



Product Bulletin

Better Chemistry. **Better Business.**

Ultrex Z 27

Product Code: 2232027
Revised Date: 08/05/2014

Ultrex Z 27

An Immersion Blackening Material For Zinc

Ultrex Z 27 is a mildly acidic, non-chromate containing powdered material used to produce by immersion, uniform black coatings on zinc die castings and zinc plated parts. The coating produced by **Ultrex Z 27** is a black, inert metallic oxide sufficiently adherent to the base material to allow mild deformation of the part. The process produces glossy, black finishes on bright zinc plate and on buffed die castings. Dull black finishes are obtained on etched or dull surfaces. The coating has fair corrosion resistance and may be suitable for some indoor applications without further protection. Where additional corrosion and wear resistance is required, the **Ultrex Z 27** coating should be lacquered, waxed or oiled. Application of these films also enhance the tone and depth of the **Ultrex Z 27** coating.

Ultrex Z 27 coatings afford an excellent base for paint. They are also easily relieved or scratch brushed to produce interesting "antiqued" and pewter-like finishes.

Zinc plated parts should be dipped in dilute acid (0.25% nitric) and rinsed prior to immersion in the **Ultrex Z 27** solution. Die cast parts should be alkaline or detergent cleaned and acid dipped in 0.5% sulfuric acid prior to blackening.

OPERATING CONDITIONS

Concentration: 4 – 8 oz/gal

Temperature: 85-120°F

Immersion Time: 1 - 5 minutes (higher temperatures produce faster deposits)

Control: Maintain solution pH between 5.0 - 5.5 with small additions of sulfuric acid. Add 1 - 2 oz/gal **Ultrex Z 27** to speed up deposition rate, when required.

Equipment: 300 series stainless, fiberglass or plastic tanks. 300 series stainless or titanium coils.

Caution: **Ultrex Z 27** is a mildly acidic salt and solution. Avoid contact with skin and eyes. In case of contact, flush thoroughly with water.



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ANALYSIS FOR BATH CONCENTRATION

REAGENTS & TEST SOLUTIONS:

1. Mannitol powder
2. Bromocresol Purple Indicator
3. 0.1 Molar Sodium Hydroxide (also 0.1 Normal)

METHOD: Burrett Titration Method

1. Pipette a 10 sample of the working solution into a clean 250 ml Erlenmeyer flask.
2. Add approximately 5 grams of Mannitol powder (sufficient to make a paste mixture).
3. Add 20 drops of Bromocresol Purple Indicator, developing a yellow/green solution color.
4. Titrate with **0.1 Normal** Sodium Hydroxide until the solution color changes to a uniform purple.

$$\begin{aligned} \text{Oz/gal Ultrex Z 27} &= \text{mls 0.1 N Sodium Hydroxide} \times 0.75 \\ 8 \text{ oz per gallon} &= 10.7 \text{ mls 0.1N Sodium Hydroxide} \end{aligned}$$

TEST KIT: Dropping Bottle Method

1. Using 5 ml syringe provided, transfer 5 mls of **Ultrex Z 27** solution into testing bottle.
2. Add ½ teaspoon of Mannitol and 20 drops Bromocresol Purple Indicator.
3. Add **1.0 N** Sodium Hydroxide drop wise, while mixing solution until the solution turns a definite purple.

$$\begin{aligned} \text{Oz/gal Ultrex Z 27} &= \text{drops of 1.0 N Sodium Hydroxide} \times 0.55 \\ 8 \text{ oz per gallon} &= 15 \text{ drops 1.0 N sodium Hydroxide} \end{aligned}$$

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.