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To:	:	**All Surveyors/Auditors**
Applicable to flag	:	**All Flags**
Subject:	:	**IMO to Reconsider Tin in Silicone Coatings**
Reference:	:	**AFC Convention - Subsea Industries**

IMO to Reconsider Tin in Silicone Coatings

The re-emergence of organotin in marine hull coatings is of increasing concern, with academics and environmentalists calling on IMO to investigate the use of tin in silicone-based foul release systems and other ships hull coatings.

While use of the organotin tributyltin (TBT) was outlawed as an active biocide almost ten years ago, the IMO is claimed to "have left the door open" for tin as a catalyst, but according to some academics the amount of organotin used suggests it could be acting as the active agent.

The amount of 'catalyst' added is more than ten times higher compared to 2005. There is a purpose beside the catalyst activity and that the risk of spreading tin compounds again to kill marine life is eminent.

While shipowners may have thought the use of organotins in marine hull coatings was completely outlawed in 2008 with the ban on TBT, they can still be used as a catalyst if organotin content does not exceed the allowable limit of 250mg/1kg of paint. Dibutyltin and dioctyltin are the organotins under most scrutiny.

The question is why are organotins still being used when there are much safer chemicals available that are just as effective as catalysts for curing hull coatings? Even small amounts of organotin leaching in to the sea can impact marine fauna in the same way as TBT.

Part of the problem is that at very low concentrations, less than 1/1000th of the amount in coatings, organotins cause mollusks to change sex and/or become behaviorally castrated, with male following male pheromones and female following female pheromones.

The effects of dibutyltin and probably dioctyltin are similar to TBT. Organotins at very low levels alter enzymes that process steroids, which is why mollusks change sex.

Customer Service Center
5201 Blue Lagoon Drive, 9TH. Floor,
Miami, Fl., 33126
Tel: 1 (305) 716 4116,
Fax: 1 (305) 716 4117,
E-Mail:joel@conarinagroup.com

Technical Head Office
7111 Dekadine Ct.
Spring, Tx., 77379
Tel: 1 (832) 451 0185,
1 (832) 258 4050,
E-Mail:cbozenovici@vcmaritime.com

The question is whether silicone-based hull coatings are relying on the presence of organotins as an active ingredient to prevent fouling, rather than a catalyst to deliver non-stick properties to the coating.

Independent research on the tin content of some foul release coatings appears to have identified levels allegedly exceeding the limits set by the IMO's Marine Environmental Protection Committee (MEPC). This tends to support earlier research indicating that this type of paint appeared to be having a toxic effect on aquatic fauna in a way that led to the ban on TBT in 2008.

REFERENCES: AFC Convention

ATTACHMENTS: No

Kindest Regards,
Cosmin Bozenovici
Naval Architect – Conarina Technical Head Office

Customer Service Center
5201 Blue Lagoon Drive, 9TH. Floor,
Miami, Fl., 33126
Tel: 1 (305) 716 4116,
Fax: 1 (305) 716 4117,
E-Mail:joel@conarinagroup.com

Technical Head Office
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Spring, Tx., 77379
Tel: 1 (832) 451 0185,
1 (832) 258 4050,
E-Mail:cbozenovici@vcmaritime.com