# Harmful ships' paint systems outlawed as international convention enters into force

An international convention banning the use of organotins and other harmful substances in anti-fouling paints applied on ships' hulls enters into force on 17 September 2008.

The International Convention on the Control of Harmful Anti-Fouling Systems on Ships (AFS Convention) was adopted on 5 October 2001 by IMO and the terms for its entry into force (ratification by 25 States representing 25 per cent of the world's merchant shipping tonnage) were reached last year. The Convention has, to date, been ratified by 34 States, with a combined 52.81 per cent of world merchant shipping tonnage.

Under the Convention, ships are not permitted to apply or re-apply organotin compounds which act as biocides in their anti-fouling systems; ships either shall not carry such compounds on their hulls or external parts or surface or, in the case of ships that already carry such compounds on their hulls, will have to apply a coating that forms a barrier to prevent them leaching from the underlying non-compliant anti-fouling systems.

The Convention also establishes a mechanism to evaluate and assess other anti-fouling systems and prevent the potential future use of other harmful substances in these systems.

The Convention applies to ships flying the flag of a Party to the Convention, as well as ships not entitled to fly their flag but which operate under their authority, and to all ships that enter a port, shipyard or offshore terminal of a Party. It applies to all ships, including fixed or floating platforms, floating storage units (FSUs) and floating production storage and off-loading units (FPSOs).

## Anti-fouling systems

Anti-fouling paints are used to coat the bottoms of ships to prevent sea life such as algae and molluscs attaching themselves to the hull - thereby slowing down the ship and increasing fuel consumption.

The AFS Convention defines "anti-fouling systems" as "a coating, paint, surface treatment, surface, or device that is used on a ship to control or prevent attachment of unwanted organisms".

In the early days of sailing ships, lime and later arsenic were used to coat ships' hulls, until the modern chemicals industry developed effective anti-fouling paints using metallic compounds. These compounds slowly "leach" into the sea water, killing barnacles and other marine life that have attached to the ship.

But studies showed that these compounds persist in the water, killing sealife, harming the environment and possibly entering the food chain. One of the most popular anti-fouling paints, developed in the 1960s, contained the organotin compound tributyltin (TBT), which has been proven to cause deformations in oysters and sex changes in whelks.

Today, there are a variety of effective anti-fouling systems available which do not contain TBT, such as organotin-free anti-fouling paints and biocide-free non-stick coatings which have an extremely slippery surface - preventing fouling occurring and making it easier to clean when it does.