o-Aminoazotoluene

CAS No. 97-56-3

Reasonably anticipated to be a human carcinogen
Also known as C.I. solvent yellow 3 or fast garnet GBC base

Carcinogenicity

o-Aminoazotoluene is reasonably anticipated to be a human carcinogen based on sufficient evidence of carcinogenicity from studies in experimental animals.

Cancer Studies in Experimental Animals

o-Aminoazotoluene caused tumors in several species of experimental animals, at several different tissue sites, and by several different routes of exposure. Dietary administration of o-aminoazotoluene caused benign and/or malignant liver tumors in mice of both sexes (hepatocellular adenoma or carcinoma), male rats (adenoma, hepatocellular carcinoma, cholangioma, or other carcinoma), hamsters of both sexes (hepatocellular adenoma or carcinoma), and dogs of unspecified sex (hepatocellular adenoma or carcinoma, adenocarcinoma, or cholangioma). In mice of both sexes, it also caused lung tumors and benign blood-vessel tumors (hemangioendothelioma in the lung). In addition, urinary-bladder cancer was observed in hamsters of both sexes (papillary or transitional-cell carcinoma) and in dogs of unspecified sex (carcinoma); gallbladder tumors in female hamsters (papilloma or carcinoma) and in dogs of unspecified sex (adenocarcinoma); and mammary-gland cancer (adenocarcinoma) in female hamsters (IARC 1975).

Dermal exposure to o-aminoazotoluene caused liver tumors in mice of unspecified sex. Administration of o-aminoazotoluene by subcutaneous or intramuscular injection caused hepatocellular liver tumors in female mice, rats of unspecified sex, and newborn mice of both sexes (following a single subcutaneous injection). Also observed were lung tumors in adult and newborn mice of both sexes and cancer at the injection site (fibrosarcoma) in female mice. Administration of o-aminoazotoluene by intraperitoneal injection caused hepatocellular liver tumors in mice of both sexes. Benign urinary-bladder tumors (papilloma) following intravesicular instillation in mice and intravesicular implantation in rabbits may also have been exposure-related.

Cancer Studies in Humans

No epidemiological studies were identified that evaluated the relationship between human cancer and exposure specifically to o-aminoazotoluene.

Properties

o-Aminoazotoluene is an azo dye that exists at room temperature as odorless reddish-brown to golden crystals or an orange powder. It is practically insoluble in water and soluble in alcohol, ether, chloroform, oils, fats, acetone, cellulose, and toluene. It remains stable under normal temperatures and pressures (IARC 1975, Akron 2009). Physical and chemical properties of o-aminoazotoluene are listed in the following table.