2025

PCB Webinar Series

Webinar #4

PCBs in Open Applications

26 March 2025

unitar
United Nations
Institute for Training and Research

Introduction

Polychlorinated Biphenyls (PCB) are a class of synthetic chlorinated organic chemicals that represent a risk as they are toxic to wildlife and humans, persistent, and can bioaccumulate and travel long distances in the environment. Furthermore, they are classified as carcinogens, and they can suppress the immune system, which can increase the risk of developing a wide variety of diseases. There is scientific evidence that humans are exposed to PCB through ingestion of animal fats, inhalation, and absorption through the skin. Workers in the electrical sector can be particularly exposed to PCB as these chemicals may be present in older electrical equipment such as transformers, capacitors and fluorescent lighting ballasts.

The PCB have been listed under the **Stockholm Convention** as Persistent Organic Pollutants (POPs). Parties that ratified the Stockholm Convention aim to eliminate the use of PCB by 2025 and to provide their environmentally sound waste management by 2028.

Noting that the environmentally sound management of PCB requires enormous efforts and specific technical knowledge from different stakeholders -from national governments, companies, and international and civil society organisations, among other sectors-UNITAR developed the **2024-2025 PCB Webinar Series** to raise awareness and enhance global and national capacities.

This Webinar #4: "PCBs in Open Applications" explored key aspects of PCBs and other contaminants found in open applications, including their presence and management in construction materials and demolition waste. The session also featured a case study from Colombia, providing insights into practical management approaches. This event served to collect views and questions from participants to advance in the definition of topics for the following webinars of the series.

Agenda

2:00 - 2:05 PM	Introduction	Sofia Schlezak (UNITAR, PCB Projects Coordinator)
2:05 - 2:25 PM	Overview: PCBs in Open Applications	Urs K. Wagner (PCB Sr Expert)
2:25 - 2:40 PM	Managing PCBs in Open Applications – Case study from Colombia	Edwin Camelo Martínez (PCB Demonstration Projects Analyst)
2:40 - 2:45 PM	Transition	Giang Huong Pham (UNITAR, PCB Projects Assistant)
2:45 - 3:00 PM	PCBs, other Contaminants and Construction and Demolition Waste (CDW)	Urs K. Wagner (PCB Sr Expert)
3:00 - 3:25 PM	Ask the Experts session	Urs K. Wagner & Edwin Camelo Martínez
3:25 - 3.30 PM	Closing remarks	Sofia Schlezak

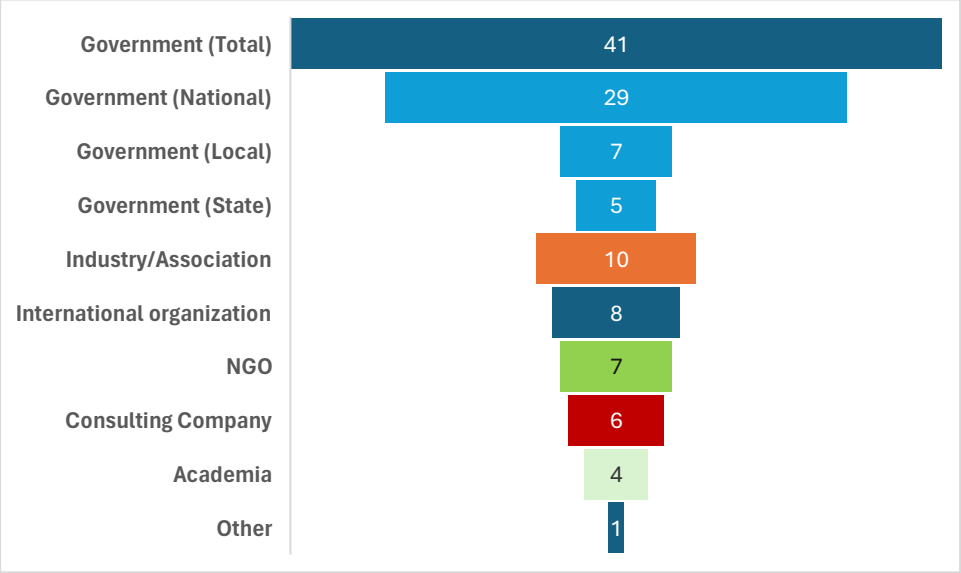
Resources

The resources for this webinar (flyer, presentations, satisfaction Survey, recording) are available in the Shared Folder and in the PCB e-Learning Platform

