Corrosion Inhibitor for Corrosion Control of Ship Bilge

Corrosion of ship bilge is a serious problem faced by Indian Navy which reduces ship's service life. Seawater mixed with oily wastes and waste oils fills ship bilges in Indian Naval ships which corrodes bilge and other piping materials. To avoid ship bilge corrosion, organic protective coating is applied at the time of fabrication and during refittment of ship. However, this coating is damaged by the physical, mechanical and other welding works. Due to difficulty in reaching the bilge area, it is not possible to recoat the bilges. Also use of sacrificial anode to control corrosion of bilge is not feasible, due to wet and dry conditions and coating of oils over sacrificial anodes. Corrosion inhibitors can minimize the corrosion of bilges and other materials placed in bilge area.

NMRL, Ambernath has developed the corrosion inhibitor for controlling corrosion of ship bilge material from bilge water, containing mainly seawater, oils and other contaminants. This inhibitor system can fully protect steels based structural materials against corrosion. The inhibitor system can function as corrosion inhibitor with inhibition efficiency more than 95 % for at least 20 days duration. This inhibitor system is highly soluble in seawater without requirement of any extra medium. It can be used as pellet, powder and liquid form so that this inhibitor system can be selected as per requirement of the user.

This inhibitor system can fully protect mild steel, carbon steel and low alloy steels based materials against corrosion and partially protect aluminium alloys, stainless steels and copper alloys.

Infrastructure requirement includes Mixing and grinding machine, Pellet making machine, chemical analysis facility for quality control of raw materials and finished product.

Market potential and potential users

The potential users of this technology are Indian Navy, Coast guard and any other structures where stagnant seawater is in closed environment.