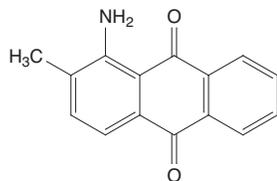


## 1-Amino-2-methylantraquinone

### CAS No. 82-28-0

Reasonably anticipated to be a human carcinogen

First listed in the *Third Annual Report on Carcinogens* (1983)



### Carcinogenicity

1-Amino-2-methylantraquinone is *reasonably anticipated to be a human carcinogen* based on sufficient evidence of carcinogenicity from studies in experimental animals.

#### Cancer Studies in Experimental Animals

Oral exposure to 1-amino-2-methylantraquinone caused tumors in two rodent species and at two different tissue sites. Dietary administration of technical-grade 1-amino-2-methylantraquinone increased the combined incidence of benign and malignant liver tumors (hepatocellular adenoma and carcinoma) in female mice. In rats, it caused liver cancer in both sexes and increased the combined incidence of benign and malignant kidney tumors (tubular-cell adenoma and carcinoma and adenocarcinoma) in males (NCI 1978).

#### Cancer Studies in Humans

No epidemiological studies were identified that evaluated the relationship between human cancer and exposure specifically to 1-amino-2-methylantraquinone.

### Properties

1-Amino-2-methylantraquinone is an anthraquinone dye and dye intermediate that exists as an orange solid at room temperature (NCI 1978). It is practically insoluble in water; soluble in acetone, benzene, ethanol, ethylene glycol, monoethyl ether, and linseed oil; and slightly soluble in carbon tetrachloride (IARC 1982, ChemIDplus 2009). Physical and chemical properties of 1-amino-2-methylantraquinone are listed in the following table.

Property	Information
Molecular weight	237.3 <sup>a</sup>
Melting point	206°C <sup>a</sup>
Log $K_{ow}$	4.07 <sup>b</sup>
Water solubility	0.332 mg/L at 25°C <sup>b</sup>
Vapor pressure	$3.82 \times 10^{-8}$ mm Hg at 25°C <sup>b</sup>

Sources: <sup>a</sup>HSDB 2009, <sup>b</sup>ChemIDplus 2009.

### Use

1-Amino-2-methylantraquinone was used almost exclusively as a dye and as an intermediate in the production of dyes. It was used as a dye for synthetic fibers, furs, and thermoplastic resins. The only dyes derived from 1-amino-2-methylantraquinone that were produced in the United States were C.I. acid blue 47, last produced in 1973, and C.I. solvent blue 13, last produced in 1974 (IARC 1982, HSDB 2009).

### Production

U.S. production of 1-amino-2-methylantraquinone began in 1948 and ended in 1974 (IARC 1982). In 2009, 1-amino-2-methylantraquinone was produced by one manufacturer in Europe (SRI 2009)

and was available from twelve suppliers, including three U.S. suppliers (ChemSources 2009). U.S. imports of 1-amino-2-methylantraquinone were last reported in 1972, when 120 kg (265 lb) was imported (IARC 1982).

### Exposure

The primary routes of potential human exposure to 1-amino-2-methylantraquinone are inhalation and dermal contact. The potential for exposure is limited, because 1-amino-2-methylantraquinone is no longer produced commercially in the United States or reported to be imported. No data were found on environmental releases of 1-amino-2-methylantraquinone. The potential for occupational exposure was greatest among workers engaged in textile dyeing; however, no data were found on the numbers of workers potentially exposed (HSDB 2009).

### Regulations

#### Environmental Protection Agency (EPA)

Emergency Planning and Community Right-To-Know Act  
Toxics Release Inventory: Listed substance subject to reporting requirements.

### References

- ChemIDplus. 2009. *ChemIDplus Advanced*. National Library of Medicine. <http://chem.sis.nlm.nih.gov/chemidplus/chemidheavy.jsp> and select Registry Number and search on CAS number. Last accessed: 04/21/09.
- ChemSources. 2009. *Chem Sources - Chemical Search*. Chemical Sources International. <http://www.chemsources.com/chemonline.html> and search on aminomethylantraquinone. Last accessed: 4/21/09.
- HSDB. 2009. *Hazardous Substances Data Bank*. National Library of Medicine. <http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB> and search on CAS number. Last accessed: 4/21/09.
- IARC. 1982. 1-Amino-2-methylantraquinone. In *Some Aromatic Amines, Anthraquinones and Nitroso Compounds and Inorganic Fluorides Used in Drinking Water and Dental Preparations*. IARC Monographs on the Evaluation of Carcinogenic Risk of Chemicals to Humans, vol. 27. Lyon, France: International Agency for Research on Cancer. pp. 199-204.
- NCI. 1978. *Bioassay of 1-Amino-2-Methylantraquinone for Possible Carcinogenicity*. Technical Report Series No. 111. DHEW (NIH) Publication No. 78-1366. Bethesda, MD: National Institutes of Health. 105 pp.
- SRI. 2009. *Directory of Chemical Producers*. Menlo Park, CA: SRI Consulting. Database edition. Last accessed: 4/21/09.