Oxamyl ; CASRN 23135-22-0

Human health assessment information on a chemical substance is included in the IRIS database only after a comprehensive review of toxicity data, as outlined in the IRIS assessment development process. Sections I (Health Hazard Assessments for Noncarcinogenic Effects) and II (Carcinogenicity Assessment for Lifetime Exposure) present the conclusions that were reached during the assessment development process. Supporting information and explanations of the methods used to derive the values given in IRIS are provided in the guidance documents located on the IRIS website.

STATUS OF DATA FOR Oxamyl

File First On-Line 03/31/1987

Category (section)	Assessment Available?	Last Revised
Oral RfD (I.A.)	yes	03/31/1987
Inhalation RfC (I.B.)	not evaluated	
Carcinogenicity Assessment (II.)	not evaluated	

I. Chronic Health Hazard Assessments for Noncarcinogenic Effects

I.A. Reference Dose for Chronic Oral Exposure (RfD)

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The oral Reference Dose (RfD) is based on the assumption that thresholds exist for certain toxic effects such as cellular necrosis. It is expressed in units of mg/kg-day. In general, the RfD is an estimate (with uncertainty spanning perhaps an order of magnitude) of a daily exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime. Please refer to the Background Document for an elaboration of these concepts. RfDs can also be derived for the noncarcinogenic health effects of

substances that are also carcinogens. Therefore, it is essential to refer to other sources of information concerning the carcinogenicity of this substance. If the U.S. EPA has evaluated this substance for potential human carcinogenicity, a summary of that evaluation will be contained in Section II of this file.

I.A.1. Oral RfD Summary

Critical Effect	Experimental Doses*	UF	MF	RfD
Decreased body weight gain and food consumption **2-Year Rat Feeding/ Oncogenic Study** **du Pont, 1972a**	NOEL: 50 ppm (2.5 mg/kg/day) LEL: 100 ppm (5 mg/kg/day)	100	1	2.5E-2 mg/kg/day

*Conversion Factors: 1 ppm = 0.05 mg/kg/day (assumed rat food consumption)

I.A.2. Principal and Supporting Studies (Oral RfD)

E.I. du Pont de Nemours and Company. 1972a. MRID No. 00083352, 00113400. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Four hundred twenty albino rats (55/sex/dose) were fed 0, 50, 100 and 150 ppm oxamyl in their diets for 2 years. At 100 and 150 ppm, there was a decreased rate of body weight gain. Cholinesterase depression was observed in the males at 150 ppm after 8 days, but returned to normal by 1 month. No clinical signs of toxicity were observed at 150 ppm.

I.A.3. Uncertainty and Modifying Factors (Oral RfD)

UF — An uncertainty factor of 100 was used to account for the inter- and intraspecies differences. Although significant data gaps exist (studies must be repeated), an additional UF was not considered necessary since existing information on oxamyl indicates that the toxicological endpoint(s) will not be affected by repeating the studies.

MF — None

I.A.4. Additional Studies/Comments (Oral RfD)

The Registration Standard is scheduled to be completed by April of 1987.

Data Considered for Establishing the RfD:

1) 2-Year Feeding (oncogenic) - rat: Principal study - see previous description; core grade supplementary

2) 2-Year Feeding - dog: NOEL=100 ppm (2.5 mg/kg/day); LEL=150 ppm (3.75 mg/kg/day) (liver effects); core grade supplementary (MTD not reached) (du Pont, 1972b)

3) 3-Generation Reproduction - rat: Fetotoxic NOEL=50 ppm (2.5 mg/kg/day); Fetotoxic LEL=100 ppm (5 mg/kg/day) (decreased weanling body weight); core grade supplementary (summary data missing) (du Pont, 1971a)

4) Teratology - rat: Maternal NOEL=50 ppm (2.5 mg/kg/day); Maternal LEL=100 ppm (5 mg/kg/day) (decreased food consumption and body weight); core grade supplementary (du Pont, 1971b)

5) Teratology - rabbit: Fetotoxic NOEL=4 mg/kg; core grade minimum (du Pont, 19780)

Data Gap(s): Chronic Rat Feeding Study; Chronic Dog Feeding Study; Rat Reproductive Study; Rat Teratology Study

I.A.5. Confidence in the Oral RfD

Study — Low
Database — Medium
RfD — Medium

The critical study was of inadequate quality and is given a low confidence rating. Other studies in the database are supportive; confidence in the data base can be considered medium to low. Confidence in the RfD can also be considered medium to low.

I.A.6. EPA Documentation and Review of the Oral RfD

Pesticide Registration Files

Agency Work Group Review — 12/09/1986

Verification Date — 12/09/1986

Screening-Level Literature Review Findings — A screening-level review conducted by an EPA contractor of the more recent toxicology literature pertinent to the RfD for oxamyl conducted in August 2003 identified one or more significant new studies. IRIS users may request the references for those studies from the IRIS Hotline at hotline.iris@epa.gov or 202-566-1676.

I.A.7. EPA Contacts (Oral RfD)

Please contact the IRIS Hotline for all questions concerning this assessment or IRIS, in general, at (202)566-1676 (phone), (202)566-1749 (FAX) or hotline.iris@epa.gov (internet address).

I.B. Reference Concentration for Chronic Inhalation Exposure (RfC)

Substance Name — Oxamyl
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Not available at this time.

II. Carcinogenicity Assessment for Lifetime Exposure

Substance Name — Oxamyl
CASRN — 23135-22-0

This substance/agent has not undergone a complete evaluation and determination under US EPA's IRIS program for evidence of human carcinogenic potential.

III. [reserved]
IV. [reserved]
V. [reserved]

VI. Bibliography

Substance Name — Oxamyl
CASRN — 23135-22-0

VI.A. Oral RfD References

E.I. du Pont de Nemours and Company. 1971a. MRID No. 00066912. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

E.I. du Pont de Nemours and Company. 1972b. MRID No. 00114400. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

E.I. du Pont de Nemours and Company. 1972a. MRID No. 00083352, 00113400. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

E.I. du Pont de Nemours and Company. 1972b. MRID No. 00083352, 00113400. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

E.I. du Pont de Nemours and Company. 1980. MRID No. 00063009. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

VI.B. Inhalation RfC References

None

VI.C. Carcinogenicity Assessment References

None

VII. Revision History

Substance Name — Oxamyl
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Date	Section	Description
10/28/2003	I.A.6	Screening-Level Literature Review Findings message has been added.

VIII. Synonyms

Substance Name — Oxamyl
CASRN — 23135-22-0
Last Revised — 03/31/1987

- 23135-22-0
- D-1410
- 2-Dimethylamino-1-(Methylthio)Glyoxal O-Methylcarbamoylmonoxime
- DPX 1410
- Methyl 2-(Dimethylamino)-N- (((Methylamino)Carbonyl)Oxy)-2-Oxoethanimidothioate
- Methyl N',N'-Dimethyl-N-((Methylcarbamoyl)Oxy)-1-Thiooxamimidate
- Oxamimidic Acid, N',N'-Dimethyl-N-((Methylcarbamoyl)oxy)-1(Methylthio)
- Oxamyl
- S-Methyl 1-(Dimethylcarbamoyl)-N-(Methylcarbamoyl)Oxy)Thioformimidate
- Thioxamyl
- Vydate