

# BINAP 配体催化剂



## BINAP 钯类催化剂

品名	CAS	货号
Dichloro[(R)-(+)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl]palladium(II), min. 98% [(R)-(+)-2,2'-双(二苯基膦)-1,1'-联萘]二氯化钯	115826-95-4	<a href="#">46-0870</a>
Dichloro[(S)-(-)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl]palladium(II), min. 98% [(S)-(-)-2,2'-双(二苯基膦)-1,1'-联萘]二氯化钯	127593-28-6	<a href="#">46-0871</a>

## BINAP 钌类催化剂

品名	CAS	货号
Chloro[(R)-(-)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl][(R)-1,1-bis(4-methoxyphenyl)-3-methylbutane-1,2-diamine]ruthenium(II) tetrafluoroborate, min. 97% 氯[(R)-(-)-2,2'-双(二苯基膦)-1,1'-联萘][(R)-1,1-双(4-甲氧基苯基)-3-甲基丁烷-1,2-二胺]钌(II)四氟硼酸盐	N/A	<a href="#">44-0136</a>
Chloro[(S)-(-)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl][(S)-1,1-bis(4-methoxyphenyl)-3-methylbutane-1,2-diamine]ruthenium(II) tetrafluoroborate, min. 97% 氯[(S)-(-)-2,2'-双(二苯基膦)-1,1'-联萘][(S)-1,1-双(4-甲氧基苯基)-3-甲基丁烷-1,2-二胺]钌(II)四氟硼酸盐	1150112-86-9	<a href="#">44-6063</a>
Chloro[(R)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl][(1R,2R)-cyclohexane-1,2-diamine]ruthenium(II) tetrafluoroborate, min. 97% 氯[(R)-2,2'-双(二苯基膦)-1,1'-联萘][(1R,2R)-环己烷-1,2-二胺]钌(II)四氟硼酸盐	1150112-42-7	<a href="#">44-0134</a>
Chloro[(S)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl][(1S,2S)-cyclohexane-1,2-diamine]ruthenium(II) tetrafluoroborate, min. 97% 氯[(S)-2,2'-双(二苯基膦)-1,1'-联萘][(1S,2S)-环己烷-1,2-二胺]四氟硼酸钌(II)	N/A	<a href="#">44-6053</a>
Chloro[(R)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl][(1R,2R)-cyclohexane-1,2-diamine]ruthenium(II) tetrakis(pentafluorophenyl)borate, min. 97% 氯[(R)-2,2'-双(二苯基膦)-1,1'-联萘][(1R,2R)-环己烷-1,2-二胺]钌(II)四(五氟苯基)硼酸盐	1150112-55-2	<a href="#">44-6054</a>
Chloro[(S)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl][(1S,2S)-cyclohexane-1,2-diamine]ruthenium(II) tetrakis(pentafluorophenyl)borate, min. 97% 氯[(S)-2,2'-双(二苯基膦)-1,1'-联萘][(1S,2S)-环己烷-1,2-二胺]钌(II)四(五氟苯基)硼酸盐	N/A	<a href="#">44-6055</a>
Chloro[(R)-(+)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl](p-cymene)ruthenium(II) chloride [RuCl(p-cymene)((R)-binap)]Cl 氯[(R)-(+)-2,2'-双(二苯基膦)-1,1'-联萘](伞花烃)氯化钌(II)	145926-28-9	<a href="#">44-0084</a>



