Enerox Acid Salt S 37

Enerox Acid Salt S 37 is a convenient powdered fluoride containing product used in place of mineral acid solutions for pickling and activating metal surfaces prior to plating. Enerox S 37 effectively dissolves oxide and silicate films remaining from alkaline cleaning and promotes excellent adhesion of electrodeposits to most all metals. It is particularly effective on zinc die cast alloys, lead, tin, leaded brass, white metal, and other difficult-to-activate metals.

Enerox Acid Salt S 37 will operate over wide limits of concentration and immersion times. Enerox S 37 salts are buffered to provide a constant level of acidity and uniform pickling throughout the life of the bath. Additionally, Enerox S 37 has a high tolerance for dissolved metals and thus may be used for long periods of operation before requiring replacement.

Features & Benefits

Dry acid salt	No fumes; safer work environment
High fluoride content	Quick descaling and deoxidizing; higher productivity
Versatile	One product for multiple substrates; simpler inventory control

Operating Conditions

Concentration	4 – 8 oz/Gal
Temperature	Ambient
Immersion time	15 sec – 5 min

<u>Solution preparation</u>
Fill 2/3 of the tank with warm water (110°F to120°F). Slowly stir in 4 oz/Gal of Enerox S 37 or each final gallon of operating solution. As the salts dissolve, the temperature of the solution will be lowered. If the temperature should fall below 65°F., the immersion time of work in the operational bath will have to be significantly increased. To avoid this, it may be necessary to use warm water to bring the solution to an effective operating temperature. Use of higher concentrations, provide very little increase in activity and will only result in greater drag-out losses.

Operation
The immersion times for zinc die castings in a 4 oz/Gal solution of Enerox S 37 will generally be 15 to 30 seconds. The time will vary with the activity of the zinc surface which is, in turn, dependent upon the casting and mechanical finishing operations to which it has been subjected. Whenever there is doubt concerning the effectiveness of the activation, it is better to use longer immersion times. Too short an immersion time will give inferior results while in most all cases, long immersion times will have no adverse effects. The immersion times for iron, steel, copper, brass, lead, tin and other alloys will vary from 30 seconds to 5 minutes.

Equipment
Plastic or rubber lined containers should be used for Enerox S 37 Ceramicware, lead lined, or stainless-steel tanks are not suitable. Since some gas is formed when the metals are immersed, exhaust ventilation is recommended.

Control
The solution of Enerox S 37 may be controlled either visually or chemically. Visual control is accomplished by observing the gas evolution at the work surface. When activation as witnessed by gas evolution, slows down, the addition of approximately 1 oz/Gal of salts will usually restore the activity of the solution.

Titration Method

1. Dilute a 5 mL sample of Enerox S 37 solution with 25 mL distilled water.
2. Add 3 drops Methyl Orange-Xylene Cyanole indicator solution.
3. Titrate with 0.1 N Sodium Hydroxide until indicator changes from purple to green (for Methyl Orange, the change is from red to yellow).
4. Record mL used.

Calculation

Concentration (oz/Gal) = mL 0.1 N NaOH x 0.263

Caution

Enerox S 37 acidic and contains fluorides. Therefore, proper protective rubber clothing and safety glasses should be worn when working with the solution or handling the salts. Avoid breathing dust and do not take internally. If any of the salts or solution contact skin or eyes, flush with plenty of water for at least 15 minutes; for eyes, obtain medical attention. Read appropriate SDS prior to use.

Note: Read appropriate Safety Data Sheet prior to using product.

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