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Oxyfluorfen; CASRN 42874-03-3

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 Oxyfluorfen

File First On-Line 01/31/1987

Category (section)	Assessment Available?	Last Revised
Oral RfD (I.A.)	yes	01/31/1987
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)

Substance Name — Oxyfluorfen

CASRN — 42874-03-3

Primary Synonym — Goal

Last Revised — 01/31/1987

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
Increased absolute liver weight and nonneoplastic lesions	NOEL: 2 ppm (0.3 mg/kg/day)	100	1	3E-3 mg/kg/day
20-Month Mouse Feeding Study	LEL: 20 ppm (3 mg/kg/day)			
Rohm & Haas, 1977a				

*Conversion Factors: 1 ppm = 0.15 mg/kg/day (assumed mouse food consumption)

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

Rohm and Haas Company. 1977a. MRID No. 00037939. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Fifty Charles River CD-1 mice/sex/dose were fed diets containing 2, 20, and 200 ppm of oxyfluorfen (87.7% active ingredient) for 20 months. The following results were noted: 1) increased absolute liver weight at 20 ppm; 2) necrosis, regeneration, and hyperplastic nodules in liver at 20 ppm; and 3) increased incidence of effects at 200 ppm.

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

UF — An uncertainty factor of 100 was used to account for the interspecies differences and the spectrum of sensitivity in the human population.

MF — None

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

Data Considered for Establishing the RfD

- 1) 20-Month Feeding (oncogenic) - mice: Principal study - see previous discussion; core grade minimum
- 2) 2-Year Feeding - dog: NOEL=100 ppm (2.5 mg/kg/day); LEL=600 ppm (15 mg/kg/day), (increased liver weight, elevated alkaline phosphatase; increased bile pigmented hepatocytes); core grade minimum (Rohm and Haas, 1981)
- 3) 2-Year Feeding (oncogenic) - rat: Systemic NOEL=40 ppm (2 mg/kg/day); Systemic LEL=800/600 ppm (40/30 mg/kg/day) (minimal hypertrophy of centrilobular hepatocytes of the liver); core grade minimum (Rohm and Haas, 1977b)
- 4) 3-Generation Reproduction - rat: NOEL=10 ppm (0.5 mg/kg/day); LEL=100 ppm (5 mg/kg/day); core grade minimum (Rohm and Haas, 1977c)
- 5) Teratology - rat: Fetotoxic NOEL=100 mg/kg/day; Fetotoxic LEL=1000 mg/kg/day; Teratogenic NOEL=1000 mg/kg/day (HDT); core grade minimum (Rohm and Haas, 1977d)
- 6) Teratology - rabbit: Maternal NOEL=10 mg/kg/day; Maternal LEL=30 mg/kg/day (anorexia, decreased body weight gain); Fetotoxic NOEL=10 mg/kg/day; Fetotoxic LEL=30 mg/kg/day (fused sternebrae); Teratogenic NOEL=1000 mg/kg/day; core grade supplementary (Rohm and Haas, 1982)

Data Gap(s): Rabbit Teratology Study

I.A.5. Confidence in the Oral RfD

Study — High
Database — High
RfD — High

The principal study appears to be of good quality and, therefore, is given a high rating. The data and supporting studies are of high quality; thus, the database is given a high confidence rating. High confidence in the RfD follows.

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

Pesticide Registration Files

Agency Work Group Review — 06/10/1986

Verification Date — 06/10/1986

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 Oxyfluorfen conducted in September 2002 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 — Oxyfluorfen

CASRN — 42874-03-3

Primary Synonym — Goal

Not available at this time.

II. Carcinogenicity Assessment for Lifetime Exposure

Substance Name — Oxyfluorfen

CASRN — 42874-03-3

Primary Synonym — Goal

Not available at this time.

III. [reserved]

IV. [reserved]

V. [reserved]

VI. Bibliography

Substance Name — Oxyfluorfen

CASRN — 42874-03-3

Primary Synonym — Goal

VI.A. Oral RfD References

Rohm and Haas Company. 1977a. MRID No. 00037939. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Rohm and Haas Company. 1977b. MRID No. 00083445, 00135072. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Rohm and Haas Company. 1977c. MRID No. 00135073. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Rohm and Haas Company. 1977d. MRID No. 00083444. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Rohm and Haas Company. 1981. MRID No. 00071918. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Rohm and Haas Company. 1982. MRID No. 00094502. 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 — Oxyfluorfen
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Primary Synonym — Goal

Date	Section	Description
12/03/2002	I.A.6.	Screening-Level Literature Review Findings message has been added.

VIII. Synonyms

Substance Name — Oxyfluorfen
CASRN — 42874-03-3
Primary Synonym — Goal
Last Revised — 01/31/1987

- 42874-03-3
- 2-CHLORO-1-(3-ETHOXY-4-NITROPHENOXY)-4-TRIFLUOROMETHYLBENZENE
- 2-CHLORO-alpha,alpha,alpha-TRIFLUORO-p-TOLYL-3-ETHOXY-4-NITROPHENYL ETHER
- ETHER, 2-CHLORO-alpha,alpha,alpha-TRIFLUORO-p-TOLYL 3-ETHOXY-4-NITROPHENYL
- GOAL
- Oxyfluorfen
- RH-2915