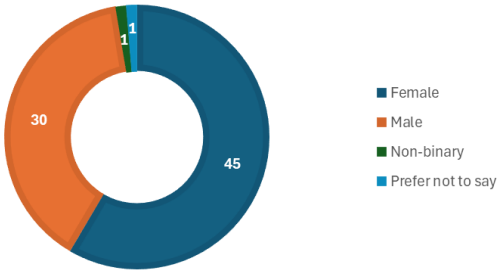
Attendance breakdown and representation

Total attendance: 77 participants[1]

SECTORS



GENDER DISTRIBUTION



COUNTRIES REPRESENTATION (38)

Country	#	Country	#	Country	#
Honduras	10	Yemen	2	Liberia	1
Colombia	6	Bangladesh	1	Mexico	1
Argentina	5	Belarus	1	Moldova, Republic of	1
Peru	5	Burundi	1	Morocco	1
Brazil	4	Côte d'Ivoire	1	Myanmar	1
Costa Rica	4	Croatia	1	Pakistan	1
Ecuador	3	Dominica	1	Philippines	1
Madagascar	3	Egypt	1	Russia	1
Switzerland	3	Ethiopia	1	Sierra Leone	1
Botswana	2	Germany	1	Slovakia	1
Chile	2	Ghana	1	South Africa	1
Dominican Republic	2	Hungary	1	United States	1
Senegal	2	Kuwait	1		

[1] *The total number of participants was 124, with a maximum concurrent attendance of 77 participants.*

Questions received and answered

DISCLAIMER: PCB experts suggest the following answers based on their academic training and professional experiences. Please refer to official materials for legal provisions related to the Stockholm and Basel conventions.

Q: Can we get the presentations after the webinar? A: Yes, all these materials are available online in our platform: UNITAR PCB learning platform/Webinar series/ 2024-2025 PCB Webinar Series — Webinar #4: Webinar #4 – UNITAR | PCB Platform | Switzerland

Q: What are some of the long-term strategies for ensuring the sustainable disposal and management of PCBs in construction and demolition materials in countries with limited economic resources, such as Myanmar? A: One of the most important tasks - with open but also closed applications of PCBs – is of course their identification and documentation BEFORE they are removed and disposed. Smaller "pilot identification projects" focusing on PCB open applications typically found in CDW, for examples caulks, paints and coatings, will provide initial findings if and possibly how long PCB was used in open applications.

It is generally believed that PCB were used in open applications between the 1950s and the early 1980s. However, the time of usage of PCB in the different applications may vary from across countries. In many countries it should be possible to exclude PCB contamination in CDW from buildings built after 1990. This may help to develop strategies for a specific country. Furthermore it should be investigated in history of construction and source of materials. Most countries never produced PCB containing products, nor imported due to the comparably high price levels of PCB containing paints, caulks etc. However, by e.g. development projects and donations, such materials might have come into countries.

Q: How are paint and coatings considered in open applications? A: Paints, (anti-corrosion) coatings and caulk (sealants) probably account for the biggest part of open applications of PCB. Paint sealings on concrete floors and anti-corrosion coatings on metal objects can be found in all types of buildings, plants, installations, bridges and vessels whereas caulks were typically mainly used in concrete buildings.

