PLASTIC LITTER IS CARRYING TOXIC CHEMICALS

It has been estimated that 4.8-12.7 million tonnes of plastics enter the oceans every year.[1] Plastics are made from carbon and chemicals and many of the chemicals can leach out from the plastics -- this means that plastic litter can act as carriers of toxic chemicals to remote regions.

The Case of UV-328

Many of the chemicals that are used in plastics can leach from the materials, which means that people are continously exposed to them. It also means that the chemicals are continously leaching into the environment.

Since floating plastics are transported far via water, plastic litter can carry UV-328 to the most remote corners of the world.

When evaluating UV-328, a toxic UV-stabilizer used in a wide range of plastics, a UN expert review committee found that UV-328 leaches from plastics, throughout its lifecycle, and that one way that it is transported to remote locations is when plastic litter spreads via water.

Animals frequently mistake plastic litter for food and recent research has shown that when birds eat plastics containing UV-328 the chemical leaches into them from the plastics.[2] Similarily, polybrominated diphenyl ethers, another group of toxic plastic additives, has been found in the tissue of seabirds and its presence was linked to the ingestion of plastic litter.[3]

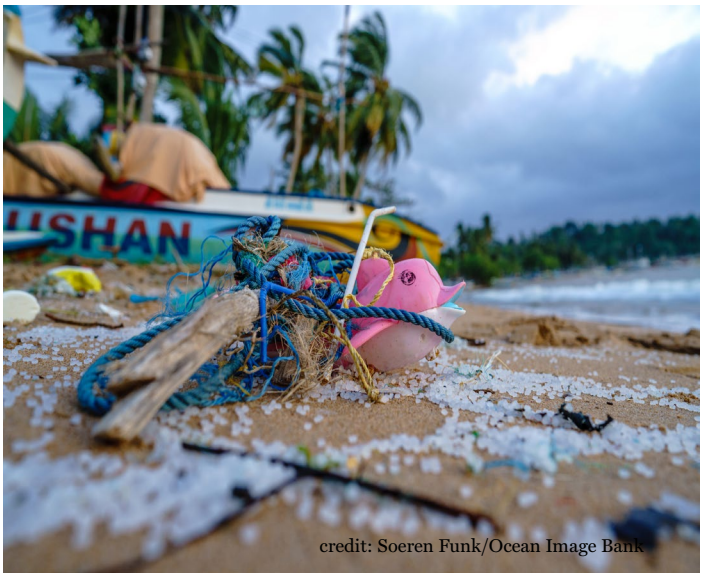
Plastic Litter Contains a Wide Range of Chemicals

Research shows that over 10,000 chemicals are used in plastics.[4] Of those more than 2,400 are substances of concern, including carcinogens and endocrine disruptants. Over 1,600 of the substances are also toxic to aquatic organisms.

Annually thousands of tonnes of plastic additives are transported with floating plastic debris to the Arctic.[5] These additives include brominated flame retardants, benzotriazole UV-stabilizers, chlorinated paraffins, and bisphenols.

Environmental Pollutants Can Also Sorb to Plastic Litter

In addition to the chemicals that are used in plastics, environmental pollutants can sorb to the plastic litter. The consequences of this are not yet fully understood, but measurements of beached plastics have shown that it is a widespread occurrence. For example, in 2021 IPEN showed that plastic preproduction pellets found on beaches all over the world had PCBs sorbed to the plastics.[6]



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Plastics and the Stockholm Convention on POPs

The Stockholm Convention is an international, legally bidning agreement, ratified by over 180 countries to adress global chemical pollution, with the objective to protect human health and the environment from persistent organic pollutants (POPs). As such it deals with some of the most toxic chemicals in the world and chemicals that are listed under the Convention are subjected to global restrictions and/or bans.

Several POPs that are listed under the Convention have been used in plastics. One of the chemicals that will be discussed in 2023 is UV-328. This chemical is used in a wide range of plastics and the review process has found that it is toxic, bioaccumulative and persistent.[7]

Conclusions

Since plastics can transport chemicals within them over large distances many of the chemicals used in plastic materials may be considered long-range pollutants. It is therefore necessary to regulate these chemicals internationally as they cross borders and impact countries that do not use or produce them.

References

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