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CL Blue Chromate III D

Properties:

CL Blue Chromate III D is a trivalent blue passivation which is applied to passivate acid, cyanide and alkaline, cyanide –free zinc coatings.

CL Blue Chromate III D supplies bright blue coatings with an excellent corrosion protection.

CL Blue Chromate III D offers a long service life.

High drying temperatures of 70 – 100 °C improve the corrosion protection.

Tank and technical equipment

Tank: tanks made of Pe.PP, stainless steel or PP,PVC or Koroseal
Lined steel tanks.

Movement: Cathodic movement or air agitation is recommended

Heating: Heating coils made of stainless steel, porcelain or PTFE
(teflon) are suitable. The passivation CL Blue Chromate III D
should not take place with a temperature less than 18°C.

<u>Operating values</u>	<u>Optimum</u>	<u>Range</u>
Temperature	25 °C	18 – 30°C
Treatment time	ca. 20 sec.	10 – 45 sec.
pH value	1,8	1,5 – 2,4 *
Drying temperature	100°C	70 – 100°C
Drying time	10 min.	5-15 min.

* The ph value should be adjusted to 2.0 – 2,4 by higher concentration of the blue passivation.

<u>Bath composition</u>	<u>Optimum</u>	<u>Range</u>
CL Blue Chromate III D	50 ml/l	50 – 100 ml/l*
Nitric acid 53% techn.	To adjust pH to 1,5 – 2,0	
If necessary; Inhibitor 3 D	2 ml/l	1 – 5 ml/l

* The increased make-up concentrations improve the corrosion resistance of the layers. By zinc coatings from cyanide, or alkaline-cyanide-free electrolytes, we recommend a make-up concentration of 50 – 60 ml/l

Make-up

For a make-up of 100 lt. Passivation solution, stirr 5 l. CL Blue Chromate III D concentrate in water. Furthermore are approx. 0,2 – 0,4 l. 53% nitric acid required to adjust the pH value. The addition of Inhibitor 3 D decreases the solvence of iron on non-plated area's on the parts (for example the inside of tubes) and therefore clearly increases the service life of CL Blue Chromate III D.

The recommended make-up quantity of Inhibitor 3 D is 0,2 l on 100 l. passivation solution.

Make-up procedure

Fill up a thoroughly cleaned tank with 3/4 of the bath volume.

Slowly add 50 ml/l CL Blue Chromate III D conc. whilst stirring.

Fill the solution up with water until the end volume is reached and mix through thoroughly.

Measure the pH value and adjust to 1,8. To decrease the pH value use concentrated nitric acid (approx. 53%). To increase the pH value we recommend the use 20% caustic soda.

Bath maintenance

During operation of the passivation solution, the pH value increases. The CL Blue Chromate III D solution is kept on it's nominal value by adjustment of the pH value with nitric acid and a regular addition of CL Blue Chromate III D.

For every 50 m² passivated surface are, according to the drag out, approx. 0,3 – 0,6 l CL Blue Chromate III D consumed.

For every 1 l. dosage quantity CL Blue Chromate III D are approx. 20 ml Inhibitor 3 D required.

Operation indications

Concentrations, pH value, exposition time and temperature of the solution as well as the intensity of the movement have a large influence on the growth of the passivation layer, A too low pH value causes a darker appearance of the layers. This may lead to yellow stains deposition. A too high ph value causes a slow deposit thickness which lead to a too bright colour. The above mentioned parameters must be kept to obtain an optimal passivation layer. Impurities from iron can be indicated by a yellowish colour. By an addition of 2 ml/l Inhibitor 3 D directly by the new make.-up of the blue passivation, can the accumulation of iron clearly be reduced. If the blue passivation already contains iron, add 0,5 – 1,0 g/l citric acid to optimise the effect.

Organic impurities may also have an influence on the colour. In this case add 0,5 – 1,5 g/l CL – ST 3.

Drying

Drying should take place in a suitable drying oven. For bulk articles should a centrifuge or barrel drier be used. The maximum object temperature according to DIN 50961 is 70 °C.

A higher drying temperature improves the corrosion protection. The optimum drying temperature is 100 °C.

Analysis values

To achieve a constant result we recommend a regular analytical control. The ph value must be checked and adjusted regularly within short spaces of time. For the function of the passivation is the content of CL Blue Chromate III D conc. and the impurities with Zn^{2+} very important.

The content of CL Blue Chromate III D is calculated by a quantity xx ml passivation:
Consumed ml sodiumthiosulfate solution x factor = ml/l CL Blue Chromate III D.

Hazard indication

The necessary precautions measures should be adhered to in handling the chemicals. Chemicals without a hazard indication should not been seen as harmless. Also when the handling of chemicals are not due to hazard identification, we recommend to handle with care and avoid for example skin contact.

Warranty

The information herein is to be believed reliable. However no warranty, express or implied, is made as to its accuracy or completeness and none is made as to the fitness of this material for any purpose. CL technology shall not be liable for damages, loss or expense to persons or property resulting from its use. Suitability and merchantability are solely the responsibility of the user. The only obligation of the seller or manufacturer is to replace the product if defective in material or workmanship at the time sold. Nothing herein shall be construed as a recommendation for use in violation of any patent.

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