

Product information Alficoat 748/3

ENVIROX "NR"-procedure

Alficoat 748/3

Alficoat 748/3 is identical to Alficoat 748, but a bit more acid. The alternative procedure for the chrome-free "no rinse"-pretreatment of aluminium and aluminium alloys serves as an adhesion base and corrosion protection prior to powder coating and lacquering.

Alficoat 748/3 procedures colorless to slightly yellowish conversion layers. The system has been approved for application by the international quality association QUALICOAT (no. A-19) and GSB International (no. 303 a, powder coating). The ENVIROX "NR"-procedure also succeeded in the 10 years outdoor exposure test (Hoek van Holland) provided by GSB International.

Alficoat 748/3 procedures flawless results in immersion and spraying procedures and is especially suitable for use in coil coating plants and big volume immersion plants. For the pretreatment of parts which may have retained fluid in indentations, we recommend using Alfipas 745 - Alfipas 746 with the necessary subsequent rinsing.

Characteristics

Initial quantity	4 - 30 g/l Alficoat 748/3 The required concentrations and application conditions are determined by our technical field service when the plant is put into operation since the concentrations depend very much on the individual plant conditions.
Density	approx. 1.0 g/ml Alficoat 748/3
Duration of treatment	spraying: 30 - 120 seconds dipping : 60 – 180 seconds
Injection pressure	0.5 – 1.5 bar
Temperature	20 - 30° C (ideally: 20 – 25°C)
Desired values	pH-value: 2 – 4 degree of impurities [V]: max. 100 points (ideally: < 50 points)
Drying parameters	object temperature: 80 - 130°C duration: 5 - 15 minutes
Quality control	see paragraph Maintaining concentration
Form of delivery	Alficoat 748/3: liquid/ 30 kg plastic canisters and 1000 kg containers (IBC)

The operation of the product is largely affected by the material and the condition of the surface of the parts. Therefore, the optimal operating parameters may be beyond the indicated ranges of the standard values in individual cases.

Safety precautions	Please observe the usual regulations for the handling of chemical substances. For the classifications according to the statutory regulations for transport, storage and handling of the product and further details on the product please refer to the safety data sheet. Bath solutions, rinse water and the concentrates must be treated according to the applicable regulations before they enter the sewage system.
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Procedure	In order to obtain a flawless conversion layer, reguline surfaces are required. Depending on the type and the degree of contamination of the parts, there are various possibilities to achieve this: Prior to the conversion treatment, the parts must be rinsed in demineralised water (ideally value: < 30 µS/cm, dripping water) in order to avoid drag-in of harmful impurities into the Alficoat 748/3 bath. After conversion treatment the surface is blasted with air, if necessary, and brought into the dryer. In order to avoid draining edges completely (f. ex. if transparent lacquers are used) the parts can be blasted with air before being introduced into the dryer, fogged with demineralised water or, if the parts are treated in cages, briefly dipped into demineralised water (conductance: < 30 µS/cm).
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Tank material	Tanks of acid-resisting stainless steel or rigid PVC are suitable. When choosing the suitable tank material, resistance to fluorides must be taken into consideration.
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Preparation	The bath solution is prepared in fully demineralised water (conductance: < 30 µS/cm).
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Maintaining concentration	<p>The pH-value is layer by adding Alficoat 748/3 at to high values. If metal ions (f. ex. due to bad rinse water quality) are introduced, the Alficoat 748/3 bath becomes turbid over time. Therefore, the limit values for impurities in the bath must be observed. If the limit value is exceeded, the bath must be partially renewed. Alternatively, a continuous partial renewal of the bath is possible, f. ex. in plants with a high throughput of parts. As a precaution, the bath can be clarified with the specially adjusted ENVIROX Cartridge filter system. The concentration of decomposition products (degree of impurities) in the bath is determined by the following measuring method. For measuring a suitable, high quality pH-meter (e.g. from WTW) is necessary.</p> <p>Determination of concentration and measurement of impurities: A 100 ml bath sample is pipetted with a volumetric pipette into a 300 ml Erlenmeyer flask. Titration is performed while continuously measuring the pH-value (pH-meter) using 0.1 N sodium hydroxide solution from a 50 ml burette with Schellbach stripe until the pH-value is 4.2. During titration, the solution must be thoroughly mixed using a magnetic stirrer with stirring core. Prior to analysis, the pH-electrode must be calibrated.</p> <p>Spent ml 0.1 N sodium hydroxide solution x 3.48 = g/l Alficoat 748/3 (value C)</p> <p>Without (!) filling up the burette, titration is continued under the same conditions until a pH-value of 8.2 has been reached.</p> <p>Spent ml 0.1 N sodium hydroxide solution x 1.8 = value D</p> <p>Calculation of the degree of impurities [V] = (value D – value C) x 5</p> <p>The degree of impurities [V] must not exceed a value of 100. If this value is exceeded, the bath solution must be partially renewed.</p>
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Maintaining concentration (continuation)

In addition to the given analysis method an alternative titration method (by indicator) is available. This one can be used if the concentration of Alficoat 748/3 obtains 7 g/l and more.

Alufinish laboratory chemicals

Sodium hydroxide solution 0.1 N (item no. 5108)

Evaluation and measurement of the layer**Evaluation using the stain test (quick test):**

A quick and simple evaluation of the pretreated metal surface is possible with the stain test (staining of the surface). The intensity of the colouring serves as an approximate measure of the achieved layer thickness. We recommend to perform this quick test at least once in every shift.

Photometric measurement of the layer:

A special photometric measuring method makes possible a quantitative determination of the layer. For this purpose, the deposited titaniferous layer is removed from the metal surface, stained with an indicator and the coloured solution is measured photometrically. The layer is then calculated in mg titanium/m². We recommend to perform this measurement at least once daily.

X-ray-fluorescence analysis (XRF):

This apparatus-based and expensive analysis method is used for an exact layer measurement by stimulation through X-rays. X-ray fluorescence measurements (f. ex. for the verification of photometrically determined measuring values) can be performed in the Alufinish Laboratory.

The relevant instructions are available separately.

Modified 2015-11-11 (ts). With this version all prior versions are in valid. The information is provided according to the best of our knowledge and conscience at the time of printing and it reflects our experience in the laboratory and in practice. These are standard values which are however, not binding and must be adjusted to specific requirements.

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