Product Bulletin

Product Name: Black Zinc
Product Code: 2232009
Revision Date: December 21, 2023

Black Zinc

Black Zinc is an acidic, low temperature powdered product developed to impart a black conversion coating of zinc die casting, galvanized stock and electroplated zinc parts.

Features & Benefits

Provides base for organic coatings	Lacquers, paints, waxes, and oils
Blackens a wide range of alloys	Cast, galvanized, plated

Operating Conditions

Concentration	1 lb/Gal (120 g/L)
Temperature	80°F – 100ºF

While the operating temperature may range between 80°F to 100º F, With the optimum being 85ºF, the highest blackening speed is achieved at 90ºF.

Operating temperatures below 80ºF will result in non-uniform colors-black with iridescent colors. Temperatures above 100º F can cause the coating to be gray rather than black and also will deplete the solution rather rapidly. Therefore, it is important not to exceed 100º F and subsequent depletion of bath life.

Immersion Time	5 to 20 min

This time will be dependent upon the solution temperature and age of the bath. Agitation of the work or of the solution accelerates the rate of blackening.

Immersion times longer than 30 minutes will result in loss in color, in that the coating will be "steely" in appearance rather than jet black. Short immersion time less than 2 to 3 minute will produce an iridescent color.

Agitation	Recommended - Solution or work movement

Agitation accelerates the formation of the black coating.

pH	Operating range 3.9 to 5.5

As the Black Zinc solution is being used the pH will fall. At a pH of 3.7 the Black Zinc solution will attack the zinc die-castings and above 5.5 black coating will not be as intense.

The addition of ammonium hydroxide to the Black Zinc will raise the pH of the solution. Sulfuric acid will lower the bath pH.

Equipment

Tank ventilation	Recommended
Tanks	Koroseal, lined steel or polypropylene
Heating units	Karbate, teflon or tantalum

Bath Control

Operate the bath until exhaustion and then make up a fresh bath. Should the configuration of the work be such that there is an excessive solution drag-out then additions of 4 oz/gal of Black Zinc should be made to the solution when the blackening time becomes longer than 30 minutes.

Baths Make-Up

Fill the tank half full of cold water. Add the required lbs. of Black Zinc, mix thoroughly and then fill tank with water to the final level.

Process Cycle

1. Immerse part in the appropriate Hubbard-Hall cleaner at 150°F to 160°F for 5 minutes.
2. Cold water rinse.
3. Activate part in the appropriate Hubbard-Hall Acid Salt at room temperature for 30 seconds.
4. Cold water rinse.
5. Blacken parts in Black Zinc, 1 lb/Gal, 80°F to 100°F, 5 to 20 minutes.
6. Cold water rinse.
7. Seal with the appropriate Hubbard-Hall sealer.

Waste Disposal

The Aquapure team will be able to assist with the proper waste treatment solution.

Product Bulletin

Product Name: Black Zinc
Product Code: 2232009
Revision Date: December 21, 2023

Caution

Avoid contact with skin and eyes - wear goggles and rubber gloves when handling the Black Zinc.

In case of contact, flush exposed areas with cool water for 15 minutes; for eyes also get immediate medical attention.

Avoid breathing the dust from the Black Zinc powder. A respirator is recommended when handling the material.

Our People. Your Problem Solvers.

For more information on this process,
please call us at 203.756.5521 or email: techservice@hubbardhall.com

Hubbard-Hall holds certifications for **ISO 9001:2015**, Responsible Distribution, as accredited by the **ACD** (Alliance for Chemical Distributors) and as a **Women-Owned Small Business**, as well as maintaining an association with **Omni-Chem**[136].