

Tip: Using Plasti Dip to Seal Lead Weights

Introduction

In the Conservation Department at Miami University in Ohio, there is an assortment of weights in varying shapes and sizes (fig. 1).



Fig. 1. Assortment of weights in the Conservation department at Miami University.

Many of the weights are made of metal, which upon examination was assumed to be lead in most cases. Some of these are or were encapsulated in various protective materials.

In spite of the protective coverings, when the surfaces of the weights were tested with lead test swabs, almost all types of covered weights tested positive for lead (fig. 2).



Fig. 2. Stains on fabric-covered weight after conducting swab test, indicating positive result.

This exposed lead posed a health risk to staff and students, so the Preservation Librarian, Kim Hoffman, decided to try recovering the weights. Given their many shapes and sizes of solid weights, it would have been easiest to use a paint or a clear coat. However, the lead tests showed that paint and clear coat had failed to fully encapsulate the lead in the past, suggesting that a better solution was necessary.

Instead of paint, she decided to try a product called Plasti Dip. According to their [website](#), Plasti Dip is an “air-dry, specialty rubber coating.” One common use of this product in its use for coating tool handles, as advertised in the image on the can (fig. 3).



Fig. 3. Can of Plasti Dip.

The listed ingredients are VM&P Naptha, Hexane, Toluene, Methyl Ethyl Ketone, and carbon black. The product's [FAQ page](#) states that it “does not contain any heavy metals, and when completely dry, it is considered harmless.” This seemed like it might be a good solution for our strangely shaped weights.

Procedure

For the project, the department ordered a 14 ounce can of Plasti Dip. This product is messy and has a strong odor; a fume hood and gloves are recommended if you want to try this procedure. Scrap pieces of plastic, such as an empty margarine tub (fig. 4), were useful for propping up the drying weights.



Fig. 4. Weight drying on the edge of a margarine tub.

Dipping a small weight following the directions on the can produced satisfactory results. The weight was still very tacky after thirty minutes, which is the listed recoat time on the can, and at that point it was easy to accidentally mar the surface. It proved possible to correct for that effect and get a fairly smooth finish by doing several re-coats. The weight was still somewhat tacky after drying overnight but cured hard after several days. When the finish was tested by rubbing the weight against a piece of paper, there was no transfer of color or material. The surface of the newly coated weight tested negative for lead.

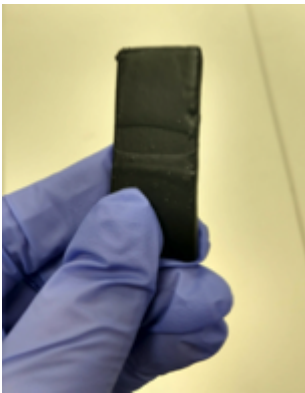


Fig. 5. Small weight fully sealed in Plasti Dip.

Lesson Learned

When staff returned to the office after a four-month absence due to the pandemic, it became apparent that if you use the original top on the can, the liquid Plasti Dip will dry out over time. In the future, the department will add an extra seal in order to preserve the leftover dip.

The partially congealed dip was used in an attempt to cover another weight. After the weight was dipped, the Preservation Librarian attempted to smooth out the coating using a scrap of barrier board (fig. 6).



Fig. 6. Plasti Dip smeared over lead weight and scrap barrier board.

The resulting coating did harden, but never become smooth.

Conclusion

Overall, the results were a qualified success. The procedure worked well for small weights that you can easily dip in the can. It is possible to purchase larger cans, which might be appropriate for dipping larger weights. For future attempts, the department may try other approaches, such as pouring the dip into a larger container. The product also comes in a spray application, which might be a solution for weights that are too difficult to dip.

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