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CL - HNF (Hardchrome)

PROPERTIES

CL-HNF is a fluoride-free hard chrome electrolyte which operates with a high efficiency, the current efficiency lies between 24%-26%.

Application range from hydraulic parts, wear resistance components in engines to printing machines parts. Practically all common base metals can be coated to any desired deposit thickness. CL-HNF is extremely wear resistant as Taber Abraser Test and practical results show. The minimum Vicker hardness is 1000 HV 0,1.

CL-HFN deposits are uniformly microcracked and ideal to achieve high corrosion resistance values on steel parts.

CL-HNF can be used with conventional lead-alloy anodes as well as platinesed titanium anodes.

We recommend the use of lead-antimony anodes, with appr. 1,0 % antimony as the best anode material regarding anode corrosion.

However lead-bismuth anodes are also useable.

ELECTROLYTE COMPOSITION

Chromic acid	240 - 300 g/l (optimum 280 g/l)
Sulphate	1,25 – 1,8 0 %
Catalyst CL HNF	40 ml/l

The sulphate content is adjusted and corrected with sulphuric acid.

OPERATION AND MAINTENANCE

The chromic acid- and sulphate content must be frequently checked via analysis. The Catalyst CL HNF is only occasionally analysed and corrected. Drag—out losses however must be compensated.

By replenishing of the chromic acid the Catalyst is added at the following ratio:

100 kg chromic acid and 6.0 l Catalyst HNF

OPERATING INSTRUCTIONS

Working temperature	50 – 60 °C
Current density	10 – 60 A/dm ²
Current efficiency	24-26%

EQUIPMENT

Tank	PVC, Koroseal-Keragelith or Teflon lining
Cooling	Teflon, lead or double tank
Heating	Bath heaters made from porcelain or Teflon
Temperature control	necessary
Suction device	necessary
Anodes	Lead- alloyed anodes or platinised titanium
Infinitely adjustable rectifier.	Voltage 4 – 15 Volt. Residual ripple under 5%

MAKE-UP

Fill up a thoroughly cleaned tank with 2/3 of the volume with possibly chloride-free water and add the required quantities of chromic acid, sulphuric acid and Catalyst HNF. Solve the salts at a temperature of 50 – 60 °C and stir well. After this fill up the tank until it's nominal values are reached. Apply the anodes and work the bath through for 3 hours at the working temperature.

SPECIAL INDICATIONS

Chloride ions deteriorate the deposition properties and deposit results. Drag-in has to be avoided. The trivalent chrome is adjusted by an optimum anode-cathode ratio to 3 – 5 g/l.

Higher values must be avoided. The ratio between the anode and cathode surface should be around 2 : 1.

HAZARD INDICATION

Attention has to be paid to the legal regulations for the handling of dangerous working substances. Chemicals without a hazardous indication should not be seen as harmless.

Also with the handling of chemicals which do not require a registration, we recommend to take care and to avoid for example skin contact.

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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