



Technical Product Bulletin

Alodine 1200 S

Yellow chromating of aluminium in an immersion process - powdered, chromic acid containing product -

Fields of application:

Alodine® 1200 S is a powdered chemical used to produce a protective coating on aluminium which ranges in colour from light iridescent golden to tan. The process is operated at room temperature. The coating produced minimizes corrosion and provides an improved bond for paint.

The Alodine® 1200 S coating chemical, being listed on the Qualified Product List QPL-81706, is an approved material to be used by Method C (immersion processing) to produce Class 1A and 3 coatings, bare or unpainted, in accordance with Military Specification MIL-C-5541 B.

Alodine® 1200 S and other Alodine® coating chemicals are listed in the Qualified Product List QPL-81706 as approved materials for other Methods and Classes of Military Specification MIL-C-5541 B.

Coating bath make-up:

For 1000 l volume of bath, add to the water with stirring or circulating by the pump:

Alodine® 1200 S	7.5 kg
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Operating conditions:

Points Cr(VI)	12 - 13
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Alodine 1200 S

pH	1.8 - 2.0
Temperature	20 - 40 °C
Time	0.5 - 5 min.

Process sequence:

Operation No. 1 - Clean
Operation No. 2 - Rinse
Operation No. 3 - Deoxidize
Operation No. 4 - Rinse
Operation No. 5 - Coat with Alodine® 1200 S
Operation No. 6 - Rinse
Operation No. 7 - Rinse with deionized water
Operation No. 8 – Dry

The work, after processing and drying, is ready for use either painted or unpainted.

Maintenance of the bath:

The Alodine® 1200 S bath is controlled in the plant by a titration of the Cr(VI)-points and a pH check.

Cr(VI)-points:

Titration:

1. Pipette 10 ml sample of the Alodine® 1200 S bath into a flask and dilute with 50 ml distilled water.
2. Add 20 ml of 25 % H₂SO₄ and 2 - 3 g KJ.
3. Titrate against 0.1 N sodium thiosulphate solution until the colour changes from brown to yellow.
4. Add several ml of soluble starch solution to the sample and continue the titration until the blue-black colour disappears.
5. Record the number of ml of 0.1 N sodium thiosulphate solution used as Cr(VI)-points.

Replenishment:

Add 1.25 kg of Alodine® 1200 S per 1000 l of bath for each Cr(VI)-point lacking and Alodine® 45 if required.

The addition of small amounts of Alodine® 45 is necessary in case of high bath load and continuously operating immersion plants.

The bath should be kept within 12 and 13 Cr(VI)-points.

pH-Determination:

A pH determination should be made each time the Alodine® 1200 S coating chemical bath has been replenished.

The optimum pH lies between 1.8 and 2.0.

NOTE: The pH of the Alodine® 1200 S is adjusted with diluted caustic solution and nitric acid, respectively.

Remarks:

The tank material containing Alodine® 1200 S should be made out of rigid PVC (free of plasticisers) or austenitic steel (type 1.4571).

Hooks and basket will have to be made out of aluminum, rigid PVC (free of plasticisers) or austenitic steel.

Bathes of Alodine® 1200 S as well as its rinsing bathes are not to be discharged into the public sewage system without prior detoxification and neutralization.

Caution!

Alodine® 1200 S contains chromium trioxide, complex fluoro and cyanide compounds. Wear

- Eye goggles
- Rubber gloves
- Acid resistant wear
- Avoid contact with skin
- Provide air circulation

Equipment and chemicals for the analysis:

Pipet, 10 ml
Erlenmeyer flask, 300 ml
Graduated cylinder, 50 ml
Buret, 25 ml
DI-water
Sulphuric acid, 25 %, pur
Potassium iodide
Starch solution (stabilized), 1 %
Sodium thiosulphate solution, 0.1 N
pH-meter

The expiry date of the product is given on the packaging labels.

The information provided herein, especially recommendations for the usage and the application of our products, is based upon our knowledge and experience. Due to different materials used as well as to varying working conditions beyond our control, we strictly recommend to carry out intensive trials to test the suitability of our products with regard to the required processes and applications. We do not accept any liability with regard to the above information or with regard to any verbal recommendation, except for cases we are liable of gross negligence or false intention.