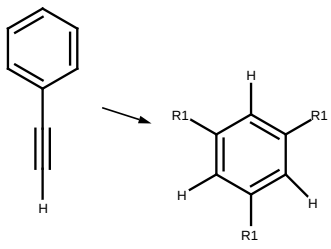
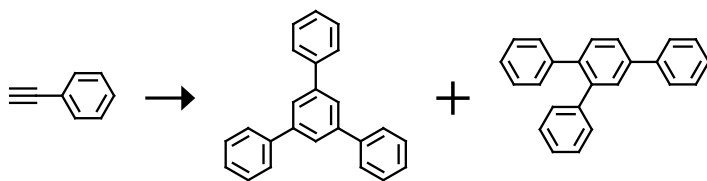


Query

	Query	Results	Date
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Rx-ID: 1309167 [View in Reaxys](#) 1/43

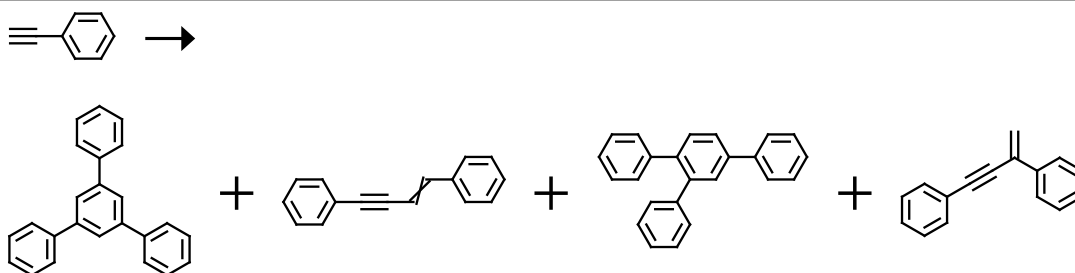
Yield	Conditions & References
95 %	With (DMSC)TiCl₂, sodium in benzene-d₆, Time= 0.5h, T= 80 °C , cyclotrimerization Ozerov, Oleg V.; Ladipo, Folami T.; Patrick, Brian O.; Journal of the American Chemical Society; vol. 121; nb. 34; (1999); p. 7941 - 7942 View in Reaxys
90 %	With Mo-complexes in acetone, Time= 36h, T= 0 °C Boorman, P. Michael; Wang, Meiping; Parvez, Masood; Journal of the Chemical Society, Dalton Transactions: Inorganic Chemistry (1972-1999); (1996); p. 4533 - 4542 View in Reaxys
24 %, 71 %	With eta;5-cyclopentadienyl dicarbonyl cobalt in water, Time= 2h, T= 380 °C , p= 187515Torr Borwieck, H.; Walter, O.; Dinjus, E.; Rebizant, J.; Journal of Organometallic Chemistry; vol. 570; nb. 1; (1998); p. 121 - 128 View in Reaxys
71 %, 24 %	With eta;5-cyclopentadienyl dicarbonyl cobalt in water, Time= 2h, T= 380 °C , p= 187515Torr Borwieck, H.; Walter, O.; Dinjus, E.; Rebizant, J.; Journal of Organometallic Chemistry; vol. 570; nb. 1; (1998); p. 121 - 128 View in Reaxys
7.2 %, 64.8 %	With It;Ni(Cl; *gt;CPh)2(Ph₃P)2gt; in benzene, Time= 1h, Heating Bicev, Peter; Furlani, Anita; Russo, Maria Vittoria; Gazzetta Chimica Italiana; vol. 110; nb. 1; (1980); p. 25 - 30 View in Reaxys
51 %, 30 %	With bis(allyl)-ruthenium(IV) dimer in methanol, water, Time= 19h, T= 75 °C Cadierno, Victorio; Garcia-Garrido, Sergio E.; Gimeno, Jose; Journal of the American Chemical Society; vol. 128; nb. 47; (2006); p. 15094 - 15095 View in Reaxys
29 %, 35 %	With {nickel(II)(isothiocyanato)2*2PPh₃} in diethylamine, Time= 24h, Heating Bicev, Peter; Furlani, Anita; Russo, Maria Vittoria; Gazzetta Chimica Italiana; vol. 110; nb. 1; (1980); p. 25 - 30 View in Reaxys
	With NbCl₅ in benzene, Time= 1h, T= 60 °C , other halides of Nb and Ta, various solvents and temperatures, Product distribution Masuda, Toshio; Mouri, Taizo; Higashimura, Toshinobu; Bulletin of the Chemical Society of Japan; vol. 53; nb. 4; (1980); p. 1152 - 1155 View in Reaxys
	With Ti(eta.6-toluene){(.mu.-Br)2(AlBr₂)}2 in toluene, Time= 15h, T= 80 °C , further temperature, Product distribution Calderazzo, Fausto; Marchetti, Fabio; Pampaloni, Guido; Hiller, Wolfgang; Antropiusova, Helena; Mach, Karel; Chemische Berichte; vol. 122; (1989); p. 2229 - 2238 View in Reaxys
	With uranium, Time= 0.166667h, Yield given. Yields of byproduct given

	Wen, T.C.; Chang, C.C.; Chuang, Y.D.; Chiu, J.P.; Chang, C.T.; Journal of the American Chemical Society; vol. 103; nb. 15; (1981); p. 4576 - 4578 View in Reaxys
	With tantalum pentachloride in tetrachloromethane, Time= 1h, T= 60 °C , Yield given. Yields of byproduct given Masuda, Toshio; Mouri, Taizo; Higashimura, Toshinobu; Bulletin of the Chemical Society of Japan; vol. 53; nb. 4; (1980); p. 1152 - 1155 View in Reaxys
	With (8-hydroxyquinoline)Rh(CO)AsPh₃ in ethanol, Time= 6h, T= 60 - 70 °C , Yield given. Yields of byproduct given Shestakova, V. S.; Shestakov, G. K.; Yur'eva, L. P.; Belyi, A. A.; Temkin, O. N.; Bulletin of the Academy of Sciences of the USSR, Division of Chemical Science (English Translation); vol. 34; nb. 3; (1985); p. 485 - 487; Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya; nb. 3; (1985); p. 534 - 536 View in Reaxys
	With Si₂Cl₆, Time= 15h, T= 200 °C , Yield given. Yields of byproduct given Yang, Jinchao; Verkade, John G.; Journal of the American Chemical Society; vol. 120; nb. 27; (1998); p. 6834 - 6835 View in Reaxys
	With [(Ph₃P)₂Ni(CO)₂] in benzene, Time= 3h, T= 80 °C Meriwether, L.S. et al.; Journal of Organic Chemistry; vol. 26; (1961); p. 5155 - 5163 View in Reaxys
	With NbCl₅ in benzene, Time= 1h, T= 60 °C , Yield given. Yields of byproduct given Masuda, Toshio; Mouri, Taizo; Higashimura, Toshinobu; Bulletin of the Chemical Society of Japan; vol. 53; nb. 4; (1980); p. 1152 - 1155 View in Reaxys
	With Mo-complexes in toluene, T= 0 °C Boorman, P. Michael; Wang, Meiping; Parvez, Masood; Journal of the Chemical Society, Dalton Transactions: Inorganic Chemistry (1972-1999); (1996); p. 4533 - 4542 View in Reaxys
	With titanium, zirconium in tetrahydrofuran, Time= 3h, T= 25 °C , other alkynes; var. solvents and time; other metals as catalysts, Product distribution Choi, Kyu Sang; Park, Moon Kyeu; Han, Byung Hee; Journal of Chemical Research, Miniprint; nb. 9; (1998); p. 2348 - 2362 View in Reaxys
	With zirconium in tetrahydrofuran, Time= 3h, T= 25 °C , Yield given, Yields of byproduct given. Title compound not separated from byproducts Choi, Kyu Sang; Park, Moon Kyeu; Han, Byung Hee; Journal of Chemical Research, Miniprint; nb. 9; (1998); p. 2348 - 2362 View in Reaxys
	With indium, [MoCl₅] in ethylene glycol dimethyl ether, Time= 1h, T= 80 °C , Cyclization, trimerization Hara, Ryuichiro; Guo, Qiaoxia; Takahashi, Tamotsu; Chemistry Letters; nb. 2; (2000); p. 140 - 141 View in Reaxys
	With [MoCl₅], aluminium in ethylene glycol dimethyl ether, Time= 3h, T= 50 °C , Cyclization, trimerization Hara, Ryuichiro; Guo, Qiaoxia; Takahashi, Tamotsu; Chemistry Letters; nb. 2; (2000); p. 140 - 141 View in Reaxys
	With tropp^{Ph}, cobalt(II) dibromide, zinc, T= 90 °C , Cyclotrimerization