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Chloro[(S)-(-)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl](p-cymene)ruthenium(II) chloride [RuCl(p-cymene)((S)-binap)]Cl 氯[(S)-(-)-2,2'-双(二苯基膦)-1,1'-联萘]钌(II)	130004-33-0	<a href="#">44-0086</a>
Chloro[(R)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl][(1R,2R)-2-(diphenylphosphino)-1,2-diphenylethanamine]ruthenium(II) tetrafluoroborate, min. 97%	1150112-54-1	<a href="#">44-6057</a>
氯[(R)-2,2'-双(二苯基膦)-1,1'-联萘][(1R,2R)-2-(二苯基膦)-1,2-二苯基乙胺]钌(II)四氟硼酸盐		
Chloro[(R)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl][(1R,2R)-2-(diphenylphosphino)-1,2-diphenylethanamine]ruthenium(II), tetrakis(pentafluorophenyl)borate, min. 97%	1150112-53-0	<a href="#">44-6070</a>
氯[(R)-2,2'-双(二苯基膦)-1,1'-联萘][(1R,2R)-2-(二苯基膦)-1,2-二苯基乙胺]钌(II)四(五氟苯基)硼酸盐		
Chloro[(R)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl][2-(diphenylphosphino)ethanamine]ruthenium(II) tetrafluoroborate, min. 97%	1150112-44-9	<a href="#">44-6056</a>
氯[(R)-2,2'-双(二苯基膦)-1,1'-联萘][2-(二苯基膦)乙胺]钌(II)四氟硼酸盐		
Chloro[(R)-(+)-2,2'-bis(diphenylphosphino)-5,5',6,6',7,7',8,8'-octahydro-1,1'-binaphthyl](p-cymene)ruthenium(II) chloride [RuCl(p-cymene)((R)-H8-binap)]Cl	944451-26-7	<a href="#">44-0094</a>
氯[(R)-(+)-2,2'-双(二苯基膦)-5,5',6,6',7,7',8,8'-八氢-1,1'-联萘](p-伞花素)氯化钌(II)		
Chloro[(S)-(-)-2,2'-bis(diphenylphosphino)-5,5',6,6',7,7',8,8'-octahydro-1,1'-binaphthyl](p-cymene)ruthenium(II) chloride [RuCl(p-cymene)((S)-H8-binap)]Cl	944451-27-8	<a href="#">44-0095</a>
氯[(S)-(-)-2,2'-双(二苯基膦)-5,5',6,6',7,7',8,8'-八氢-1,1'-联萘](p-伞花素)氯化钌(II)		
Chloro[(R)-(+)-2,2'-bis(di-p-tolylphosphino)-1,1'-binaphthyl](p-cymene)ruthenium(II) chloride [RuCl(p-cymene)((R)-tolbinap)]Cl	131614-43-2	<a href="#">44-0088</a>
氯[(R)-(+)-2,2'-双(二-对甲苯基膦)-1,1'-联萘](对伞花炔)氯化钌(II)		
Chloro[(S)-(-)-2,2'-bis(di-p-tolylphosphino)-1,1'-binaphthyl](p-cymene)ruthenium(II) chloride [RuCl(p-cymene)((S)-tolbinap)]Cl	228120-95-4	<a href="#">44-0089</a>
氯[(S)-(-)-2,2'-双(二-对-甲苯基膦)-1,1'-联萘](对-异丙基甲苯)氯化钌(II)		
Chloro[(R)-(+)-2,2'-bis[di(3,5-xylyl)phosphino]-1,1'-binaphthyl](p-cymene)ruthenium(II) chloride [RuCl(p-cymene)((R)-xylbinap)]Cl	944451-24-5	<a href="#">44-0092</a>
氯[(R)-(+)-2,2'-双(二-(3,5-二甲苯基)膦)-1,1'-联萘](p-伞花素)氯化钌(II)		
Chloro[(S)-(-)-2,2'-bis[di(3,5-xylyl)phosphino]-1,1'-binaphthyl](p-cymene)ruthenium(II) chloride [RuCl(p-cymene)((S)-xylbinap)]Cl	944451-25-6	<a href="#">44-0093</a>
氯[(S)-(+)-2,2'-双(二-(3,5-二甲苯基)膦)-1,1'-联萘](p-伞花素)氯化钌(II)		
Chloro[(R)-(+)-2,2'-bis[di(3,5-xylyl)phosphino]-1,1'-binaphthyl][(2R)-(-)-1-(4-methoxyphenyl)-1'-(4-methoxyphenyl-kC)-3-methyl-1,2-butanediamine]ruthenium(II)	1384974-38-2	<a href="#">44-0217</a>
氯[(R)-(+)-2,2'-双[二(3,5-二甲苯基)膦]-1,1'-联萘][(2R)-(-)-1-(4-甲氧基苯基)-1-(4-甲氧基苯基-kC)-3-甲基-1,2-丁二胺]钌(II)		