Q: What is the amount of PCB waste (open applications) in Latin America compared to developed countries? What information do we have on the presence and detection of PCBs in applications opened in the GRULAC region? A: In the GRULAC region (Latin America and the Caribbean), there is currently a lack of comprehensive studies on the presence and detection of PCBs in open applications. While some isolated efforts have taken place—such as surface and paint sampling in Guatemala—these do not yet form a cohesive regional picture. In Colombia, as per the results presented by Mr Edwin Camelo Martínez, assessments of potentially contaminated sites found no evidence of PCBs, although other hazardous substances were detected. This suggests that open application materials containing PCBs may not have been widely used, likely due to their high cost. It is recommended that investigations begin with buildings constructed using imported or donated materials, particularly those associated with foreign companies, as these may present higher risks. Many countries in the region already have regulatory frameworks and circular economy initiatives in place within the construction sector, which can be adapted to include the management of persistent organic pollutants (POPs), including PCBs. Given limited resources, efforts should not focus solely on PCBs but also consider other co-occurring contaminants such as asbestos and short-chained chlorinated paraffins (SCCPs).

Q: Are PCBs still been produced? If so, which country is the main producer? A: Production of PCBs has been globally discontinued since the early to mid-1990s. However, there were reports that some countries continued limited production for domestic use only into the early 2000s. For example, the National Implementation Plan (NIP) from the Democratic People's Republic of Korea stated that production did occur at least until 2006[2]. Since then, no updated information has been found.

While PCB production seems to be effectively ceased worldwide, with no ongoing international production, there remains concern about legacy sources, such as contaminated oils that may re-enter circulation through recycling processes.

Q: What is the responsibility of the Parties regarding the control of PCBs in open applications? A: The objective of the measures and obligations established under the Stockholm Convention is to eliminate or minimize the releases of this listed chemicals to the environment. Identifying and managing PCBs in other articles (open applications) in an environmentally sound manner contributes to this. According to the SC, Parties should endeavor to identify other articles (e.g. open applications of PCBs) and manage them in accordance with paragraph 1 of Article 6. The articles containing PCBs can end up in several places, like open dumpsites/landfills, even in contaminated sites. Therefore, for specific issues, the Basel Convention also provides guidance on the environmental standards and BET&BAP. For example, for specially engineered landfills (D5 operation), for Incineration (D10/R1) operations, for POPs waste management, etc. Parties to both SC and BC need to take measures to ensure the environmentally sound management of these waste, which includes avoiding dumping of waste, but also other issues, like toxic recycling. On POPs contaminated sites, guidance under SC has been updated and will be considered at the upcoming COPs.

Q: If a country has to prioritize potential contaminated sites for a preliminary assessment, is there any correlation possible between prioritized contaminated sites and the source (open, close)? A: The prioritization of contaminated sites should be based primarily on risk, considering both health and environmental impacts[3]. While it's not possible to establish a universal rule linking risk levels directly to whether a source is "open" or "closed," certain patterns can help guide preliminary assessments. For instance, open applications of PCBs—such as paints, adhesives, or sealants—can present significant health risks due to direct exposure and higher potential for environmental release, especially in buildings where people live or work. On the other hand, closed applications—like transformers or capacitors—may carry lower immediate exposure risks when properly maintained. However, they can pose serious hazards if leaks occur or if contaminated oils are stored improperly, as these can result in large, uncontrolled releases. Therefore, while there is no fixed correlation, the condition and management of the source, as well as its proximity to relevant environmental matrices and human populations, are critical factors in determining risk and should be integrated into site prioritization.

[2] Source: UNEP/POPS/PCBSIWG/7/9.Rev1

[3] For more information, please refer to the newly updated guidance on management of sites contaminated with POPs under the Stockholm Convention, available at: www.pops.int/Implementation/BATandBEP(new)/POPscontaminatedsites(new)/Guidance(new)/tabid/9649/Default.aspx

Next steps

Please email us and let us know your preferred topic for our Webinars in 2025!

Comments? Questions?

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