

## Preparation of Hard Coating Solutions by the Sol-Gel Method

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In order to improve the surface hardness of transparent plastic films, organic-inorganic hybrid coating solutions were synthesized by the sol-gel method. The coating solutions were prepared by adding SINCO (Acrylic-Hybrid Resins) to a colloidal silica (12 nm) suspension. PC(polycarbonate) substrates were Bar-coating and dried at room temperature for 10 min before being cured at 120°C for 30 min. The pencil hardness and adhesion to substrates of the coating films, prepared at acidic condition (pH 4), showed better properties than those at neutral or basic conditions. Also, the pencil hardness and adhesion to substrates of the coating films increased with increasing colloidal silica content.