



# X-ray film recycling: Optimizing your return

*Silean LLC*

The recycling of X-ray film that has met its retention requirements has been going on for quite a few years, and many companies have participated in its benefits. Those benefits include reduced archive costs, revenue from the reclaimed silver, reduced potential of litigation and future environmental/disposal issues. However, a significant number of companies either have never pursued this opportunity or are using methods that are less than optimum, thus reducing their returns.

## Silean delivers payment to the client within 45 days from the date film is shipped from the client's facility.

Today, it is important companies not only participate in film recycling but also optimize their returns by being as efficient as possible. This is accomplished by 1) Minimizing the labor costs required to remove film from its archive location, 2) Choosing a recycler with

a proven ability to efficiently wash or remove the maximum silver and 3) Ensuring the best pricing has been obtained. In the following, we will discuss the recycling process in order to gain a better understanding.

The recycling process begins with determination of the retention requirement for the film or what needs to be kept and for how long. This may be defined in a company policy or may be written into specific contracts. Once the film for recycle has been identified, it is removed from its storage location and palletized for shipment. Lower cost labor that can quickly and efficiently perform this function is used. The film, paper packaging and reports are shipped to the processing location where sorting stations are set up to efficiently separate the film from the paper. Once loaded into the trailer for shipment, the trailer is locked and sealed for transit to the processor that has proven its ability to provide optimal washing of the film, enhancing silver recovery. Shipment costs are reduced through volume contracts with shippers.

Upon arrival at the processing location, the trailer is unlocked, the seal integrity is verified and the film moved to a secure

location within the facility. Under restricted access and video surveillance, the pallets are weighed and moved to the sorting stations. Once sorted, the film is weighed again to obtain the actual film weight now that the paper products are removed. The paper is immediately shredded in the same secure facility, bailed and sent to be recycled. The chopped paper is typically used to manufacture tissue and similar paper products.

The processing of the film begins with a series of chopping operations to create a coarse flake. At this time, personnel obtain multiple samples of the flake using specific procedures and deliver the samples to the laboratory to determine the assay or amount of silver in the film. The flake then begins its washing operation where the silver and emulsion are separated from the polyester backing. It's this operation that is critical to ensure the maximum amount of silver is washed or removed from the polyester backing. Once washed, the polyester is separated in a settling operation, removed, dried and recycled, normally being used as nonwovens in fabrics and other consumer products. The silver sludge is dried into a cake then pulver-

ized into a fine powder.

The final step is smelting of the silver powder. The powder is loaded into the smelting furnace and smelted for several hours at about 2,000 F. The silver is then poured into ingot molds for cooling. Once cool, silver ingots are placed in a vault for storage. Even the impurities or slag that is removed during the smelting process is cooled and later recycled completing the recycling operation.

Maximum value to the client is obtained by efficiently loading, transporting and processing the film. The overall transaction is simplified as Silean coordinates the entire effort, delivering payment to the client within 45 days from the date film is shipped from the client's facility. A certification of disposal of the film and paper products is also provided. Payment is based on the quantity of silver recovered and silver spot price at the time of settlement. Ultimately a win-win situation is achieved for each company involved in the recycle effort and, more importantly, for the environment.

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3807 Barracuda Lane, La Porte, TX  
(805) 616-4851  
Mexico Office: (624) 165-3811  
[www.mirglobal.com](http://www.mirglobal.com)  
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**STOP PAYING UNNECESSARY COSTS FOR MAINTAINING AN ARCHIVE OF X-RAY FILM**

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