



July 2023

## *Chemical profile*

# Pentachlorobenzene

## Summary

- Pentachlorobenzene (PeCB) is recognised across the world as an environmental pollutant and is listed on the Stockholm Convention as a persistent organic pollutant (POP). It is a priority for scheduling under the Industrial Chemicals Environmental Management Standard (IChEMS).
- PeCB was used as a flame retardant in plastics and textiles, a component of polychlorinated biphenyl (PCB) mixtures and as an intermediate in the manufacture of other chemicals. Production and use of PeCB appears to have ceased in the late 1990s in Australia.
- Although PeCB has not been used in Australian industry for many years, previously imported or manufactured articles containing PeCB are expected to remain in use.
- PeCB is of concern due to its persistence, bioaccumulation, toxicity and potential for long range transport.

## Introduction and use of PeCB in Australia

Production of PeCB in Australia ceased in 1995 and use of articles containing PeCB ceased in 1998, as set out in a Commonwealth regulation impact statement for the consideration of nine chemicals listed on the Stockholm Convention ([2009 RIS](#)).

Past industrial uses of PeCB in Australia include as:

- a viscosity modifier in polychlorinated biphenyl (PCB) mixtures
- a flame retardant in plastics and textiles
- a chemical intermediate in the manufacture of other chemicals (e.g., the fungicide pentachloronitrobenzene).

PCBs were used as dielectric and coolant fluids in electrical equipment such as transformers and capacitors.

Other industrial uses of PeCB reported in the [Stockholm Convention PeCB risk profile](#) include in dyestuff carriers and laboratory reagents. PeCB may be formed as a by-product during the manufacture of some organochlorine chemicals and is also unintentionally produced through the combustion of organic wastes and degradation of some chlorinated compounds.

## Controls under the Stockholm Convention

PeCB is listed in Annex A of the Stockholm Convention on persistent organic pollutants for elimination of intentional production and use. This means that there are restrictions on import, export, manufacture and use, as well as requirements for managing stockpiles and wastes of these chemicals in countries which have ratified the amendments to the Stockholm Convention for these chemicals.

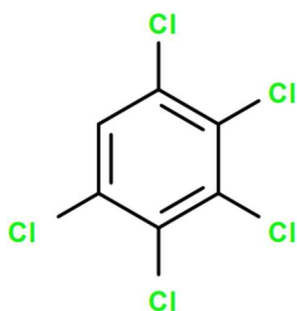
PeCB is also listed in Annex C of the Stockholm Convention for elimination from unintentional production. Restrictions on releases from anthropogenic sources and wastes containing these chemicals apply to ratifying parties.

Australia has not yet ratified the amendments to the Stockholm Convention for this chemical.

The Stockholm Convention has no specific exemptions for uses of PeCB and no ongoing acceptable purposes for this POP.

## Chemical identity

- CAS Name: Benzene, 1,2,3,4,5-pentachloro-
- Synonyms: 1,2,3,4,5-pentachlorobenzene; pentachlorobenzene; PCB; PeCB; QCB; quintochlorobenzene
- CAS registry number: 608-93-5



**Figure 1 Chemical structure of PeCB.**

## Additional information: regulation of PeCB in Australia

The Australian Industrial Chemicals Introduction Scheme (AICIS) published an Evaluation Statement for PeCB in December 2022.

The AICIS found that the human health and environmental risks of PeCB could not be managed, and so decided to [remove](#) the chemical from the Australian Inventory of Industrial Chemicals (AIIC). PeCB was removed from the AIIC in February 2023.

## Additional information: replacements for PeCB

Efficient and cost-effective alternatives are available for [PeCB](#) as set out in the linked Stockholm Convention documents.

## References

AICIS 2022, *Benzene, 1,2,3,4,5-pentachloro- (PeCB) Evaluation Statement*, 22 December 2022, Australian Industrial Chemicals Introduction Scheme, [Benzene, 1,2,3,4,5-pentachloro- \(PeCB\) - Evaluation statement - 22 December 2022 \(industrialchemicals.gov.au\)](#), accessed 5 July 2023.

DEWHA 2009, [Regulation Impact Statement for the Consideration of the Addition of Nine Chemicals to the Stockholm Convention on Persistent Organic Pollutants \(POPs\)](#), accessed 5 May 2022.

UNEP 2007, [Risk Profile on Pentachlorobenzene \(Addendum\)](#), Stockholm Convention, Report of the Persistent Organic Pollutants Review Committee on the work of its third meeting, accessed 23 May 2022.

## More information

Email [ichems.enquiry@dcceew.gov.au](mailto:ichems.enquiry@dcceew.gov.au)

Web <https://www.dcceew.gov.au/environment/protection/chemicals-management/national-standard>

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