	Gruetzmacher, Hansjoerg; Meyer, Christian; Boulnaaz, Souad; Schoenberg, Hartmut; Deblon, Stephan; Liedtke, Juergen; Loos, Sandra; Woerle, Michael; Phosphorus, Sulfur and Silicon and the Related Elements; vol. 144; (1999); p. 465 - 468 View in Reaxys
	With (.eta.⁽⁶⁾-cyclohepta-1,3,5-triene)(.eta.⁽⁴⁾-cycloocta-1,5-diene)iron⁽⁰⁾ in tetrahydrofuran, Time= 46h, T= 20 °C , cyclotrimerization, Title compound not separated from byproducts Breschi, Chiara; Piparo, Loris; Pertici, Paolo; Caporusso, Anna Maria; Vitulli, Giovanni; Journal of Organometallic Chemistry; vol. 607; nb. 1-2; (2000); p. 57 - 63 View in Reaxys
	With poly[TMS-(O-Si(MeO)(Cl₂Pd(py)2PONH(CH₂)₁₁-O-)n] in chloroform, Time= 16h, T= 62 °C , Product distribution, Further Variations: Catalysts Fu, Yaw-Shyan; Yu, Shuchun J.; Angewandte Chemie, International Edition; vol. 40; nb. 2; (2001); p. 437 - 440; Angewandte Chemie; vol. 113; nb. 2; (2001); p. 451 - 454 View in Reaxys
	With eta;5-cyclopentadienyl dicarbonyl cobalt, supercritical CO₂, Time= 24h, T= 90 °C , p= 135011Torr , Irradiation Montilla, Francisco; Aviles, Teresa; Casimiro, Teresa; Ricardo, Ana Aguiar; Ponte, Manuel Nunes da; Journal of Organometallic Chemistry; vol. 632; nb. 1-2; (2001); p. 113 - 118 View in Reaxys
	With [2,3-[[C₅(CH₃)₅Rh]2B₃H₇] in tetrahydrofuran, Time= 24h, T= 22 °C , Title compound not separated from byproducts Yan, Hong; Beatty, Alicia M.; Fehlner, Thomas P.; Angewandte Chemie, International Edition; vol. 40; nb. 23; (2001); p. 4498 - 4500; Angewandte Chemie; vol. 113; nb. 23; (2001); p. 4630 - 4633 View in Reaxys
94 % Chromat., 6 % Chromat.	With [Mo(CO)3(1-methyl imidazole)3] in toluene, Time= 8h, T= 60 °C Ardizzoia, G. Attilio; Brenna, S.; LaMonica, G.; Maspero, A.; Masciocchi, N.; Journal of Organometallic Chemistry; vol. 649; nb. 2; (2002); p. 173 - 180 View in Reaxys
	With di-tert-butylphosphanylethylcyclopentadienylcobalt(I) in ethanol, Time= 7h, T= 25 °C , Title compound not separated from byproducts Yong, Li; Butenschoen, Holger; Chemical Communications (Cambridge, United Kingdom); nb. 23; (2002); p. 2852 - 2853 View in Reaxys
	With tantalum thiochloride in toluene, Time= 2h, T= 20 °C , Title compound not separated from byproducts Peters, Christoph; Fischbeck, Uwe; Tabellion, Frank; Regitz, Manfred; Preuss, Fritz; Zeitschrift fuer Naturforschung, B: Chemical Sciences; vol. 58; nb. 1; (2003); p. 44 - 51 View in Reaxys
99 % Chromat., 1 % Chromat.	With HIr(1,5-cyclooctadiene)(bis(diphenylphosphino)methane) in tetrahydrofuran, Time= 0.25h, T= 60 °C , Title compound not separated from byproducts Farnetti, Erica; Marsich, Nazario; Journal of Organometallic Chemistry; vol. 689; nb. 1; (2004); p. 14 - 17 View in Reaxys
	With bis(cyclopentadienyl)titanium dichloride, C₁₄H₁₀Mg(THF)₃ in benzene-d₆, Time= 2h, T= 75 °C , Product distribution Ladipo, Folami T.; Sarveswaran, Vallipuram; Kingston, Jesudoss V.; Huyck, Rebecca A.; Bylikin, Sergei Y.; Carr, Shana D.; Watts, Randy; Parkin, Sean; Journal of Organometallic Chemistry; vol. 689; nb. 3; (2004); p. 502 - 514 View in Reaxys

	With (CO)₂Ni[Ph₂P(CH₂)₃Si(O-SiO₂)₃]₂ on silica in various solvent(s), Time= 20h, T= 155 °C , Product distribution, Further Variations: Catalysts, Solvents Reinhard, Simone; Behringer, Klaus D.; Bluemel, Janet; New Journal of Chemistry; vol. 27; nb. 5; (2003); p. 776 - 778 View in Reaxys
	With hexacarbonyl molybdenum, 2-Fluorophenol in chlorobenzene, Heating, Title compound not separated from by-products Sashuk, Volodymyr; Ignatowska, Jolanta; Grela, Karol; Journal of Organic Chemistry; vol. 69; nb. 22; (2004); p. 7748 - 7751 View in Reaxys
	With [TaCl₃(.eta.2-EtCCEt)(1,2-dimethoxyethane)] in toluene, Time= 20h, T= 25 °C , Title compound not separated from byproducts Oshiki, Toshiyuki; Nomoto, Hiroshi; Tanaka, Kouji; Takai, Kazuhiko; Bulletin of the Chemical Society of Japan; vol. 77; nb. 5; (2004); p. 1009 - 1012 View in Reaxys
	With [Rh(DTBM-Segphos)]BF₄ in dichloromethane, Time= 16h, T= 30 °C , Product distribution, Further Variations: Temperatures Tanaka, Ken; Toyoda, Kazuki; Wada, Azusa; Shirasaka, Kaori; Hirano, Masao; Chemistry--A European Journal; vol. 11; nb. 4; (2005); p. 1145 - 1156 View in Reaxys
	With magnesium, zinc(II) iodide, zinc in dichloromethane, Time= 3h, T= 20 °C , Diels-Alder reaction, Product distribution, Further Variations: Catalysts, Reaction partners, Solvents Hilt, Gerhard; Hess, Wilfried; Vogler, Thomas; Hengst, Christoph; Journal of Organometallic Chemistry; vol. 690; nb. 23; (2005); p. 5170 - 5181 View in Reaxys
	With sodium, anti-(p-tert-butylthiacalix[4]arene*2TiCl₂) in toluene, Time= 20h, T= 20 °C , Product distribution, Further Variations: Catalysts, Temperatures, reaction times Morohashi, Naoya; Yokomakura, Katsuya; Hattori, Tetsutaro; Miyano, Sotaro; Tetrahedron Letters; vol. 47; nb. 7; (2006); p. 1157 - 1161 View in Reaxys
	With Cy₂DAB, zinc(II) iodide, zinc, cobalt(II) dibromide in acetonitrile, Time= 0.25h, T= 20 °C , Product distribution, Further Variations: Reagents, time Hilt, Gerhard; Vogler, Thomas; Hess, Wilfried; Galbiati, Fabrizio; Chemical Communications (Cambridge, United Kingdom); nb. 11; (2005); p. 1474 - 1475 View in Reaxys
	With titanium(IV) isopropylate, chloro-trimethyl-silane, magnesium in tetrahydrofuran, Time= 12h, T= 20 °C Ohkubo, Mutsumi; Mochizuki, Sayaka; Sano, Takeshi; Kawaguchi, Yuuki; Okamoto, Sentaro; Organic Letters; vol. 9; nb. 5; (2007); p. 773 - 776 View in Reaxys
	With Ni(CO)₂[Ph₂P-(CH₂)₃-Si(OEt)₃]₂, silica gel in various solvent(s), T= 100 °C , Product distribution, Kinetics, Further Variations: Catalysts, Temperatures, Solvents, reusing run Reinhard, S.; Soba, P.; Rominger, F.; Bluemel, J.; Advanced Synthesis and Catalysis; vol. 345; nb. 5; (2003); p. 589 - 602 View in Reaxys
	With Rhodium trichloride, N-ethyl-N,N-diisopropylamine in toluene, Time= 12h, Heating Yoshida, Kenta; Morimoto, Ichiro; Mitsudo, Koichi; Tanaka, Hideo; Chemistry Letters; vol. 36; nb. 8; (2007); p. 998 - 999

	View in Reaxys
	With tetrachlorosilane, dysprosium(II) diiodide in ethylene glycol dimethyl ether, Time= 72h, T= 70 °C , Product distribution, Further Variations: Reagents, Temperatures, time Zhu, Zhenyu; Wang, Chuanfeng; Xiang, Xu; Pi, Chengfu; Zhou, Xigeng; Chemical Communications (Cambridge, United Kingdom); nb. 19; (2006); p. 2066 - 2068 View in Reaxys
	With silver trifluoromethanesulfonate, 2,6-bis(1-methylethyl)-N-(2-pyridinylmethylene)phenylamine, zinc, cobalt(II) chloride in tetrahydrofuran, Time= 0.5h, T= 20 °C , Title compound not separated from byproducts. Goswami, Avijit; Ito, Taichi; Okamoto, Sentaro; Advanced Synthesis and Catalysis; vol. 349; nb. 14-15; (2007); p. 2368 - 2374 View in Reaxys
	With Rhodium trichloride, N-ethyl-N,N-diisopropylamine in toluene, Time= 12h, Heating Yoshida, Kenta; Morimoto, Ichiro; Mitsudo, Koichi; Tanaka, Hideo; Tetrahedron; vol. 64; nb. 24; (2008); p. 5800 - 5807 View in Reaxys
	With [1,2-bis(4-methoxyphenylthio)ethane]cobalt dibromide, zinc(II) iodide, zinc in dichloromethane, Time= 0.0833333h, T= 25 °C , Inert atmosphere, Reactivity, Solvent, Reagent/catalyst, Time, regioselective reaction Hilt, Gerhard; Hengst, Christoph; Hess, Wilfried; European Journal of Organic Chemistry; nb. 13; (2008); p. 2293 - 2297 View in Reaxys
	With CpCo(CO)dmfu in N,N-dimethyl-formamide, Time= 0.166667h, T= 200 °C , Microwave irradiation Geny, Anais; Agenet, Nicolas; Iannazzo, Laura; Malacria, Max; Aubert, Corinne; Gandon, Vincent; Angewandte Chemie, International Edition; vol. 48; nb. 10; (2009); p. 1810 - 1813 View in Reaxys
	With [mu;N,kappa;P,kappa;C,kappa;N-{2-(i-Pr₂PO),6-(CH₂NBn)-(C₆H₃)}Ni]₂ in benzene-d₆, T= 50 °C , Inert atmosphere Spasyuk, Denis M.; Zargarian, Davit; Inorganic Chemistry; vol. 49; nb. 13; (2010); p. 6203 - 6213 View in Reaxys
	With dichloro(2,6-bis[1-(2,6-dimethylphenylimino)ethyl]pyridine)iron(II), zinc(II) iodide, zinc in acetonitrile, Time= 8h, T= 50 °C , regioselective reaction Liu, Yongbing; Yang, Nianfa; Yan, Xiaoyu; Xi, Chanjuan; Catalysis Communications; vol. 12; nb. 6; (2011); p. 489 - 492 View in Reaxys


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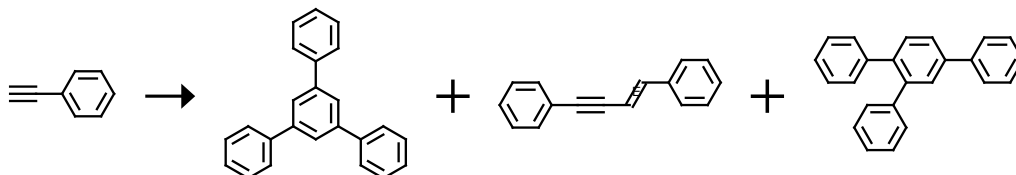
Yield	Conditions & References
	Example Title 4.3. General procedure for the synthesis of 1,3-diyne, 1,3-enynes and tri-substituted benzenes General procedure: A solution of terminal alkyne (1.0 mmol), Pd(AcO)₂ (4 mg, 0.02 mmol), PPh₃ (21 mg, 0.08 mmol), and Et₃N (202 mg, 2.0 mmol) in THF (10 mL) was heated at reflux, under magnetic stirring for 6 h. The solution was cooled to room temperature and the solvent was removed under reduced pressure to give a crude material. The crude

mixture was then purified by chromatography on silica gel (petroleum ether/Et₂O 95:5) to afford, as shown in Table 1 and Table 2, 1,4-dialkyl- and 1,4-diaryl-1,3-butadiynes 2a-c together with dimerization products 3a-d and 4a-d, asymmetrical and symmetrical cyclotrimerisation products 5a-d and 6a-d.

