

Arsenic, Inorganic

CASRN 7440-38-2 | DTXSID4023886

- [Toxicological Review \(PDF\)](#) (318 pp, 17.0 MB)
- [IRIS Summary \(PDF\)](#) (6 pp, 422.9 KB)
- [Workshop & meeting details from the development of the draft IRIS Assessment for inorganic arsenic](#)

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Values](#)

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IRIS Toxicological Review of Inorganic Arsenic (Public Comment and External Review Draft)

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Notice

[UPDATE] In Dec 2023, EPA released [BMD Model Code and BMD Modeling Results](#) provided for the draft IRIS Toxicological Review of Inorganic Arsenic. This was announced in the Federal Register for a 15-day public comment and review period. [[Federal Register Notice Dec 29, 2023](#)]

Overview

In October 2023, the IRIS Program released the draft IRIS Toxicological Review of Inorganic Arsenic for public comment and external peer review. The IRIS assessment of inorganic arsenic will undergo an independent external scientific peer review managed by EPA's Science Advisory Board (SAB). Additional information about the peer review meeting can be found on the [SAB website](#).

Related Links

- [EPA Chemicals Dashboard](#)
- [Arsenic, Inorganic](#)
- [Workshop and Meetings from the Development of the Draft IRIS Assessment for inorganic Arsenic](#)
- [eChemPortal](#)
- [Arsenic, Inorganic](#)

Critical Effect

Citation

U.S. EPA. IRIS Toxicological Review of Inorganic Arsenic (Public Comment and External Review Draft). U.S. Environmental Protection Agency, Washington, DC, EPA/635/R-23/166, 2023.

Background

Inorganic arsenic is used for hardening copper and lead alloys. It also is used in glass manufacturing as a decolorizing and refining agent, as a component of electrical devices, in the semiconductor industry, and as a catalyst in the production of ethylene oxide. Arsenic compounds are used as a mordant in the textile industry, for preserving hides, as medicinals, pesticides, pigments, and wood preservatives.

Arsenic is also found naturally in the environment and is typically present in soil and water at detectable levels. Sources of human exposure to inorganic arsenic include drinking water, diet, air, and soils (which can contain naturally occurring arsenic or contamination from anthropogenic sources). This draft IRIS health assessment addresses cancer and non-cancer human health effects that may result from chronic exposure to this chemical.

History/Chronology

| Date | Description |
|----------|--|
| Dec 2023 | EPA released BMD Model Code and BMD Modeling Results provided for the draft IRIS Toxicological Review of Inorganic Arsenic for a 15-day comment period. [Federal Register Notice Dec 29, 2023] |
| Oct 2023 | EPA release the draft IRIS Toxicological Review of Inorganic Arsenic for a 60-day public comment period and external peer review. EPA also released the interagency science consultation comments from reviewers. [Federal Register Notice: Oct 16, 2023] |
| Nov 2022 | EPA sent an interagency science consultation inorganic arsenic draft for review and comment. |
| Jul 2019 | EPA posted the summary of public comments document received on the IRIS inorganic arsenic protocol. |
| May 2019 | EPA released the Updated Problem Formulation and Systematic Review Protocol for the IRIS inorganic Arsenic Assessment. EPA posted an errata sheet outlining an update that was made to the protocol and posted on this site on June 20, 2019. [Federal Register Notice May 28, 2019] |

Systems



[Cardiovascular](#)



[Endocrine](#)

Tumor Sites



[Respiratory](#)



[Urinary](#)

