



Smithsonian Institution

Archives of American Art

Celebrating 175: Ray Yoshida, Notebook on Enamels, circa 1956-circa 1990

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Gold is prepared for enameling as follows: anneal and pickle several times, using a hot solution of one part nitric acid to thirty-two parts water, then scratch brush thoroughly.

Silver may be prepared for enameling by annealing and pickling with a hot solution of sulfuric acid and water, then rinsing in three parts nitric acid and one part hot water, keeping the pieces agitated. The silver will then appear black. This film should be removed by scratch brushing, then the articles are ready for enameling. Great care is necessary when using the above method as strong nitric acid solution attacks solder, brass joints, and catches, very rapidly.

Silver may also be prepared for enameling as follows: anneal and pickle with a weak sulphuric acid solution, then place the articles to be cleaned in the following strip, until they are of a uniform gray color, and scratch brush.

A good strip for silver is one gallon of water, sixteen ounces of sulphuric acid and one ounce of bichromate of potash. Should dark spots appear on articles when removed from this strip, they should be given another treatment, as the fire is not removed until they are of a uniform gray shade, without dark spots.

Vitrifiable enamel used on the finer grades of Jewelry, is ground with distilled water, in agate mortars. However, owing to the cost of agate, large mortars or ball mills, made of Wedgewood ware, are used for grinding commercial quantities of enamel. The material should be ground not coarser than eighty mesh for large articles, or finer than one hundred mesh for small pieces.

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Wash enamel with clean water several times after grinding, stirring each time, then let settle and decant until finally all cloudiness has disappeared, and the water over the ground enamel is clear. Never use well water for washing enamel, it contains mineral salts, which are detrimental to enamel that has been ground.

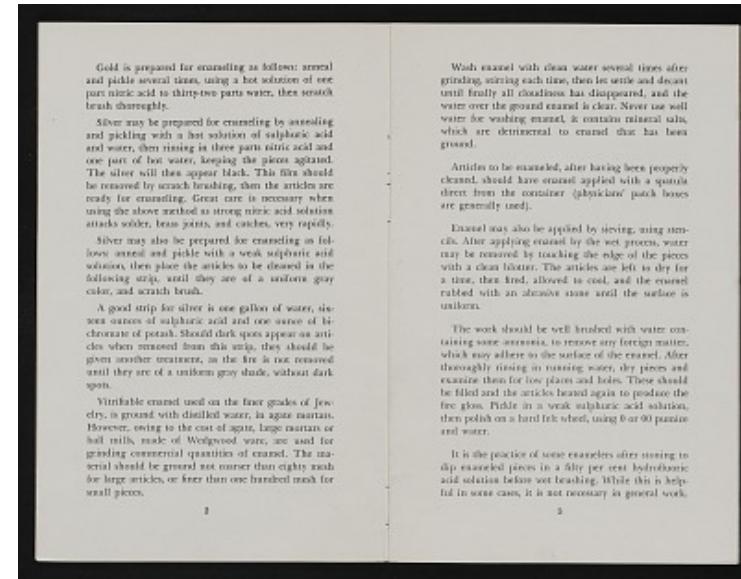
Articles to be enameled, after having been properly cleaned, should have enamel applied with a spatula direct from the container (physicians' patch boxes are generally used).

Enamel may also be applied by sieving, using stencils. After applying enamel by the wet process, water may be removed by touching the edge of the pieces with a clean blotter. The articles are left to dry for a time, then fired, allowed to cool, and the enamel rubbed with an abrasive stone until the surface is uniform.

The work should be well brushed with water containing some ammonia, to remove any foreign matter, which may adhere to the surface of the enamel. After thoroughly rinsing in running water, dry pieces and examine them for low places and holes. These should be filled and the articles heated again to produce the fire gloss. Pickle in a weak sulphuric acid solution, then polish on a hard felt wheel, using 0 or 00 pumice and water.

It is the practice of some enamellers after stoning to dip enameled pieces in a fifty per cent hydrofluoric acid solution before wet brushing. While this is helpful in some cases, it is not necessary in general work.

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