



19 October 2022

## *IChEMS Advisory Committee: Advice to the Decision Maker*

# Hexachlorobutadiene (HCBd)

The Advisory Committee on the Environmental Management of Industrial Chemicals (IChEMS Advisory Committee) provides independent, expert advice to the decision maker on matters related to scheduling industrial chemicals under section 28 of the *Industrial Chemicals Environmental Management (Register) Act 2021*. The matters for consideration by the IChEMS Advisory Committee include environmental, social and economic factors.

Rachel Burgess (Acting Branch Head, Chemicals Management Branch), as a delegate for the Minister for the Environment, requested that the IChEMS Advisory Committee provide advice on matters that relate to the making of a scheduling decision on the industrial chemical hexachlorobutadiene (HCBd).

## Summary

### Background information

- There is no information on historical uses and quantities of hexachlorobutadiene (HCBd) in Australia.
- Hexachlorobutadiene is listed as a Persistent Organic Pollutant (POP) on the Stockholm Convention on Persistent Organic Pollutants due to its high persistence in the environment, high bioaccumulation potential, strong potential for long-range environmental transport and chronic toxic effects.
- In response to a public call for information made in August 2022 under section 20(1) of the *Industrial Chemicals Environmental Management (Register) Act 2021* (the ICEMR Act), one Australian university reported importing and using HCBd for research purposes and disposing of and managing waste containing HCBd.
- One Australian jurisdiction reported that it is aware of a stockpile containing HCBd.

### IChEMS Advisory Committee Advice

The IChEMS Advisory Committee advises the delegate that HCBd should be listed in Schedule 7 of the IChEMS Register. This listing should:

- Prohibit the import, export, manufacture (including as an unintentional by-product) and use of HCBd. Limited exceptions for laboratory and research use and for the purposes of environmentally sound disposal should apply.
- Include risk management measures to manage wastes and stockpiles and require compliance with the Industrial Chemicals Environmental Management Standards (IChEMS) Minimum Standards.

## Detailed advice

The IChEMS Advisory Committee's responses to the delegate's questions are provided below.

### **Question 1: Is the Committee satisfied with the characterisation of the relevant risks from hexachlorobutadiene in Australia?**

The Committee notes that HCBD is listed as a Persistent Organic Pollutant (POP) on the *Stockholm Convention on Persistent Organic Pollutants*.

The Committee advises that the relevant risks posed by HCBD are consistent with the criteria for Schedule 6 or 7 of the IChEMS Scheduling Principles.

Hexachlorobutadiene is listed on the Stockholm Convention. The Committee acknowledges that chemicals listed on the Stockholm Convention have toxic properties, resist degradation, are bioaccumulative and are transported across international boundaries through air, water, and migratory species. They can be deposited far from their place of release, where they accumulate in terrestrial and aquatic ecosystems and may cause harm.

The Committee advises that chemicals listed on the Stockholm Convention should be considered as of equivalent environmental concern to chemicals that are persistent, bioaccumulative and toxic (PBT), noting that a precautionary approach is warranted where there is a high degree of uncertainty.

The Stockholm Convention Risk Profile for HCBD<sup>1</sup> summarises the key scientific data available on HCBD internationally. In reviewing this data, the Committee concludes that HCBD also meets the criteria for persistence, bioaccumulation and toxicity under the [Australian PBT criteria](#).

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<sup>1</sup> Available on the Stockholm Convention website ([www.pops.int](http://www.pops.int)).

**Question 2: Is the Committee satisfied that hexachlorobutadiene does not have an essential use in Australia, taking into consideration the IChEMS Scheduling Principles?**

The Committee advises that HCBD does not have an essential use in Australia.

The Committee has reviewed the below information and concludes that HCBD does not have an essential use in Australia:

- In response to a public call for information made in August 2022 under section 20(1) of the ICEMR Act, one Australian university reported that they import and use HCBD for research purposes and dispose of and manage waste containing HCBD.
- The National Industrial Chemicals Notification and Assessment Scheme (NICNAS) conducted a mandatory call for information on the introduction and use of HCBD in Australia in 2010. No introduction or use of HCBD was reported.
- The Stockholm Convention lists no acceptable purposes for the use of HCBD. The Parties to the Convention have determined that efficient and cost-effective alternatives are available.
- Only one Australian jurisdiction has reported that it is aware of a stockpile containing HCBD.

In reviewing this information, the Committee concludes that ongoing import and use of HCBD for research purposes should be permitted. The Committee notes that, in accordance with section 14(2) of the ICEMR Principles, activities for research or laboratory purposes or for the purposes of disposing of the chemicals in an environmentally sound way are not intended to be identified as essential uses. By default, activities for these purposes will be exempted from the prohibitions that apply to chemicals listed in Schedule 7.

**Question 3: Is the Committee satisfied that the proposed prohibitions and restrictions are appropriate? Is the Committee satisfied that the exceptions are appropriate?**

The Committee advises that the proposed prohibitions, restrictions and exceptions should prohibit the import, export, manufacture (including as an unintentional by-product) and use of HCBd. Limited exceptions for laboratory and research use and for the purposes of environmentally sound disposal should apply.

