



Chromate Dyes

1. Description

Specialty chromate dyes offer an economical means for coloring certain chromate conversion coatings on aluminum or zinc for identification and/or decorative purposes.

Note: Specialty chromate dyes WILL NOT COLOR RoHS compliant aluminum chromates.

The following colors are available:

- Specialty Red No. 1
- Specialty Red No. 5
- Specialty Violet No. 2
- Specialty Orange No. 7
- Specialty Yellow No. 1
- Specialty Yellow No. 4
- Specialty Blue No. 1
- Specialty Blue No. 4
- Specialty Green No. 3
- Specialty Black No. 1
- Specialty Black No. 55

2. Application instructions (See Section 4)

This data is a "guideline" of suggested (not limited) operating conditions, but cannot be extended to cover every possible case. Not all chromate dyes are compatible with all chromates. The suitability should be confirmed by the users own test prior to purchase.

Concentration: 2-10 g/l

pH: 3.5-4.5

Temperature: 70°-90°F

Dye time: 3-10 minutes

3. Conditions for using chromate dyes

Tank: Stainless steel or other acid resistant materials such as neoprene, polyethylene and polypropylene that can withstand a constant operating temperature of 100°F.

Water quality: Deionized or tap

pH adjustments: Raise with sodium hydroxide.
Lower with acetic acid.

Intensity of color: Color and final shade are influenced by many factors. Increasing the dye bath temperature, time, or concentration will yield deeper colors.

Ammonium bifluoride: When coloring aluminum chromate, adding 0.10 oz/gal of ammonium bifluoride to your chromate solution shows improved results.

4. Typical application cycle

1. Clean
2. Rinse
3. Etch
4. Rinse
5. Deoxidize
6. Rinse
7. Rinse
8. Chromate
9. Rinse in cool, clean running water.
7. Dye
8. Rinse

5. Storage

Shelf life is virtually unlimited.
Store in original container in a cool dry location.
Close package tightly after removal of dye.
In humid environments, dye powder may clump-up.

6. Preparation of a new dyebath

1. A cleaned tank is filled with water to about 75% of final volume and raised to dyeing temperature.
2. The required amount of dye is weighed out and dissolved in hot water (160°-180°F) in a separate container until a slurry is formed. This is your stock solution.
3. With agitation turned on in tank, pour stock solution into tank.
4. Top off the tank to final working solution volume with more hot water and agitate for 15 minutes.
5. Using a calibrated pH meter, check the pH and adjust.
6. The dyebath is brought to dyeing temperature.

7. Conversion factor

Converting grams per liter (g/l) to ounces per gallon (oz/gal)

$$\text{g/l} \times 0.134 = \text{oz/gal}$$

8. Product safety

We recommend that the company/operator read and review the **Material Safety Data Sheet** for the appropriate health and safety warnings before use.

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