

Product information Alficolor 680

ALFISTEEL-procedure

Alficolor 680

This is a ready-to-use-concentrate for the preparation and adjustment of a two-step-colouring procedure on nickel base for colour shades ranging from light to dark grey. The produced colours show the typical "stainless steel finish"

Alficolor 680 is free of cresol and phenolsulphonic acids, shows excellent stabilizing properties and produces rich, nonfading colours.

Alficolor 680 is distinguished by a very good throughing power, high stability, good reproducibility and simple maintenance.

Characteristics	Initial quantity	130 g/l Alficolor 680 12 g/l sulphuric acid (D = 1.84) (see paragraph maintaining concentration)
	Density	Alficolor 680: approx. 1.2 g/ml Korrekturlösung 681: approx. 1.15 g/ml
	Duration of colouring	approx. 0.5 – 3 minutes, depending on the desired depth of shade
	Temperature	18 - 24 °C, preferably 20 °C
	Electric power supply	alternating current, 50 Hz, 14-20 V, 0.2-1.0 A/dm ² if necessary, DC- AC
	Quality control	see paragraph Maintaining concentration
	Desired values (setting range)	Alficolor 680: 130 g/l (100 - 150 g/l) sulphuric acid: 15 g/l (10 - 20 g/l) Korrekturlösung 681: 10(7 – 12 points)
	Form of delivery	Alficolor 680: liquid/30-kg-plastic jerrican and 1000-kg-container (IBC) Korrekturlösung 681: liquid/ 35-kg-plastic jerrican

The way the product is strongly influenced by the material and the composition of the surface. In individual cases the optimal operating parameters may vary from the given standard parameters.

Safety precautions

Please observe the usual safety precautions for handling chemical substances. Classifications according to the statutory regulations for transport, storage and handling of the product and other product-specific instructions are included in the EG-safety sheet. Bath solutions, rinse water and concentrates must be treated according to the applicable regulations before entering the sewage system.

Procedure

The colouring procedure should be carried out immediately after anodising and rinsing. For this purpose, the parts should remain in the Alficolor 680 bath for 2 -3 minutes without current.

Procedure
(continuation)

Then automatic switching is started.
In most cases, darker colour shades may be achieved by increasing the voltage during colouring. After the colouring time has elapsed, the parts are removed from the bath immediately, rinsed thoroughly and sealed as usual. Since the depth of colour depends on many factors, manual colour adjustment might be required in some cases. The colour depth can be corrected by chemical removal in the colour bath or in a weakly acidic rinsing bath or by additional colouring. As the uniformity of the colours depends very much on the quality of the anodised surface, it is important to keep the anodizing conditions constant. The addition of Alfinox 502 or oxalic acid to the anodizing bath can be advisable.

Tank material

Plastic tanks or tanks coated with plastic or hard rubber are suitable. The distance between the electrode tracks should be as great as possible. The bath level should always be a few millimetres below the level of the anodizing bath in order to prevent penetration of non-anodised material into the colouring bath.

Maintaining concentration

For the preparation of the colouring bath, demineralized water should be used. Thus possible faults resulting from impurities from the process water can be prevented. The given quantities are average values and can be adapted to individual requirements.

Higher contents of Korrekturlösung 681 will produce darker colour shades and improved depth of shade dispersion within the same time period.

Extended duration of colouring will in most cases only produce (warm) stainless steel colouring shades with a yellow cast, but it will hardly lead to colour intensification. Durations of colouring of more than 3 minutes will not intensify the colour further and should therefore be avoided. A higher sulphuric acid content stabilises the bath, but also increases the attack on the anodising layer so that the layer might be damaged if the sulphuric acid content is too high. If necessary, depth of shade dispersion and bath stability can be further improved by extra additions of Alficolor 697.

Addition of Alficolor 680 depends on the analysis. When the colouring effect decreases despite correct Alficolor 680 content, the points according to Korrekturlösung 681 should be determined. If necessary, Korrekturlösung 681 must be added. The concentration can be maintained automatically by our dosing device AAZ which controls addition of Alficolor 680 by measuring the electricity used.

Determination of concentration: A 5 ml colour bath sample is pipetted with a volumetric pipette into a 300 ml Erlenmeyer flask and diluted with approx. 100 ml of distilled water. Then 10 ml ammonia solution (25%) and a spatula tipful of indicator A26 (Murexid) are added. Then titration is performed with titration solution A26 (0.1 mol Titriplex III) until the solution turns blue-violet for the first time.

Spent ml titration solution x 20.4 = g/l Alficolor 680

Determination of sulphuric acid: A 50 ml bath sample is pipetted with a volumetric pipette into a 300 ml Erlenmeyer flask and diluted with 50 ml (pipette) dist. water. Titration is performed using 1n caustic soda from a Schellbach burette until a pH-value of 2.1 is reached. During titration, the solution must be mixed well using a magnetic stirrer. Before the analysis, the pH meter must be calibrated.

Used ml 1n caustic soda x 1.1 = g/l sulphuric acid

Maintaining concentration (continue)

Korrekturlösung 681 - Determination of points: 100 ml of the colouring bath are pipetted with a volumetric pipette into a 300 ml Erlenmeyer flask. Then 50 ml hydrochloric acid (37% hydrochloric acid 1:1 diluted with water) are added from a measuring flask. Then 2 ml starch solution (1%) are added and titration is performed immediately using 0.1 n iodide solution from a brown glass burette until the colour changes to blue.

Consumed ml 0.1 n iodide solution = points Korrekturlösung 681

For each lacking point, 0.6 ml (0.7 g) Korrekturlösung 681 are added per liter bath solution.

Electrodes

Plates (possibly edged ones) of acid-proof high-quality stainless steel should be used. Their surface area should be as large as possible. The electrodes should be cleaned periodically. The most practical way to do this is to immerse the entire electrode track into an alkaline pickling, to rinse them thoroughly afterwards and to scrub them.

Air agitation

It is recommended to agitate the bath by blowing in oil-free compressed air when the solution is prepared, after extended breaks and possibly for a short time after the parts were introduced into the solution.

Electric power status

The transformer rating should be designed to approx. 1 Amp/dm². The voltage should be 25 V. A control device with five to six different programs for automatic switching is definitely recommended. This device switches on a variable waiting-time of 0.5 - 3 minutes. During the first 20 - 60 seconds of the waiting-time the air agitation can be operated, if necessary. On completion of the waiting-time the programmed voltage is set according to the selected program and kept constant. After the colouring time has elapsed the automatic switch turns the transformer off and gives an acoustical and/or optical signal. The selection of the programs depends on the results of test colourings accomplished by variation of the colouring time, or also of the voltage.

Racking of the parts

The racking of the parts must be given more care with the Alficolor-procedure than with normal anodizing. Especially important factors are appropriate contact points, even distribution of the parts and a correspondingly large distance between them. Titanium contacts are unsuitable. Visible surfaces should not exhibit marking from the contacts and should be mounted facing the electrode.

We will be glad to give you advice in this area and to send you relevant informations.

Modified 2006-09-06 (ts-mb). This modification replaces all other versions. All data are given according to our best knowledge and belief. They must, however, be regarded only as non-binding standard values which should be adjusted to individual requirements.

As the application of our products lies beyond our sphere of influence, we can assume liability only for the perfect standard quality at the time of delivery. Consequential damages can be accepted only if they were agreed upon prior to use in writing and if the promised characteristic was expressly mentioned.