

REFERENCE DOSES (RfDs) FOR ORAL EXPOSURE

Chemical: Diphenylamine

CAS #: 127-39-4

Caswell #: 398

Carcinogenicity: No evidence of carcinogenicity in rats and mice.

Systemic Toxicity: See below.

Preparation Date: 7/17/86

Endpoint	Experimental Doses	UF	MF	RfD
Thomas et. al. (1967) 2-Year Dog Feeding Study	100 ppm (2.5 mg/kg/day) NOEL	100	—	0.025 mg/kg/day
decreased body weight gain, and increased liver and kidney weights	1000 ppm (25 mg/kg/day) LEL			

Conversion factor: 1% = 10,000 ppm

Conversion factor (dog): 1 ppm = 0.025 mg/kg/day

Endpoint and Experimental Doses:

2-Year Dog Feeding Study

J. Thomas et. al.

Toxicology and Applied Pharmacology 11, 184-194 (1967)

Eight male and 8 female purebred beagles were fed 0.01, 0.1, and 1% diphenylamine. Decreased weight gain and anemia were noted at 0.1 and 1%. At 1%, an increase in liver and weights were observed.

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Uncertainty Factors (UFs):

An uncertainty factor of 100 was used to account for inter- and intraspecies differences.

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Modifying Factors (MFs):

None

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Additional Comments:

Data Considered for Establishing the RfD

- 1) 2-Year Feeding - Dog (NOEL = 2.5 mg/kg; LEL = 25 mg/kg; decreased body weight gain, increased liver and kidney weights)
- 2) 2-Year Feeding/Oncogenic - Rat (NOEL = 3.1 mg/kg; LEL = 31 mg/kg; kidney lesions)
- 3) 2-Generation Reproduction - Fetotoxic NOEL = 125 mg/kg; Fetotoxic LEL = 250 mg/kg; reduced litter size and weight of young)

Data Gap(s)

- 1) Teratology - Rat
- 2) Teratology - Rabbit

Other Data Considered

- 1) 92-Week Oncogenic - Mice (Oncogenic NOEL \geq 37.5 mg/kg)

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Confidence in the RfD:

Study: Medium

Data Base: Medium

RfD: Medium

The critical study appears to be of good quality and is given a medium confidence rating. Since the data base on chronic toxicity is incomplete, the RfD is given a medium confidence rating.

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Documentation of RfD and Review:

Registration Files
Journals

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Agency RfD Review:

First Review: 7/22/86
Second Review:
Verification Date: 7/22/86

U.S. EPA Contact:

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