With palladium diacetate, triphenylphosphine in tetrahydrofuran, Time= 6h, T= 110 °C , Inert atmosphere

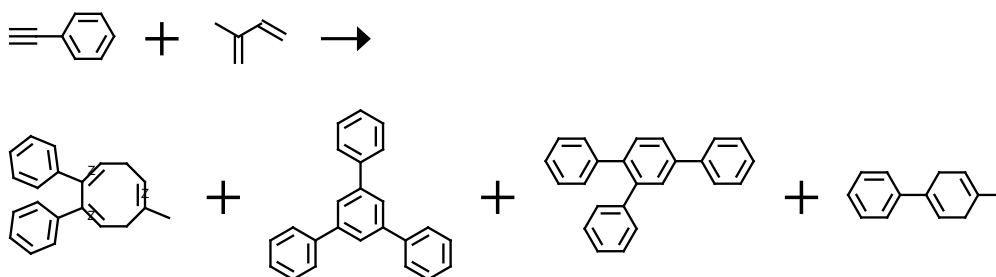
Perrone, Serena; Bona, Fabio; Troisi, Luigino; Tetrahedron; vol. 67; nb. 38; (2011); p. 7386 - 7391

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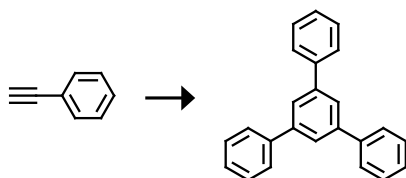
Rx-ID: 9473410 [View in Reaxys](#) 3/43

Yield	Conditions & References
78 %, 19 % , 1 %	With triethylsilane, chloridotris(trimethylphosphane)cobalt(I) in tetrahydrofuran, Time= 24h, T= 65 °C Field, Leslie D.; Ward, Antony J.; Journal of Organometallic Chemistry; vol. 681; nb. 1-2; (2003); p. 91 - 97 View in Reaxys



Rx-ID: 10059064 [View in Reaxys](#) 4/43

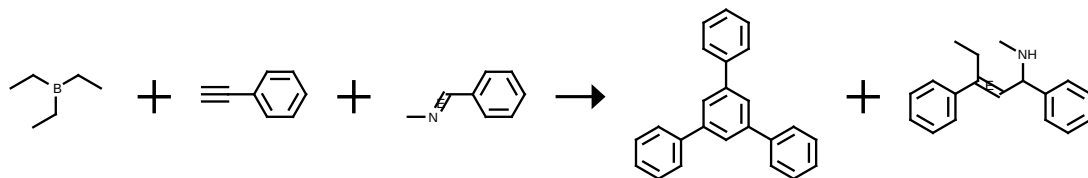
Yield	Conditions & References
31 %, 64 %	With zinc(II) iodide, zinc, CoBr₂(c-Hex-diimine) in dichloromethane, T= 20 °C , Diels-Alder reaction Hilt, Gerhard; Hess, Wilfried; Vogler, Thomas; Hengst, Christoph; Journal of Organometallic Chemistry; vol. 690; nb. 23; (2005); p. 5170 - 5181 View in Reaxys
47 %, 23 %	With Cy₂DAB, zinc(II) iodide, zinc, cobalt(II) dibromide in tetrahydrofuran, Time= 5h, T= 20 °C Hilt, Gerhard; Vogler, Thomas; Hess, Wilfried; Galbiati, Fabrizio; Chemical Communications (Cambridge, United Kingdom); nb. 11; (2005); p. 1474 - 1475 View in Reaxys



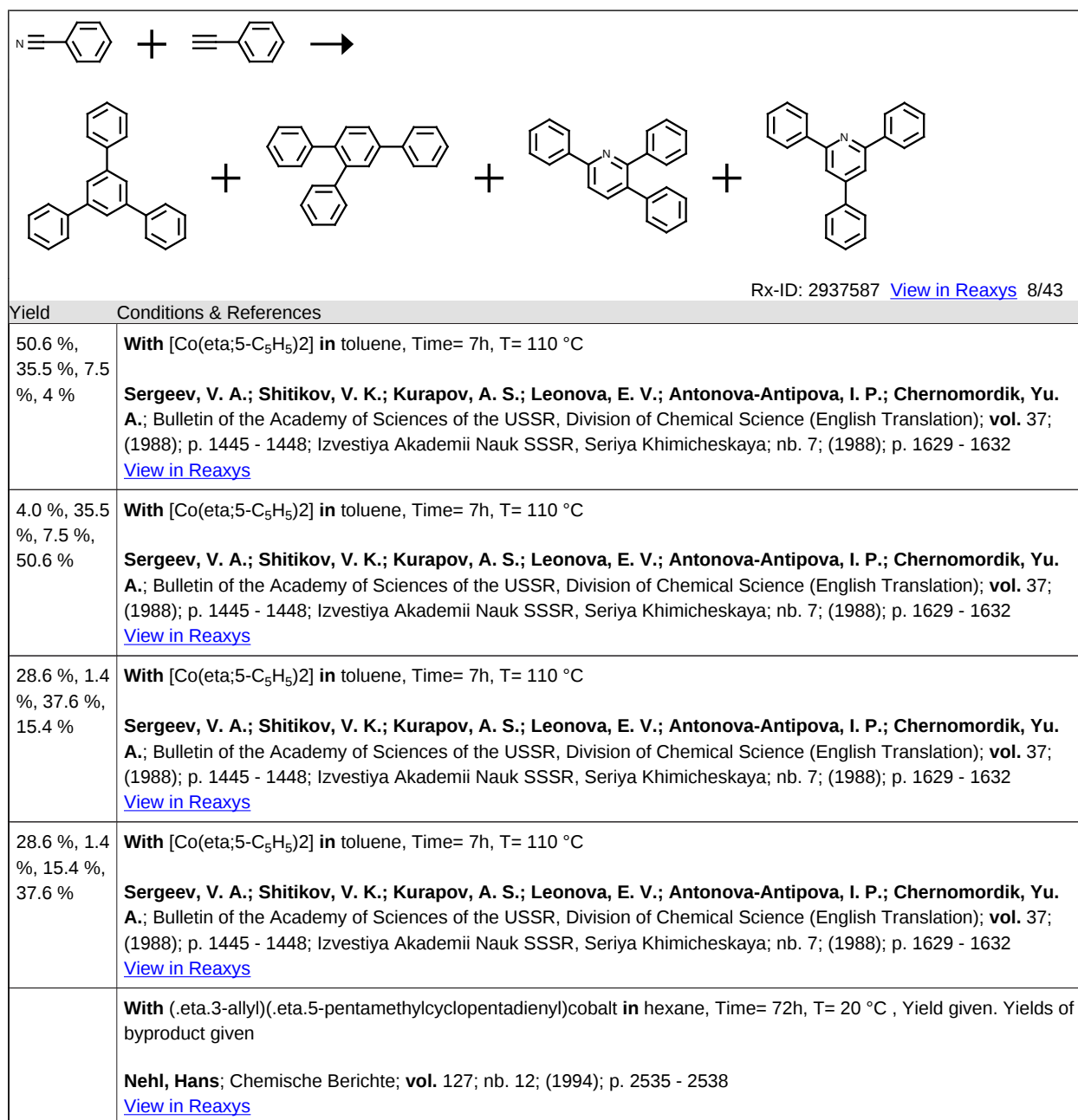
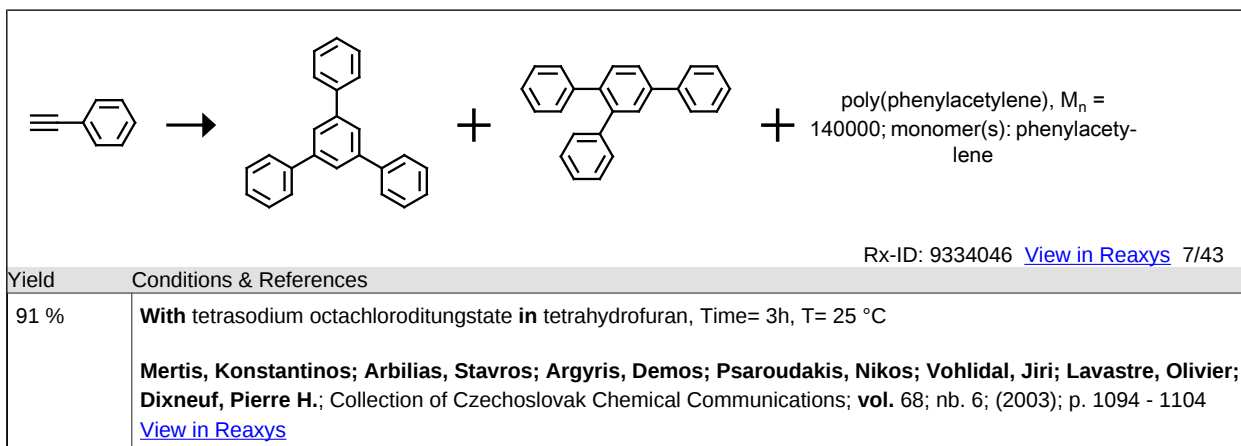
Rx-ID: 705510 [View in Reaxys](#) 5/43

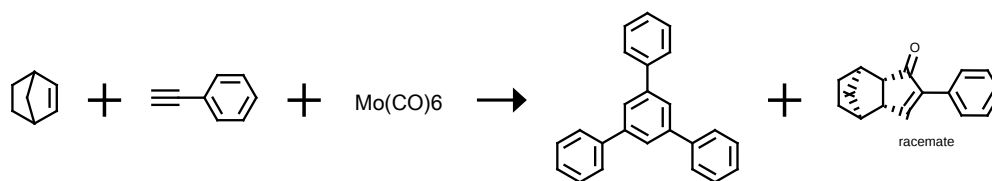
Yield	Conditions & References
91 %	With indium(III) chloride, 2-iodophenol in chlorobenzene, Time= 24h, Reflux, regioselective reaction

