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CL BRIGHT CHROME 2000

PROPERTIES

The bright chrome plating solution CL-2000 is a mixed acid chrome electrolyte. It is applied for deposition of decorative bright chrome layers. The special characteristic of this electrolyte is the excellent covering power which can be obtained by operation within a wide range of current density.

CL-2000 may be applied with 300 g/l as well as with 200 g/l chromic acid. High chromic acid concentrations have a positive effect to conductivity, tolerance to contaminations and there are lower variations in the composition as is usual for chrome electrolytes.

MAKE-UP

Make-up quantity for 100 ltr.:

300 g/l make-up	30.00 kg Chromic acid 3.0 l. CL-2000 Part 1 3.0 l. CL-2000 Part 2 0.21 kg Sulphuric acid, chem. pure conc., d = 1.84
200 g/l make-up	20.00 kg Chromic acid 2.0 l. CL-2000 Part 1 2.0 l. CL-2000 Part 2 0.1 kg Sulphuric acid, chem. pure conc., d = 1.84

OPERATING CONDITIONS

Density:	300 g/l make-up = 1.21 g/cm ³ (abt. 25° Be) 200 g/l make-up = 1.14 g/cm ³ (abt. 18° Be)
Temperature:	35 – 50°C preferably 40°C
Current density:	5 – 25 A/dm ² at 40°C
Voltage:	The voltage is dependent upon the plant and operating conditions. Average value: 6 – 12 V.
Anode current density:	15 – 25 A/dm ²
Rectifiers:	usually 8 volt units, for higher outputs usually 12 volt units.
Rate of deposition:	rate of deposition at 40°C and current densities of: 10 A/dm ² = approx. 0.12 micron/min. 15 A/dm ² = approx. 0.2 micron/min. 20 A/dm ² = approx. 0.3 micron/min.

MAINTENANCE

a) Nominal values:		<u>Minimum and maximum</u>		
<u>values:</u>				
300 g/l make-up	Chromic acid	280	-	350 g/l
	Sulphuric acid (in relation to the chromic acid content)	0.6	-	0.8%
	Density	23.5 1.195	- -	28.5° Be 1.245 g/cm ³
200 g/l make-up	Chromic acid	180	-	220 g/l
	Sulphuric acid (in relation to the chromic acid content)	0.4	-	0.6%
	Density	16.0 1.125	- -	19.5° Be 1.156 g/cm ³

b) Reinforcement

When adding chromic acid, CL-2000 Part 1 and CL-2000 Part 2 are added in the same ratio as the make-up. This is applicable to solutions without recycling.

To 100 kg chromic acid are added:

4 l. CL-2000 Part 1 and

4 l. CL-2000 Part 2

CL-2000 Part 1 and CL-2000 Part 2 contain no sulphate.

To increase the density at 1° Be (0.007 g/cm³) an addition of about 1.5 kg/100 l. chromic acid and the respective quantities of CL-2000 Part 1 and CL-2000 Part 2 are required.

Under normal working conditions and if strictly observing our recommendations, corrections are required in exceptional cases only, and will be prescribed by us after analysis of the solution.

EFFLUENT TREATMENT

The electrolyte contains hexavalent chromium compounds and usually heavy metal contaminations, such as iron and copper. Concentrations and rinse waters have to be disposed of in compliance with the legal regulations.

WARRANTY

Seller makes no warranty, whether of merchantability, fitness or otherwise, expressed or implied, concerning the product other than it shall be of the specifications stated herein. Any recommendations made by Seller concerning the use of the product are believed to be reliable, but seller makes no warranty of the results obtained. Buyer agrees to inspect the product supplied hereunder immediately after delivery. Failure to give notice in writing as aforesaid within the specified time constitutes an unqualified acceptance of the product and a waiver of all claims with respect thereto.

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