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Triallate; CASRN 2303-17-5

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 Triallate

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)

Substance Name — Triallate

CASRN — 2303-17-5

Last Revised — 03/31/1987

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 hemosiderin deposition, serum alkaline phosphatase, and liver weight in females	NOAEL: 1.275 mg/kg/day LOAEL: 4.25 mg/kg/day	100	1	1.3E-2 mg/kg/day
2-Year Dog Feeding Study				
Monsanto, 1979				

*Conversion Factors: see text

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

Monsanto Company. 1979. MRID No. 00029455; HED Doc. No. 005525. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Four beagle dogs/sex/group were fed 0, 1.5, 5 and 15 mg/kg triallate ad libitum for 24 months. At the end of the study, animals were sacrificed and necropsied. An increase in liver weight in the high-dose group of males and mid-dose group of females was observed. An increase in hemosiderin deposition, particularly in the spleen, was noted in all triallate-treated groups, and an increase in serum alkaline phosphatase levels was observed in the mid-dose and high-dose groups. The effect of increased hemosiderin deposition at the low dose was slight to minimal; at higher doses there were no effects related to the hematopoietic system. The amount of triallate in the diets was calculated to be 1.275 mg/kg/day, 4.25 mg/kg/day, and 12.75 mg/kg/day as a result of dogs receiving, on the average, 85% of the targeted doses in their diets.

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

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

MF — None

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

None

Data Considered for Establishing the RfD:

- 1) 2-Year Feeding - dog: Principal study - see previous description; core grade minimum
- 2) 2-Year Feeding - mouse: NOEL=20 ppm (3 mg/kg/day); LEL=60 ppm (9 mg/kg/day) (increased splenic hematopoiesis for males); core grade minimum (Monsanto Co., 1983)
- 3) Chronic Feeding - hamster: NOEL=50 ppm (5 mg/kg/day); LEL=300 ppm (30 mg/kg/day) (decreased triglycerides in males); core grade supplementary (urinalyses and clotting measurements were reported) (Monsanto Co., 1984a)
- 4) 2-Generation Reproduction - rat: Tentative NOEL=150 ppm (7.5 mg/kg/day); Tentative LEL=600 ppm (30 mg/kg/day) (head bobbing and circling in pregnant females, reduced mean pup weight at birth); core grade minimum (Monsanto Co., 1984b)
- 5) Teratology - rat: Maternal and Fetotoxic NOEL=30 mg/kg/day; Maternal and Fetotoxic LEL=90 mg/kg/day (reduced weight and reduced ossification); core grade minimum (Monsanto Co., 1982a)
- 6) Teratology - rabbit: Fetotoxic NOEL=5 mg/kg/day; Fetotoxic LEL=15 mg/kg/day (unossified sternabrae and an increase in skeletal malformations); core grade minimum (Monsanto Co., 1982b)

Data Gap(s): Chronic Rat Feeding Study

I.A.5. Confidence in the Oral RfD

Study — Medium

Database — High

RfD — High

The critical study is of adequate quality and is given a medium confidence rating. The database on chronic toxicity is supportive; therefore, confidence in the database can be considered high to medium. Confidence in the RfD can also be considered high to medium.

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

Pesticide Registration Files

Agency Work Group Review — 12/16/1986

Verification Date — 12/16/1986

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 — Triallate

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Not available at this time.

II. Carcinogenicity Assessment for Lifetime Exposure

Substance Name — Triallate

CASRN — 2303-17-5

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 — Triallate

CASRN — 2303-17-5

VI.A. Oral RfD References

Monsanto Company. 1979. MRID No. 00029455; HED Doc. No. 005525. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Monsanto Company. 1982a. MRID No. 00114260, 92187021; HED Doc. No. 002996, 003651. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Monsanto Company. 1982b. MRID No. 00114261, 92187022; HED Doc. No. 002996. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Monsanto Company. 1983. MRID No. 00132859, 92187020; HED Doc. No. 004942, 006996. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Monsanto Company. 1984a. MRID No. 00132881, 00151790, 00159797, 00163574, 92187052; HED Doc. No. 006996, 007279. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Monsanto Company. 1984b. MRID No. 00132880, 00144308, 92187023; HED Doc. No. 004942, 005735. 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 — Triallate
CASRN — 2303-17-5

Date	Section	Description
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No entries

VIII. Synonyms

Substance Name — Triallate
CASRN — 2303-17-5
Last Revised — 03/31/1987

- 2303-17-5
- AVADEx BW
- CARBAMIC ACID, DIISOPROPYLTHIO-, S-(2,3,3-TRICHLOROALLYL) ESTER
- CP 23426
- DIISOPROPYLTRICHLOROALLYLTHIOCARBAMATE
- DIPHThAL
- FAR-GO
- N-DIISOPROPYLTHIOCARBAMIC ACID S-2,3,3-TRICHLORO-2-PROPENYL ESTER
- N,N-DIISOPROPYL-2,3,3-TRICHLORALLYL-THIOLCARBAMAT
- 2-PROPENE-1-THIOL, 2,3,3-TRICHLORO-, DIISOPROPYLCARBAMATE
- S-2,3,3-TRICHLOROALLYL N,N-DIISOPROPYLTHIOCARBAMATE
- THIOCARBAMIC ACID, N-DIISOPROPYL-, S-2,3,3-TRICHLOROALLYL ESTER
- TRIALLAT
- Triallate
- 2,3,3-TRICHLORALLYL-N,N-(DIISOPROPYL)-THIOCARBAMAT
- 2,3,3-TRICHLOROALLYL DIISOPROPYLTHIOCARBAMATE