	Xu, Yan-Li; Pan, Ying-Ming; Wu, Qiang; Wang, Heng-Shan; Liu, Pei-Zhen; Journal of Organic Chemistry; vol. 76; nb. 20; (2011); p. 8472 - 8476 View in Reaxys
90 %	With iron(II) tris(trimethylsilyl)siloxide in toluene, Time= 0.0833333h Chesnokova, Tatiana A.; Zhezlova, Elena V.; Kornev, Alexander N.; Fedotova, Yana V.; Zakharov, Lev N.; Fukin, Georgy K.; Kursky, Yuri A.; Mushtina, Tatiana G.; Domrachev, Georgy A.; Journal of Organometallic Chemistry; vol. 642; nb. 1-2; (2002); p. 20 - 31 View in Reaxys
90 %	With carbon dioxide, copper dichloride, palladium dichloride in water, Time= 24h, T= 20 °C , p= 7500.6Torr Li, Jin-Heng; Xie, Ye-Xiang; Synthetic Communications; vol. 34; nb. 9; (2004); p. 1737 - 1744 View in Reaxys
20 %	With camphorimine palladium in dichloromethane Carvalho, M. Fernanda N. N.; Almeida, Fernanda M. T.; Galvao, Adelino M.; Pombeiro, Armando J. L.; Journal of Organometallic Chemistry; vol. 679; nb. 1; (2003); p. 143 - 148 View in Reaxys
	T= 0 °C , ΔS; ΔH; ΔG; various temperatures., Thermodynamic data Lebedev, B. V.; Bykova, T. A.; Smirnova, N. N.; Kulagina, T. G.; J. Gen. Chem. USSR (Engl. Transl.); vol. 52; nb. 11; (1982); p. 2630 - 2636, 2327 - 2331 View in Reaxys
	With water, methylamine, T= 260 °C Krassuski, Kiprianow; Zhurnal Russkago Fiziko-Khimicheskago Obshchestva; vol. 56; (1925); p. 5,9; Chem. Zentralbl.; vol. 97; nb. I; (1926); p. 895 View in Reaxys
	With triphenyl phosphite, dicobalt octacarbonyl, carbon monoxide, bicyclo[2.2.1]hepta-2,5-diene in ethylene glycol dimethyl ether, Time= 24h, T= 120 °C , p= 2280Torr , Yield given Jeong, Nakcheol; Hwang, Sung Hee; Lee, Youngshin; Chung, Young Keun; Journal of the American Chemical Society; vol. 116; nb. 7; (1994); p. 3159 - 3160 View in Reaxys
	Reaction Steps: 2 1: Einleiten von HBr 2: anhydrous ethanol / 55 °C With ethanol Taylor; Journal of the Chemical Society; (1937); p. 343,346 View in Reaxys

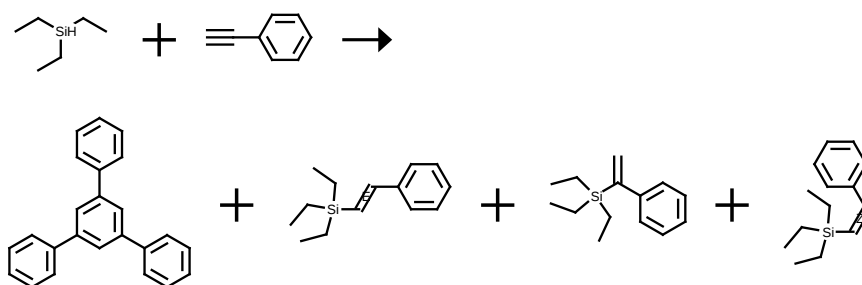

 Rx-ID: 9333926 [View in Reaxys](#) 6/43

Yield	Conditions & References
35 %	With bis(1,5-cyclooctadiene)nickel⁽⁰⁾, tricyclopentyl-phosphine in methanol, methyl acetate, Time= 16h, T= 50 °C Patel, Sejal J.; Jamison, Timothy F.; Angewandte Chemie, International Edition; vol. 42; nb. 12; (2003); p. 1364 - 1367; Angewandte Chemie; vol. 115; nb. 12; (2003); p. 1402 - 1405 View in Reaxys

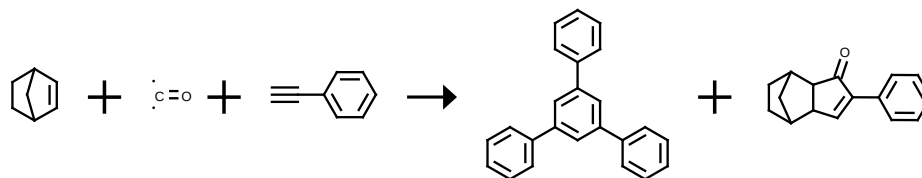



 Rx-ID: 7445478 [View in Reaxys](#) 9/43

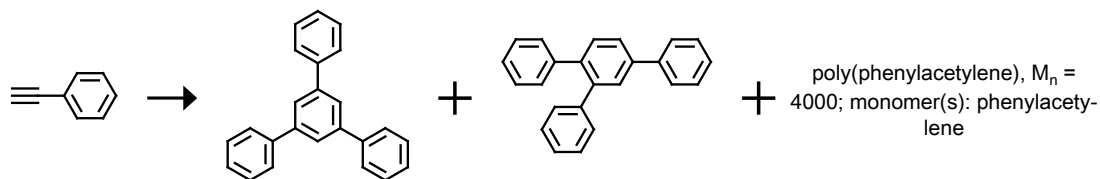
Yield	Conditions & References
50 %	With dimethyl sulfoxide in toluene, Time= 12h, T= 100 °C , Yields of byproduct given Jeong, Nakcheol; Lee, Sang Jo; Lee, Bun Yeoul; Chung, Young Keun; Tetrahedron Letters; vol. 34; nb. 25; (1993); p. 4027 - 4030 View in Reaxys
18 %	With dimethyl sulfoxide in toluene, Time= 12h, T= 100 °C , Yield given Jeong, Nakcheol; Lee, Sang Jo; Lee, Bun Yeoul; Chung, Young Keun; Tetrahedron Letters; vol. 34; nb. 25; (1993); p. 4027 - 4030 View in Reaxys


 Rx-ID: 9473294 [View in Reaxys](#) 10/43

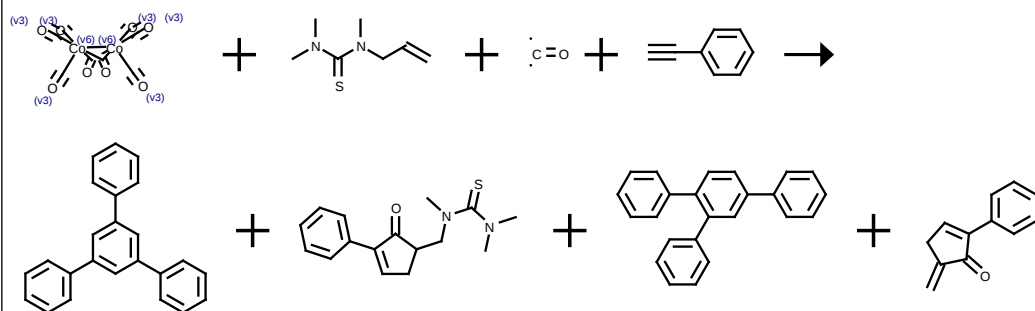
Yield	Conditions & References
21 %, 56 %, 18 %, 5 %	With [Co(PPh₃)₂(CO)Cl] in tetrahydrofuran, Time= 24h, T= 65 °C , Further byproducts given Field, Leslie D.; Ward, Antony J.; Journal of Organometallic Chemistry; vol. 681; nb. 1-2; (2003); p. 91 - 97 View in Reaxys
51 %, 20 %, 18 %, 9 %	With [Rh(CO)Cl(1,2-bis(diphenylphosphino)ethane)] in THF-d₈ (tetrahydrofuran-d₈), Time= 4h, T= 80 °C , Further byproducts given Field, Leslie D.; Ward, Antony J.; Journal of Organometallic Chemistry; vol. 681; nb. 1-2; (2003); p. 91 - 97 View in Reaxys


 Rx-ID: 26011321 [View in Reaxys](#) 11/43

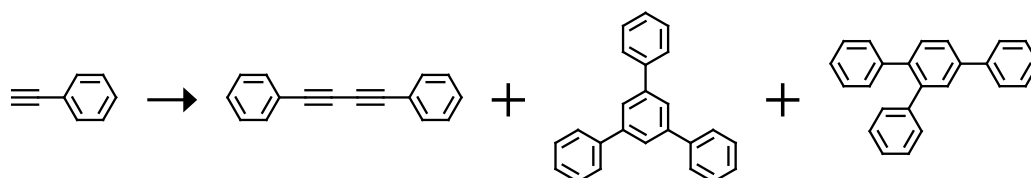
Yield	Conditions & References
90 %, 6 %	With [Co₃(μ₃-CH)-(CO)₇(PMe₂Ph)₂] in toluene, Time= 10h, T= 120 °C , p= 7500.75Torr , intermolecular Pauson-Khand reaction, Product distribution, Further Variations: Catalysts Moberg, Viktor; Mottalib, M. Abdul; Sauer, Desiree; Poplavskaya, Yulia; Craig, Donald C.; Colbran, Stephen B.; Deeming, Antony J.; Nordlander, Ebbe; Dalton Transactions; nb. 18; (2008); p. 2442 - 2453 View in Reaxys


 Rx-ID: 9334045 [View in Reaxys](#) 12/43

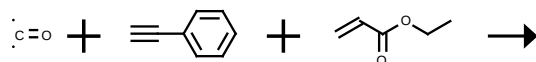
Yield	Conditions & References
40 %	With [Mo₂Cl₄(MeOH)₂(PPh₃)₂] in methanol, Time= 4h, T= 25 °C Mertis, Konstantinos; Arbiliyas, Stavros; Argyris, Demos; Psaroudakis, Nikos; Vohlidal, Jiri; Lavastre, Olivier; Dixneuf, Pierre H.; Collection of Czechoslovak Chemical Communications; vol. 68; nb. 6; (2003); p. 1094 - 1104 View in Reaxys

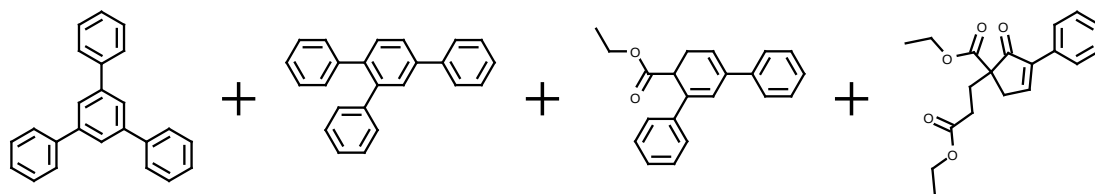

 Rx-ID: 29571445 [View in Reaxys](#) 13/43

Yield	Conditions & References
13 %, 3 %	Stage 1: With 1,1,3,3-tetramethyl-2-thiourea in toluene, Time= 0.0833333h, Inert atmosphere, Pauson-Khand reaction Stage 2: in toluene, Time= 24h, T= 110 °C , p= 2250.23Torr , Autoclave, Pauson-Khand reaction Petrovski, Zeljko; Martins, Bruno M. R.; Afonso, Carlos A. M.; Tetrahedron Letters; vol. 51; nb. 26; (2010); p. 3356 - 3359 View in Reaxys

