



ARLON

► Shelf Life of Vinyl Film

The shelf life of vinyl film is primarily determined by a.) the amount of plasticizing oils which transfer into the adhesive coating, and b.) the sensitivity of the affected adhesive to plasticizer contamination when it is fully saturated or contaminated. To some extent shelf life is dictated by product formula of film and adhesive but is also strongly affected by storage conditions at the distributor and end-user facility. A sign shop that keeps its film properly stored can expect to use it for significantly longer than the indicated shelf life with minimal risk, while an overheated or wet storage condition will invariably cause problems.

FORMULA

All vinyl films in the graphic market contain plasticizers which may be monomeric or polymeric, with a wide range of molecular weight. High molecular weight, polymeric plasticizers, such as those used in cast film are most stable. The grade of resin (polyvinyl chloride for the most part) and the amount of non-resin fillers, such as pigment, extensors, stabilizers also effect how much of the total plasticizer content will become mobile and the rate at which it will migrate when exposed to a given storage temperature. As one might guess, the higher the storage temperature the faster the migration and subsequent saturation (possible deadening) of adhesive.

STORAGE

Storage at recommended temperature and humidity will provide at least the shelf life listed in Product Information Bulletins for each product. If a product is certain to be on the shelf for an extended period before being completely consumed, it would be wise to store it in the coolest part of the facility and strive to control relative humidity near 50% within a 40% range.

- The liner will expand at the location of moisture contact, causing the surface of the affected area to be mottled.
- The silicone release coating on the liner will become inconsistent and cause difficult character weeding.
- The thin layer of clay which is coated over the upper surface of the release paper will rip away from the paper itself and come off with the adhesive during weeding.
- The paper will tend to curl or become wavy when it is unwound. This will make flatbed cutting, and overall weeding, overlaying with application tape and installing very difficult.

RECOMMENDATION

Keep the product cool and dry, keep in its box if possible (this also helps with color and manufacturing batch I.D.) and don't lay heavy rolls on their side for extended periods.

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