

Purpose: To establish approved instructions for performing Gravimetric / Millipore Cleanliness Tests which determine the filterable residual contaminate weight. The process flushes loose particulate material adhering to test parts and then the fluid is filtered, weighed, and analyzed.

Equipment:

- a) Vacuum pump
- b) Vacuum flask
- c) Filtering funnel
- d) Filter pads
- e) Filter Pad for Spray Gun
- f) Laboratory oven
- g) Analytical balance
- h) Solvent – Mineral Spirits unless otherwise specified
- i) Stainless steel collection pan
- j) Solvent dispensing gun
- k) Pressure vessel
- l) Desiccator
- m) Filter forceps
- n) Microscope
- o) Reticule for Microscope
- p) Microscope Slides for Particle Counting
- q) Fume Hood

Revision: 1	Date: August 15, 2007	Page 1 of 7
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Approved		Authorized
	Reason for the revision change:	
Rev: 0	8/16/04 - New Issue	
Rev: 1	8/15/07 – Completely rewritten/revised to reflect current practices	

Procedures:

Preparation:

1. Before beginning the process, spray all the equipment to be used with solvent and wipe down with lint free wipers. This includes the collection pan, filtering funnel, filter forceps, and anything else that may come in contact with the part flushing process.



2. Check the 5µm filter in the spray gun periodically and change if dirty or it restricts the flow.



Revision: 1	Date: August 15, 2007	Page 2 of 7
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Pad conditioning:

1. Before use the filter pad must be dried and weighed. Place the pad in the oven for at least ten (10) minutes at 140°F +/- 10°F.



2. Move the filter pad to the desiccator for at least (10) minutes to cool.



3. Weigh and record the filter pad Tare weight on the Cleanliness Testing Results sheet (Form # [F7.2.1-9](#)).



Revision: 1	Date: August 15, 2007	Page 3 of 7
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Approved		Authorized
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Part Flushing:

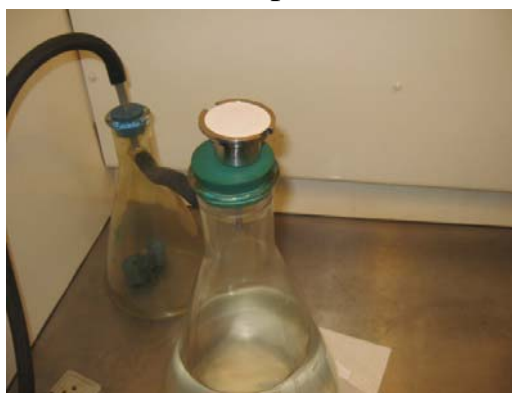
1. Fill the pressure pot with mineral spirits (or other solvent if specified) and set the pressure to 20 psi +/- 5 psi.



2. Place the part to be tested in the collection pan and spray thoroughly with solvent covering all areas of interest.



3. Place the filter pad that has already been weighed on the filter holder and place filter funnel on top.



Revision: 1	Date: August 15, 2007	Page 4 of 7
-------------	-----------------------	-------------

Approved		Authorized
Rev: 0	Reason for the revision change:	
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4. Empty and flush down the container into the filter funnel with the vacuum pump on. Flush down the filter funnel as well.



5. Carefully remove the filter pad from the funnel.



6. Again, place the filter pad in the oven for approximately ten (10) minutes at 140°F +/- 10°



Revision: 1	Date: August 15, 2007	Page 5 of 7
-------------	-----------------------	-------------

Approved		Authorized
	Reason for the revision change:	
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7. Move the filter pad to the desiccator for at least (10) minutes to cool.



8. Weigh and record the Gross weight on the Cleanliness Testing Results sheet (Form # [F7.2.1-9](#)).



9. Subtract the Tare weight from the Gross weight to obtain the Net Weight. Record on the Cleanliness Testing Results sheet. (Form # [F7.2.1-9](#)) Record weights in milligrams. Also, fill in Customer, Work Order No., Parts, Date, Tested By, and Pad Pore Size on the form.

Revision: 1	Date: August 15, 2007	Page 6 of 7
-------------	-----------------------	-------------

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10. Secure the filter pad to Form #[F7.2.1-9](#) using clear tape or if a particle count is required place the filter pad between two microscope slides.



11. If required, measure the largest particle size, using the microscope with reticule, and record the size in microns. Or, if particle counting is required use the Filtrex software from GT Vision.

Safety: Observe MSDS's on solvent handling. Wear appropriate safety apparatus if necessary.

Documentation:

Cleanliness Testing Results

Form # [F7.2.1-9](#)

Revision: 1	Date: August 15, 2007	Page 7 of 7
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