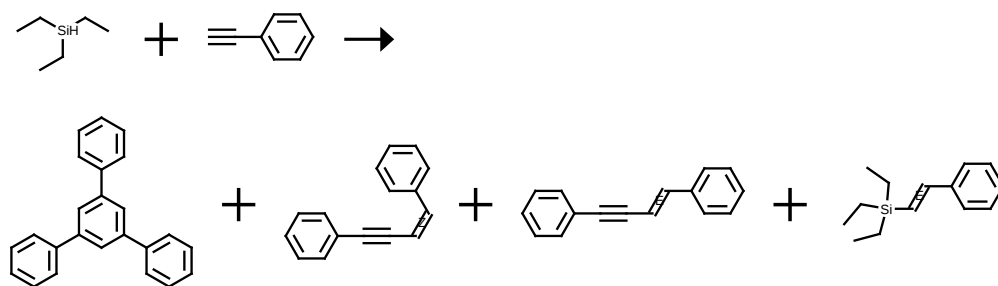

 Rx-ID: 31336016 [View in Reaxys](#) 14/43

Yield	Conditions & References
40 %	Stage 1: With palladium dichloride, zirconia vibration ball mill, neat (no solvent), Glaser coupling Stage 2: Time= 2h, T= 20 °C , neat (no solvent) Schmidt, Robert; Thorwirth, Rico; Szuppa, Tony; Stolle, Achim; Ondruschka, Bernd; Hopf, Henning; Chemistry--A European Journal; vol. 17; nb. 29; (2011); p. 8129 - 8138 View in Reaxys

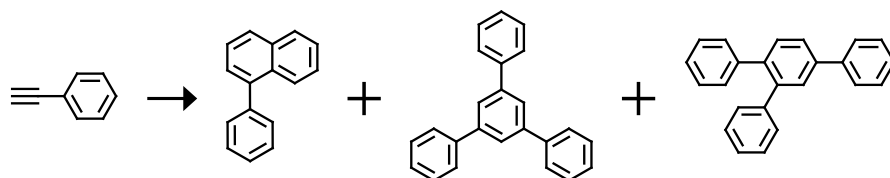



Rx-ID: 4179487 [View in Reaxys](#) 15/43

Yield	Conditions & References
29 %	With dicobalt octacarbonyl, Time= 32h, T= 120 °C , p= 30002.4Torr , Further byproducts given. Yields of byproduct given Costa, Mirco; Mor, Andrea; Tetrahedron Letters; vol. 36; nb. 16; (1995); p. 2867 - 2870 View in Reaxys

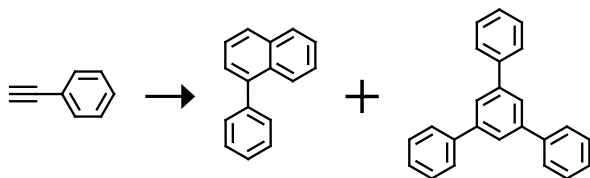

Rx-ID: 9473293 [View in Reaxys](#) 16/43

Yield	Conditions & References
13 %, 76 %, 7 %, 2 %	With chlorobis(carbonyl)bis(trimethylphosphine)cobalt in THF-d8 (tetrahydrofuran-d8), Time= 18h, T= 65 °C , Further byproducts given Field, Leslie D.; Ward, Antony J.; Journal of Organometallic Chemistry; vol. 681; nb. 1-2; (2003); p. 91 - 97 View in Reaxys

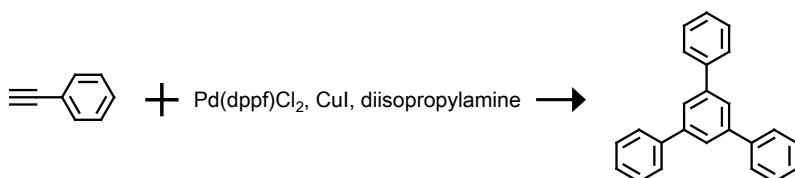

Rx-ID: 10141294 [View in Reaxys](#) 17/43

Yield	Conditions & References
60 % Chromat., 6 % Chromat., 9 % Chromat.	With 1-n-butyl-3-methylimidazolium hexafluorophosphate, 5,10,15,20-tetraphenylporphyrinato ruthenium(II) carbonyl, Time= 72h, T= 150 °C , Product distribution, Further Variations: Reagents Conte, Valeria; Elakkari, Elfituri; Floris, Barbara; Mirruzzo, Valentina; Tagliatesta, Pietro; Chemical Communications (Cambridge, United Kingdom); nb. 12; (2005); p. 1587 - 1588 View in Reaxys
72 %Chromat.	With VOPc, Time= 48h, T= 160 - 180 °C , Inert atmosphere, neat (no solvent) Cicero, Daniel; Lembo, Angelo; Leoni, Alessandro; Tagliatesta, Pietro; New Journal of Chemistry; vol. 33; nb. 10; (2009); p. 2162 - 2165 View in Reaxys
20 %Chromat.	With ruthenium porphyrin-Merrifield resin adduct, Time= 48h, T= 160 - 180 °C , Neat (no solvent), Inert atmosphere Ciammaichella, Alina; Leoni, Alessandro; Tagliatesta, Pietro; New Journal of Chemistry; vol. 34; nb. 10; (2010); p. 2122 - 2124

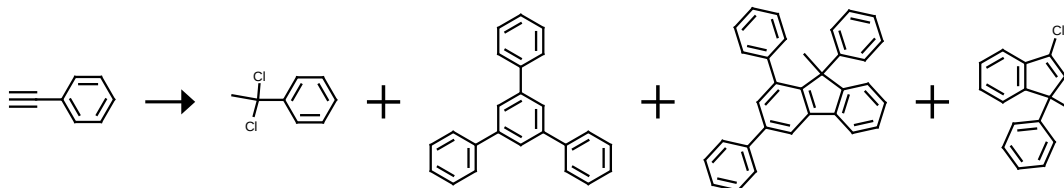
	View in Reaxys
51 %Chromat.	With Ru(CO)((C₆H₅)₃C₂₀H₈N₄C₆H₄CH₂OH), T= 160 - 180 °C , Neat (no solvent), Inert atmosphere Ciammaichella, Alina; Leoni, Alessandro; Tagliatesta, Pietro; New Journal of Chemistry; vol. 34; nb. 10; (2010); p. 2122 - 2124 View in Reaxys


Rx-ID: 11187781 [View in Reaxys](#) 18/43

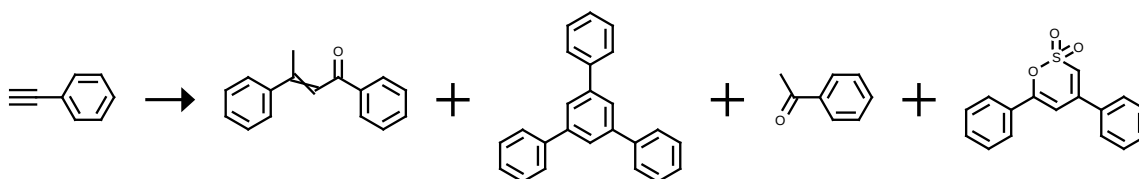
Yield	Conditions & References
	With mesoporous graphitic C₃N₄, Time= 24h, T= 140 °C Goettmann, Frederic; Fischer, Anna; Antonietti, Markus; Thomas, Arne; New Journal of Chemistry; vol. 31; nb. 8; (2007); p. 1455 - 1460 View in Reaxys


Rx-ID: 16568850 [View in Reaxys](#) 19/43

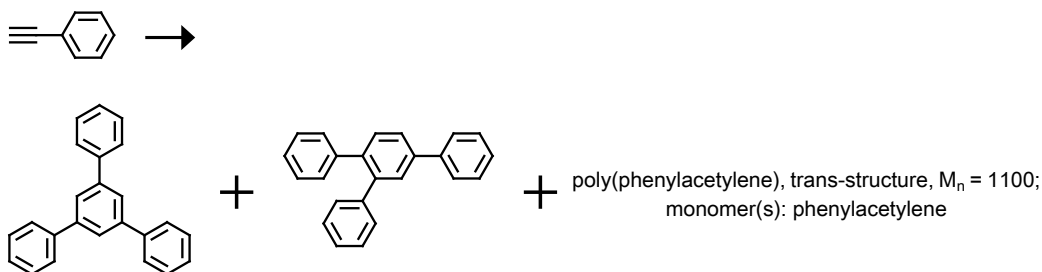
Yield	Conditions & References
	Reaction Steps: 2 1: 22 percent / conc. sulfuric acid / acetic acid / Heating 2: 6 percent / conc. sulfuric acid / acetic acid / Heating With sulfuric acid in acetic acid, 1: Cyclization / 2: Cyclization Yusubov, M. S.; Filimonov, V. D.; Rogachev, V. O.; Russian Journal of Organic Chemistry; vol. 32; nb. 8; (1996); p. 1229 - 1230; Zhurnal Organicheskoi Khimii; vol. 32; nb. 8; (1996); p. 1272 - 1273 View in Reaxys
	Reaction Steps: 2 1: 38 percent / conc. sulfuric acid / acetic acid / 3.5 h / Heating 2: 6 percent / conc. sulfuric acid / acetic acid / Heating With sulfuric acid in acetic acid, 1: Cyclization / 2: Cyclization Yusubov, M. S.; Filimonov, V. D.; Rogachev, V. O.; Russian Journal of Organic Chemistry; vol. 32; nb. 8; (1996); p. 1229 - 1230; Zhurnal Organicheskoi Khimii; vol. 32; nb. 8; (1996); p. 1272 - 1273 View in Reaxys


Rx-ID: 3365670 [View in Reaxys](#) 20/43

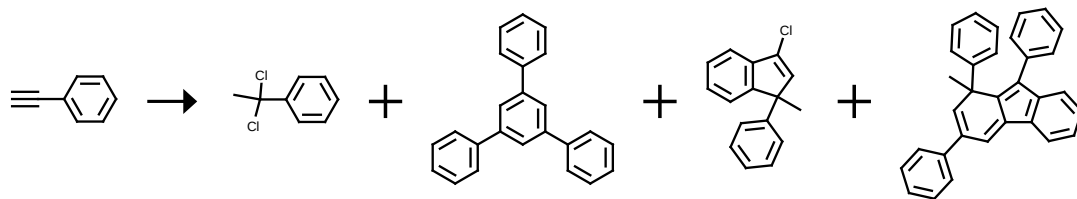
Yield	Conditions & References
11 % Spectr., 7 %, 8 %, 11 %	With hydrogenchloride, Time= 312h, Further byproducts given Griesbaum, Karl; Rao, V. V. Ramana; Leifker, Gregor; Journal of Organic Chemistry; vol. 47; nb. 25; (1982); p. 4975 - 4981 View in Reaxys
11 % Spectr., 7 %, 11 %, 8 %	With hydrogenchloride, Time= 312h, Further byproducts given Griesbaum, Karl; Rao, V. V. Ramana; Leifker, Gregor; Journal of Organic Chemistry; vol. 47; nb. 25; (1982); p. 4975 - 4981 View in Reaxys
11 %, 11 %, 8 %, 7 %	With hydrogenchloride, Time= 312h, Further byproducts given Griesbaum, Karl; Rao, V. V. Ramana; Leifker, Gregor; Journal of Organic Chemistry; vol. 47; nb. 25; (1982); p. 4975 - 4981 View in Reaxys


