

Abstract: Changes in appearance and in the chemical and mechanical properties of films of Liquitex acrylic gloss medium, a commercial artists' medium based on an acrylic polymer dispersion, have been studied during natural aging in the dark and in accelerated thermal and light exposure tests. In dark storage at room temperature and humidity, the films acquire a haze and slight yellow discoloration in a few weeks, while the tensile properties stabilize only after film formation has progressed for about 50 days. Crosslinking seems to occur slowly at room temperature, causing the film to become only partially soluble in benzene and butanone, although the extent of this crosslinking does not seem to cause difficulty in film removal even after extended heat aging. The resistance of this polymer material to photochemical degradation by near-ultraviolet light is very high. Exposure of these films to near-ultraviolet light causes very slow scission and oxidation of the polymer, producing a gradual increase in solubility and hardness; severely degraded films suffer a sudden loss of tensile strength.