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Diacetato[(R)-(+)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl]ruthenium(II) Ru(OAc) <sub>2</sub> [(R)-binap] [(R)-(+)-2,2'-双(二苯基膦)-1,1'-联萘]钌(II)	325146-81-4	<a href="#">44-0152</a>
Diacetato[(S)-(-)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl]ruthenium(II), 98% 二乙酸[(S)-(-)-2,2'-双(二苯基膦)-1,1'-联萘基]钌(II)	261948-85-0	<a href="#">792043</a>
Diacetato[(R)-(+)-2,2'-bis(diphenylphosphino)-5,5',6,6',7,7',8,8'-octahydro-1,1'-binaphthyl]ruthenium(II) Ru(OAc) <sub>2</sub> [(R)-H8-binap] 二乙酸根[(R)-(+)-2,2'-二(二苯基膦基)-5,5',6,6',7,7',8,8'-八氢-1,1'-联萘基]钌(II)	374067-51-3	<a href="#">44-0166</a>
Diacetato[(S)-(-)-2,2'-bis(diphenylphosphino)-5,5',6,6',7,7',8,8'-octahydro-1,1'-binaphthyl]ruthenium(II) Ru(OAc) <sub>2</sub> [(S)-H8-binap] 二乙酸根[(S)-(-)-2,2'-二(二苯基膦基)-5,5',6,6',7,7',8,8'-八氢-1,1'-联萘基]钌(II)	142962-95-6	<a href="#">44-0167</a>
Diacetato[(R)-(+)-2,2'-bis(di-p-tolylphosphino)-1,1'-binaphthyl]ruthenium(II) Ru(OAc) <sub>2</sub> [(R)-tolbinap] 二乙酰基[(S)-(-)-2,2'-双(二-P-苯基磷酰)-1,1'-联萘]钌	116128-29-1	<a href="#">44-0162</a>
Diacetato[(S)-(-)-2,2'-bis(di-p-tolylphosphino)-1,1'-binaphthyl]ruthenium(II) Ru(OAc) <sub>2</sub> [(S)-tolbinap] 二乙酰基[(S)-(-)-2,2'-双(二-p-苯基磷酰)-1,1'-联萘]钌	106681-15-6	<a href="#">44-0163</a>
Diacetato[(R)-(+)-2,2'-bis(di(3,5-xylyl)phosphino)-1,1'-binaphthyl]ruthenium(II) Ru(OAc) <sub>2</sub> [(R)-xylbinap] 二乙酸根[(R)-2,2'-二(二(3,5-二甲苯基)膦基)-1,1'-联萘基]钌(II)	374067-50-2	<a href="#">44-0164</a>
Diacetato[(S)-(-)-2,2'-bis(di(3,5-xylyl)phosphino)-1,1'-binaphthyl]ruthenium(II) Ru(OAc) <sub>2</sub> [(S)-xylbinap] ((S)-(-)-2,2'-双(二(3,5-二甲苯基)膦)-1,1'-联萘)钌(II)	374067-49-9	<a href="#">44-0165</a>
Dichloro[(R)-2,2'-bis[bis(4-methylphenyl)]-1,1'-binaphthyl][(1R,2R)-2-amino-1-phenylpropyldiphenylphosphine]ruthenium(II), min. 97% 二氯[(R)-2,2'-双[二(4-甲基苯基)]-1,1'-联萘][(1R,2R)-2-氨基-1-苯基丙基二苯基膦]钌(II)	1150113-55-5	<a href="#">44-0232</a>
Dichloro[(R)-bis(diphenylphosphino)-1,1'-binaphthyl][(1R,2R)-2-amino-1-phenylpropyldiphenylphosphine]ruthenium(II), min. 97% 二氯[(R)-双(二苯基膦基)-1,1'-联萘][(1R,2R)-2-氨基-1-苯基丙基二苯基膦]钌(II)	N/A	<a href="#">44-6022</a>
Dichloro[(R)-bis(diphenylphosphino)-1,1'-binaphthyl][(1S,2S)-2-amino-1-phenylpropyldiphenylphosphine]ruthenium(II), min. 97% 二氯[(R)-双(二苯基膦基)-1,1'-联萘][(1S,2S)-2-氨基-1-苯基丙基二苯基膦]钌(II)	N/A	<a href="#">44-6023</a>
Dichloro[(R)-(+)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl][(2R)-(-)-1,1-bis(4-methoxyphenyl)-3-methyl-1,2-butanediamine]ruthenium(II) dichloromethane adduct, min. 97% 二氯[(R)-(+)-2,2'-双(二苯基膦)-1,1'-联萘基][(2R)-(-)-1,1-双(4-甲氧苯基)-3-甲基-1,2-丁二胺]钌(II)	329735-86-6	<a href="#">44-0210</a>
Dichloro[(S)-(-)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl][(2S)-(+)-1,1-bis(4-methoxyphenyl)-3-methyl-1,2-butanediamine]ruthenium(II) dichloromethane adduct, min. 97% 二氯[(S)-(-)-2,2'-双(二苯基膦基)-1,1'-联萘基][(2S)-(+)-1,1-双(4-甲氧苯基)-3-甲基-1,2-丁二胺]钌(II)二氯甲烷	212143-24-3	<a href="#">44-0211</a>