Rx-ID: 5063871 [View in Reaxys](#) 21/43

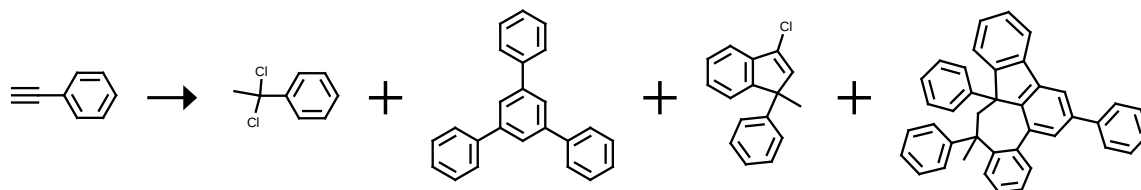
Yield	Conditions & References
6 %, 22 %, 1 %	With sulfuric acid in acetic acid, Heating, Cyclization, hydration; condensation Yusubov, M. S.; Filimonov, V. D.; Rogachev, V. O.; Russian Journal of Organic Chemistry; vol. 32; nb. 8; (1996); p. 1229 - 1230; Zhurnal Organicheskoi Khimii; vol. 32; nb. 8; (1996); p. 1272 - 1273 View in Reaxys


Rx-ID: 9334044 [View in Reaxys](#) 22/43

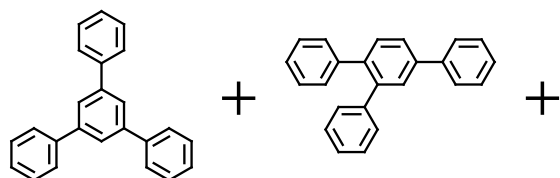
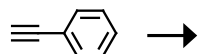
Yield	Conditions & References
	With ethylaluminum dichloride, (Bu₄N)2[Re₂Cl₈] in tetrahydrofuran, Time= 6h, T= 25 °C , Product distribution, Further Variations: Solvents, Temperatures, Catalysts Mertis, Konstantinos; Arblias, Stavros; Argyris, Demos; Psaroudakis, Nikos; Vohlidal, Jiri; Lavastre, Olivier; Dixneuf, Pierre H.; Collection of Czechoslovak Chemical Communications; vol. 68; nb. 6; (2003); p. 1094 - 1104 View in Reaxys


Rx-ID: 3365672 [View in Reaxys](#) 23/43

Yield	Conditions & References
11 % Spectr., 7 %, 11 %, 1 %	With hydrogenchloride, Time= 312h, Further byproducts given Griesbaum, Karl; Rao, V. V. Ramana; Leifker, Gregor ; Journal of Organic Chemistry; vol. 47; nb. 25; (1982); p. 4975 - 4981 View in Reaxys


Rx-ID: 3365673 [View in Reaxys](#) 24/43

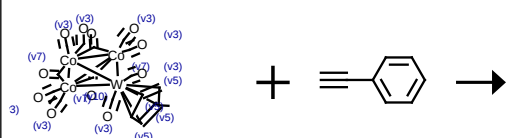
Yield	Conditions & References
11 % Spectr., 7 %, 11 %, 1 %	With hydrogenchloride, Time= 13h, Further byproducts given Griesbaum, Karl; Rao, V. V. Ramana; Leifker, Gregor ; Journal of Organic Chemistry; vol. 47; nb. 25; (1982); p. 4975 - 4981 View in Reaxys

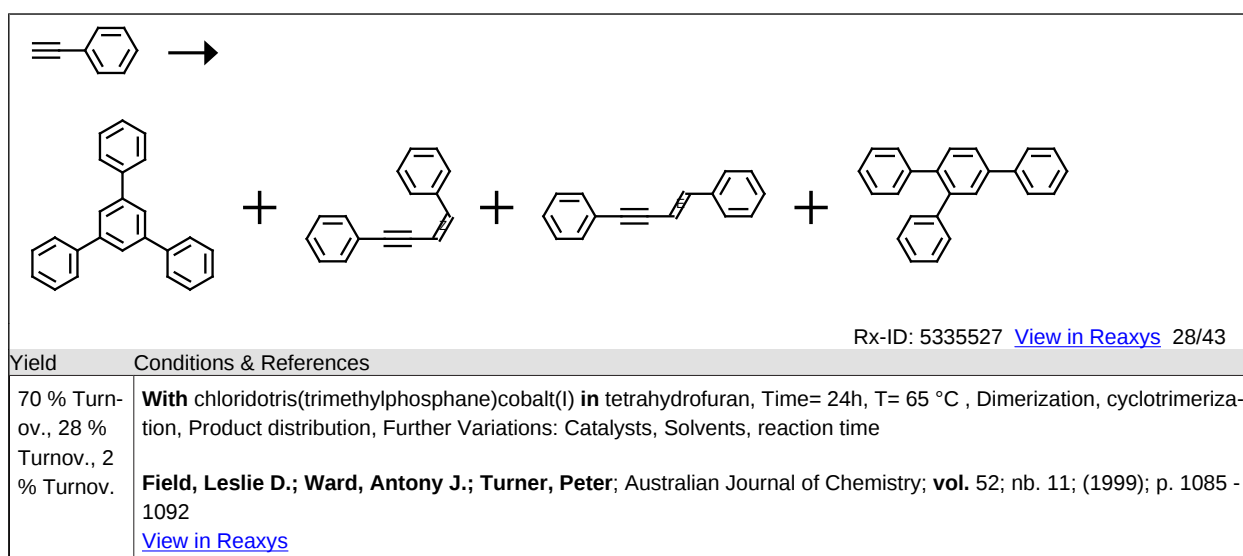
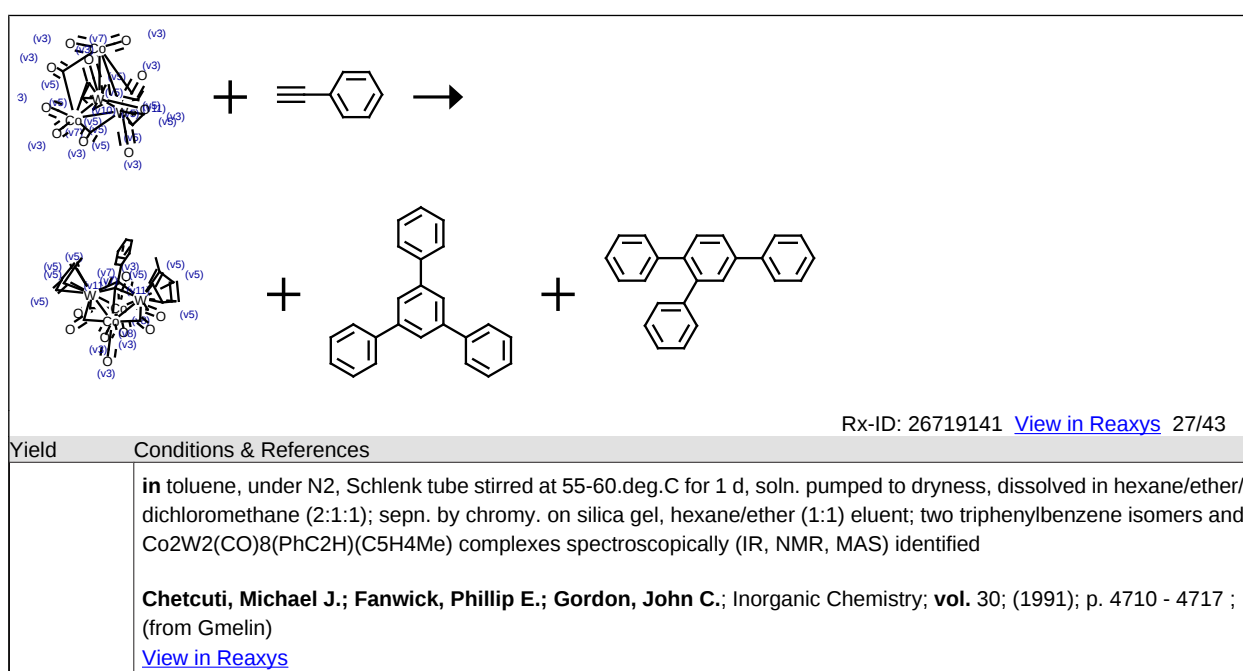
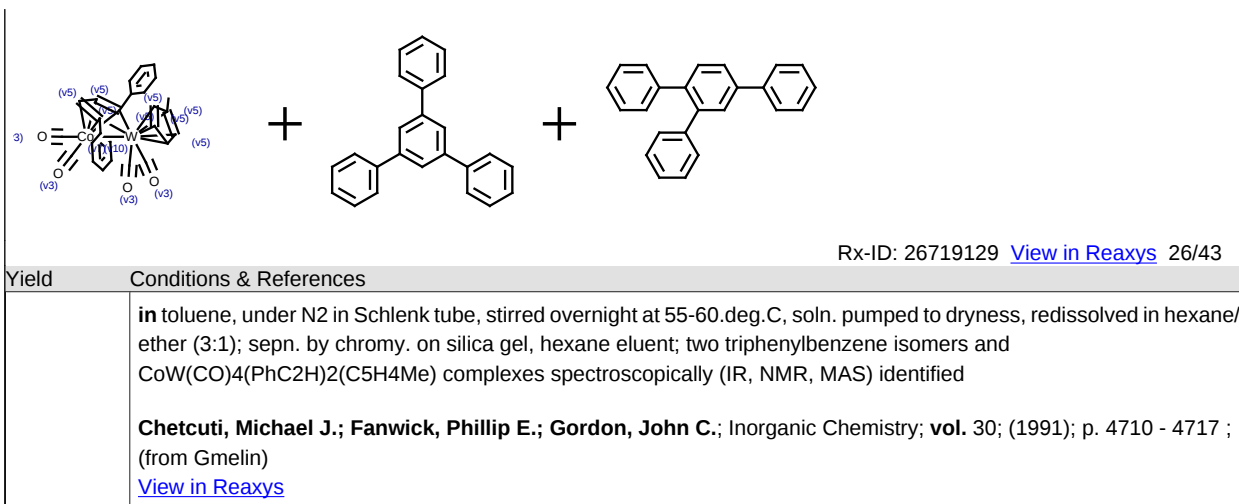


linear oligomers and polymers

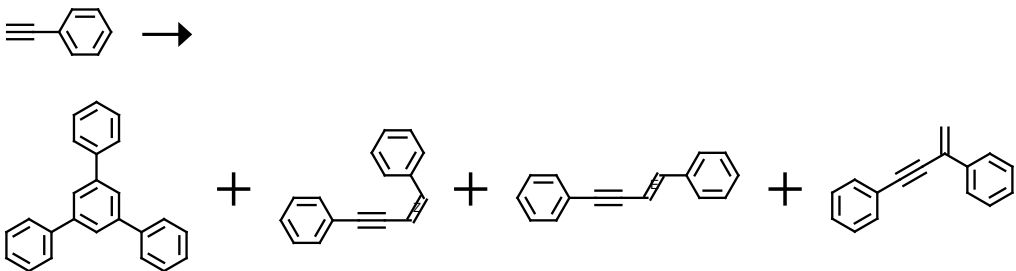
Rx-ID: 6215478 [View in Reaxys](#) 25/43