Chemical Structure for Arsenic,

| Date | Description |
|----------|--|
| Dec 2015 | The National Academies of Science hosted a meeting on the review of EPA's IRIS Toxicological Assessment of Inorganic Arsenic (Preliminary Meeting Materials) . |
| Apr 2015 | EPA released a revised ADP and other preliminary materials and held two public meetings (webinars). |
| Jun 2014 | EPA held a public science meeting to present and encourage comments on the ADP, preliminary assessment materials, and key science issues. |
| Nov 2013 | NRC released the interim report, Critical Aspects of EPA's IRIS Assessment of iAs and provided recommendations; NRC supported EPA's plan. |
| May 2013 | EPA submitted a draft Assessment Development Plan (ADP) and preliminary assessment materials to NRC for review. |
| 2013 | EPA held eight science issues public webinars (Mar–July). |
| Jan 2013 | EPA held a public planning and scoping meeting for development of a new IRIS Toxicological Review of Inorganic Arsenic (cancer and noncancer). |
| 2011 | Congress directed EPA to contract with the National Research Council (NRC) to review the draft assessment (cancer and noncancer). |
| Oct 2010 | SAB announced a public teleconference to conduct a quality review of the draft report to be held on November 22, 2010. [Federal Register Oct 25, 2010] |
| Feb 2010 | EPA released the revised draft IRIS inorganic arsenic assessment (cancer) for public comment and peer review, SAB announced public teleconference to conduct a quality review of the draft report to be held on November 22, 2010. [Federal Register Notice Oct 25, 2010], and SAB completed its review of the draft assessment. |
| Jun 2009 | EPA hosted an interagency science consultation on the draft IRIS Toxicological Review of Inorganic Arsenic (cancer). |
| Oct 2008 | Draft IRIS Toxicological Review for Inorganic Arsenic (Cancer) submitted to OMB for interagency review. |
| Jun 2007 | Science Advisory Board (SAB) posted a response to the 2005 EPA reassessment of inorganic arsenic (cancer). |
| Jul 2005 | EPA released the draft IRIS inorganic arsenic assessment in July 2005 for public comment and peer review. |

Inorganic

As

Synonyms

- Arsenic
- Arsenic, inorganic
- Arsenic, inorganic
- Gray-arsenic
- 7440-38-2

[more synonyms](#)

| Date | Description |
|------|---|
| 2003 | EPA started a reassessment of the IRIS assessment for inorganic arsenic. |
| 2001 | NRC reviewed the 2001 Primary Drinking Water Standard for inorganic Arsenic and EPA's supporting risk assessment and makes recommendations for applying epidemiologic data in the cancer health assessment. |
| 2001 | NRC updated the NRC (1999) report and evaluated the toxicological risk and health effects of arsenic as relevant to the 2001 Arsenic Rule. |
| 1999 | NRC reviewed the 1988 IRIS assessment and the available health data for inorganic arsenic and makes recommendations for updating the cancer assessment. |
| 1988 | EPA published the IRIS Health Hazard Assessment for Inorganic Arsenic. |

Status

The toxicological review of inorganic arsenic was released for a 60-day public comment period and external peer review. Following the external peer review meeting, the assessment will be revised, taking into consideration all public and external peer review comments received.

Additional Information

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Download(s)

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- [IRIS Toxicological Review of Inorganic Arsenic \(Public Comment and External Review Draft\) \(PDF\)](#) (264 pp, 13.7 MB, [about PDF](#))
- [IRIS Toxicological Review of Inorganic Arsenic \(Public Comment and External Review Draft\) Supplemental Information \(PDF\)](#) (315 pp, 7.7 MB, [about PDF](#))

- [Final Charge Questions for External Reviewers \(Jan.\) \(PDF\)](#)_ (6 pp, 189.5 KB, [about PDF](#))
- [REVIEW OF EPA'S DRAFT IRIS TOXICOLOGICAL REVIEW OF INORGANIC ARSENIC \(PDF\)](#)_ (83 pp, 1.4 GB, [about PDF](#))
- [IRIS TOXICOLOGICAL REVIEW OF INORGANIC ARSENIC \(FINAL REPORT, 2025\) \(PDF\)](#)_ (318 pp, 169.8 MB, [about PDF](#))

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Document Related Link(s)

- [Updated Problem Formulation and Systematic Review Protocol for the Inorganic Arsenic IRIS Assessment](#)
- [IRIS Toxicological Review of Inorganic Arsenic \(Interagency Science Consultation Draft, 2022\)](#)
- [Bmd Model Code and Bmd Modeling Results for the Inorganic Arsenic IRIS Assessment \(External Review Draft\)](#)

HERO Project

- [Primary Literature Search References Sorted By Author \(Inorganic Arsenic\)](#)
- [Dose-response model code and results](#)

Federal Register Notices

- [FR Notice: Dec 29, 2023](#)
- [FR Notice: Oct 16, 2023](#)

Docket

Comments on the assessment may be submitted and reviewed using the Docket ID [EPA-HQ-ORD-2012-0830](#)

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