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Dichloro[(S)-(-)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl][(S)-(-)-2-( $\alpha$ -(t-butyl)methanamine)-1H-benzimidazole]ruthenium(II), min. 95%	N/A	<a href="#">44-0925</a>
二氯[(S)-(-)-2,2'-双(二苯基膦基)-1,1'-联萘[(S)-(-)-2-( $\alpha$ -(叔丁基)甲胺)-1H-苯并咪唑]钌(II)		
Dichloro[(R)-(+)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl][(1S,2S)-(-)-1,2-diphenylethylenediamine]ruthenium(II), min. 90%	212210-87-2	<a href="#">44-0221</a>
二氯[(R)-(+)-2,2'-双(二苯基膦基)-1,1'-联萘][(1S,2S)-(-)-1,2-二苯基乙二胺]钌(II)		
Dichloro[(S)-(-)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl][(1R,2R)-(+)-1,2-diphenylethylenediamine]ruthenium(II), min. 98%	329735-87-7	<a href="#">44-0222</a>
二氯[(S)-(-)-2,2'-双(二苯基膦基)-1,1'-联萘][(1R,2R)-(+)-1,2-二苯基乙二胺]钌(II)		
Dichloro[(R)-(+)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl][(1R,2R)-(+)-1,2-diphenylethylenediamine]ruthenium(II), min. 90%	212143-23-2	<a href="#">44-0220</a>
二氯[(R)-(+)-2,2'-双(二苯基膦基)-1,1'-联萘][(1R,2R)-(+)-1,2-二苯基乙二胺]钌(II)		
Dichloro[(S)-(-)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl][(1S,2S)-(-)-1,2-diphenylethylenediamine]ruthenium(II), min. 98%	329736-05-2	<a href="#">44-0223</a>
二氯[(S)-(-)-2,2'-双(二苯基膦基)-1,1'-联萘][(1S,2S)-(-)-1,2-二苯基乙二胺]钌(II)		
Dichloro[(R)-bis(diphenylphosphino)-1,1'-binaphthyl][2-(diphenylphosphino)ethylamine]ruthenium(II), min. 97%	1097731-98-0	<a href="#">44-6025</a>
二氯[(R)-双(二苯基膦基)-1,1'-联萘][2-(二苯基膦基)乙胺]钌(II)		
Dichloro[(S)-bis(diphenylphosphino)-1,1'-binaphthyl][2-(diphenylphosphino)ethylamine]ruthenium(II), min. 97%	N/A	<a href="#">44-6026</a>
二氯[(S)-双(二苯基膦基)-1,1'-联萘][2-(二苯基膦基)乙胺]钌(II)		
Dichloro[(R)-(+)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl][(R)-(+)-2-( $\alpha$ -methylmethanamine)-1H-benzimidazole]ruthenium(II), min. 95%	N/A	<a href="#">44-0910</a>
二氯[(R)-(+)-2,2'-双(二苯基膦基)-1,1'-联萘][(R)-(+)-2-( $\alpha$ -甲基甲胺)-1H-苯并咪唑]钌(II)		
Dichloro[(S)-(-)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl][(S)-(-)-2-( $\alpha$ -methylmethanamine)-1H-benzimidazole]ruthenium(II), min. 95%	1443051-87-3	<a href="#">44-0905</a>
二氯[(S)-(-)-2,2'-双(二苯基膦基)-1,1'-联萘][(S)-(-)-2-( $\alpha$ -甲基甲酰胺基)-1H-苯并咪唑]钌(II)		
Dichloro[(R)-(+)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl][(R)-(+)-2-( $\alpha$ -(i-propyl)methanamine)-1H-benzimidazole]ruthenium(II), min. 95%	N/A	<a href="#">44-0920</a>
二氯[(R)-(+)-2,2'-双(二苯基膦基)-1,1'-联萘][(R)-(+)-2-( $\alpha$ -(i-丙基)甲胺)-1H-苯并咪唑]钌(II)		



