



Surface Technologies

Translation of the German Technical Process
Bulletin

Alodine® 1200 two component immersion process

Yellow chromating of aluminium

Fields of application:

Alodine® 1200 is a two package chemical used to produce a protective coating on aluminum 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.

Alodine® 1200 is used in an immersion, spray and brush-on application. This Technical Product Bulletin is valid for an immersion process.

Alodine® 1200 is divided in two components:

Alodine® 1200 A - liquid, chromic acid containing component
Alodine® 1200 B - powder, fluoride containing accelerator

Coating bath make-up:

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

Alodine® 1200 A	7,7 - 15,0 kg or 6,1 - 11,9 l
Alodine® 1200 B	5,2 - 10,5 kg

Do not premix the two components before adding to the bath. Add each component separately to the bath solution!

Operating conditions:	Points Cr(VI)	6.7 - 13.5
	pH	1.8 - 2.1
	Temperature	20 - 40 ° C
	Time	1 - 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
- 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 coating chemical 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 coating chemical 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 1,0 kg or 0,8 l of Alodine® 1200 A and 0,8 kg of Alodine® 1200 B per 1000 l of bath for each Cr(VI)-point lacking.

The bath should be kept within 6.7 and 13.5 Cr(VI)-points.

pH-Determination:

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

The optimum pH lies between 1.8 and 2.1.

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

Remarks:

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

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

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

Caution!

Alodine® 1200 A contains chromium trioxide
Alodine® 1200 B contains fluorides

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 thiosulphat solution, 0.1 N
pH-meter

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

This information is based on our current level of knowledge. It is given in good faith but it is not intended to guarantee any particular properties. The users must satisfy themselves that there are no circumstances requiring additional information or precautions or the verification of details given herein.; This information is based on our current level of knowledge. It is given in good faith but it is not intended to guarantee any particular properties. The users must satisfy themselves that there are no circumstances requiring additional information or precautions or the verification of details given herein.

Henkel Oberflächentechnik GmbH
40191 Düsseldorf
Telefon +49 211 797 3000
Telefax +49 211 798 3636

Henkel Teroson GmbH
Postfach 10 56 20
69046 Heidelberg
Telefon +49 6221 704 0
Telefax +49 6221 704 698

Henkel Oberflächentechnik GmbH
Geschäftseinheit Wasserbehandlung
D-40191 Düsseldorf
Telefon +49 211 797 9190
Telefax +49 211 798 2262

Revision date: 19-04-2001