Mi-Tique® 1792

Room temperature antiquing solution for copper, brass, bronze and Munz. Produces mainly light brown to darker brown color with red hues. While not the target color, black can be produced with long dwell times.

Features & Benefits

US 10 B, US 5, Finish	Matching of hardware finishes
Uniform deposition coating	Easily relieved to get varying levels for worn antique appearance
ROHS and REACH compliant	Reduction of hazardous chemicals

Operating Conditions

Instructions

Mi-Tique 1792 liquid concentrate is diluted with water and used at room temperature as an immersion "oxidizing" solution. The color developed and the reaction rate with the various metal surfaces is controlled by varying the concentration and the length of immersion. Prior to charging a production tank, some experimentation should be done with properly prepared sample parts to determine the conditions required to produce the desired finish. It differs from Mi-Tique 1791 by producing browns enriched with a more definite reddish tone.

Equipment

Acid resistant tanks, tumbling barrels, baskets, and racks must be used with Mi-Tique solutions. Plastic, plastic lined, rubber lined, glass or stoneware are suitable. Mild steel may be used for the cleaning, rinsing and sealant tanks.

Solution Make Up and Color Development

Prior to charging a production tank, some experimentation should be done with properly prepared sample parts, using various dilutions and immersion times to determine the conditions required to produce the desired color.

Black and blackish-brown finishes are obtained with dilutions of one (1) part concentrate to 3 to 5 parts water and immersion times of 2 to 3 minutes. Light brown colors are developed by using immersions of 1 to 2 minutes and dilutions of 6 to 10 parts water. The outer color is the smut and can be a different color when wiped. Test runs to establish immersion times and concentrations will give consistent colors.

Antique finishes should be protected with an oil, wax, or lacquer topcoat. Since the ultimate color will be influenced and enhanced by the topcoat, the topcoat must be applied before judging the depth of color or before comparing with other antique finishes. The natural color of the alloy and the mechanical finish on the surface will also affect the final color of "highlighted" or burnished finishes.

Surface Preparation

Plated Surfaces
1. Rinse thoroughly in cold water.

2. Activate for 15 to 30 seconds in a dilute solution of the appropriate Hubbard-Hall's Acid Salt to neutralize residual alkaline plating solution, which could contaminate the Mi-Tique solution.

3. Rinse thoroughly in cold water.

Wrought Alloys and Sheet Stock
1. Thoroughly clean and deoxidize with the appropriate Hubbard-Hall's Aquaease cleaner, followed by subsequent deoxidizing with the appropriate Hubbard-Hall's Acid Salt, or burnish, belt sand, glass bead or sandblast the surface.

2. Rinse thoroughly with cold water to remove residual cleaning solutions or blasting dust.

"Oxidizing", Relieving, Sealing
1. Immerse pieces, while still wet from preceding rinse, in the Mi-Tique solution for the length of time necessary to produce the desired color. Rotating perforated barrels are recommended for processing small parts. If dip baskets are used, the parts should be agitated when first introduced into the solution to break air bubbles and to assure solution contact with all surfaces.

2. Rinse thoroughly with water. If a hot water rinse is used to accelerate drying, it should be preceded with a short dip in cold water to minimize staining. For the lightest color wet relieve or tumble will quickly remove excess color.

3. Force dry in heated spin drier, oven, or cob meal tumble. The darkest colors are more stable when dried. Large architectural panels should be wiped dry or blown dry with compressed air. Small parts do not have to be dried if they are to be barrel or vibratory burnished immediately after rinsing.

4. A variety of attractive antiqued or "highlighted" finishes are produced by buffing, scratch brushing, barrel, or vibratory burnishing. Brass wheel brushes will shift color to a darker black.

5. A protective topcoat should be applied to enhance the color and give added corrosion and abrasion resistance. The appropriate Hubbard-Hall's Metal Guard should be applied to obtain the desired finish.

Solution Replenishment and Maintenance

The solution is gradually depleted through use but may be replenished indefinitely with periodic additions of Mi-Tique 1792 concentrate. The strength of the solution and the amount of concentrate to be added can be determined by titrating with sodium thiosulfate as outlined in Chemical Control Procedure section or the strength can be maintained by recording the time of immersion. When the time required to produce the desired color increases, add sufficient concentrate to reduce the time to your established standard.