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Dichloro[(S)-(-)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl][(S)-(-)-2-( $\alpha$ -i-propyl)methanamine)-1H-benzimidazole]ruthenium(II), min. 95%	N/A	<a href="#">44-0915</a>
二氯[(S)-(-)-2,2'-双(二苯基膦基)-1,1'-联萘[(S)-(-)-2-( $\alpha$ -i-丙基)甲胺)-1H-苯并咪唑]钌(II)		
Dichloro[(R)-(+)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl]ruthenium(II), min. 95%	132071-87-5	<a href="#">44-0248</a>
[(R)-(+)-2,2'-双(二苯基膦)-1,1'-联萘]二氯化钌		
Dichloro[(S)-(-)-2,2'-bis(di-p-tolylphosphino)-1,1'-binaphthyl][(S)-(-)-2-( $\alpha$ -t-butyl)methanamine)-1H-benzimidazole]ruthenium(II)	134524-84-8	<a href="#">44-0249</a>
二氯[(S)-(-)-2,2'-双(二-对-甲苯基膦基)-1,1'-联萘[(S)-(-)-2-( $\alpha$ -叔丁基)甲胺)-1H-苯并咪唑]钌(II)		
Dichloro[(S)-(-)-2,2'-bis(di-p-tolylphosphino)-1,1'-binaphthyl][(S)-(-)-2-( $\alpha$ -t-butyl)methanamine)-1H-benzimidazole]ruthenium(II)	N/A	<a href="#">44-0950</a>
二氯[(S)-(-)-2,2'-双(二-对-甲苯基膦基)-1,1'-联萘[(S)-(-)-2-( $\alpha$ -叔丁基)甲胺)-1H-苯并咪唑]钌(II)		
Dichloro[(R)-(+)-2,2'-bis(di-p-tolylphosphino)-1,1'-binaphthyl][(R)-(+)-2-( $\alpha$ -methylmethanamine)-1H-benzimidazole]ruthenium(II), min. 95%	N/A	<a href="#">44-0935</a>
二氯[(R)-(+)-2,2'-双(二对甲苯基膦基)-1,1'-联萘][(R)-(+)-2-( $\alpha$ -甲基甲胺)-1H-苯并咪唑]钌(II)		
Dichloro[(S)-(-)-2,2'-bis(di-p-tolylphosphino)-1,1'-binaphthyl][(S)-(-)-2-( $\alpha$ -methylmethanamine)-1H-benzimidazole]ruthenium(II), min. 97%	N/A	<a href="#">44-0930</a>
二氯[(S)-(-)-2,2'-双(二-对-甲苯基膦基)-1,1'-联萘[(S)-(-)-2-( $\alpha$ -甲基甲酰胺基)-1H-苯并咪唑]钌(II)		
Dichloro[(S)-(-)-2,2'-bis(di-p-tolylphosphino)-1,1'-binaphthyl][(S)-(-)-2-( $\alpha$ -i-propyl)methanamine)-1H-benzimidazole]ruthenium(II)	N/A	<a href="#">44-0940</a>
二氯[(S)-(-)-2,2'-双(二-对-甲苯基膦基)-1,1'-联萘[(S)-(-)-2-( $\alpha$ -i-丙基)甲胺)-1H-苯并咪唑]钌(II)		
Dichloro[(R)-(+)-2,2'-bis(di-p-tolylphosphino)-1,1'-binaphthyl][(R)-(+)-2-( $\alpha$ -i-propyl)methanamine)-1H-benzimidazole]ruthenium(II), min. 95%	N/A	<a href="#">44-0945</a>
二氯[(R)-(+)-2,2'-双(二-对-甲苯基膦基)-1,1'-联萘[(R)-(+)-2-( $\alpha$ -i-丙基)甲胺)-1H-苯并咪唑]钌(II)		
Dichloro{(R)-(+)-2,2'-bis[di(3,5-xylyl)phosphino]-1,1'-binaphthyl}[(2R)-(-)-1,1-bis(4-methoxyphenyl)-3-methyl-1,2-butanediamine]ruthenium(II) RuCl <sub>2</sub> [(R)-xylbinap][(R)-daipen]	220114-32-9	<a href="#">44-0212</a>
氯{(R)-(+)-2,2'-双[二(3,5-二甲苯基)膦]-1,1'-联萘}[(2R)-(-)-1,1-双(4-甲氧苯基)-3-甲基-1,2-丁基二胺基]钌(II)		
Dichloro{(S)-(-)-2,2'-bis[di(3,5-xylyl)phosphino]-1,1'-binaphthyl}[(2S)-(+)-1,1-bis(4-methoxyphenyl)-3-methyl-1,2-butanediamine]ruthenium(II) RuCl <sub>2</sub> [(S)-xylbinap][(S)-daipen]	220114-01-2	<a href="#">44-0213</a>
二氯[(S)-(-)-2,2'-二[二(3,5-二甲苯基)膦基]-1,1'-联萘基][(2S)-(+)-1,1-二(4-甲氧苯基)-3-甲基-1,2-丁二胺]钌(II)		



