Chemtronics ES132

Chemtronics ES132 Flux-Off Aqueous Instruction Manual

Model: ES132 | Brand: Chemtronics

1. Product Overview

The Chemtronics ES132 Flux-Off Aqueous is an advanced, water-based cleaning solution designed for effective removal of various flux residues from printed circuit boards (PCBs) and electronic assemblies. This product is formulated to be powerful yet environmentally conscious, offering a safe alternative to solvent-based cleaners for many applications. It is suitable for use in both batch and inline cleaning systems, as well as for manual cleaning processes.

Figure 1.1: Chemtronics ES132 Flux-Off Aqueous product container. This image shows the typical packaging for the ES132 Flux-Off Aqueous solution.

Key features include its ability to clean a wide range of flux types, its non-flammable nature, and its low odor. The ES132 is an essential component for maintaining the integrity and performance of electronic components by ensuring clean, residue-free surfaces.

2. Safety Information

Read the Safety Data Sheet (SDS) thoroughly before use. The SDS provides detailed information on hazards, precautions, first aid, and emergency procedures. Always keep the product in its original container, tightly closed, and out of reach of children and unauthorized personnel.

2.1 Personal Protective Equipment (PPE)

- **Eye Protection:** Wear chemical splash goggles or a full face shield to protect against splashes.
- **Hand Protection:** Use chemical-resistant gloves (e.g., nitrile, neoprene, or butyl rubber).
- **Skin Protection:** Wear appropriate protective clothing to prevent skin contact.
- **Respiratory Protection:** If ventilation is inadequate or exposure limits are exceeded, use an approved respirator with appropriate cartridges.

2.2 Handling and Storage

- Ensure adequate ventilation in the work area.
- Avoid contact with eyes, skin, and clothing.
- Do not ingest.
- Store in a cool, dry, well-ventilated area away from incompatible materials and direct sunlight.
- Keep containers tightly closed when not in use.

2.3 Emergency Procedures

- **Inhalation:** Move to fresh air. If breathing is difficult, administer oxygen. Seek medical attention.
- **Skin Contact:** Wash thoroughly with soap and water. Remove contaminated clothing. If irritation persists, seek medical attention.
- **Eye Contact:** Rinse immediately with plenty of water for at least 15 minutes, holding eyelids open. Seek immediate medical attention.
- **Ingestion:** Do NOT induce vomiting. Rinse mouth with water. Seek immediate medical attention.

3. Preparation and Setup

Before using Chemtronics ES132 Flux-Off Aqueous, ensure your workspace is properly prepared and all necessary safety measures are in place.

3.1 Workspace Preparation

- Ensure the work area is clean, well-lit, and has adequate ventilation.
- Lay down protective coverings (e.g., chemical-resistant mats) to prevent spills from damaging surfaces.
- Have appropriate waste containers ready for spent cleaning solution and contaminated materials.

3.2 Product Dilution (if applicable)

The ES132 Flux-Off Aqueous may be used concentrated or diluted with deionized (DI) water, depending on the severity of the flux residue and the cleaning method. Refer to the product's technical data sheet for recommended dilution ratios for specific applications (e.g., ultrasonic, spray, or manual cleaning). Always add the cleaner to water, not water to cleaner, to minimize foaming.

3.3 Equipment Setup

For automated cleaning systems (e.g., ultrasonic baths, inline cleaners), follow the manufacturer's instructions for filling and operating the equipment with aqueous cleaning solutions. Ensure all equipment is compatible with water-based cleaners.

4. Operating Instructions

The Chemtronics ES132 Flux-Off Aqueous can be used in various cleaning methods. Always test on a small, inconspicuous area first to ensure material compatibility.

4.1 Manual Cleaning

1. **Apply:** Dispense a small amount of ES132 Flux-Off Aqueous onto a clean, lint-free wipe, brush, or swab.
2. **Scrub:** Gently scrub the areas contaminated with flux residue. For stubborn residues, allow the solution to dwell for a short period (e.g., 30 seconds to 1 minute) to penetrate the flux.
3. **Rinse:** Thoroughly rinse the cleaned area with deionized (DI) water to remove all cleaner and dissolved flux residues. Inadequate rinsing can lead to white residues.
4. **Dry:** Dry the assembly completely using compressed air, a heat gun (at a safe temperature), or by allowing it to air dry in a clean environment.

