



ALUMINUM PROCESSING

Gluconate is a valuable chemical used in the aluminum etching industry. Gluconate increases the efficiency and life of caustic aluminum etch bath by:

- Providing excellent stability in caustic formulations and in normal operating temperatures (120° F to 180° F) when etching aluminum.
- Preventing the formation of hydrated aluminum oxide which can adhere to the sides and heating coils of etch tanks. By sequestering the aluminum, the dispersed aluminate sludge can be easily rinsed from the tank.
- Providing more uniform and controlled etching of aluminum.
- Enabling a mirror like finish to be obtained rather than a satin finish

Caustic concentration of aluminum etch baths may vary from 3 to 10 oz/gallon. Gluconate is normally added at 2 to 5% based on caustic amount (100% caustic soda basis).

A combination of gluconic acid and hydrochloric acid used electrochemically is capable of roughening an aluminum surface to a uniformly coarse texture suitable for lithographic uses.



The degree of etching is controlled by the etch time, temperature, concentrations of caustic soda and gluconate. Trial runs are recommended to arrive at optimum operating results.

Once an etching bath is operating as desired, periodic testing of the caustic soda concentration by titration is required so that proper make-up quantities may be added. Generally, one-half of the percentage of gluconate used in the original bath will satisfy the make-up addition.