## GC System Recommended Maintenance Schedule

### Gas Management

**Gas purifiers (carrier gas and detector gas)**  
*Every 6 to 12 months*  
Replacement schedule is based on capacity and grade of gases. In general, replace non-indicating traps every 6 to 12 months or when indicating traps start to change color. Replace indicating traps when indicating material is spent.

**Split vent trap**  
*Every 6 months*  
Replace.

**Flowmeter calibration**  
*Every 1 to 2 years*  
Re-calibrate electronic flowmeters – follow recommended schedule for the unit (shown on the calibration certificate).

#### Sample Introduction and Inlets

**Syringes and/or syringe needles**  
*Every 3 months*  
Replace syringe if dirt is noticeable in the syringe, if it cannot be cleaned, if the plunger doesn’t slide easily, or if clogged. Replace needle if septa wear is abnormal or the needle becomes clogged.

**Inlet liner**  
*Weekly*  
Check often. Replace when dirt is visible in the liner or if chromatography is degraded.

**Liner O-rings**  
*Monthly*  
Replace with liner or with signs of wear.

**Inlet septum**  
*Daily*  
Check often. Replace when signs of deterioration are visible (gapping holes, fragments in inlet liner, poor chromatography, low column pressure, etc.).

**Inlet hardware**  
*Every 6 months*  
Check for leaks and clean.

**Inlet gold or stainless**  
*Monthly*  
Check for scratches, corrosion, or build-up of non-volatile sample components and steel seal replace if dirty.

### Columns

**Front-end maintenance**  
*Weekly – monthly*  
Remove 5 to 1 meter from the front of the column when experiencing chromatographic problems (peak tailing, decreased sensitivity, retention time changes, etc.). Replace inlet liner, septum and clean inlet as necessary. Guard column may be useful for increasing column lifetime.

**Solvent rinse**  
*As needed*  
Perform when chromatography degradation is due to column contamination. Only for bonded and cross-linked phases.

**Replacement**  
*As needed*  
Replace when trimming and/or solvent rinsing no longer return chromatographic performance.

**Ferrules**  
*As needed*  
Replace when changing columns and inlet/detector parts.

### Detectors

**FID/NPD jets and collector**  
*As needed*  
Clean when deposits are present. Replace when they become scratched, bent or damaged, or when having difficulty lighting FID or keeping flame lit.

**NPD bead**  
*As needed*  
Replace when signal drifts or there is a dramatic change in sensitivity.

**FID**  
*Every 6 months*  
Measure hydrogen, air and makeup gas flows.

**TCD**  
*As needed*  
Thermally clean by “baking-out” when a wandering baseline, increased noise, or a change in response is present. Replace when thermal cleaning does not resolve the problem.

**ECD**  
*Every 6 months*  
Wipe test. Thermally clean by “baking-out” when baseline is noisy, or the output value is abnormally high. Replace when thermal cleaning does not resolve the problem.

**FPD**  
*Every 6 months*  
Measure hydrogen, air and makeup gas flows. Clean/replace FPD windows and seals when detector sensitivity is reduced.

### Mass Selective Detectors

**Tune MSD**  
*As needed*  
Keep plenty of PFTBA (part number 05971-60571) on hand.

**Check the calibration vial**  
*Every 6 months*  
Vial can be refilled without venting the system.

**Replace the fiberline pump oil**  
*Every 6 months*  
Check the fluid weekly. Change when the fluid becomes discolored or every 6 months.

**Replace the diffusion pump fluid**  
*Every year or as needed*  
Check the fluid weekly. Too little fluid will cause the pump to run at a higher temperature, resulting in degradation and loss of high vacuum. Change when the fluid is discolored or contains particulates.

**Clean the ion source**  
*As needed*  
Clean when performance deteriorates to remove contamination and restore the electrostatic properties of the ion lensing system. Replace scratched parts to maintain optimal performance.

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*Schedule is an approximation of average usage requirements. Frequency may vary widely based upon application and sample type.*

Remember, the downtime for scheduled maintenance is always less disruptive than the downtime for unscheduled maintenance and troubleshooting!