The frequency of additions will depend upon the volume of work processed. For optimum results, the solution should be maintained at 85% of its original strength or greater, and frequent small additions are recommended.

With automatic lines, a bath history should be established immediately after charging the tank by keeping a record of the number of loads processed versus the titrated strength to determine the point at which the bath is depleted approximately 10 to 15% and replenishment is necessary. Timed metering pumps, triggered by the load, are recommended for maintaining a consistent strength. Over time copper from parts will increase in the solution and selenium reacting out will be depleted. Partial bail out and chemical additions are recommended for large tanks when the ingredients are out of balance.

The life of the solution and the coverage will be increased by continuous circulation and filtration. An alternative is to allow the solid by-products of the reaction to settle to the bottom of the tank and transfer the solution to a clean, plastic-lined drum to be retained for recharging after the tank is cleaned.

Titration Method

A sample of a freshly prepared production bath should always be taken as a control solution prior to running any parts through the bath. If a sample was not taken, a laboratory prepared solution at the same concentration may be used as the control solution.

Equipment required

25mL pipette
50mL burette
Burette Stand
Ring Stand
250mL Erlenmeyer Flask

Chemicals required

6 N Hydrochloric Acid
15%w/w Potassium Iodide
0.1N Sodium Thiosulfate
2%w/w Soluble Starch Solution

1. Pipette 25 mL of production bath into a 250 mL Erlenmeyer flask.
2. Add 75 mL water to flask.
3. Add 10 mL 6 N Hydrochloric Acid to flask.
4. Add 20 mL 15 %w/w Potassium Iodide to flask.
5. Swirl the solution once, stopper or aluminum foil covered stopper, and store in the dark for 10 minutes.
6. Add 10 mL starch solution to give a dark blue green to almost black color.
7. Titrate with 0.1 N Sodium Thiosulfate solution until the dark black color changes to a light brown. Please note: Upon standing, the light brown color will turn dark again, but additional Sodium Thiosulfate should not be added. The first endpoint is correct.
8. Record mL used.

Calculation

$$Concentration = mL\ 0.1\ N\ Na_2S_2O_3 \times 0.6676$$

Test Kit Method

Equipment required
4 oz mixing bottle
2 syringes (5mLs)
2 syringes (3 mL)

Chemicals required
2 oz 0.5 N Sodium Thiosulfate
4 oz 6 N Hydrochloric Acid
8 oz 15%w/w Potassium Iodide
4 oz 2%w/w Starch Indicator

1. Transfer a 5 mL sample of the production bath into the mixing bottle.
2. Dilute with approximately 50 mL of water.
3. Add 2 mL 6 N Hydrochloric Acid to the bottle.
4. Add 4 mL of the 15% by weight Potassium Iodide solution.
5. Add 2 mL of Starch Solution. The solution will become a dark blue to almost black color.
6. Add the 0.5 N Sodium Thiosulfate solution from the dropping bottle --drop by drop-counting the drops while swirling the flask. The end point is marked by a sudden change in color from dark black to light brown.
7. Record the number of drops used.

Calculation

$$Concentration = \#\ Drops\ 0.5\ N\ Na_2S_2O_3 \times 0.77$$

Caution

The Mi-Tique solution is mildly acidic. Avoid contact with eyes, skin and clothing. Wear eye shields, protective gloves, and aprons. The solution is toxic if taken internally. Read and understand OSHA Safety Data Sheet and drum warning labels prior to working with or handling this product.

WARRANTY: THE QUALITY OF THIS PRODUCT IS GUARANTEED ON SHIPMENT FROM OUR PLANT. IF THE USE RECOMMENDATIONS ARE FOLLOWED, DESIRED RESULTS WILL BE OBTAINED. SINCE THE USE OF OUR PRODUCTS IS BEYOND OUR CONTROL, NO GUARANTEE EXPRESSED OR IMPLIED IS MADE AS TO THE EFFECTS OF SUCH USE, OR THE RESULTS TO BE OBTAINED.

Our people. Your problem solvers.

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