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Mr. Roby,

During North Shore Components inspection process, we use the Nisene JetEtch decapsulation machine. This provides us with an invaluable way to determine the quality of components. The decapsulation machine gives us the ability to detect counterfeit components much more easily by being able to see the die inside the chip. It is very beneficial to be able to see the inside composition of the components you are inspecting. One can detect and verify the die markings, wire bonds, bond pads, and lead frame interconnects. The state of the art JetEtch automated acid decapsulation system removes the outer layers that encapsulate these (and other) complex, high-density packages. Essentially, this enables us with the ability to discover ESD damage (if present) within the component, and to determine whether they were previously used.

The decapsulation machine is very easy to operate, fully programmable, and capable of storing multiple etch programs for different package types such as DIP devices, small quad flat packs, large TQFPs, small outline devices, SOICs, BGAs, and PPGAs, ensuring reliable and consistent results. Once the components are placed inside, with the appropriate gasket or etch accessory, you can simply pick the program you wish to use, which will contain the etch time, acid type, heat up time, etch type, etch volume, and rinse time, and then press start to begin the decapsulation process. The system works with the following acids:

- Nitric Acid (90% yellow or white fuming or 98% fuming are suggested; all nitric acid is acceptable)
- Sulfuric Acid (20% fuming and 96-98% fuming are suggested; all sulfuric acid is acceptable);
- Mixed etchants (programmable in 13 ratios)

The provided guide helps determine the programs for all the different package types. The built-in system safety features protect the operator by way of pneumatically controlled process cover. Combined with an enclosed fume hood, excellent visibility under all conditions is assured.

The JetEtch automated acid decapsulation system is a valuable part of North Shore Components Inspection process, and helps ensure the validation of components.

Sincerely Yours,

Joseph Ruggiero, Vice President