UN environment programme

TRICLOSAN

Assessment Report on Issues of Concern

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1. Sources

Triclosan is a synthetic, broad-spectrum antibacterial chemical used as an additive in thousands of consumer and medical antibacterial products and plastics.

It has been used commercially across the globe since the 1970s. Major global use is in cosmetics and personal care products (68%, particularly deodorants) followed by disinfection and medical use (16%) and lower amounts in paints (8%), and in plastic materials, toys and appliances (8%).

2. Why is it relevant?

The Intensive use and continuous release of triclosan to the environment have raised public concerns, as scientific evidence of adverse environmental and human health impacts emerged. Based on various assessments:

Triclosan was identified as an issue with emerging evidence of risks to human health and the environment by the Global Chemicals Outlook II;

Triclosan is highly toxic to aquatic organisms such as fish, amphibians invertebrates, algae, and some soil organisms.

Evidence of effects on the endocrine system at environmentally relevant concentrations has also been noted;

Triclosan in surface water at measured concentrations may cause harmful effects in aquatic ecosystems.

Triclosan in the environment might also promote antimicrobial resistance, but more evidence is required;

Current levels of general population exposure to triclosan through relevant products and breast milk, as well as the associated health risks, may still be low. However, the potential adverse effects such as endocrine disruption cannot be ruled out.

Triclosan is primarily released to the environment through wastewater from the production and use. It has been detected in surface, ground and drinking water.

While triclosan is moderately soluble in water, it has rather short half-lives (under aerobic conditions) in the various environmental compartments.

As such, triclosan is not likely to persist in the environment and undergo long-range transport. However, triclosan is resistant to degradation under anaerobic conditions.

In typical wastewater treatment plants from developed countries, triclosan can be removed from influents with reported efficiencies of 57% to 99%, or up to 50% when partitioned into sludge or biosolid waste.

Human exposure to triclosan occurs primarily through the skin or mouth during the use of triclosan-containing products, with only a minor contribution via environmental exposures.

Workers may have additional significant exposure through inhalation and dermal contact where triclosan is produced or largely used.

For more detailed information on triclosan, please see Chapter 4.11 of the ***Assessment Report on Issues of Concern*** and Part B, Chapter 11 of the ***Annexes to the Assessment Report on Issues of Concern***. Available on the UNEP website.

3. Existing instruments and actions

A wide range of instruments and actions have been developed and taken across the globe to address some specific uses of triclosan. Some countries and regions have established legally binding obligations to ban the use of triclosan in different products, e.g. in over-the-counter consumer antiseptic products, biocidal products or in liquid soap.

These actions can be complemented by other instruments such as legally binding requirements of pollution prevention plans e.g., by those who use and import triclosan-containing cosmetics, natural health products or drugs, or by voluntary phase-out by some major multinational companies.

Over 200 scientists, medical doctors and public health professionals signed the Florence Statement on Triclosan and Triclocarban. The statement calls for avoidance of triclosan, triclocarban and other antimicrobial chemicals except where they provide an evidence-based health benefit and there is adequate evidence demonstrating they are safe, among other recommendations.

See Annexes for more

4. Challenges and opportunities

The impact of triclosan remains largely local due to characteristics such as low persistence in most environmental media and low long range transport potential. However, its ubiquitous use may be a major cause of concern and a focus for international actions.

Current instruments and actions on triclosan have limitations, in terms of geographical coverage and their respective scopes. In particular, most of them focus only on cosmetics and personal care products. Other smaller but still significant uses exist with limited oversight and control (e.g. uses in paints; disinfection and medical uses; in plastics, toys and appliances).

Future action may focus on the reduction and elimination of triclosan in all uses where no evidence-based health benefits are shown.

The international community may share assessment results and lessons learned so as to avoid repeated efforts to assess triclosan, particularly for developing and transition countries.

The international community may also look into other antimicrobial chemicals for the same or similar uses as triclosan. Replacements that have very different molecular structures from triclosan, but which still have similar hazardous properties, such as high toxicity to aquatic organisms, have been introduced but could prove to be regrettable substitutions.

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