



Better Chemistry. **Better Business.**

**Mi-Tique® 1791**

**Product Code: 2300000**

**Revised Date: 6/18/2015**

**Mi-Tique® 1791**

### **DESCRIPTION**

**Mi-Tique® 1791** is a room temperature and liquid metal coloring formulation for antiquing copper, brass and munz, which produces light to dark brown and black color range.

### **FEATURES AND BENEFITS**

- Wide range of colors from brown to black
- Liquid concentrate 1 part diluted with 6 parts water
- Low Temperature 70F (21C)
- US 5, US 10B, US 20 Finish
- Immersion or hand wipe
- Burnish to easily get varying levels for worn antique appearance
- RoHS and REACH Compliant

### **TYPICAL APPLICATIONS**

- Door and Cabinet Hardware
- Lighting: Lamps and Fixtures
- Architectural and Garden Elements
- Metal Decorative Accessories
- Plumbing: Sinks and Faucets
- Medallions and Plaques
- Apparel: Buttons and Buckles



## Product Bulletin

Better Chemistry. **Better Business.**

**Mi-Tique® 1791**

**Product Code: 2300000**  
**Revised Date: 6/18/2015**

### **INSTRUCTIONS**

**Mi-Tique® 1791** liquid concentrate is diluted with water and used at room temperature as an immersion "oxidizing" solution. By varying the concentration and length of immersion, a range of colors from light flemish browns and statuary bronzes to blackish browns to black U.S. 10B finish can be produced.

### **EQUIPMENT**

Acid resistant tanks, tumbling barrels, baskets and racks must be used with the 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 MAKEUP 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 6 parts water and immersion times of 1 to 3 minutes. Light statuary brown colors are developed by using short immersions of 30 seconds or by increasing the dilution to 8-15 parts water. Immersion times and concentrations are not critical and the colors can be consistently reproduced in production.

Antique finishes should be protected with oil, wax, or lacquer topcoat and the ultimate color will be influenced and enhanced by the topcoat and, therefore, 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. Minimum plating thickness should be 3-4 mils.
2. Rinse thoroughly in cold water.
3. Rinse for 15-30 seconds in a dilute solution of Hubbard-Hall's Acid Salt W, acid salt (1/4 oz. to 2.5 oz/gal) to neutralize residual alkaline plating solution, which could contaminate the Mi-Tique® solution.
4. Rinse thoroughly in cold water.



**Mi-Tique® 1791**

**Product Code: 2300000**  
**Revised Date: 6/18/2015**

### WROUGHT ALLOYS AND SHEET STOCK

1. Thoroughly clean and deoxidize with HUBBARD-HALL's Aquaease™ SL 80 followed with Acid Salt W, 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 AND 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 hot water rinse is used to accelerate drying, it should be preceded with a short dip in cold water to minimize staining.
3. Force dry in heated spin drier, oven or cobmeal. 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.
5. A Protective topcoat should be applied to enhance the color and give added corrosion and abrasion resistance. For a hard, dry finish, apply METAL GUARD® 600. For an oily U.S. 10B finish, apply HUBBARD-HALL's METAL GUARD® 500.

### SOLUTION REPLENISHMENT AND MAINTENANCE

The solution is gradually depleted through use but may be replenished indefinitely with periodic additions of Mi-Tique® 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" 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.



## Product Bulletin

Better Chemistry. **Better Business.**

**Mi-Tique® 1791**

**Product Code: 2300000**  
**Revised Date: 6/18/2015**

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 10-15% and replenishment is necessary. Timed metering pumps, triggered by the load, are recommended for maintaining a consistent strength.

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.

### DROPPING BOTTLE CHEMICAL CONTROL PROCEDURE

#### EQUIPMENT REQUIRED

#### CHEMICALS REQUIRED

4 oz mixing bottle	2 X 2 oz 0.5 N Sodium Thiosulfate
2 syringes (5 mls)	4 oz 6 N Hydrochloric Acid
2 syringes (3 mls)	8 oz Potassium Iodide 15 %/wt
	4 oz Starch Indicator 2 %

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. Titration of this "new" solution will provide the figure for  $D_1$ .

1. Transfer a 5 ml sample of the production bath into the 125 ml Erlenmeyer flask.
2. Dilute with water to the 50 ml mark.
3. Add 2 ml 6N (1:1) Hydrochloric Acid to the flask.
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 0.5N Sodium Thiosulfate solution, from the dropping bottle - drop by drop - counting the drops while swirling the flask.
7. The end point is marked by a sudden change in color from dark black to light brown.

### CALCULATION

Number of drops \_\_\_\_ X 0.3556 = \_\_\_\_ % by volume Mi-tique 1791

4



## Product Bulletin

Better Chemistry. **Better Business.**

**Mi-Tique® 1791**

**Product Code: 2300000**  
**Revised Date: 6/18/2015**

45 drops X 0.3556 = 16% Mi-tique 1791

### **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.