Halltronic R 629

Product Code: 2707017
Revised Date: 10/23/2007

Halltronic R 629
Sodium Chlorate Usage Data For Ferric Chloride

CHEMICAL REACTIONS

$2FeCl_3 + Fe \rightarrow 3\ FeCl_2$ Etch

$3FeCl_2 + 3\ Cl^{-1} \rightarrow 3\ FeCl_3$ Regeneration

$NaClO_3 + 6HCl \rightarrow NaCl + 6Cl^{-1} + 3H_2O$ Oxidation of HCl to Chlorine and Water

Therefore: 1 mole of iron etched requires ½ mole of $NaClO_3$ and 3 moles of HCl for regeneration

1 mole of Fe = 55.847 grams
1 mole of $NaClO_3$ = 106.44 grams
1 mole HCl = 36.46 grams

1 pound of Iron = 454 grams = 8.13 moles and requires 4.06 moles (= 432.1 grams = 0.95 lbs.) $NaClO_3$ and 24.39 moles (= 889.3 grams = 1.96lbs.) HC1 for regeneration.

Halltronic R 629 solution contains 629 grams/liter $NaClO_3$ or 5.25 lbs./gallon

Industrial grade HCl (Muriatic Acid) is 30 % HCl and contains 344.7 gm/1HCl or 2.87 lbs/gal.

Therefore: 1 pound of iron etched requires -

0.18 gallons of **Halltronic R 629**

and

0.68 gallons of Muriatic acid (30% HCl) for regeneration

The numbers given above are for an ideal reaction with 100% efficiency. Actual usage will probably be 10% to 20% higher depending on temperature, type of alloy, etc.

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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.

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