



## COMPENDIUM OF CANADA'S ENGAGEMENT IN INTERNATIONAL ENVIRONMENTAL AGREEMENTS AND INSTRUMENTS

### *International Convention on the Control of Harmful Anti-fouling Systems on Ships (AFS)*

**SUBJECT CATEGORY:**

Marine/ Oceans

**TYPE OF AGREEMENT / INSTRUMENT:**

Multilateral

**FORM:**

Legally-binding treaty

**STATUS:**

- Adopted on 5 October 2001 and entry into force on 17 September 2008
- Entered into force in Canada on July 8, 2010

**LEAD & PARTNER DEPARTMENTS:**

**Lead:** Transport Canada

**Partners:** Environment and Climate Change Canada, Department of Fisheries and Oceans, Health Canada

**FOR FURTHER INFORMATION:**

**Web Links:**

[International Maritime Organization](#) Website

**Contacts:**

[Transport Canada Inquiry Centre](#)

**COMPENDIUM EDITION:**

February 2022

#### PLAIN LANGUAGE SUMMARY

This Convention deals with the prevention of use of anti-fouling paints and systems on the hulls of vessels. Anti-fouling refers to the growth on the hull of vessels. Previously, tin was added in various forms to the compounds used on the hulls but it was found that these compounds were toxic to the marine ecosystems. Subsequently, these substances were banned, and the Convention is now in place to ensure that anti-fouling paints and systems that are used to prevent biofouling on the hulls of vessels are not toxic to the marine environment.

The Convention requires vessels to carry a certificate and a log book to demonstrate that their anti-fouling system does not contain prohibited substances.

All ships in Canadian waters and all Canadian ships everywhere are subject to strict anti-fouling regulations.

#### OBJECTIVE, KEY ELEMENTS & EXPECTED RESULTS

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, which can slow down a ship and increase fuel consumption.

In the early days of sailing ships, lime and later arsenic were used to coat ships' hulls, until the modern chemicals industry developed anti-fouling paints using metallic compounds. These compounds slowly release into the sea water, killing barnacles and other marine life that have attached to the ship. More recently, studies have shown that these compounds can persist in the water, harming the environment and possibly entering the marine food chain. For example, one of the most effective anti-fouling paints, developed in the 1960s, contained organo-tributyltin (TBT), which has been proven toxic to the marine environment.

Under the terms of the AFS Convention, Parties to the Convention are required to prohibit and/or restrict the use of harmful anti-fouling systems on ships flying their flag, as well as ships not entitled to fly their flag but

which operate under their authority and all ships that enter a port, shipyard or offshore terminal of a Party.

Anti-fouling systems to be prohibited or controlled are listed in an annex to the Convention, which will be updated as and when necessary.

The Convention includes a clause which states that a ship shall be entitled to compensation if it is unduly detained or delayed while undergoing inspection for possible violations of the Convention.

Annex I states that all ships shall not apply or re-apply organotin compounds which act as biocides in anti-fouling systems. This applies to all ships (including fixed and floating platforms, floating storage units (FSUs), and Floating Production Storage and Offtake units (FPSOs)).

The Convention provides for the establishment of a "technical group," to include people with relevant expertise, to review proposals for other substances used in anti-fouling systems to be prohibited or restricted. Article 6 on Process for Proposing Amendments to controls on Anti-fouling systems sets out how the evaluation of an anti-fouling system should be carried out.

The tributyltin (TBT) was removed from anti-fouling paints and replaced by several new biocides. One of these replacements was cybutryne (also known as Irgarol 1051) which is used in hull paint to prevent biofouling growth.

In June 2021, the IMO banned the application or reapplication of antifouling systems containing cybutryne as of January 1, 2023, because studies have proven that this substance is harmful to various marine organisms.

## CANADA'S INVOLVEMENT

Under the *Canada Shipping Act, 2001*, the *Vessel Pollution and Dangerous Chemicals Regulations* apply to all ships in Canadian waters and to all Canadian ships everywhere. Division 8 of Part 2 of the Regulations requires ships of 400 tons gross tonnage or

more to have on board an anti-fouling certificate and those that are under 400 tons gross tonnage but 24 metres or more in length to have on board a self-declaration.

The Pest Management Regulatory Agency (PMRA) indicated in a Special Review Announcement that all registrations and use of organotin-based anti-fouling paints ceased to be effective December 31, 2002. The PMRA maintains a list of currently registered anti-fouling paints that may be imported, sold or used in Canada.,

## RESULTS / PROGRESS

### *Activities*

Transport Canada and the PMRA Regulations banned the use of organotin compounds including TBTs as an anti-fouling system on all ships. The regulations required the removal or encapsulation of coatings containing organotin compounds ~~including~~ by 2008. These regulations stopped Canadian operators from having the coating applied outside of Canada and putting the ship into service in Canadian waters.

They also stop persons from transferring into Canadian registry ships with this type of coating without it being removed or encapsulated.

It should be noted that cybutryn is not listed under the Canadian Environmental Protection Act, 1999 (S.C.1999, c.33).

The IMO developed Biofouling Guidelines in 2011 and establishes a mechanism for evaluating other anti-fouling systems and preventing the potential future use of other harmful substances in these systems.

### *Reports*

Transport Canada and Environment and Climate Change Canada activities are documented in the proceedings of the IMO Committee Meetings and published on the IMO website.