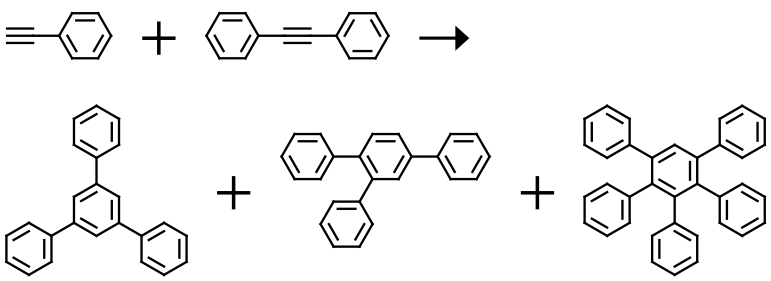
Yield	Conditions & References
60 %, 21.5 %	With $\text{Ir}(\text{NCS})(\text{Cl};*\text{gt};\text{CPh})(\text{Ph}_3\text{P})_2\text{gt}$; in diethylamine, Time= 6h, Heating, other catalysts, other solvent, various reaction time, Product distribution, Mechanism Bicev, Peter; Furlani, Anita; Russo, Maria Vittoria ; Gazzetta Chimica Italiana; vol. 110; nb. 1; (1980); p. 25 - 30 View in Reaxys

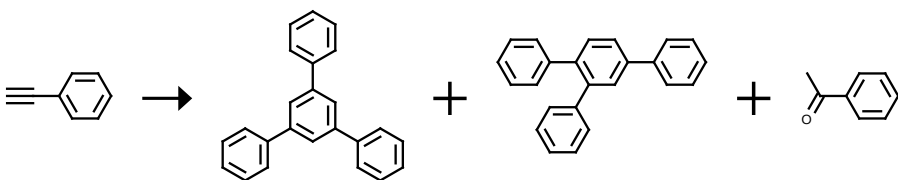




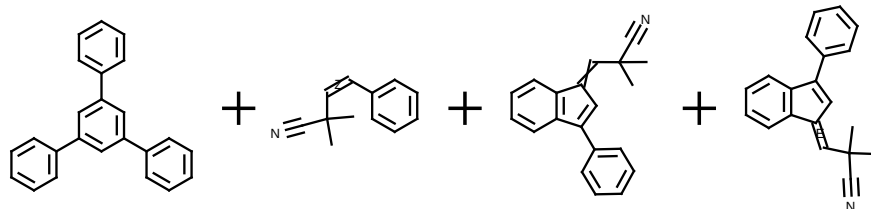
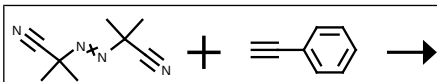
26 % Turn-ov., 13 % Turnov.	With Rh(PPh ₂ Me) ₂ (CO)Cl in THF-d ₈ (tetrahydrofuran-d ₈), Time= 67h, T= 65 °C , Dimerization, cyclotrimerization Field, Leslie D.; Ward, Antony J.; Turner, Peter; Australian Journal of Chemistry; vol. 52; nb. 11; (1999); p. 1085 - 1092 View in Reaxys
76 % Turn-ov., 18 % Turnov., 4 % Turnov., 2 % Turn-ov.	With [Rh(CO)Cl(1,2-bis(diphenylphosphino)ethane)] in THF-d ₈ (tetrahydrofuran-d ₈), Time= 78h, T= 65 °C , Dimerization, cyclotrimerization Field, Leslie D.; Ward, Antony J.; Turner, Peter; Australian Journal of Chemistry; vol. 52; nb. 11; (1999); p. 1085 - 1092 View in Reaxys

	
Rx-ID: 9804037 View in Reaxys 29/43	
Yield	Conditions & References
	With water, [(eta;5-MeC ₅ H ₄)Ru(eta;1-DVCP)(eta;3-DVCP)]PF ₆ in isopropyl alcohol, Heating, Product distribution, Further Variations: Catalysts Duraczynska, Dorota; Nelson, John H.; Dalton Transactions; nb. 1; (2005); p. 92 - 103 View in Reaxys

	
Rx-ID: 29810589 View in Reaxys 30/43	
Yield	Conditions & References
	With anhydrous iron chloride, Y[N(TMS) ₂] ₃ Bu, Xiuli; Zhang, Zhengxing; Zhou, Xigeng; Organometallics; vol. 29; nb. 16; (2010); p. 3530 - 3534 View in Reaxys

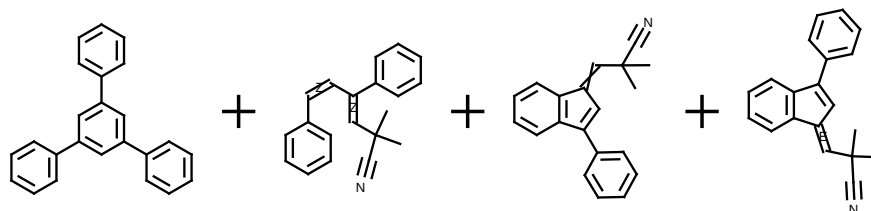
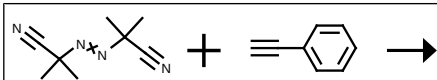
	
Rx-ID: 3365772 View in Reaxys 31/43	

Yield	Conditions & References
30 %, 25 % %, 8 %	With Rhodium trichloride, RhCl₃-Aliquat[®] 336 in ethanol, water, Time= 5h, Heating, Product distribution Setty-Fichman, Merav; Blum, Jochanan; Sasson, Yoel; Eisen, Moris; Tetrahedron Letters; vol. 35; nb. 5; (1994); p. 781 - 784 View in Reaxys



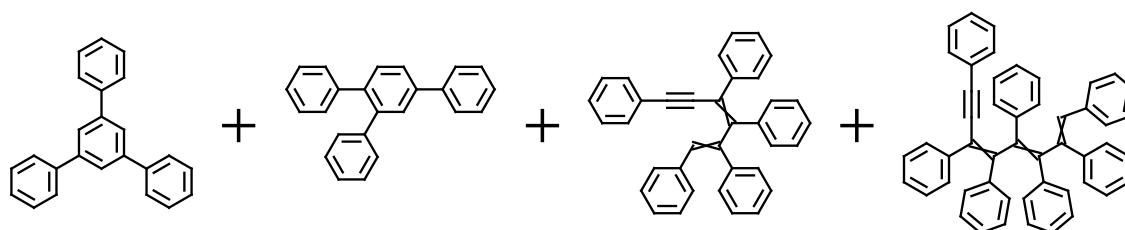
Rx-ID: 4736061 [View in Reaxys](#) 32/43

Yield	Conditions & References
	in benzene, Time= 4h, Heating, Further byproducts given. Title compound not separated from byproducts Montevecchi, Pier Carlo; Navacchia, Maria Luisa; Spagnolo, Piero; Tetrahedron; vol. 53; nb. 23; (1997); p. 7929 - 7936 View in Reaxys



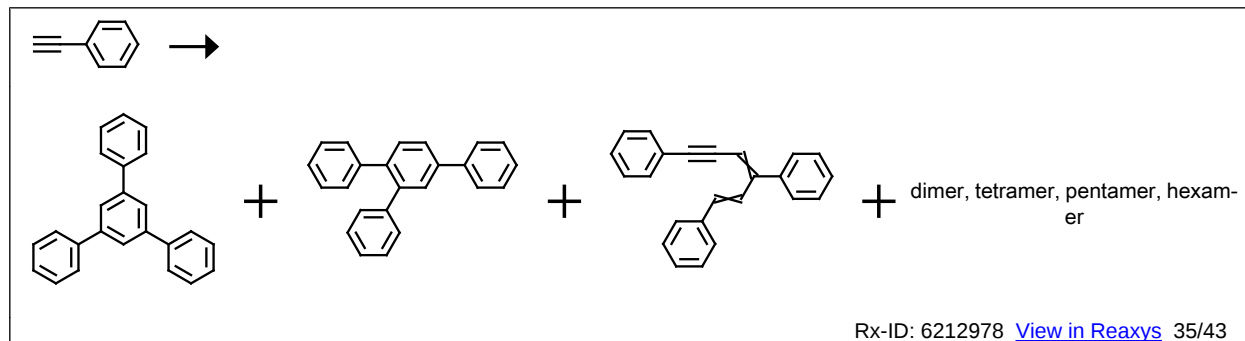
Rx-ID: 4736062 [View in Reaxys](#) 33/43

Yield	Conditions & References
	in benzene, Time= 4h, Heating, Further byproducts given Montevecchi, Pier Carlo; Navacchia, Maria Luisa; Spagnolo, Piero; Tetrahedron; vol. 53; nb. 23; (1997); p. 7929 - 7936 View in Reaxys

