Naled (CASRN 300-76-5)

Reference Dose for Chronic Oral Exposure (RfD)

**Main Contents**

- Category (section)
- Status
- Last Revised

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**I. Chronic Health Hazard Assessments for Noncarcinogenic Effects**

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

Substance Name — Naled
CASRN — 300-76-5
Last Revised — 01/01/1995

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.

NOTE: The Oral RfD for naled may change in the near future pending the outcome of a further review now being conducted by the RfD/RfC Work Group.

**I.A.1. Oral RfD Summary**

<table>
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<th>Critical Effect</th>
<th>Experimental Doses*</th>
<th>UF</th>
<th>MF</th>
<th>RfD</th>
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<td></td>
<td>100</td>
<td>1</td>
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</table>
Brain ChE inhibition

NOEL: 0.2 mg/kg/day

LEL: 2.0 mg/kg/day

2-Year Rat Study, Dietary

Chevron Chemical Co., 1984a

*Conversion Factors: none

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


Sprague-Dawley CD rats were randomly assigned to four groups (55 animals/ sex/group). The animals were fed (by gavage) diets containing 0, 0.2, 2, and 10 mg/kg/day for 2 years. Brain cholinesterase was inhibited approximately 24 and 60% in both male and female rats receiving dose levels of 2 and 10 mg/kg/day, respectively. Also there was a slight inhibition of red blood cell cholinesterase and moderate inhibition of plasma cholinesterase at 10 mg/kg/day.

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

UF — An uncertainty factor of 100 was used to account for the fact that a brain ChE NOEL was used in determining the RfD. This factor accounts for both the expected inter- and intraspecies variability to the toxicity of this chemical in lieu of specific data.

MF — None

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

Data Considered for Establishing the RfD:

1) 2-Year Feeding/Oncogenic - Rat: Principal study - see previous description; core grade minimum

2) 1-Year Feeding - Dog: NOEL=0.2 mg/kg/day; LEL=2.0 mg/kg/day (inhibition of plasma and RBC ChE, decreased hemoglobin and hematocrit); core grade minimum (Chevron Chemical, 1986)

3) 2-Generation Reproduction - Rat: Parental NOEL=6 mg/kg/day; Parental LEL=18 mg/kg/day (decreased body weight in males); Progeny NOEL=6 mg/kg/day; Progeny LEL=18 mg/kg/day (decreased survival, litter size and pup body weight); core grade minimum (Chevron Chemical, 1985)

4) Teratology - Rat: Maternal NOEL=10 mg/kg/day; Maternal LEL=40 mg/kg/day (body weight loss, tremors, dyspnea, and depressed activity); Teratogenic NOEL=40 mg/kg/day (HDT); Fetotoxic NOEL=40 mg/kg/day (HDT) (Chevron Chemical, 1984b)

5) Teratology - Rabbit: Maternal NOEL=8 mg/kg/day (HDT); Fetotoxic NOEL=8 mg/kg/day (HDT); core grade supplementary (Chevron Chemical, 1984c)

Other Data Reviewed:

1) 89-Week Feeding (oncogenic) - Mice: Systemic NOEL=15 mg/kg/day; Systemic LEL=50-75 mg/kg/day (increased mortality, decreased body weight in males, decreased relative liver weight in females); core grade minimum (Chevron Chemical, 1984d)

Data Gap(s): Rabbit Teratology Study

I.A.5. Confidence in the Oral RfD

Study — Medium
Database — Medium
RfD — Medium
The critical study is of fair quality and is given a medium rating. The data base has some gaps, but there is a good amount of chronic data in dogs and rodents; therefore, confidence in the database can be considered medium to high. Confidence in the RfD can also be considered medium to high.

_I.A.6. EPA Documentation and Review of the Oral RfD_

Pesticide Registration Standard, December 1982

Pesticide Registration Files


Verification Date — 07/22/1986

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 Naled conducted in November 2001 did not identify any critical new studies. IRIS users who know of important new studies may provide that information to 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 — Naled
CASRN — 300-76-5

Not available at this time.

_II. Carcinogenicity Assessment for Lifetime Exposure_

Substance Name — Naled
CASRN — 300-76-5

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 — Naled
CASRN — 300-76-5
Last Revised — 03/01/1991

_VI.A. Oral RfD References_


Chevron Chemical Company. 1984c. MRID No. 00146496. 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__

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<td>08/01/1995</td>
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<td>EPA's RfD/RfC and CRAVE workgroups were discontinued in May, 1995. Chemical substance reviews that were not completed by September 1995 were taken out of IRIS review. The IRIS Pilot Program replaced the workgroup functions beginning in September, 1995.</td>
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<td>04/01/1997</td>
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__VIII. Synonyms__

Substance Name — Naled
CASRN — 300-76-5

- 300-76-5
- Alvora
- Bromchlorophos
- Bromex
- Bromex 50
- BRP
- Dibrom
- Dibromfos
- 1,2-Dibromo-2,2-dichloroethyl(dimethyl phosphate
- Dimethyl(1,2-dibromo-2,2-dichloroethyl)phosphate
- ENT 24988
- Fosbrom
- Naled
- Phosphoric acid, 1,2-dibromo-2,2-dichloroethyl dimethyl ester
- RE 4355