The Committee advises that the prohibitions and restrictions for HCBd, and any exceptions to them, should achieve the following objectives:

- From 1 July 2023, the import, manufacture (including as an unintentional by-product) and use of HCBd should be prohibited. This should include the neat chemical HCBd, or HCBd in mixtures or in articles. This prohibition should not apply where:
  - HCBd is present as an unintentional trace contaminant (see below).
  - HCBd is introduced for laboratory-scale research or as a reference standard.
  - Import is permitted for the purposes of environmentally sound disposal in accordance with the *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal*, subject to approval under the *Hazardous Waste (Regulation of Exports and Imports) Act 1989*.
  - Articles containing HCBd were already in use before or on 1 July 2023. This should allow continued use of articles that were in service before the date the scheduling decision on HCBd takes effect. When an article containing HCBd becomes waste, the risk management measures for waste disposal should apply.
- From 1 July 2023, the export of HCBd should be prohibited. This should include the neat chemical HCBd, or HCBd in mixtures or in articles. This prohibition should not apply where:
  - HCBd is present as an unintentional trace contaminant (see below).
  - Export is permitted for the purposes of environmentally sound disposal in accordance with the *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal*, subject to approval under the *Hazardous Waste (Regulation of Exports and Imports) Act 1989*.

The Committee recognises the benefits of aligning the approach taken to unintentional trace contaminants with that of Regulation 2019/1021 of the European Parliament and of the Council on Persistent Organic Pollutants (Regulation (EC) 2019/1021). Under Regulation (EC) 2019/1021, unintentional trace contaminants are qualitatively defined as a substance that is incidentally present in a minimal amount, below which the substance cannot be meaningfully used, and above the detection limit of existing detection methods to enable control and enforcement. For some priority chemicals, quantitative thresholds are defined in the regulation to improve regulatory clarity.

The Committee advises that, for all high-concern chemicals prohibited or restricted under IChEMS, it is appropriate to adopt a default qualitative threshold for unintentional trace contaminants, with a specific quantitative threshold to be set where necessary. The qualitative threshold should encompass all of the following aspects:

- The chemical should be present at trace levels only
- The chemical should not be present intentionally
- The chemical should be unavoidably present (for example, it is not possible to prevent its formation through improved manufacturing processes)
- The chemical should only be present at a level which has no meaningful functional purpose
- The chemical should only be present at a level that does not result in significant environmental exposure (that is, representing a relatively low environmental risk). While the Committee advises that it would be preferable to manage incidental contamination in a way that does not result in harm, it also recognises the difficulties in estimating risks of harm from exposure to persistent organic pollutants in products and articles.

The Committee notes that no quantitative threshold has been defined for HCBd in Regulation (EC) 2019/1021. The Committee advises that the default qualitative threshold be adopted for the IChEMS Scheduling Decision for HCBd.

**Question 4: Is the Committee satisfied that the proposed risk management measures for hexachlorobutadiene are appropriate to manage the relevant risks?**

The Committee advises that the proposed risk management measures should ensure management of wastes and stockpiles containing HCBD and require compliance with the IChEMS Minimum Standards.

The Committee advises that the risk management measures for HCBD should achieve the following objectives:

- From 1 July 2023, disposal or recovery operations that may lead to recovery, recycling, reclamation or re-use of HCBD, on its own, should be prohibited.
- Producers and holders of waste should undertake reasonably practicable measures to avoid contamination of this waste with HCBD.
- Waste consisting of, containing or contaminated by HCBD at a concentration of greater than 100 mg/kg should be disposed of or recovered, as soon as reasonably practicable, either:
  - in such a way as to ensure that the chemical is destroyed or irreversibly transformed so that the remaining waste and releases do not contain chemicals that exhibit Schedule 6 or Schedule 7 risk characteristics, or
  - as authorised under a law of an Australian State or Territory or Australian government, where destruction or irreversible transformation is not the environmentally preferable option.
- Waste consisting of, containing or contaminated by HCBD at a concentration of less than 100 mg/kg should be disposed of or recovered, as soon as reasonably practicable, in an environmentally sound manner as authorised under a law of an Australian State or Territory or Australian government.
- Isolation of HCBD from waste should be allowed, provided that the HCBD is subsequently disposed of as outlined above.
- Any remaining stockpiles should be treated as waste. A holder of an accumulated mass of HCBD, whether on its own, in mixtures or in articles, for which import, manufacture, use and export is prohibited, should:
  - notify the relevant agency responsible for environmental protection of the nature and size of the stockpile, and
  - manage that stockpile as waste, as outlined above, and comply with all jurisdictional legislation.
- Any person becoming aware of any failure to comply with any of these prohibitions, restrictions or risk management measures should, as soon as reasonably practicable, notify the relevant agency responsible for environmental protection.

- Any person handling HCBd, whether on its own, in mixtures or in articles, should comply with the IChEMS Minimum Standards. By applying a standard risk management measure that points to the Minimum Standards, the Minimum Standards can be implemented using the same regulatory mechanisms as other risk management measures.

The Committee recognises that the proposed 100 mg/kg concentration limit for HCBd aligns with the 'low persistent organic pollutant content level' for HCBd agreed under the auspices of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal. This level is referenced under the Stockholm Convention and is used to determine waste disposal requirements. International legislation on the waste management of POPs has adopted this value, including Regulation (EC) 2019/1021.