# BINAP 配体催化剂



Dichloro{(R)-(+)-2,2'-bis[di(3,5-xylyl)phosphino]-1,1'-binaphthyl}[(1R,2R)-(+)-1,2-diphenylethylenediamine]ruthenium(II) RuCl <sub>2</sub> [(R)-xylbinap][(R,R)-dpen] 二氯{(R)-(+)-2,2'-双[二(3,5-二甲苯基)膦]-1,1'-联萘}[(1R,2R)-(+)-1,2-二苯基]钌(II)	220114-38-5	<a href="#">44-0226</a>
Dichloro{(S)-(-)-2,2'-bis[di(3,5-xylyl)phosphino]-1,1'-binaphthyl}[(1S,2S)-(-)-1,2-diphenylethylenediamine]ruthenium(II) RuCl <sub>2</sub> [(S)-xylbinap][(S,S)-dpen] 二氯{(S)-(-)-2,2'-双[二(3,5-二甲苯基)膦]-1,1'-联萘}[(1S,2S)-(-)-1,2-二苯基]钌(II)	220114-03-4	<a href="#">44-0224</a>
Dimethylammonium dichlorotri(μ-chloro)bis[(R)-(+)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl]diruthenate(II) [NH <sub>2</sub> Me <sub>2</sub> ][{RuCl((R)-binap)} <sub>2</sub> (μ-Cl) <sub>3</sub> ] 二甲基二氯三(μ-氯双[(R)-(+)-2,2'-双(二苯基膦基)-1,1'-联萘]二钌(II))	199684-47-4	<a href="#">44-0510</a>
Dimethylammonium dichlorotri(μ-chloro)bis[(S)-(-)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl]diruthenate(II) [NH <sub>2</sub> Me <sub>2</sub> ][{RuCl((S)-binap)} <sub>2</sub> (μ-Cl) <sub>3</sub> ] 氯[(S)-(-)-2,2'-双(二苯基膦)-1,1'-联萘]钌(II)氯化物	199541-17-8	<a href="#">44-0511</a>
Dimethylammonium dichlorotri(μ-chloro)bis[(R)-(+)-2,2'-bis(diphenylphosphino)-5,5',6,6',7,7',8,8'-octahydro-1,1'-binaphthyl]diruthenate(II) [NH <sub>2</sub> Me <sub>2</sub> ][{RuCl((R)-H8-binap)} <sub>2</sub> (μ-Cl) <sub>3</sub> ] 二甲基氨基二氯三(μ-氯)双[(R)-(+)-2,2'-双(二苯基膦基)-5,5',6,6',7,7',8,8'-八氢-1,1'-联萘]二钌(II)	2378771-65-2	<a href="#">44-0516</a>
