

AMIA 2002—EVALUATION OF ARCHIVAL FILM CONTAINER OPTIONS

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		Archival board box	Nonvented plastic can	Nonvented metal can	Vented plastic can	Vented metal can	Sealed can
Description	Materials	Archival cardboard containing alkaline buffer and sometimes zeolites.	Polypropylene. Earlier products used polyethylene. Plastic may contain flame retardant. Color based on pigments.	Steel with either tinplate or anti-corrosion coating (e.g., Kodak latex-based paint).	Polypropylene. Plastic may contain flame retardant. Color based on pigments.	Stainless steel with replaceable filter insert.	Plastic or metal. (Molecular sieves may be added inside can.) Moisture-proof materials should be used.
	Design	Commonly, cardboard box with metal edges.	May be circular or square.	Molded ridges on cover and bottom.	Various designs.	Perforated can (lid and bottom).	Variable.
Role in physical protection	Durability	Short term.	Long term	Long term	Long term	Long term	Long term
	Stackability	Not suitable for stacking more than a few 1000-ft. film rolls. Load on bottom box can be an issue in a stack of several boxes.	Depends on can design.	Interlocking can designs optimize stackability Load generally is not an issue.	Depends on can design.	Load is not an issue. No interlocking design.	Depends on configuration.
	Shipping	Not suitable.	Suitable.	Suitable.	Suitable.	May not be suitable.	Not practical if material must be handled or accessed frequently.
	Fire protection	No fire protection.	Some fire protection.	Some fire protection.	Some fire protection.	Information not available.	Depends on configuration.
	Protection against water damage	Flood: No. Overhead: No.	Flood: No. Overhead: Yes.	Flood: No. Overhead: Yes.	Flood: No. Overhead: Yes.	Flood: No. Overhead: No.	Flood: Yes. Overhead: Yes.

		Archival board box	Nonvented plastic can	Nonvented metal can	Vented plastic can	Vented metal can	Sealed can
Role in film chemical stability	Inertness	Archival cardboard must pass PAT. ¹	Enclosure materials must pass PAT.	Enclosure materials must pass PAT.	Enclosure materials must pass PAT.	Enclosure materials must pass PAT.	Enclosure materials must pass PAT.
	Corrosion	Corrosion is not an issue with cardboard.	Corrosion is not an issue with plastics.	Anti-corrosion coating provides suitable resistance.	Corrosion is not an issue with plastics.	Highly resistant to corrosion.	Depends on enclosure type.
	Control of vinegar syndrome	Porosity of cardboard material helps. Under cold conditions benefits are marginal.	Should only be used under cold conditions.	Should only be used under cold conditions.	Ventilation helps. Under cold conditions benefits are marginal.	Ventilation helps. Under cold conditions benefits would be marginal.	Use of adsorbents (e.g., molecular sieves) helps. Under cold conditions benefits are marginal.
	Control of cross-contamination (e.g., by acidic vinegar syndrome byproducts)	No advantage. (Air quality and T and RH conditions are key factors in cross-contamination.)	Reduces but does not eliminate the risk.	Reduces but does not eliminate the risk.	In theory, may permit cross-contamination. Air quality and T and RH conditions are key factors.	In theory, may permit cross-contamination. Air quality and storage conditions are key factors.	Eliminates the risk of cross-contamination.
	Mitigation of temperature changes	No significant impact.	No significant impact.	No significant impact.	No significant impact.	No significant impact.	No significant impact.
	Mitigation of humidity changes	No significant impact. Cardboard does not significantly buffer RH fluctuations.	Buffers RH fluctuations.	Buffers RH fluctuations.	Provides limited buffering against RH fluctuations.	Should provide limited buffering against RH fluctuations.	Microenvironments inside can are not affected by macroenvironmental RH fluctuations.
Recommended uses		Suitable for short-term storage. Not recommended for long-term storage because of limited durability.	Suitable for most uses; not recommended for film collections affected by chemical decay except under cold storage conditions.	Suitable for most uses; not recommended for film collections affected by chemical decay except under cold storage conditions.	Suitable for most uses; optimal for film collections affected by chemical decay when combined with proper storage.	Should be suitable for most uses; should be optimal for film collections affected by chemical decay when combined with proper storage.	Not practical for large collections. May be used in the absence of RH control. Often used in conjunction with adsorbents (e.g., molecular sieves) or at subfreezing temperatures.

¹ Photographic Activity Test, ISO Standard 14523: 1999. A test for predicting chemical degradation in photographic materials caused by harmful interactions with enclosure materials.