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The Fuel Absorption Behavior Of Polyester And C-Orthocryl Resin Used in Marine Vehicle Manufacturing

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Abstract

The marine industry is using many types of alternative Polymer-based composite materials in the manufacture of small tourist boats, fishing boats and military boats due to the impact of the harsh marine environment on metallic materials. There's a lot of research have been conducted or still ongoing for the possibility of using others types of resins non-degradable resins in marine composites, to achieve a fundamental understanding of how Fuel interact with the Polymer, In this research, two types of resin polyester resin and c-orthocryl resin were subjected to fuels (Gasoline) absorption test, absorption test were conducted by immersing specimens into Gasoline at room temperature from 1st day until 4th week, the absorption of the gasoline by two Polymers was captured and compared. The weight gain by the polyester due to absorption was low but was different for the other C-orthocryl. The absorption of model fuel decreased the mechanic propriety of composites. The change in Absorption was significantly different between the polyester resin and the C-orthocryl resin these results can be making C-orthocryl not possible substitute for the polyester resin in the naval industry; the phenomenon of gasoline absorption is discussed after 1 month, Scanning electron microscope was used to investigate the microscopic mechanisms of absorption and damage and were used to determine the change in the polyester & c-orthocryl after immersion in Gasoline solutions.

Keywords – Absorption, Polyester, C-orthocryl, Composites, Gasoline.