

## 2-Biphenylamine and Its Salts

2-Biphenylamine [2-aminobiphenyl] is a chemical intermediate used in the manufacture of C.I. Acid Red 15. It is also present as a contaminant in diphenylamine (a pesticide and dye intermediate, a stabilizer for nitrocellulose explosives, and a topical agent for prevention of screwworm infestation in animals) and 4-biphenylamine (a rubber antioxidant). Occupational exposure may occur during its manufacture and use.

2-Biphenylamine and its salts passed the animal data screen, underwent a preliminary toxicological evaluation, and is being brought to the Carcinogen Identification Committee for consultation. This is a compilation of the relevant studies identified during the preliminary toxicological evaluation.

### Epidemiological data

No cancer epidemiology studies were identified.

### Animal carcinogenicity data

- 103-week feeding studies
  - Male and female B6C3F<sub>1</sub> mice: NTP (1982)
    - *Increases in hemangiosarcomas in females (by pairwise comparison and trend) and males (by trend)*
  - Male and female F344/N rats: NTP (1982)
    - *No treatment-related tumor findings in males or females*

### Other relevant data

- Genotoxicity
  - As reviewed or reported in NTP (1982, p. 14), Tennant *et al.* (1987, p. 935, 937) and CCRIS (2006)
    - Mutagenicity in *Salmonella typhimurium* reverse mutation assays (*positive and negative*) and mouse lymphoma cell mutagenesis assays (*positive*)
    - Chromosome aberrations in Chinese hamster ovary (CHO) cells (*positive and negative*)
    - Sister chromatid exchange in CHO cells (*negative*)
- Structure activity considerations
  - Structurally similar to 4-biphenylamine, an IARC Group 1 carcinogen
  - Other nitrogen-containing aromatic compounds [e.g., the Proposition 65 carcinogens: 2-methyl-1-nitroanthraquinone, 4,4'-methylene-*bis*(2-chloroaniline) and 2,4-dichlorophenyl-*p*-nitrophenyl

ether] also induce hemangiosarcomas in B6C3F<sub>1</sub> mice: NTP (1982, pp. 63-64).

## References<sup>1</sup>

Chemical Carcinogenesis Research Information System (CCRIS, 2006)  
<http://toxnet.nlm.nih.gov> (accessed on June 11, 2009).

National Toxicology Program (NTP, 1982). *NTP Technical Report on the Carcinogenesis Bioassay of 2-Biphenylamine Hydrochloride (CAS No. 2185-92-4) in F344/N Rats and B6C3F<sub>1</sub> Mice (Feed Study)*. NTP TR-233. NTP-81-35. NIH publication No. 83-1789. U.S. DHHS, NIH, Research Triangle Park, NC and Bethesda, MD.

Tennant RW, Margolin BH, Shelby MD, Zeiger E, Haseman JK, Spalding J, Caspary W, Resnick M, Stasiewicz S, Anderson B, Minor R (1987). Prediction of chemical carcinogenicity in rodents from in vitro genetic toxicity assays. *Science* **236**:933-41.

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<sup>1</sup> Excerpts or the complete publication have been provided to members of the Carcinogen Identification Committee, in the order in which they are discussed in this document.