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Bayleton; CASRN 43121-43-3

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 Bayleton

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 — Bayleton

CASRN — 43121-43-3

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
Decreased body weight gain, erythrocyte count and hemoglobin level	NOEL: 50 ppm (2.5 mg/kg/day)	100	1	3E-2 mg/kg/day
2-Year Rat Dietary Study	LEL: 500 ppm (25 mg/kg/day)			
Mobay Chemical, 1978				

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

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

Mobay Chemical Corporation. 1978a. MRID No. 00032538. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Fifty male and 50 female young Wistar rats were fed 50, 500, or 5000 ppm of Bayleton in the diet for 2 years. A control group was included. Animals were examined daily for physical appearance, body weight, behavioral changes, clinical effects, and pharmacological response. A decrease in body weight gain, erythrocyte count, and hemoglobin level was observed at 500 ppm. At 5000 ppm, cyclic decreases in food consumption accompanied by violent motor reactions were observed. Decreased body weight gain, increased mortality, decreased hemoglobin, decreased hematocrit and thrombocyte count, and increased cholesterol were observed at the high dose.

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

UF — An uncertainty factor of 100 has been used to account for the inter- and intraspecies differences in the extrapolation from laboratory animals to humans.

MF — None

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

Teratogenic studies in rats are positive (cleft palates).

Data Considered for Establishing the RfD:

- 1) 2-Year Feeding - rat: Principal study - see previous description; core grade minimum
- 2) 2-Year Feeding - dog: NOEL=100 ppm (2.5 mg/kg/day); LEL=1000 ppm grade minimum (25 mg/kg/day) (no weight gain, increased serum alkaline phosphatase and N-demethylase activity, and increased liver weight); core grade minimum (Mobay Chemical, 1978b)
- 3) Teratology - rat: Teratogenic NOEL=50 mg/kg/day; Teratogenic LEL=100 mg/kg/day (cleft palates); Maternal Toxicity NOEL=10 mg/kg/day; Maternal Toxicity LEL=25 mg/kg/day (increased motor activity and depression of maternal weight gain); core grade minimum (Mobay Chemical, 1981)
- 4) Teratology - rabbit: NOEL=50 mg/kg/day (HDT); Maternal Toxicity NOEL=50 mg/kg/day (HDT); core grade minimum (Mobay Chemical, 1976)
- 5) 3-Generation Reproduction - rat: Fetotoxic NOEL=50 ppm (2.5 mg/kg/day); LEL=300 ppm (15 mg/kg/day) (decreased pup weight gain); Maternal Toxicity NOEL=300 ppm; Maternal Toxicity LEL=1800 ppm (90 mg/kg/day) (decreased body weight gain, effect on lactation performance); Reproductive NOEL=300 ppm; Reproductive LEL=1800 ppm (decreased fertility, decreased litter size); core grade minimum (Mobay Chemical, 1979)

Other Data Reviewed:

- 1) 2-Year Feeding (oncogenic) - mice: Systemic NOEL=50 ppm (7.50 mg/kg/day); Systemic LEL=300 ppm (45 mg/kg/day) (increased mortality at 12 months); core grade minimum (Mobay Chemical, 1980)

Data Gap(s): None

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. Additional studies are of medium to high quality. Moreover, the 2-year dog study provides the same NOEL and RfD. Therefore, the database is given a high confidence. High confidence in the RfD follows.

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

Office of Pesticide Programs Files

Agency Work Group Review — 03/11/1986

Verification Date — 03/11/1986

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 Bayleton conducted in November 2001 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 — Bayleton
CASRN — 43121-43-3

Not available at this time.

II. Carcinogenicity Assessment for Lifetime Exposure

Substance Name — Bayleton
CASRN — 43121-43-30

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 — Bayleton
CASRN — 43121-43-3

VI.A. Oral RfD References

Mobay Chemical Corporation. 1976. MRID No. 00048631, 00060230. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Mobay Chemical Corporation. 1978a. MRID No. 00032538. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Mobay Chemical Corporation. 1978b. MRID No. 00032539. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Mobay Chemical Corporation. 1979. MRID No. 00032541. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Mobay Chemical Corporation. 1980. MRID No. 00069013. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Mobay Chemical Corporation. 1981. MRID No. 00089023. 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 — Bayleton
CASRN — 43121-43-3

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

VIII. Synonyms

Substance Name — Bayleton
CASRN — 43121-43-3
Last Revised — 03/31/1987

- 43121-43-3
- AMIRAL
- BAY 6681 F
- Bayleton
- BAY-MEB-6447
- 2-BUTANONE, 1-(4-CHLOROPHENOXY)-3,3-DIMETHYL-1-(1,2,4-TRIAZOL-1-YL)-
- 1-(4-CHLOROPHENOXY)-3,3-DIMETHYL-1-(1,2,4-TRIAZOL-1-YL)-BUTAN-2-ONE
- 1-(4-CHLOROPHENOXY)-3,3-DIMETHYL-1-(1H-1,2,4-TRIAZOL-1-YL)-2-BUTANONE
- MEB 6447
- TRIADIMEFON
- 1H-1,2,4-TRIAZOLE, 1-((tert-BUTYLCARBONYL-4-CHLOROPHENOXY)METHYL)-