

Vinegar Syndrome - Protecting your microfilm images

Are Your Permanent Records as Secure as They Can Be?



Research libraries, government agencies and other vital record centers have used microfilm to capture and store essential information for many decades. Until about 25 years ago, virtually all of these records utilized a type of microfilm with maximum life expectancy of 100 years — when stored and handled under ideal conditions. However, while your storage facility may diligently maintain appropriate temperature and humidity levels, any time microfilm leaves the vault, it becomes vulnerable to deterioration.

This destructive phenomenon is commonly known as “vinegar syndrome.” In fact, at this point, even if your microfilm has never left its pristine storage facility, films from the 1930s are fast approaching their life expectancy!

Recognize the First Signs of Trouble

As you know, microfilm contains several different layers of material. The critical information resides on a photosensitive layer of gelatin emulsion that is coated onto a thicker base material for strength and support. From the 1930s through the mid-1990s, most manufacturers used a cellulose acetate base. Since the 1980s, microfilm has been available on a much more stable plastic base

of polyester. These polyester-based films can raise the microfilm’s life expectancy to 500 years, under recommended storage and handling conditions.

Unfortunately, acetate-based microfilm will break down rapidly when exposed to fluctuating temperature, humidity, or pollutants. Once this exposure occurs, the film’s base undergoes chemical degradation, generating by-products including acetic acid, which produces a noticeable aroma of vinegar – hence the term “vinegar syndrome.”

The presence of vinegar odor does not necessarily mean the film has significantly deteriorated, but it indicates the breakdown reaction is occurring. Excessive moisture and acetic acid are the catalysts for the reaction, and once started, the reaction produces more acid, and is autocatalytic - it cannot be stopped, and it accelerates, especially at elevated temp and RH.

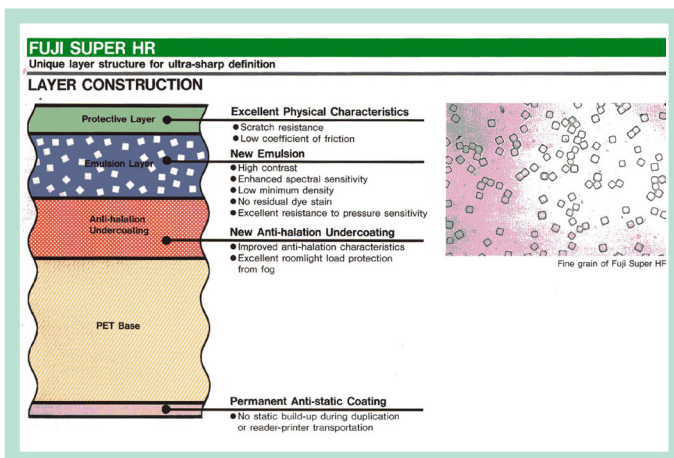
The base material loses its dimensional stability and becomes brittle, causing film layers to curl, shrink, and buckle. This makes the microfilm extremely fragile and, if left untreated, can destroy or erase the critical information it contains.

Prompt Action Can Make a Real Difference



While it is impossible to reverse the effects of “vinegar” syndrome, you can take early action to slow its progress and protect your data. The key is to get started as soon as possible. Unless you catch vinegar syndrome early on, the deterioration will continue to progress and can reach the point of no return, degrading and ultimately destroying the information completely.

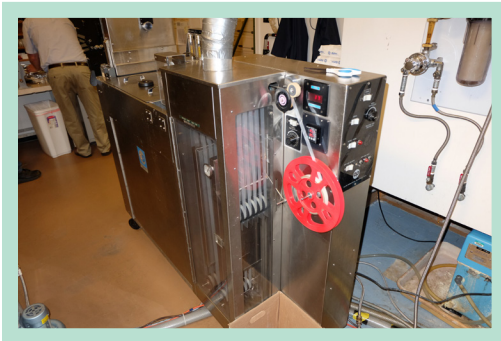
First, you need to determine exactly what type of microfilm you have. Is any of it on an acetate base? If it is, you will need to evaluate the film’s condition and assess any level of degradation from vinegar syndrome. Next you can isolate suspect microfilm and consider your options to prevent future problems. One thing is certain: you will need to monitor all acetate-based microfilm periodically to keep the data safe and secure.



Protect Your Film for the Future: Here's How

There are several ways to contain and mitigate the impact of vinegar syndrome – in other words, to keep it from undermining your entire acetate microfilm collection.

You can use A-D test strips to monitor film that does not yet exhibit any odor. Placed inside film boxes or cans, these strips detect and quantify acid accumulation and assess the film's level of degradation.



For film that already has the vinegar smell, molecular sieves can adsorb moisture and acetic acid to slow the rate of deterioration. Reducing storage tem-

perature and humidity levels is another way to slow the progress of vinegar syndrome.

Undoubtedly, the best way to preserve all the information on your acetate-based microfilm is to transfer it onto modern, polyester-based silver duplicating film. Depending on the data's importance, you might want to make multiple duplicates for added security and then store one copy at a remote location.

It is also possible to scan the acetate base film to create a digital record for easy access and the assurance of knowing you have an eye-readable archive for up to 500 years on this new polyester base duplicate.

Your Fujifilm Service Provider Can Help

Take the first crucial step toward protecting and preserving your microfilm and its essential data. Contact your local Fujifilm representative. They can recommend a service provider enrolled in the Fujifilm Microfilm Processing Certification Program. The network is nationwide, with providers in local markets throughout the country. Members commit to submit data to Fujifilm on a monthly basis to demonstrate their capability to meet or exceed industry standards for microfilm processing quality control.

Based on your instructions, a local Fujifilm-enrolled service provider can inventory your microfilm storage facility, identify evidence of vinegar syndrome, and recommend solutions that fit your budget. From A-D test strips to molecular sieves to a custom quotation for duplication services using high quality Fujifilm

polyester-based silver duplication film, your service provider has the right answers. Apply these procedures to sample rolls of microfilm, a section of your library, or your whole microfilm collection.



For more information, please contact Fujifilm Document Products at 888-676-3719 or FujifilmMicrofilm.com today.

Don't continue to wait and worry!