

## SB 乳膠對輕塗紙性質之影響

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### Effect of Styrene-Butadiene Latex Conditions on the Properties of Light Weight-Coated Paper

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Comparing to other fine grades paper, light-weight-coated (LWC) paper has shown significant growth lately both in production and consumption. As its coating weight is restricted, characteristics of the binder used would expect to exert more pronounced effect on the properties of LWC. We studied the functions and characteristics of the SB latex used on paper properties at the optimum binder dosages. The best brightness and gloss of LWC was attained by using an SB latex with a 9°C glass transition temperature (T<sub>g</sub>). LWC with the best opacity and wet-picking resistance was obtained from an SB latex having a 15°C T<sub>g</sub>. Latex having a -5°C T<sub>g</sub>, however, gave LWC of the best dry-picking resistance. SB latex with lower gel content (Gc), i.e., 50%, resulted in better opacity, gloss and wet-picking resistance. Latex with higher Gc of 80%, on the other hand, showed better dry-picking resistance. The smaller the latex particle size (P<sub>c</sub>), the better gloss and dry-and wet-picking resistance attained. For better opacity, larger P<sub>c</sub> was favored.

**【Key words】:** Light-weight-coated paper, binder, styrene-butadiene latex, gloss, glass transition temperature, gel content, particle size, paper properties

輕量塗佈紙(Light Weight Coated paper, LWC)，近年來之產量和消費量較其他文化紙品有相當大幅成長。由於塗佈量有限，塗料組成中，接著劑之用量、配合比之選擇、本身的特質、性狀等對塗佈紙之性質有重大影響。本研究主要探討乳膠性質對輕塗紙性質之影響。本研究之乳膠條件範圍內，玻璃轉移溫度 9°C 之乳膠可使輕塗紙有最佳白度與光澤度，玻璃轉移溫度 15°C 者展現最佳不透明度和濕強，玻璃轉移溫度為 -5°C 時則有最佳乾強較低之凝膠含量（50%）可得較佳的不透明度、光澤度和濕剝抵抗，較高的凝膠含量（80%）則乾剝抵抗較佳；小粒徑者光澤度和較佳的乾、濕剝抵抗皆佳，要有良好不透明度則需要大粒徑之乳膠。乳膠之特質不同可獲致不同之塗佈紙性質。