

Press Release – Chemicals of Emerging Arctic Concern

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New classes of environmental contaminants found in the Arctic

The Arctic Monitoring and Assessment Programme (AMAP) have previously documented high levels of persistent environmental contaminants, such as PCBs and DDTs in Arctic wildlife and some Arctic human populations. This contamination is mainly a result of historical use, transport by air and oceans to the Arctic from source regions at lower latitudes, and uptake and bio-magnification in Arctic food chains. Presence of contaminants in Arctic species has raised concerns about health effects on wildlife, and also for human health effects in some vulnerable populations, in particular those that rely on marine mammals as part of their subsistence diets.

National monitoring coordinated by AMAP over the past 25 years shows that **international and national pollution control activities have been effective at reducing levels of the chemicals they regulate**, reducing threats to Arctic wildlife and humans.

However, **pollution threats to the Arctic are continually evolving**.

AMAP's new assessment of *Chemicals of Emerging Arctic Concern* documents evidence of the occurrence of 16 major groups of 'emerging chemicals' as well as micro-plastics in the Arctic and confirms that **a broad range of new chemicals of concern are now found in the Arctic**.

Moreover, an even larger number of chemicals with the potential to reach the Arctic are presently in use, with new chemicals continuing to enter commerce each year.

The assessment findings include the following:

- Generally levels of most new chemicals identified in the Arctic are lower than those seen for 'legacy' persistent organic pollutants (POPs) previously considered in AMAP assessments. However, organophosphate-based flame retardants were found in surprisingly high concentrations in Arctic air, much higher than brominated flame retardants.
- In addition to presence resulting from long-range transport by air and ocean currents, local sources may be important for some pharmaceuticals and chemicals used in consumer products such as phthalates, and siloxanes; the extent of this impact is not well documented.
- Information on temporal trends of new chemicals is sparse, however where available it often shows stable or increasing levels.
- Most chemicals of emerging concern (CEC) found in the Arctic were identified in air samples. Some were found in biota indicating bioaccumulation; several (including long-chain perfluorinated carboxylic acids (PFCAs), α -hexabromocyclododecane (HBCDD), decabromodiphenyl ethane (DBDPE), short-chain chlorinated paraffins (SCCPs), polychlorinated naphthalenes (PCNs)) seem to bio-magnify.

- Implications for wildlife and human health of the presence of these new CEC in the Arctic are currently unknown.

On the basis of its assessment of Chemicals of Emerging Arctic Concern, AMAP is recommending to the Arctic Council that there may be a need for new approaches to chemicals management and regulatory efforts, including further development of existing global chemicals regulatory systems. Industry also has a part to play in addressing these new concerns.

The science behind this new AMAP assessment will be presented at the *AMAP International Conference on Arctic Science: Bringing Knowledge to Action* (April 24-27, 2017 Reston, VA, USA); its findings will be considered by Arctic Council Ministers at their meeting in May 2017.



Chemicals of Emerging Arctic Concern
Summary for Policy-makers
AMAP

SUBSTANCES CONSIDERED IN THE ASSESSMENT OF CHEMICALS OF EMERGING ARCTIC CONCERN

- Brominated flame retardants (BFRs)*
- New (unintentionally generated) polychlorinated biphenyls (PCBs)
- Chlorinated flame retardants (CFRs)
- Chlorinated paraffins*
- Current-use pesticides (CUPs)*
- Halogenated natural products (HNPs)**
- Hexachlorobutadiene (HCBd)***
- Organophosphate-based flame retardants (PFRs)
- Organotins
- Pentachlorophenol (PCP)***
- Per- and polyfluoroalkyl substances (PFASs)*
- Pharmaceuticals and personal care products (PPCPs)
- Phthalates
- Plastics and microplastics
- Polycyclic aromatic hydrocarbons (PAHs)
- Polychlorinated naphthalenes (PCNs)***
- Siloxanes

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Link to Summary for Policy-Makers:

www.amap.no/documents/doc/chemicals-of-emerging-arctic-concern.-summary-for-policy-makers/1533

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