Dimethylammonium dichlorotri(μ-chloro)bis[(S)-(-)-2,2'-bis(diphenylphosphino)-5,5',6,6',7,7',8,8'-octahydro-1,1'-binaphthyl]diruthenate(II) [NH <sub>2</sub> Me <sub>2</sub> ][{RuCl((S)-H8-binap)} <sub>2</sub> (μ-Cl) <sub>3</sub> ] 二甲基铵二氯三(μ-氯二基)双[(S)-(-)-2,2'-双(二苯基膦基)-5,5',6,6',7,7',8,8'-八氢-1,1'-联萘]二钌(II)	944451-12-1	<a href="#">44-0517</a>
Dimethylammonium dichlorotri(μ-chloro)bis[(R)-(+)-2,2'-bis(di-p-tolylphosphino)-1,1'-binaphthyl]diruthenate(II) [NH <sub>2</sub> Me <sub>2</sub> ][{RuCl((R)-tolbinap)} <sub>2</sub> (μ-Cl) <sub>3</sub> ] 二甲基氯化铵(μ-氯)双[(R)-(+)-2,2'-双(对二甲苯基膦)-1,1'-联萘]二钌(II)	749935-02-2	<a href="#">44-0512</a>
Dimethylammonium dichlorotri(μ-chloro)bis[(S)-(-)-2,2'-bis(di-p-tolylphosphino)-1,1'-binaphthyl]diruthenate(II) [NH <sub>2</sub> Me <sub>2</sub> ][{RuCl((S)-tolbinap)} <sub>2</sub> (μ-Cl) <sub>3</sub> ] 二甲基铵二氯三(μ-氯二基)双[(S)-(-)-2,2'-双(二对-甲苯基膦)-1,1'-联萘]二钌(II)	309735-86-2	<a href="#">44-0513</a>
Dimethylammonium dichlorotri(μ-chloro)bis{(R)-(+)-2,2'-bis[di(3,5-xylyl)phosphino]-1,1'-binaphthyl}diruthenate(II) [NH <sub>2</sub> Me <sub>2</sub> ][{RuCl((R)-xylbinap)} <sub>2</sub> (μ-Cl) <sub>3</sub> ] 二甲基铵二氯三(μ-氯)双{(R)-(+)-2,2'-双[二(3,5-二甲苯基)膦基]1,1'-联萘}二钌(II)	944451-08-5	<a href="#">44-0514</a>



# BINAP 配体催化剂



Dimethylammonium dichlorotri(μ-chloro)bis{(S)-(-)-2,2'-bis[di(3,5-xylyl)phosphino]-1,1'-binaphthyl}diruthenate(II) [NH<sub>2</sub>Me<sub>2</sub>][{RuCl((S)-xylbinap)}<sub>2</sub>(μ-Cl)<sub>3</sub>]

二甲基铵二氯三(μ-氯)双{(S)-(-)-2,2'-双[二(3,5-二甲苯基)膦基]-1,1'-联萘}二钌(II)

944451-10-9

[44-0515](#)

