Halltronic R 629

Features & Benefits

High purity	Consistent performance; No side reactions
High concentration	Smaller storage footprint
Liquid	Ready to use; Less material handling

Operating Conditions

Sodium Chlorate Usage Data for Ferric Chloride Solutions

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 lb) $NaClO_3$ and 24.39 moles (= 889.3 grams = 1.96lb) HC1 for regeneration.

Halltronic R 629 solution contains 629 grams/L $NaClO_3$ or 5.25 lb/Gal

Industrial grade HCl (Muriatic Acid) is 30% HCl and contains 344.7 g/1 HCl or 2.87 lb/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.

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.

Our people. Your problem solvers.

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