



A Publication
of Reliable Methods
for the Preparation
of Organic Compounds

Working with Hazardous Chemicals

The procedures in *Organic Syntheses* are intended for use only by persons with proper training in experimental organic chemistry. All hazardous materials should be handled using the standard procedures for work with chemicals described in references such as "Prudent Practices in the Laboratory" (The National Academies Press, Washington, D.C., 2011; the full text can be accessed free of charge at http://www.nap.edu/catalog.php?record_id=12654). All chemical waste should be disposed of in accordance with local regulations. For general guidelines for the management of chemical waste, see Chapter 8 of Prudent Practices.

In some articles in *Organic Syntheses*, chemical-specific hazards are highlighted in red "Caution Notes" within a procedure. It is important to recognize that the absence of a caution note does not imply that no significant hazards are associated with the chemicals involved in that procedure. Prior to performing a reaction, a thorough risk assessment should be carried out that includes a review of the potential hazards associated with each chemical and experimental operation on the scale that is planned for the procedure. Guidelines for carrying out a risk assessment and for analyzing the hazards associated with chemicals can be found in Chapter 4 of Prudent Practices.

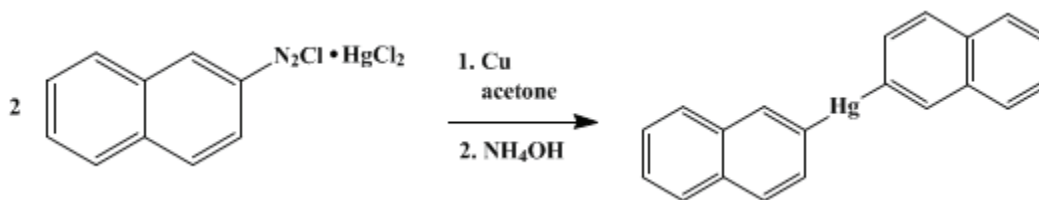
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These paragraphs were added in September 2014. The statements above do not supersede any specific hazard caution notes and safety instructions included in the procedure.

Organic Syntheses, Coll. Vol. 2, p.381 (1943); Vol. 12, p.46 (1932).

MERCURY DI- β -NAPHTHYL

[Mercury, di-2-naphthyl-]



Submitted by A. N. Nesmajanow and E. D. Kohn.
Checked by Frank C. Whitmore and R. W. Beattie.

1. Procedure

In a 2-l. round-bottomed flask, equipped with a stirrer, are placed 231 g. (0.5 mole) of the addition compound of β -naphthalenediazonium chloride and mercuric chloride (p. 432), 700 cc. of acetone (b.p. 55–57°) and 189 g. (3 moles) of copper powder (Note 1). The mixture is quickly cooled to 20° and stirred for one hour. Seven hundred cubic centimeters of concentrated aqueous ammonia solution (sp. gr. 0.9) is added, mixed well, and allowed to stand overnight. The supernatant liquid is decanted; the solid is collected on a Büchner funnel and washed successively with 25-cc. portions of water, acetone, and ether. After air-drying, the crude material is recrystallized from xylene, using decolorizing carbon. The crystals thus obtained are slightly yellow (Note 2) and melt at 241.5–243.5°. The yield is 51–55 g. (45–48 per cent of the theoretical amount based on the addition compound used) (Note 3).

2. Notes

1. The same notes apply as in the preparation of β -naphthylmercuric chloride (p. 432).
2. The product from this reaction is never pure white. Colorless mercury di- β -naphthyl can be prepared in good yield from β -naphthylmercuric chloride (p. 432) and sodium iodide, according to the directions given in *Org. Syn. Coll. Vol. I, 1941, 231*, for mercury di-*p*-tolyl.¹
3. Similar results are obtained with other aromatic amines; aniline and *p*-iodoaniline yield mercury diphenyl and mercury di-*p*-iodophenyl.

3. Discussion

Mercury di- β -naphthyl has been prepared by the action of sodium amalgam on β -bromonaphthalene,² and by the action of alcoholic sodium iodide on β -naphthylmercuric chloride.¹

References and Notes

1. Private communication, Frank C. Whitmore and R. J. Sobatzki.
 2. Chattaway, *J. Chem. Soc.* **65**, 878 (1894); Michaelis, *Ber.* **27**, 251 (1894).
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Appendix

Chemical Abstracts Nomenclature (Collective Index Number); (Registry Number)

Mercury di- β -naphthyl

β -Naphthylmercuric chloride
mercury diphenyl
mercury di-p-tolyl
mercury di-p-iodophenyl
ammonia (7664-41-7)
ether (60-29-7)
aniline (62-53-3)
copper powder (7440-50-8)
acetone (67-64-1)
decolorizing carbon (7782-42-5)
sodium (13966-32-0)
 β -bromonaphthalene (580-13-2)
mercuric chloride (7487-94-7)
xylene (106-42-3)
sodium iodide (7681-82-5)
Mercury, di-2-naphthyl- (19510-26-0)
 β -naphthalenediazonium chloride
p-IODOANILINE (540-37-4)