

## Chlorothalonil; CASRN 1897-45-6

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 Chlorothalonil

**File First On-Line 03/31/1987**

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

## I. Chronic Health Hazard Assessments for Noncarcinogenic Effects

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

Substance Name — Chlorothalonil

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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
<b>Renal tubular epithelial vacuolation</b>	NOEL: 60 ppm converted to 1.5 mg/kg/day	100	1	1.5E-2 mg/kg/day
<b>2-Year Dog Feeding Study</b>	LEL: 120 ppm (converted to 3 mg/kg/day)			
<b>Diamond Shamrock Chemical, 1970a</b>				

\*Conversion Factors: 1 ppm diet = 0.025 mg/kg/day

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

Diamond Shamrock Chemical Corporation. 1970a. MRID No. 00057702, 00114034. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Groups of eight male and eight female dogs were fed 0, 60, and 120 ppm chlorothalonil for 2 years. Renal tubular epithelial vacuolation and pigmentation were observed at 120 ppm.

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

UF — The UF of 100 accounts for uncertainties in the extrapolation from laboratory animals to humans and for sensitive humans.

MF — None

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

Data Considered for Establishing the RfD:

- 1) 2-Year Feeding - dog: Principal study - see previous description; core grade minimum
- 2) 13-Week Feeding - rat: NOEL=1.5 mg/kg/day; LEL=3.0 mg/kg/day; (irregular intracytoplasmic inclusion bodies in the proximal convoluted tubule of males); core grade guideline (Diamond Shamrock, 1983a)
- 3) 2-Year Feeding (oncogenic) - rat: Systemic NOEL=3.0 mg/kg/day (HDT); no core grade (Diamond Shamrock, 1970b)
- 4) Teratology - rabbit: Maternal NOEL=5 mg/kg/day; Maternal LEL=50 mg/kg/day (4 spontaneous abortions); core grade supplementary (Diamond Shamrock, 1975)
- 5) Teratology - rat: Maternal NOEL=100 mg/kg/day; Maternal LEL=400 mg/kg/day (mortality, reduced body weight, increased resorptions and post implantation bases); core grade guideline (Diamond Shamrock, 1983b)
- 6) 3-Generation Reproduction - rat: Reproductive LEL=75 mg/kg/day (LDT) (depressed pup weight, and gastric and esophageal acanthosis in the offspring); no core grade (Diamond Shamrock, 1967)

Data Gap(s): Rabbit Teratology Study; Rat Reproduction Study

#### **I.A.5. Confidence in the Oral RfD**

Study — High  
Database — Medium  
RfD — Medium

The principal study appears to be of good quality and therefore is given a high confidence rating. The database is supportive, but some of the studies are of low quality. Thus, the database is given medium confidence. Medium confidence in the RfD follows.

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

Pesticide Registration Files

Agency Work Group Review — 04/08/1986

Verification Date — 04/08/1986

### **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](mailto:hotline.iris@epa.gov) (internet address).

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

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Not available at this time.

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## **II. Carcinogenicity Assessment for Lifetime Exposure**

Substance Name — Chlorothalonil  
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Not available at this time.

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**III. [reserved]**

**IV. [reserved]**

**V. [reserved]**

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## **VI. Bibliography**

Substance Name — Chlorothalonil  
CASRN — 1897-45-6

## **VI.A. Oral RfD References**

Diamond Shamrock Agricultural Chemicals. 1967. MRID No. 00038913, 00091288, 00112736. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Diamond Shamrock Chemical Corporation. 1970a. MRID No. 00057702, 00114034. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Diamond Shamrock Chemical Corporation. 1970b. MRID No. 00035559. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Diamond Shamrock Agricultural Chemicals. 1975. MRID No. 00127855. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Diamond Shamrock Agricultural Chemicals. 1983a. MRID No. 00127852. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Diamond Shamrock Agricultural Chemicals. 1983b. MRID No. 00012963, 00130733. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

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## **VI.B. Inhalation RfC References**

None

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## **VI.C. Carcinogenicity Assessment References**

None

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## **VII. Revision History**

Substance Name — Chlorothalonil  
CASRN — 1897-45-6

Date	Section	Description
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No entries

## VIII. Synonyms

Substance Name — Chlorothalonil

CASRN — 1897-45-6

Last Revised — 03/31/1987

- 1897-45-6
- 1,3-BENZENEDICARBONITRILE, 2,4,5,6-TETRACHLORO-
- BRAVO
- BRAVO 6F
- BRAVO-W-75
- CHLOROALONIL
- Chlorothalonil
- CHLORTHALONIL
- DAC 2787
- DACONIL
- DACONIL 2787
- DACOSOIL
- 1,3-DICYANOTETRACHLOROBENZENE
- EXOTHERM
- EXOTHERM TERMIL
- FORTURF
- ISOPHTHALONITRILE, TETRACHLORO-
- ISOPHTHALONITRILE, 2,4,5,6-TETRACHLORO-
- NCI-C00102
- NOPCOCIDE
- NOPCOCIDE N40D N96
- NOPCOCIDE N-96
- SWEEP
- TCIN
- m-TCPN
- TERMIL
- 2,4,5,6-TETRACHLORO-3-CYANOBENZONITRILE
- TETRACHLOROISOPHTHALO-NITRILE
- meta-TETRACHLOROPHTHALODINITRILE
- m-TETRACHLOROPHTHALONITRILE
- TPN