

BLACK MAGIC® BAL

3. Immerse in a 25% to 50% by volume muriatic acid solution or in an 8 oz. to 2 lbs. per gallon solution of Hubbard-Halls's Acid Salt W at room temperature for 30 seconds to 2 minutes to remove surface oxidation.
4. Rinse in bottom-fed, overflowing cold water rinse.
5. Immerse in **Black Magic® Brass Activator Liquid** solution (220°F. boiling). Immersion time usually will be from one to 3 minutes.
6. Immerse in Black Magic® CB Liquid. Used at a concentration of 45% by volume with the temperature maintained at 200° to 210°F. Immersion time usually will be from 5 to 20 minutes, producing a uniform, deep black color.
7. Rinse in bottom-fed, overflowing cold water rinse.
8. Seal the finish by immersing for one minute or longer in HUBBARD-HALL's Metal Guard® 500 for an oily finish; Metal Guard® 310 or Metal Guard® 450 for a soft, "dry-to-the-touch" finish; or Metal Guard® 600 for a hard, dry finish.

OPERATING TIPS

Problems will rarely arise with a properly maintained and controlled Black Magic® Brass Activator Liquid solution. Most problems can be traced to insufficient surface preparation of the work or an incorrect operating temperature. Other tips would include:

1. A glass thermometer should be kept on hand to accurately check the temperature of the bath.
2. Frequent small additions of replenishment salts will produce more uniform results than large amounts added less frequently. This is also true for water replenishment to compensate for evaporation loss. The strength of the solution and the amount of replenishment salts to be added can be determined by titrating with sodium thiosulfate as outlined in Chemical Control for **Black Magic® Brass Activator Liquid**.
3. Ideally, the temperature of the solution should not drop below boiling (220°F.) when work is introduced. Sufficient heat should be maintained to ensure that the solution does not drop below this temperature for more than a minute, even with the heaviest loads. Maximum loads should not exceed 1 lb. of work per 1/2 gallon of solution. Optimum loads would be approximately one lb. of work to one gallon of solution, including the weight of barrels, baskets and racks.
4. A thorough final rinse after blackening will minimize contamination of the sealant solutions.

EQUIPMENT

The Black Magic® tanks may be constructed of mild steel or stainless steel. The cleaning and rinse tanks may also be constructed of mild steel. Acid pickling tanks should be plastic, rubber-lined or rigid-polypropylene.

Gas-heating units are preferred and should be under fired. Electric immersion units may be constructed of mild steel. Tanks to be heated should be insulated. Racks, hoods and baskets may be constructed of mild steel. Non-ferrous metal such as galvanized iron, bronze, copper, tin or

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aluminum should not be used for racks or baskets as these materials will contaminate or deplete the Black Magic® solutions.

Hot alkaline cleaning, acid pickling and the Black Magic® solutions should be exhausted. The duct work may be of the same material as recommended above for the tanks. Galvanized steel should not be used.

Your Hubbard-Hall representative is readily available to assist you in selecting and installing the proper controls as well as the complete tank system required for the process.

CAUTION

THIS MATERIAL CONTAINS CAUSTIC SODA. CAUSES SEVERE BURNS.

This material contains sodium chlorite, a strong oxidizer. Avoid contact with organic materials.

Do not get in eyes, skin or on clothing. Avoid breathing dusts or mists. Do not take internally. When handling, wear goggles and face shield.

While making solutions, add concentrate slowly to surface of solution to avoid violent reaction and spattering.

In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes. For eyes, call a physician. Do not mix this product with any other material. Avoid contact with acidic materials and solutions.

Read and understand OSHA Safety Data Sheet prior to handling or working with 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.