

### **357g Morphology and Amine Accessibility of (3-Aminopropyl)Triethoxysilane Films Prepared on Glass Surfaces**

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The morphology of (3-aminopropyl)triethoxysilane films prepared from vapor phase deposition, aqueous solution deposition, and organic solution deposition on a glass substrate were compared using fluorescent microscopy of the intrinsic film fluorescence and by reacting fluorescein isothiocyanate to the amine groups. The average amino group density of the films was evaluated by the picric acid method and by N-succinimidyl 3-[2-pyridyldithio]-propionamido (SPDP) cross-linked rhodamine. Fluorescent microscopy shows that silane films prepared from the dilute vapor phase deposition method are more uniformly distributed on glass substrates than those deposited by the other methods. The amino group density measured using picric acid was higher than that measured by SPDP cross-linked rhodamine, suggesting that the number of amino groups accessible depends on the size and shape of the reactive group. Furthermore, the differences in amino group density between the two assays depended on the film preparation method. Films prepared from vapor phase deposition provide more accessible amino groups than those deposited from aqueous or organic solutions.