



GE-77 Multilayer Glass Etch

DESCRIPTION

GE-77 is an acidic, dry crystalline powder which is used to frost and etch glass fibers found exposed after the multilayer etch back cycle. It contains a concentrated blend of fluorides developed and designed to ensure removal of debris and promote good adhesion of electroless copper or other conductive coatings. **GE-77** is used after the panels have been etched back and prior to the PTH line. It can also be used to remove drilling debris sometimes left embedded on the slots and holes of printed circuit boards.

GE-77 can be combined into the EB660 Neutralizer solution, at the levels listed below. Refer to the technical bulletin EB600 + GE77 for details

OPERATING PARAMETERS

| | |
|----------------|---|
| Make-Up | 0.25 to 0.50 pounds per gal (30 to 60 g/L) in water |
| Temperature | 64 to 75°F (18 to 24°C) |
| Immersion Time | 2 to 3 minutes |
| Process | Batch Tank |
| Agitation | Will speed cleaning action |
| Ventilation | Advised |
| Tanks | Polypropylene, Polyethylene |
| Racks/Baskets | Plastisol Covered Steel, Stainless Steel |
| Heaters | Teflon Coils |

PHYSICAL PROPERTIES

| | |
|------------------|---------------------------|
| Specific gravity | N/A |
| Appearance | White to off-white powder |
| pH (1% solution) | <3.0 |
| Odor | None |
| Flash Point | >200F |



CONTROL PROCEDURES

Replenishments are not recommended. Approximately 85 to 125 square feet per working gallon can be processed before the solution should be replaced. To increase activity a small amount of Hydrochloric Acid (10mls per gallon) can be made to the working solution.

ANALYSIS

Analysis is not required to use **GE-77**. If this is combined into the EB-660 bath, then analyze the EB-660 as detailed in that technical bulletin.

SAFETY AND STORAGE

GE-77 working solution is a strong acidic solution containing inorganic fluoride salts and acids. Avoid breathing vapors. Use product in a well ventilated area. When handling concentrate or working solution, wear protective clothing, gloves, and chemical safety goggles. In case of skin contact, remove contaminated clothing and flush affected area with plenty of cold water. In case of eye contact, flush immediately with plenty of cold water and seek medical attention immediately.

Store **GE-77** in its original container. Keep away from direct sunlight and temperature extremes. Protect from freezing.

WASTE TREATMENT

GE-77 contains acidic inorganic fluoride compounds. In the process of cleaning the imaged surface of copper clad material, some copper may be removed and dissolved in solution. The spent working solution of GE-77 should be treated for copper before sending the spent solution to the chemical sewer. Consult with local officials for further waste disposal regulations.

MISCELLANEOUS

Packaged in 5 gallon pails.