

## Flood Recovery of Electronic and Electrical Equipment

When a catastrophic flood occurs, millions of dollars of equipment is drenched and covered and filled with all kinds of dirt and muck. Some may be replaced with insurance covering the tab, but much of the equipment will need to be repaired and brought back into service as soon as possible.

Believe it or not many electronic and electrical components can handle exposure to water, and it is actually a common way to clean assemblies in manufacturing processes. Some components, like power supplies, can't be recovered, but much of it can. Before you start, remember these important tips:

- Electronic and electrical devices should be disconnected from power and all batteries removed until everything is clean and 100% dry. Connecting power too soon could cause short circuiting, which would be destructive to the device and potentially dangerous to you. Be patient!
- With sensitive electronics, it is important to avoid static build-up. Ideally use a grounding strap, or at least discharge frequently by touching a grounded metal surface away from your work.

### Step 1: Rinse Equipment with Clean Water

Electronic and electrical equipment should be flushed well with clean water to remove salt, sediment and particulate matter. Disassemble the equipment to allow access to all interior parts and flush with water until the rinse water is clean. If possible, dip the equipment into a drum or tank of clean water and agitate to dislodge trapped contaminants.

If clean water is not available, spray components with E-LINE™ IPA cleaner (part #1610-12S) or soak in a bath of isopropyl alcohol (IPA) (part #1610-G4). IPA has the benefit of being hydrophilic, so it attracts moisture and carries it away from the parts. To speed the drying process, use Vortex™ Duster (part #1697-10S). The high pressure of the Vortex™ Duster performs as a “portable compressor” to blast away moisture and solvent, even out of tight crevices. After the equipment has been rinsed thoroughly, stand it on end and allow it to drain.

### Step 2: Remove Remaining Oil, Grease, Sludge and Other Contaminants

It's important to remove all oxidized oil, grease and other contamination. Most contacts and connectors contain sensitive plastics that will be destroyed using heavy degreasing solvents. For plastic-safe precision cleaning, use Precision-V™ Cleaner (part #1651-16S), or for heavy-duty nonflammable degreasing use G3® Blue Shower® Maintenance Cleaners (part #1630-16S). Techspray aerosol cleaners feature a powerful spray force that helps dislodge any remaining trapped contaminants. Spray the equipment thoroughly or dip the equipment in the solvent and agitate while submerged.

Where removal of caked on grease, sludge and other contamination is required, a brush can be used for the most stubborn soils. Techspray offers a number of brushes made of natural fibers, which tend to be less abusive to sensitive surfaces and components, and less likely to generate static



Step 1.1: Rinse with clean water



Step 1.2: Remove moisture with E-LINE™ IPA cleaner and Vortex™ Duster



Step 2: Remove grease and sludge with aerosol cleaner

than synthetic bristles. Metal bristles should be avoided except for removing oxidation from contacts in the most extreme cases.

When wiping is required, whether for extra scrubbing action or soaking up excess water and solvent, lint-free poly-cellulose material is recommended (part #s 2364-50, 2365-300). These wipes are made of a combination of polyester and cellulose fibers, giving them both absorbency and strength. Paper towels will tend to shred, and shop towels can produce too much lint for delicate equipment.

Make sure that all contaminated areas have been sprayed and completely cleaned. Allow the equipment and assemblies to drain and dry completely before returning them to service.

### Step 3: Test Equipment

Test electrical equipment to ensure correct resistance levels have been achieved prior to operating equipment. If correct levels have not been reached, then it may be necessary to repeat Step 2 of this procedure. When correct resistance levels have been reached, energize equipment under “no-load” conditions and allow operating for a period of time before returning to normal operations.

### Technical and Application Assistance

Techspray® provides an online and phone support to answer your technical and application related questions:  
**tsales@techspray.com**  
**800-858-4043**

### Availability

#### E-LINE™ IPA Cleaner

1610-12S      12oz aerosol  
 1610-G4      1 gal bulk

#### G3® Blue Shower® Maintenance Cleaner

1630-16S      16oz aerosol  
 1638-G      1 gal bulk

#### Precision-V™ Cleaners

1651-16S      16oz aerosol  
 1651-G      1 gal bulk

#### Vortex™ Dusters

1697-10S      10oz aerosol  
 1697-8S      Invertible 8oz aerosol

#### Brushes

2020-1      1.375" horse hair brush  
 2021-1      1.375" hog bristle brush  
 2022-1      2.125" hog bristle brush  
 2027-1      0.875" hog bristle brush  
 2031-1      0.19" horse hair technical brush  
 2032-1      0.375" horse hair technical brush

#### Wipes

2364-50      12" x 12" blue poly/cellulose wipes  
 2365-300      9" x 9" blue poly/cellulose wipes

*Techspray, a division of Illinois Tool Works (ITW), is a leading manufacturer of chemical products for the electronics industry. Techspray formulates, blends, and packages a wide variety of chemicals and assorted support products for the electronics industry, heavy industry, and plant and equipment maintenance including degreasers, defluxers, conformal coating, dusters and water-based cleaners. More information can be found at <http://www.techspray.com>.*