

Synthesis and Characterization of Model Amines for Corrosion Applications

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Abstract : Fundamental studies aimed at elucidating the key contributions to corrosion performance are needed to make progress toward effective and environmentally compliant corrosion control. Epoxy/amine systems are typically employed as barrier coatings for corrosion control. However, the hardening agents used for coating applications can be very complex, making fundamental studies of water and oxygen permeability challenging to carry out. Creating model building blocks for epoxy/amine coatings is the first step in carrying out these studies. We will demonstrate the synthesis and characterization of model amine building blocks from saturated fatty acids and simple amines such as diethylenetriamine (DETA) and Bis(3-aminopropyl)amine. The structure-property relationship of thermosets made from these model amines and Diglycidyl ether of bisphenol A (DGBEA) will be discussed.

Keywords : building block, amine, synthesis, characterization

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