Propargyl alcohol; CASRN 107-19-7

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 Propargyl alcohol

File First On-Line 11/01/1990

Category (section)	Assessment Available?	Last Revised
Oral RfD (I.A.)	yes	11/01/1990
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 — Propargyl alcohol
CASRN — 107-19-7
Last Revised — 11/01/1990

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
Renal and hepatotoxicity **Rat Oral Subchronic Study** **U.S. EPA, 1987**	NOAEL: 5 mg/kg/day LOAEL: 15 mg/kg/day	3000	1	2E-3 mg/kg/day

* Conversion Factors: Actual dose tested

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

U.S. EPA. 1987. Rat oral subchronic toxicity study with propargyl alcohol. Study conducted by the Toxicity Research Laboratory for the Office of Solid Waste, Washington, DC.

Four groups of male and female rats (30/sex/group) were dosed orally with 0, 5, 15, and 50 mg/kg of propargyl alcohol daily for 13 weeks. The first 10 rats of each group were sacrificed on days 28-29 after dosing and the remaining rats were sacrificed on days 91 or 92 after dosing. Parameters examined included body and organ weight changes, food consumption, and hematological and histopathological evaluations. Treatment-related mortality was reported in the 50-mg/kg dosage group, although the precise cause was not identified. Hepatocytic megalocytosis with a less prominent proliferation of the bile ducts and cytoplasmic vacuolation of hepatocytes was observed in all rats in the 50 mg/kg group dosed for 1 or 3 months, in all 15 mg/kg rats dosed for 3 months, and in 9/10 males and 5/10 females dosed for 1 month. In the low-dose group, megalocytosis was seen only in one rat treated for 3 months. Karyomegaly of renal tubular epithelial cells was reported to occur in a dose- response fashion in the mid- and high-dose groups, but not in the low-dosage group. Hematological changes and some enzyme changes characteristic of liver damage were seen in the mid- and high-dose animals and were considered to be treatment-related. Treatment-related effects at the 15 mg/kg/day dose level included increased liver weights in both genders, increased kidney weights in females, and megalocytosis of the liver after 4 and 13 weeks of dosing; this dose is considered a LOAEL. The

daily oral administration of 5 mg/kg of propargyl alcohol produced no apparent treatment-related effects and is considered the NOAEL for this study.

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

UF — An uncertainty factor of 3000 was used: 10 for interspecies conversion, 10 for intraspecies sensitivity differences, 10 for subchronic study use for chronic RfD derivation and 3 for the lack of toxicity data in a second species and reproductive/developmental studies.

MF — None

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

No other chronic, subchronic, or developmental/reproductive toxicity studies were found in the literature.

I.A.5. Confidence in the Oral RfD

Study — Medium
Database — Low
RfD — Low

The critical study identified both a NOAEL and a LOAEL for multiple endpoints and is considered to be of medium confidence. Confidence in the database is low due to the lack of supporting subchronic, chronic, and reproductive/developmental studies. Low confidence in the RfD follows.

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

Source Document — This assessment is not presented in any existing U.S. EPA document.

Other EPA Documentation — U.S. EPA, 1987

Agency Work Group Review — 02/21/1990

Verification Date — 02/21/1990

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 Propargyl alcohol conducted in September 2002 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 — Propargyl alcohol
CASRN — 107-19-7

Not available at this time.

II. Carcinogenicity Assessment for Lifetime Exposure

Substance Name — Propargyl alcohol
CASRN — 107-19-7

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 — Propargyl alcohol
CASRN — 107-19-7

VI.A. Oral RfD References

U.S. EPA. 1987. Rat oral subchronic toxicity study with propargyl alcohol. Study conducted by the Toxicity Research Laboratory for the Office of Solid Waste, Washington, DC.

VI.B. Inhalation RfC References

None

VI.C. Carcinogenicity Assessment References

None

VII. Revision History

Substance Name — Propargyl alcohol
CASRN — 107-19-7

Date	Section	Description
11/01/1990	I.A.	Oral RfD summary on-line
12/03/2002	I.A.6.	Screening-Level Literature Review Findings message has been added.

VIII. Synonyms

Substance Name — Propargyl alcohol
CASRN — 107-19-7
Last Revised — 11/01/1990

- 107-19-7
- 2-Propyn-1-ol
- Ethynylcarbinol
- HSDB 6054
- METHANOL, ETHYNYL-
- NA 1986
- NSC 8804
- Propargyl alcohol
- PROPYNYL ALCOHOL
- RCRA WASTE NUMBER P102
- 1-HYDROXY-2-PROPYNE
- 1-propyn-3-ol
- 2-PROPYN-1-OL
- 2-PROPYNOL
- 2-PROPYNYL ALCOHOL
- 3-HYDROXY-1-PROPYNE
- 3-PROPYNOL