Hubbard-Hall
Chemical Services Since 1849

Product Bulletin

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ENEROX® NICKEL PURIFIER CT

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ENEROX® NICKEL PURIFER CT is a product used in the Enerox® nickel systems. ENEROX® NICKEL PURIFER CT is a unique purifier additive. The controlled additions of this product will overcome the detrimental effects of zinc and copper contamination in the nickel bath. This problem is typically evident as gray, smutty, striated low current streaks in the low current density deposit. In conjunction with the other addition agents, ENEROX® NICKEL PURIFIER CT enhances the overall preferred nickel deposit "white" appearance. ENEROX® NICKEL PURIFER CT is readily used in rack and barrel bright nickel plating applications.

SPECIAL FEATURES

- Counteracts Detrimental Dark Deposit Effect of Zinc & Copper
- Helps to Maintain Uninterrupted Production Plating
- Complements the Enerox® Bright Nickel System Performance
- An Effective Service Product
- Compatible With Most Bright Nickel Systems

RECOMMENDED APPLICATION

	Range	Optimum
* Concentration	0.1 – 0.4 % v/v	0.25% v/v
Nickel Bath Temperature	130- 150 deg F (54-66 deg C)	140 deg F (60 C)
Nickel Bath pH	3.5 – 4.5	4.0
Nickel Bath Agitation	Air or Mechanical	As required

Note: Your Hubbard-Hall Sales Representative or the Corporate technical Center will be pleased to recommend the optimum conditions and products for the particular nickel plating application.
*0.2 – 0.4% by volume of ENEROX® NICKEL PURIFIER CT may be added to a newly prepared bright nickel plating solution, dedicated o plating zinc base metal parts.

ANALYSIS PROCEDURE
NICKEL PLATING SOLUTION

The routine procedure should include wet analysis of the plating salts, bath pH, and a plating cell test. The Corporate Technical Center can provide the analysis procedures, along with the required solutions, labware, and testing equipment. Hull cell testing is a reliable method for determining overall condition of the nickel deposit. Additions of ENEROX NICKEL PURIFER CT, as required, should be made to the hull cell as recommended above. Effective counteracting of the copper / zinc contaminants is confirmed by restoration of the preferred bright, clean by nickel deposit.

ENEROX® NICKEL PURIFIER CT

PROCESS SUGGESTIONS

ENEROX® NICKEL PURIFIER CT is a unique service product. As such it's use will eliminate the dark low current deposit streaks associated with zinc and copper contamination in the bright nickel bath. Depending on the recessed configuration or geometric shapes of parts, as little as 10 ppm of zinc or copper contamination in the nickel bath can result in darkened low current density deposit streaks. Additions of ENEROX NICKEL PURIFIER CT, at the rate of 0.1-0.4% will maintain the desired bright, "white" nickel deposit in the low current densities. Severe zinc and copper contamination, that is above 100 ppm each, will extend the dark streaks into the mid current densities. In this condition, low current density dummy electrolysis is recommended, to plate out the excess of metallic contaminants. The use of ENEROX NICKEL PURIFIER CT is intended to maintain uninterrupted production nickel plating in the event of minor to moderate levels of zinc and copper contamination. For severe contamination, the condition is best corrected by proper low current dummy electrolysis. Care should be taken to confirm sufficient copper strike or plating of zinc base parts before the nickel plating step. 1 he nickel bath should be regularly checked for any dropped zinc or brass parts, that should be removed immediately.

ENEROX NICKEL PURIFER CT is consumed by electrolysis at the rate of one gallon per 8,000 to 20,000 amp hours (6.4 to 16 fl oz per 1,000 amp hours ENEROX NICKEL PURIFIER CT is removed, to some degree, by standard drag out and during batch carbon treatment. Continuous filtration of the nickel bath through a carbon pack removes only a slight amount of ENEROX NICKEL PURIFIER CT. Additions of ENEROX NICKEL PURIFIER CT can be made directly to the nickel bath, as required, or in conjunction with the specific Enerox Bright Nickel process additives. Low concentration of ENEROX NICKEL PURIFIER CT win not sufficiently eliminate the dark gray low current density streah due to zinc & copper contamination. High concentration of ENEROX NICKEL PURIFIER CT may result in some dullness of the low current density deposit.

PHYSICAL CHARACTERISTICS

Appearance	Clear colorless liquid
Odor	Slight
Foaming Tendency	None
Maximum Solubility	Complete

ENEROX NICKEL PURIFIER CT HAZARD CLASSIFICATION

DOT Hazard Class	Not applicable
DOT Shipping Name	Not applicable
UN Number	Not applicable
Packing Group	Not applicable
Guide Number	Not applicable

WASTE TREATMENT & DISPOSAL

The nickel plating solution is mildly acidic. Sources for treatment, such as drag out losses and batch purification, should be processed in accordance with appropriate steps, to meet local POTW or municipal effluent discharge requirement. Sludges should be separated out before discharge. Mixed solutions of nickel effluent and other plant waters may require additional treatment to meet discharge requirements.

ENEROX NICKEL PURIFIER CT

SAFETY INFORMATION

Please read and understand the ENEROX NICKEL PURIFIER CT Material Safety Data Sheet before handling and using this product.

WARRANTY

THE QUALITY OF THIS PRODUCT IS GUARANTEED ON SHIPMENT FROM OUR PLANT. IF THE USE RECOMMENDATIONS ARE FOLLOWED, DESIRED RESULTS WILL BE OBTAINED. SINCE THE USE OF OUR PRODUCTS IS BEYOND OUR CONTROL, NO GUARANTEE EXPRESSED OR IMPLIED IS MADE AS TO THE EFFECTS OF SUCH USE, OR THE RESULTS TO BE OBTAINED.