analogue behaves similarly); co-catalyst for enantioselective hydroboration; catalyses hydrosilylation, hydrogermylation of alkynes; (enantioselective) hydroformylation of alkenes; hydrosilylation of imines; co-catalyst for asymmetric transfer hydrogenation of ketones with Pr^iOH; catalyses reductive amination of aldehydes; redn. of C=C of enones using CO/H_2O via the water gas shift reaction; catalyst for isom. of strained ring compds.; for isom. of allyl alcohols to carbonyl compds.; for butadiene polym.
Physical Description: Orange cryst. (AcOH or CH_2Cl_2/Et_2O)
Melting Point: Mp 256°
Solubility: Sol. CH_2Cl_2, $CHCl_3$, spar. sol. Me_2CO; insol. Et_2O, pentane

Aldrich: 22795-1
Fluka: 14692

>>**Derivative:** 2:1 Inclusion compd. with β-cyclodextrin

CAS Registry Number: 107015-89-4
Molecular Formula: $C_{100}H_{172}Cl_2O_{72}Rh_2$
Molecular Weight: 2803.132
Percentage Composition: C 42.85%; H 6.18%; Cl 2.53%; O 41.10%; Rh 7.34%
Source/Synthesis: Synth. from $[Rh(cod)Cl]_2$ + sat. aq. β-cyclodextrin at 40°
Physical Description: Air-stable pale yellow cryst. (H_2O)
Melting Point: Mp 275-280 dec.°
Solubility: Sol. H_2O, $HOCH_2CH_2OH$, DMSO, DMF

>>**Derivative:** 2:1 Inclusion compd. with γ-cyclodextrin

Molecular Formula: $C_{100}H_{172}Cl_2O_{72}Rh_2$
Molecular Weight: 2803.132
Percentage Composition: C 42.85%; H 6.18%; Cl 2.53%; O 41.10%; Rh 7.34%
Source/Synthesis: Synth. from $[Rh(cod)Cl]_2$ + sat. aq. γ-cyclodextrin at 40°
Physical Description: Air-stable pale yellow cryst. (H_2O)
Melting Point: Mp 260-270 dec.°
Solubility: Sol. H_2O, $HOCH_2CH_2OH$, DMSO, DMF

References: