

Acenaphthylene; CASRN 208-96-8

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 Acenaphthylene

File First On-Line 01/01/1991

Category (section)	Assessment Available?	Last Revised
Oral RfD (I.A.)	not evaluated	
Inhalation RfC (I.B.)	not evaluated	
Carcinogenicity Assessment (II.)	yes	01/01/1991

I. Chronic Health Hazard Assessments for Noncarcinogenic Effects

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

Substance Name — Acenaphthylene
CASRN — 208-96-8

Not available at this time.

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

Substance Name — Acenaphthylene
CASRN — 208-96-8

Not available at this time.

II. Carcinogenicity Assessment for Lifetime Exposure

Substance Name — Acenaphthylene
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Last Revised — 01/01/1991

Section II provides information on three aspects of the carcinogenic assessment for the substance in question; the weight-of-evidence judgment of the likelihood that the substance is a human carcinogen, and quantitative estimates of risk from oral exposure and from inhalation exposure. The quantitative risk estimates are presented in three ways. The slope factor is the result of application of a low-dose extrapolation procedure and is presented as the risk per (mg/kg)/day. The unit risk is the quantitative estimate in terms of either risk per ug/L drinking water or risk per ug/cu.m air breathed. The third form in which risk is presented is a drinking water or air concentration providing cancer risks of 1 in 10,000, 1 in 100,000 or 1 in 1,000,000. The rationale and methods used to develop the carcinogenicity information in IRIS are described in The Risk Assessment Guidelines of 1986 (EPA/600/8-87/045) and in the IRIS Background Document. IRIS summaries developed since the publication of EPA's more recent Proposed Guidelines for Carcinogen Risk Assessment also utilize those Guidelines where indicated (Federal Register 61(79):17960-18011, April 23, 1996). Users are referred to Section I of this IRIS file for information on long-term toxic effects other than carcinogenicity.

II.A. Evidence for Human Carcinogenicity

II.A.1. Weight-of-Evidence Characterization

Classification — D; not classifiable as to human carcinogenicity

Basis — Based on no human data and inadequate data from animal bioassays.

II.A.2. Human Carcinogenicity Data

None.

II.A.3. Animal Carcinogenicity Data

Inadequate. No tumors were observed in a lifetime study, when 0.25% acenaphthylene (purity not specified) was applied to the skin (dose, frequency and duration not stated) of mice (sex and strain not specified) (Cook, 1932). Survival was 65% at 6 months, and 35% at 1 year. It is not stated whether a control group was used. In the series of experiments, however, the dermal application of other polycyclic aromatic hydrocarbons did result in the formation of mouse skin tumors.

II.A.4. Supporting Data for Carcinogenicity

Acenaphthylene (1 mM) yielded positive results in a *Salmonella typhimurium* forward mutation assay (Kaden et al., 1979) and was not positive in a *Salmonella typhimurium* TA98 and TA100 in the presence of hepatic homogenates (Bos et al., 1988).

II.B. Quantitative Estimate of Carcinogenic Risk from Oral Exposure

None.

II.C. Quantitative Estimate of Carcinogenic Risk from Inhalation Exposure

None.

II.D. EPA Documentation, Review, and Contacts (Carcinogenicity Assessment)

II.D.1. EPA Documentation

Source Document — U.S. EPA, 1990

The 1990 Drinking Water Criteria Document for Polycyclic Aromatic Hydrocarbons has received Agency and external review.

II.D.2. EPA Review (Carcinogenicity Assessment)

Agency Work Group Review — 02/07/1990

Verification Date — 02/07/1990

II.D.3. EPA Contacts (Carcinogenicity Assessment)

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).

III. [reserved]

IV. [reserved]

V. [reserved]

VI. Bibliography

Substance Name — Acenaphthylene

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VI.A. Oral RfD References

None

VI.B. Inhalation RfC References

None

VI.C. Carcinogenicity Assessment References

Bos, R.P., J.L.G. Theuws, F.J. Jongeneelen and P.Th. Henderson. 1988. Mutagenicity of bi-, tri-, and tetra-cyclic aromatic hydrocarbons in the "taped-plate assay" and in the conventional Salmonella mutagenicity assay. *Mutat. Res.* 204: 203-206.

Cook, J.W. 1932. The production of cancer by pure hydrocarbons -- Part II. Proc. Royal Soc. London S.B. 11: 485-496.

Kaden, D.A., R.A. Hites and W.G. Thilly. 1979. Mutagenicity of soot and associated polycyclic aromatic hydrocarbons to *Salmonella typhimurium*. Cancer Res. 39: 4152-4159.

U.S. EPA. 1990. Drinking Water Criteria Document for Polycyclic Aromatic Hydrocarbons (PAHs). Prepared by the Office of Health and Environmental Assessment, Environmental Criteria and Assessment Office, Cincinnati, OH for the Office of Drinking Water, Washington, DC. (Final Draft)

VII. Revision History

Substance Name — Acenaphthylene
CASRN — 208-96-8

Date	Section	Description
01/01/1991	II.	Carcinogen assessment on-line

VIII. Synonyms

Substance Name — Acenaphthylene
CASRN — 208-96-8
Last Revised — 01/01/1991

- 208-96-8
- Acenaphthylene
- Cyclopenta(de)naphthalene
- HSDB 2661
- NSC 59821