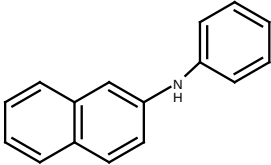
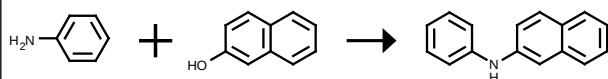


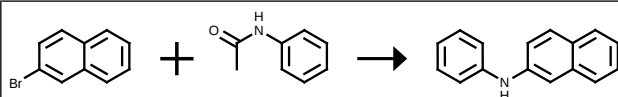
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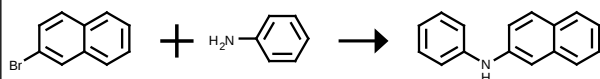

Rx-ID: 712163 [View in Reaxys](#) 1/8

Yield	Conditions & References
77 %	With boron trifluoride diethyl etherate, Time= 15h, T= 80 °C , Inert atmosphere Cazorla, Clement; Pfordt, Emilie; Duclos, Marie-Christine; Metay, Estelle; Lemaire, Marc; Green Chemistry; vol. 13; nb. 9; (2011); p. 2482 - 2488 View in Reaxys
68 %	With sulfur dioxide in water, Time= 0.5h, Irradiation, Bucherer reaction Canete, Alvaro; Melendrez, Monica X.; Saitz, Claudio; Zanocco, Antonio L.; Synthetic Communications; vol. 31; nb. 14; (2001); p. 2143 - 2148 View in Reaxys
	bei der Einwirkung auf salzsaures Anilin Graebe; Chemische Berichte; vol. 13; (1880); p. 1851; Justus Liebigs Annalen der Chemie; vol. 209; (1881); p. 148 View in Reaxys Friedlaender; Chemische Berichte; vol. 16; (1883); p. 2078 View in Reaxys Patent; BASF; DE14612; Fortschr. Teerfarbenfabr. Verw. Industriezweige; vol. 1; p. 411 View in Reaxys
	Patent; Bad. Anilin- u. Sodaf.; DE14612; Fortschr. Teerfarbenfabr. Verw. Industriezweige; vol. 1; p. 411 View in Reaxys Graebe; Chemische Berichte; vol. 13; (1880); p. 1851; Justus Liebigs Annalen der Chemie; vol. 209; (1881); p. 148 View in Reaxys Friedlaender; Chemische Berichte; vol. 16; (1883); p. 2078 View in Reaxys Patent; BASF; DE14612; Fortschr. Teerfarbenfabr. Verw. Industriezweige; vol. 1; p. 411 View in Reaxys
	With toluene-4-sulfonic acid Patent; BASF; DE848196; (1944); DRP/DRBP Org.Chem. View in Reaxys
	With titanium(IV) isopropylate Patent; Goodrich Co.; US2824137; (1955) View in Reaxys
	T= 200 - 210 °C Patent; B.A.S.F.; DE14612; Fortschr. Teerfarbenfabr. Verw. Industriezweige; vol. 1; p. 411 View in Reaxys
	With sodium pyrosulfite Bucherer; Stohmann; Chem. Zentralbl.; vol. 75; nb. I; (1904); p. 1012 View in Reaxys Bucherer; Stohmann; Journal fuer Praktische Chemie (Leipzig); vol. <2> 71; (1905); p. 451; Chem. Zentralbl.; vol. 75; nb. I; (1904); p. 1012 View in Reaxys
	With iodine, T= 180 - 190 °C Patent; Knoll and Co.; DE241853; Fortschr. Teerfarbenfabr. Verw. Industriezweige; vol. 10; p. 180 View in Reaxys Knoevenagel; Journal fuer Praktische Chemie (Leipzig); vol. <2>89; (1914); p. 45 View in Reaxys

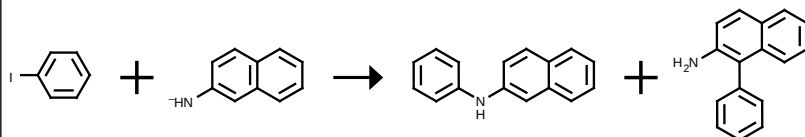
	With ammonium chlorozincate, T= 180 - 200 °C Merz; Weith; Chemische Berichte; vol. 13; (1880); p. 1300 View in Reaxys
	With calcium chloride, T= 280 °C Friedlaender; Chemische Berichte; vol. 16; (1883); p. 2077 View in Reaxys
	With calcium chloride, Time= 8h, T= 280 °C Papanov, Georgi Y.; Gacs-Baitz, Eszter; Malakov, Peter Y.; Phytochemistry (Elsevier); vol. 24; nb. 12; (1985); p. 3045 - 3046 View in Reaxys