4.2 Ultrasonic Cleaning

1. **Prepare Bath:** Fill the ultrasonic bath with the appropriate dilution of ES132 Flux-Off Aqueous and DI water.
2. **Degas:** Degas the solution by running the ultrasonic unit for 5-10 minutes before introducing parts.
3. **Immerse:** Carefully immerse the electronic assemblies into the cleaning solution. Ensure full immersion and avoid overcrowding the bath.
4. **Clean:** Run the ultrasonic unit for the recommended duration (typically 5-15 minutes, depending on flux type and residue thickness).
5. **Rinse:** Transfer assemblies to a separate rinse bath filled with fresh DI water. Rinse thoroughly, potentially using a second DI water rinse bath for critical applications.
6. **Dry:** Dry the assemblies completely using a forced-air dryer, oven, or compressed air.

4.3 Spray Cleaning (Batch or Inline)

For automated spray cleaning systems, follow the equipment manufacturer's guidelines for operating temperatures, spray pressures, and cycle times. Ensure the system is properly charged with ES132 Flux-Off Aqueous and followed by adequate DI water rinsing stages.

- **Temperature:** Optimal cleaning performance is often achieved with heated solutions (e.g., 40-60°C / 104-140°F), but always consult the product's technical data sheet.
- **Rinsing:** Multiple rinse stages with fresh DI water are crucial to prevent re-deposition of contaminants.
- **Drying:** Ensure thorough drying using heated air knives or convection drying zones.

5. Maintenance and Storage

Proper maintenance and storage ensure the longevity and effectiveness of the Chemtronics ES132 Flux-Off Aqueous.

5.1 Product Storage

- Store in a cool, dry, well-ventilated area.
- Keep containers tightly closed when not in use to prevent evaporation and contamination.
- Avoid extreme temperatures (freezing or excessive heat).
- Store away from incompatible materials (e.g., strong acids, strong bases, oxidizing agents).

5.2 Equipment Maintenance

- Regularly clean and maintain all cleaning equipment (ultrasonic baths, spray systems) according to their respective manufacturer's instructions.
- Monitor the cleanliness of the cleaning solution. Replace or filter the solution when it becomes visibly contaminated or its cleaning effectiveness diminishes.
- Ensure rinse water quality is maintained, especially for DI water systems.

6. Troubleshooting

This section addresses common issues encountered during the use of Chemtronics ES132 Flux-Off Aqueous.

Problem	Possible Cause	Solution
White Residues After Cleaning	Inadequate rinsing; cleaner or flux residue not fully removed.	Increase rinse time or number of rinse stages. Ensure fresh DI water is used for rinsing. Check water quality.
Poor Flux Removal	Incorrect dilution; insufficient contact time; solution temperature too low; excessive flux residue; solution is spent.	Adjust dilution ratio. Increase dwell/cleaning time. Increase solution temperature (within recommended limits). Replace cleaning solution.
Excessive Foaming	High agitation; incorrect dilution; presence of certain contaminants.	Reduce agitation. Adjust dilution. Consider using an anti-foaming agent if compatible and necessary.
Material Incompatibility	Cleaner reacting with sensitive components or plastics.	Always test on a small, inconspicuous area first. Consult the product's technical data sheet for known material compatibilities.

7. Product Specifications

The following specifications are for the Chemtronics ES132 Flux-Off Aqueous:

- **Item Weight:** 9.12 Pounds
- **Item model number:** ES132
- **Brand:** Chemtronics
- **Item Form:** Liquid
- **Unit Count:** 132.0 Fluid Ounces
- **Number of Items:** 1
- **Contains Liquid Contents:** Yes
- **ASIN:** B07XYH8BPX
- **Date First Available:** September 16, 2019

Note: These specifications are subject to change without prior notice. Refer to the official product data sheet for the most current information.

8. Disposal Information

Dispose of Chemtronics ES132 Flux-Off Aqueous and any contaminated materials in accordance with all local, regional, national, and international regulations. Do not discharge into drains or the environment. Consult local authorities for proper disposal methods for aqueous cleaning solutions containing flux residues.

Empty containers may retain product residue. Do not reuse empty containers without proper cleaning or reconditioning. Follow local regulations for container disposal.

9. Warranty and Support

Chemtronics products are manufactured to high-quality standards. For specific warranty information, please refer to the official Chemtronics website or contact their customer support directly. In case of technical questions, product inquiries, or support needs, please reach out to Chemtronics customer service or your authorized distributor.

Contact Information: Please visit the official Chemtronics website for the most up-to-date contact details and technical resources.