

Isopropalin; CASRN 33820-53-0

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 Isopropalin

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 — Substance Name — Isopropalin
CASRN — 33820-53-0
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
Reduced hemoglobin concentration, lowered hematocrits, and altered organ weights	NOEL: 250 ppm (15 mg/kg/day)	1000	1	1.5E-2 mg/kg/day
	LEL: 750 ppm			
90-Day Rat Feeding Study				
Elanco Products, 1969a				

*Conversion Factors -- mg/kg/day determined from actual food consumption

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

Elanco Products Company. 1969a. MRID No. 00002472. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Male and female rats were divided into 4 groups and fed the following concentrations of isopropalin in their diets: 0, 250 ppm, 750 ppm, and 2250 ppm. Average daily intake was 32, 93, and 288 mg/kg/day at the start and decreased to 15, 48, and 192 mg/kg/day by the end of 90 days. No effects were observed at 250 mg/kg/day. Reduced hemoglobin concentrations, lowered hematocrits, and altered organ weights were observed at the higher doses.

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

UF — Based on a subchronic exposure study, an uncertainty factor of 1000 was used to account for inter- and intra-species differences and the insufficient duration of the study to fully assess chronic effects.

MF — None

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

No chronic studies are required for isopropalin because of its use on tobacco. The Agency recognizes that the use of tobacco products is detrimental to the consumer and that the use of this product is voluntary.

Data Considered for Establishing the RfD

- 1) 90-Day Feeding - rat: Principal study - see discussion above; no core grade)
- 2) 90-Day Feeding - dog: NOEL=56.25 mg/kg/day (HDT); no core grade (Elanco Products, 1969b)
- 3) Teratology - rat: Fetotoxic NOEL=123 mg/kg/day; Maternal LEL=123 mg/kg/day (LDT); (soft stool and decreased food consumption); core grade minimum (Elanco Products, 1983a)
- 4) Teratology - rabbit: Fetotoxic NOEL=270 mg/kg/day; Maternal NOEL=60 mg/kg/day; Maternal LEL=270 mg/kg/day; (decreased food consumption and body weight); core grade minimum (Elanco Products, 1983b)

Data Gap(s): 1) Rat Reproduction Study

I.A.5. Confidence in the Oral RfD

Study — Medium

Database — Low

RfD — Low

The principal rat study establishing the LEL appears to be fairly comprehensive in scope. However, the minimal number of animals used and the lack of detail in general suggest a rating of medium to low. Because of the lack of chronic and reproductive data, confidence in the database is considered low to medium. Confidence in the RfD can also be considered low to medium.

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

Pesticide Registration Standard (1981)

Pesticide Registration Files

Agency Work Group Review — 11/21/1985, 02/05/1986, 05/18/1986, 06/24/1986

Verification Date — 06/24/1986

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 Isopropalin 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 — Isopropalin
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Not available at this time.

II. Carcinogenicity Assessment for Lifetime Exposure

Substance Name — Isopropalin
CASRN — 33820-53-0

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 — Isopropalin
CASRN — 33820-53-0

VI.A. Oral RfD References

Elanco Products Company. 1969a. MRID No. 00002472. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Elanco Products Company. 1969b. MRID No. 00134907. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Elanco Products Company. 1983a. MRID No. 00131230. Available from EPA. Write to FOI, EPA, Washington, DC 20460.

Elanco Products Company. 1983b. MRID No. 00131231. 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 — Isopropalin

CASRN — 33820-53-0

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

VIII. Synonyms

Substance Name — Isopropalin

CASRN — 33820-53-0

Last Revised — 01/31/1987

- 33820-53-0
- 34113-21-8
- Benzenamine, 4-(1-methylethyl)-2,6-dinitro-N,N-dipropyl-
- Cumidine, 2,6-dinitro-N,N-dipropyl-
- EL 179
- Isopropalin
- 4-Isopropyl-2,6-dinitro-N,N-dipropylaniline
- Paarlan