Rx-ID: 726838 [View in Reaxys](#) 2/8

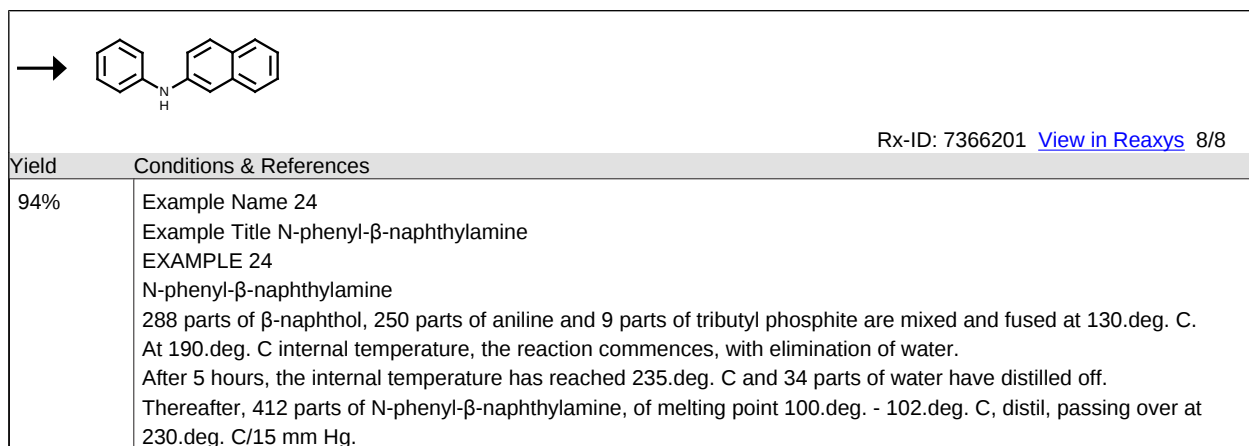
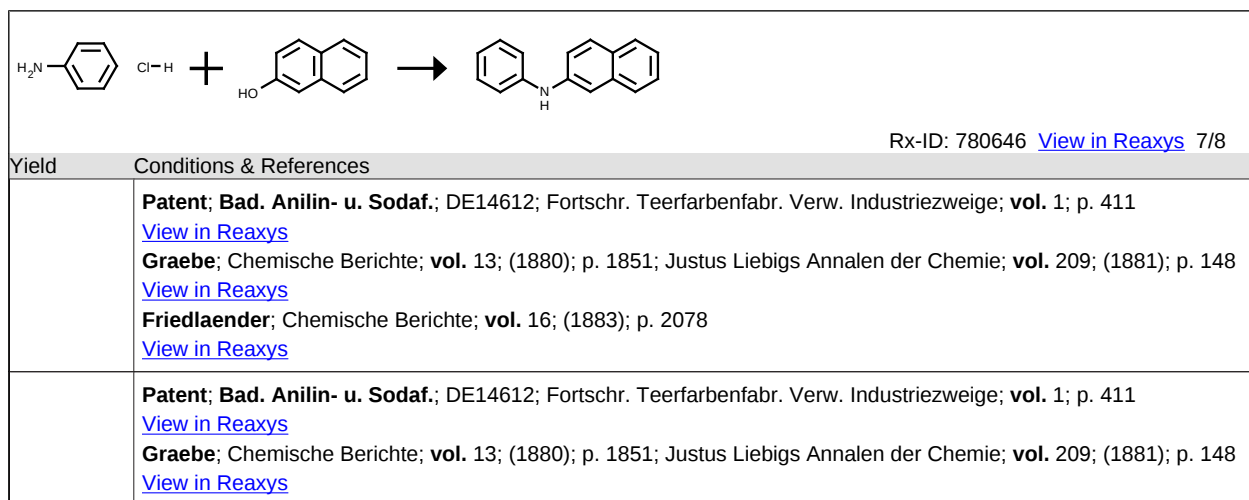
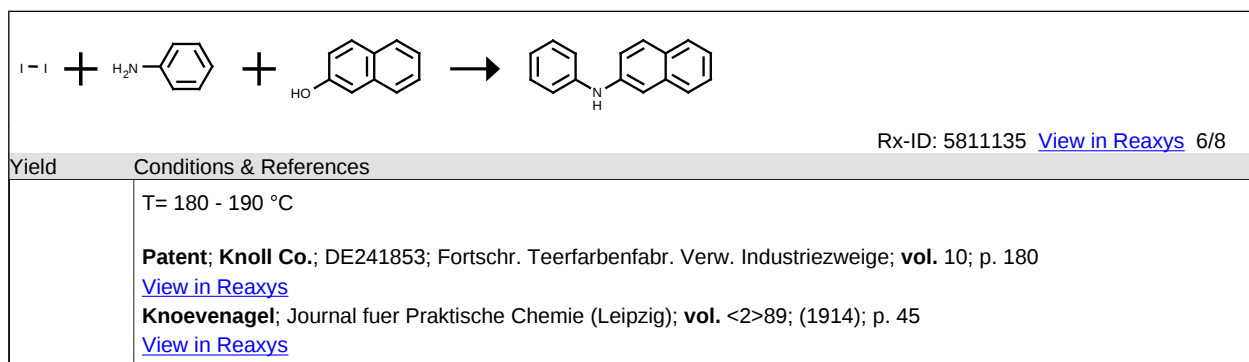
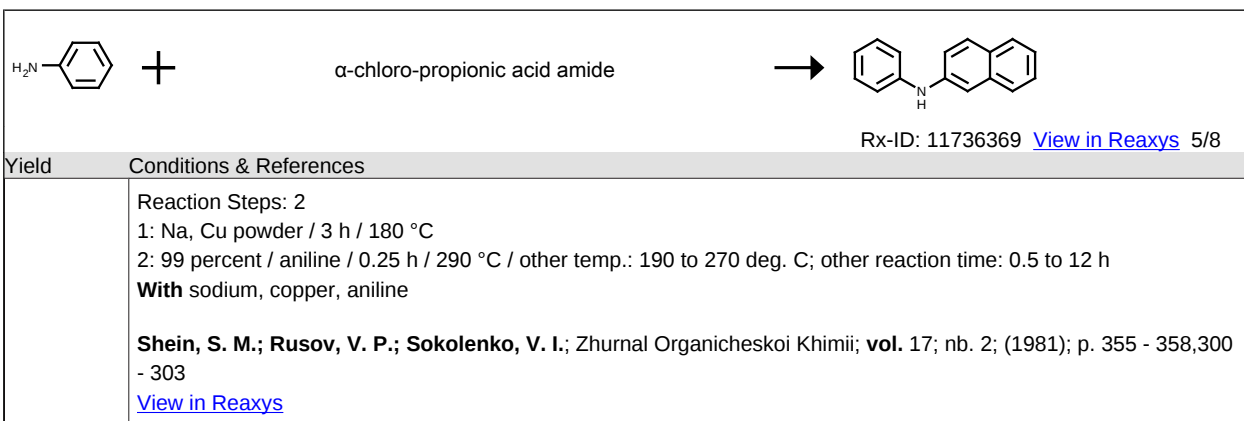
Yield	Conditions & References
	With copper, potassium carbonate, nitrobenzene, potassium iodide, und Verseifen des Reaktionsprodukts mit waessrig-alkoholischer Salzsaeure Loevenich; Loeser; Chemische Berichte; vol. 60; (1927); p. 324 View in Reaxys
	With copper(I) iodide, potassium carbonate in o-xylene, Time= 45h, T= 150 °C Yu, Mingxin; Wang, Meijun; Chen, Xiaohang; Hong, Bingbing; Zhang, Xiaoyan; Cheng, Chienhong; Journal of Chemical Research, Synopses; nb. 9; (2005); p. 558 - 560 View in Reaxys