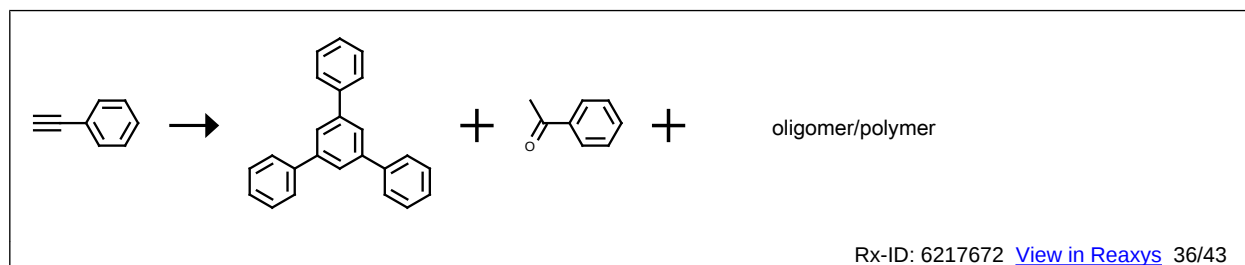


Rx-ID: 9334043 [View in Reaxys](#) 34/43

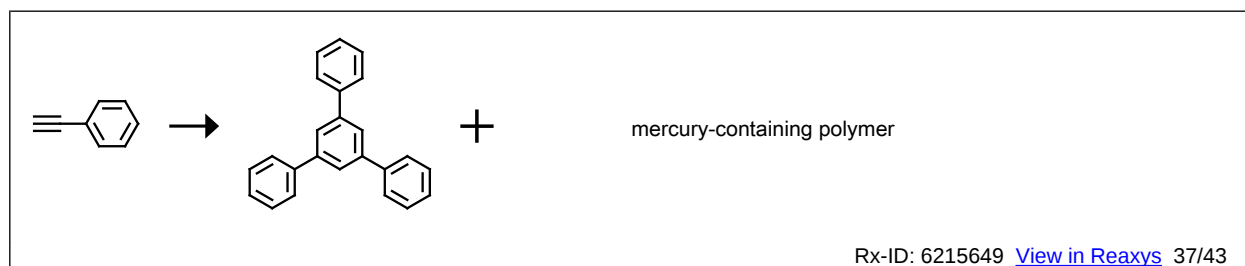
Yield	Conditions & References
	With [(η-7-[2-(diisopropylphosphanyl)phenyl]cycloheptatrienyl)(η-2-phenylacetylene)molybdenum] tetraphenylborate in tetrahydrofuran, Time= 12h, T= 79.85 °C , Product distribution Tamm, Matthias; Dressel, Bernd; Luegger, Thomas; Froehlich, Roland; Grimme, Stefan; European Journal of Inorganic Chemistry; nb. 6; (2003); p. 1088 - 1098 View in Reaxys



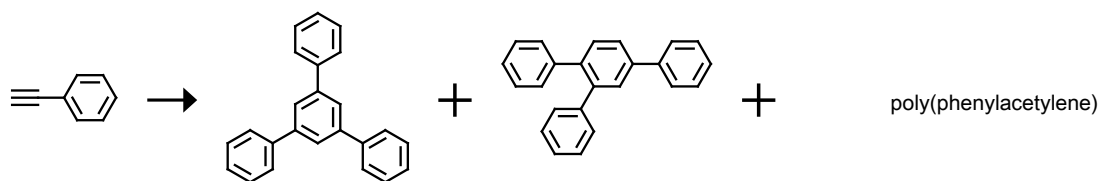
Yield	Conditions & References
	With It;Sigt;-O(CH₂)₃PPh₂Ni(CO)₂(PPh₃) on glass in benzene, Time= 4h, T= 90 °C , Product distribution Petrucchi, Maria G. L.; Kakkar, Ashok K.; Journal of the Chemical Society, Chemical Communications; nb. 15; (1995); p. 1577 - 1578 View in Reaxys



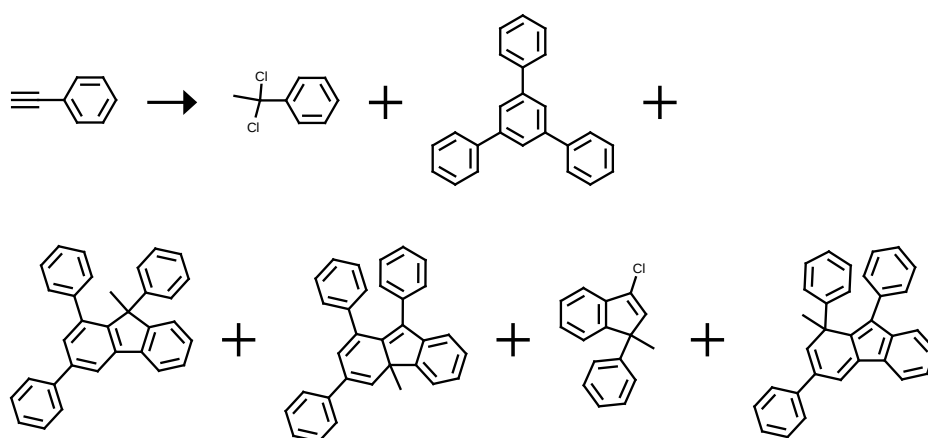
Yield	Conditions & References
	With Titanium oxide on silica-alumina, T= 220 °C , Mechanism, Product distribution Kumar, V. G.; Shoba, T. S.; Rao, K. V. C.; Tetrahedron Letters; vol. 26; nb. 50; (1985); p. 6245 - 6248 View in Reaxys



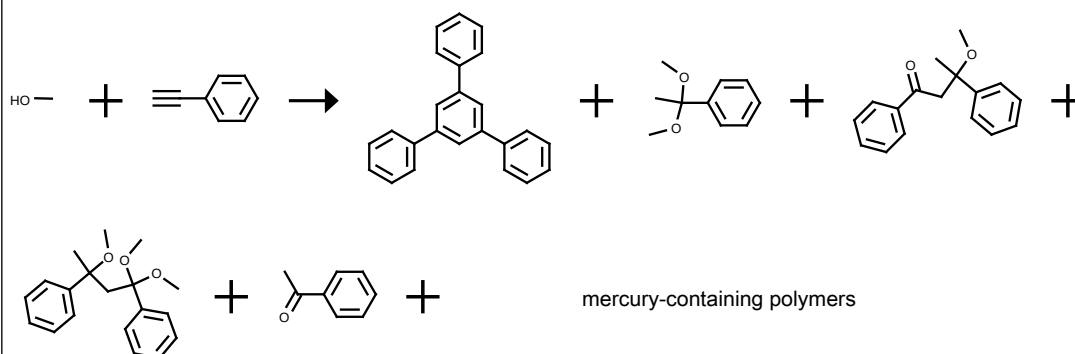
Yield	Conditions & References
	With boron trifluoride diethyl etherate, bis(2-phenylacetylenyl)mercury, Time= 4h, T= 60 - 70 °C , oth, solvent, oth, ratio of reagents, Product distribution Grigoryan, S. G.; Avetisyan, K. G.; Matnishyan, A. A.; Journal of Organic Chemistry USSR (English Translation); vol. 20; nb. 1; (1984); p. 42 - 45; Zhurnal Organicheskoi Khimii; vol. 20; nb. 1; (1984); p. 48 - 51 View in Reaxys


Rx-ID: 5335528 [View in Reaxys](#) 38/43

Yield	Conditions & References
	With [(eta;-Cp)Ni]2(PhCCH), Time= 6h, T= 115 °C , Polymerization, Product distribution, Further Variations: Catalysts, Temperatures Douglas, William E.; Journal of the Chemical Society, Dalton Transactions: Inorganic Chemistry (1972-1999); nb. 1; (2000); p. 57 - 62 View in Reaxys

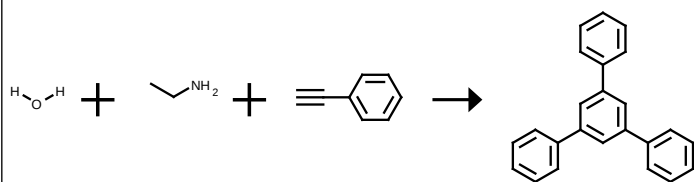

Rx-ID: 3365669 [View in Reaxys](#) 39/43

Yield	Conditions & References
11 % Spectr., 7 %, 11 %, 8 %, 4 %, 1 %	With hydrogenchloride, Time= 312h, var. p-substituted phenylacetylene, other reaction times, and catalysts, Product distribution, Mechanism Griesbaum, Karl; Rao, V. V. Ramana; Leifker, Gregor; Journal of Organic Chemistry; vol. 47; nb. 25; (1982); p. 4975 - 4981 View in Reaxys


Rx-ID: 6215648 [View in Reaxys](#) 40/43

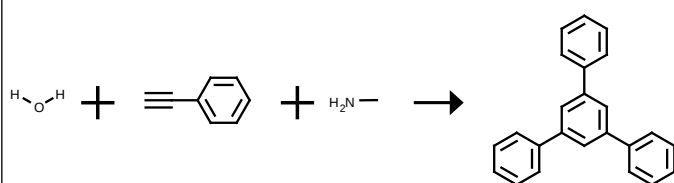
Yield	Conditions & References
	With boron trifluoride diethyl etherate, bis(2-phenylacetylenyl)mercury, T= 60 °C , var. ratios of reagents, Product distribution

Grigoryan, S. G.; Avetisyan, K. G.; Matnishyan, A. A.; Journal of Organic Chemistry USSR (English Translation); **vol.** 20; nb. 1; (1984); p. 42 - 45; Zhurnal Organicheskoi Khimii; **vol.** 20; nb. 1; (1984); p. 48 - 51
[View in Reaxys](#)



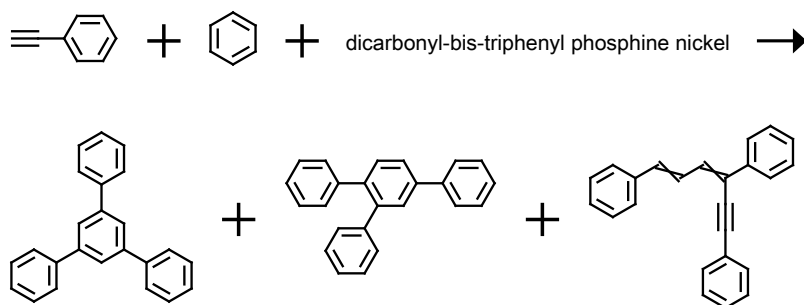
Rx-ID: 5807479 [View in Reaxys](#) 41/43

Yield	Conditions & References
	T= 260 °C , im Rohr Krassuski; Kiprianow; Zhurnal Russkago Fiziko-Khimicheskago Obshchestva; vol. 56; (1925); p. 5,9; Chem. Zentralbl.; vol. 97; nb. I; (1926); p. 895 View in Reaxys



Rx-ID: 5807483 [View in Reaxys](#) 42/43

Yield	Conditions & References
	T= 260 °C , im Rohr Krassuski; Kiprianow; Zhurnal Russkago Fiziko-Khimicheskago Obshchestva; vol. 56; (1925); p. 5,9; Chem. Zentralbl.; vol. 97; nb. I; (1926); p. 895 View in Reaxys



Rx-ID: 5812064 [View in Reaxys](#) 43/43

Yield	Conditions & References
	Meriwether, L.S. et al.; Journal of Organic Chemistry; vol. 26; (1961); p. 5155 - 5163 View in Reaxys Rose; Statham; Journal of the Chemical Society; (1950); p. 69 View in Reaxys Overberger; Whelan; Journal of Organic Chemistry; vol. 24; (1959); p. 1155 View in Reaxys