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Precision Cleaning Procedure

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1.0 **Preface**

Revision A is the Initial Release of 99-02012

2.0 Scope

This document describes the process for cleaning a wide variety of materials and components. It may be used for cleaning stainless steel; aluminum with anodized, chromated, or hard coated surfaces; Teflon, nylon, and various types of plastic materials, metals and hard coated surfaces

3.0 Acronyms

- UC: Ultrasonic cleaner
- ESD: Electrostatic discharge
- DI: Deionized water
- IPA: Isopropyl Alcohol

4.0 Safety

- Latex rubber gloves shall be worn at all times while performing this procedure.
- Safety glasses must be worn while working with solvents.
- Safety UV polycarbonate glasses must be worn when working with UV light sources.
- Never look directly into a UV light source.
- Questions should be directed to the responsible engineer.

5.0 Cleaning Procedure

5.1 Materials Required

- Ultrasonic cleaner Electrowave SUH-110 or similar
- Ultrasonic cleaner Electrowave EW-22EXP with explosion proof cover
- Small Tenney Jr oven or similar
- Surface Cleanse 930 detergent
- Deionized water
- Texwipes
- Isopropyl alcohol
- UV Light UVP-100 or similar
- UV protection goggles
- HEPA vacuum
- ESD safe swabs
- Cleanroom ESD ZipTop bags
- Latex gloves

5.2 Cleaning Procedure

1. Put Items being cleaned in UC wire basket.
2. Fill UC with tap water just enough to cover the parts being cleaned.
3. Add surface cleanse 930 cleaning solution in a 100:1 ratio water/cleaning solution
4. Turn UC on.
5. Let items sit in wire basket for 3-5 minutes – Do NOT exceed 5 mins.
6. Removed wire basket with items and rinse again in a stainless steel basin with D.I water
7. Place parts on clean Texwipes and blow dry with filtered lab grade N2
8. Place parts in UC.
9. Fill UC with IPA enough to cover parts.

10. Turn UC on and wait 1.5 minutes (do NOT exceed this limit)
11. Turn UC off
12. Drain UC
13. Rinse part with clean IPA while still inside the UC
14. Drain UC
15. Place parts on Texwipes
16. Blow dry with filtered lab grade N2
17. Place parts in Tenney oven and bake at 75C for 30 mins
18. Let parts cool off.
19. Inspect parts with UV light (wear UV eye protection goggles)
20. If particulates are found use HEPA vacuum to vacuum particles
21. If no particulates are found double bag with ZipTop ESD bags and store parts in bonded stock room.

6.0 Alternate Cleaning Procedure

For large items that can't fit in the Ultrasonic Cleaner.

6.1 Materials Required

- Isopropyl Alcohol, 99.5% IPA
- TEXWipes
- UV Light source UVP Model B100Y or equivalent
- Polycarbonate UV safety glasses
- HEPA Vacuum
- Cleanroom gowning attire
- Latex gloves

6.2 Alternate Cleaning Procedure

1. Perform a gross cleaning of the item using IPA wipes prior to entering the cleanroom gowning area.
 - a. Perform a general cleaning on all exposed surfaces.
 - b. Ensure the item has no particulate or fiber debris.
2. Transfer the item into the gowning area.
3. Gown into clean room attire.
4. Repeat the item cleaning using IPA wipes in the gowning area
 - a. Wipe items in one direction only.
 - b. Replace wipes as needed to ensure cleanliness is achieved.
5. Turn on UV light. Wait approximately 5 minutes until bulb is fully warmed.
 - a. Put on UV safety goggles
 - b. Caution: UV lens is extremely hot, avoid contact.
6. Turn lights off in gowning area.
7. Perform UV light inspection, particulates will appear white under UV light illumination.
8. If item is clean and free of particulates you can proceed to transfer item into cleanroom.
9. If item needs further cleaning continue to next step
10. Turn on HEPA Vacuum. Use UV light and vacuum off the item while looking for particulates. Remove as many particles as possible. Turn off vacuum and UV light when finished
11. Turn lights on in gowning area.
12. Transfer the item into the cleanroom.