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Yield	Conditions & References
	With tri-tert-butyl phosphine, bis(dibenzylideneacetone)-palladium⁽⁰⁾, sodium t-butanolate in toluene, T= 80 °C Yu, Mingxin; Wang, Meijun; Chen, Xiaohang; Hong, Bingbing; Zhang, Xiaoyan; Cheng, Chienhong; Journal of Chemical Research, Synopses; nb. 9; (2005); p. 558 - 560 View in Reaxys


Rx-ID: 1793334 [View in Reaxys](#) 4/8

Yield	Conditions & References
1.0 % Chromat., 47.0 % Chromat.	in ammonia, Time= 3h, Irradiation Pierini, A.B.; Baumgartner, M.T.; Rossi, R.A.; Tetrahedron Letters; vol. 28; nb. 40; (1987); p. 4653 - 4656 View in Reaxys



	This corresponds to a yield of 94percent of theory. Patent; BASF Aktiengesellschaft; US4067903; (1978); (A1) English View in Reaxys
91%	Example Name S.5 Example Title Preparation of Compound 50 Compound 50 was synthesised in the same manner as Synthesis Example 1 using the intermediate compound A and 2-naphthylphenylamine (yield 91percent). ¹H NMR (CDCl₃, 300 MHz) δ (ppm) 7.67 (dd, 4H), 7.53 (t, 8H), 7.37-7.29 (m, 12H), 7.20 (dd, 4H), 7.10-7.03 (m, 16H), 6.92-6.85 (m, 4H), 6.80 (t, 2H), 6.69 (d, 4H), 7.03 (d, 4H); ¹³C NMR (CDCl₃, 100 MHz) δ (ppm) 148.6, 147.2, 144.9, 142.9, 134.3, 130.0, 129.1, 128.7, 127.5, 126.9, 126.1, 124.4, 123.0, 120.4, 118.0, 116.7. Patent; Hwang, Seok-Hwan; Kim, Young-Kook; Lee, Chang-Ho; Lee, Seok-Jong; Yang, Seung-Gak; Kim, Hee-Yeon; US2006/134463; (2006); (A1) English View in Reaxys
	Matewosjan; Staschkow; J. Gen. Chem. USSR (Engl. Transl.); vol. 33; (1963); p. 3907,3843 View in Reaxys Walker; Hathway; Journal of Labelled Compounds and Radiopharmaceuticals; vol. 12; (1976); p. 199,204 View in Reaxys Patent; Monsanto; US3170956; (1965); Chem.Abstr.; vol. 62; nb. 16162e; (1965) View in Reaxys Patent; BASF AG; FR2326409; (1977); DE2544504; (1977); Chem.Abstr.; vol. 87; nb. 39174 View in Reaxys Patent; Shein et al.; SU384328; (1979); Ref. Zh., Khim.; vol. 1; nb. N193P; (1980) View in Reaxys
	EXAMPLES OF AMINE ANTIOXIDANTS ... 4-(p-Toluene-sulfonamido)-diphenylamine N,N'-Dimethyl-N,N'-di-sec.-butyl-p-phenylenediamine 4-Isopropoxy-diphenylamine N-Phenyl-1-naphthylamine N-Phenyl-2-naphthylamine octylated Diphenylamine octylated N-phenyl- (or) naphthylamine 4-n-Butylaminophenol ... Patent; Ciba-Geigy Corporation; US4892671; (1990); (A1) English View in Reaxys
	EXAMPLES OF AMINE ANTIOXIDANTS ... 4-(p-Toluol-sulfonamido)-diphenylamine N,N'-dimethyl-N,N'-di-sec.-butyl-p-phenylenediamine 4-Isopropoxy-diphenylamine N-Phenyl-1-naphthylamine N-Phenyl-2-naphthylamine octylated Diphenylamine octylated N-phenyl-α(or β)naphthylamine 4-n-Butylaminophenol ... Patent; Ciba-Geigy Corporation; US4791206; (1988); (A1) English View in Reaxys
	Further examples of antioxi-dants are those of the aminoaryl series for instance aniline and naphthylamine derivatives as well as their heterocyclic derivatives such as: phenyl-1-naphthylamine phenyl-2-naphthylamine N,n'-diphenyl-p-phenylenediamine N,N'-di-sec.butyl-p-phenylenediamine

	6-Ethoxy-2,2,4-trimethyl-1,2-dihydroquinoline 6-Dodecyl-2,2,4-trimethyl-1,2-dihydroquinoline Patent; Ciba-Geigy Corporation; US3959291; (1976); (A1) English View in Reaxys
	Among the aminoaryl derivatives, mention may be made of aniline and naphthylamine derivatives and their heterocyclic derivatives, e.g.: Phenyl-1-naphthylamine, phenyl-2-naphthylamine, N,n'-diphenyl-p-phenylenediamine, N,n'-di-2-naphthyl-p-phenylenediamine, N,n'-di-sec.butyl-p-phenylenediamine, 6-ethoxy-2,2,4-trimethyl-1,2-dihydroquinoline, 6-dodecyl-2,2,4-trimethyl-1,2-dihydroquinoline, Patent; Ciba-Geigy Corporation; US4026866; (1977); (A1) English View in Reaxys