



Volunteers hand out information on 'persistent organic pollutants' at a local supermarket.



Domestic and foreign researchers test and analyze PFOS at a lab.

Renewing the battle against POPs

NPC approves restriction or ban on 10 chemicals

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China is staging a renewed battle against chemical pollution after the country's top legislative body passed two amendments to an international environmental treaty.

Included in the amendments are 10 polluting substances to be restricted or banned under the Stockholm Convention on Persistent Organic Pollutants.

The convention, signed in 2001 and effective from May 2004, aims to eliminate or restrict the production and use of organic pollutants including the notorious DDT. A total of 179 countries and regions had signed the convention by May 2013.

As the Standing Committee of the National People's Congress, or China's parliament, gave its nod on Aug 30, the amendments will come into force on the Chinese mainland, in Hong Kong and Macao in the near future.

Of the 10 newly added environment-threatening chemicals, China still produces and uses chemicals related to perfluorooctanesulfonic acid (PFOS), perfluorooctanesulfonyl fluoride (PFOSE) and endosulfan.

PFOS is a fluorosurfactant created by US company 3M in 1952 that is used in coatings. According to a study by

the Environmental Directorate of the Organization for European Economic Development, "PFOS is persistent, bio-accumulative and toxic to mammalian species".

Though 3M announced the phase-out of its production in 2000, PFOS and PFOSE-related products are still made in China.

According to the Ministry of Environmental Protection, in China, PFOS is mostly used in the production of aqueous film-forming foam fire fighter, chrome plating fog inhibitor, pesticides and more recently oilfield recovery agent.

Endosulfan was extensively used as an agri-chemical to control insect pests. It later became controversial due to its acute toxicity, its potential for bio-accumulation and its role as an endocrine disruptor.

Because of the threat to human health and the environment, a global ban on the manufacture and use of endosulfan was negotiated under the Stockholm Convention in April 2011.

It is still produced and used in India, China and a few other countries. Second to India, China produces around a quarter of the world's endosulfan even though it has about 70 substitutes that can be used as pesticides.

Following the approval of the ban list, the Ministry of



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About 1,700 delegates from 178 countries, 24 international organizations and more than 60 non-governmental organizations convened in Geneva from April 28 to May 10, discussing new amendments to the Stockholm Convention.

Environmental Protection, the Ministry of Science and Technology, the Ministry of Agriculture, and the Ministry of Industry and Information Technology have adopted a series of measures to control the use and production of the chemicals.

The ministries have investi-

gated the chemicals' production and export and studied their economic and social effects as well as the threat to the environment.

The Ministry of Environmental Protection has been working to include PFOS, PFOSE and endosulfan in the National Implementation Plan

of the Stockholm Convention as well as the country's overall plan for environmental protection.

In addition, the ministry will try to garner financial and technical support from domestic and international institutions to ensure the implementation of the plan.

Recent project

One example is an international project for monitoring PFOS and PBDE organized by the Ministry of Environmental Protection and co-sponsored by NIVA from Europe, Tsinghua University, the National Research Center for Environmental Analysis and Measure-

ment, and environmental protection bureaus in Zhejiang, Hubei and Guangdong.

Designed to improve the provinces' ability in monitoring PFOS and PBDE, the project includes training locals to collect and analyze the pollutants as well as organizing anti-pollutant publicity campaigns.

Defining 'persistent organic' dangers

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"There was a strange stillness. The birds, for example — where had they gone? It was

a spring without voices."

The scenario that US biologist and conservationist Rachel Carson depicted in her 1962 book *Silent Spring* could become a reality if

governments slacken efforts to eliminate the production and use of persistent organic pollutants, environmental experts warn.

There are a few natural

sources of POPs but the substances are mostly the result of industrial processes.

Many are or were used as pesticides — the most notorious is DDT — while others

are used to produce products such as solvents and pharmaceuticals.

Experts warn that POPs pose grave risks to the environment as well as the health of people, animals and all living things as they are resistant to environmental degradation through chemical, biological or photolytic processes.

Scientists have found that most POPs have a half-life of more than two months in water and at least half a year in soil and can travel through rivers or oceans without losing impact.

They are also found to accumulate in human and animal tissue as they move up the food chain.

A study in the Great Lakes in North America found that the POP content in plankton is 500 times the content in the lake water. The figure rises to 45,000 times in shrimp and 830,000 times in fish that eat shrimp.

That means the higher on the food chain, the greater the risk.

FACT SHEET

The 'dirty dozen'

The Stockholm Convention on Persistent Organic Pollutants is an international environmental treaty that aims to eliminate or restrict the production and use of POPs. It was signed in 2001 and entered into force in May 2004.

In 1995, the United Nations Environment Program called for global action on POPs, which it defined as "chemical substances that persist in the environment, bio-accumulate through the food web, and pose a risk of causing adverse effects to human health and the environment".

The Intergovernmental Forum on Chemical Safety and the International Program on Chemical Safety then prepared an assessment of the 12 worst offenders, known as the "dirty dozen". Between June 1998 and December 2000, five meetings were held to refine the convention. Delegates adopted the Stockholm Convention on POPs in a conference in the namesake city in May 2001.

The convention took force on May 17, 2004 with ratification by an initial 128 parties and 151 signatories. They agreed to outlaw nine of the dirty dozen chemicals, limit the use of DDT to malaria control, and curtail the production of dioxins and furans. Parties to the convention have agreed to a process by which persistent toxic compounds can be reviewed and added to the convention if they meet certain criteria for persistence and transboundary threats.

The first set of new chemicals to be added was agreed at a conference in Geneva in 2009. As of May 2013, there were 179 parties to the convention, including 178 states and the European Union.

Examples include the polychlorinated biphenyl — or PCB — poisoning in Japan in 1968.

PCB contaminated rice oil was sold to poultry farmers for use as a feed supplement and to

consumers for use in cooking. Some 1,700 people were poisoned and more than 30 were killed.

In 1979, an almost identical case occurred in Taiwan province.



Signatures from different regions on display at the Ministry of Environmental Protection show the rising opposition to POPs.