Cleaning Agilent 5975 Ion Sources  
(App Note: 5989-5974EN)

Electron Impact Ion Source

The recommended cleaning material is abrasive powder, aluminum oxide powder.

Do not immerse filaments or lens insulators in solvent. If insulators are dirty, clean them with a cotton swab dampened with reagent-grade methanol. If that does not clean the insulators, replace them.

**Note:** Do not abrasively or ultrasonically clean the insulators.

Abrasively clean the surfaces that contact the sample or ion beam. Use an abrasive slurry of alumina powder and reagent-grade methanol on a cotton swab. Use enough force to remove all discolorations. Polishing the parts is not necessary; small scratches will not harm performance. Also abrasively clean the discolorations where electrons from the filaments enter the source body.

Take care to avoid contaminating cleaned and dried parts. Put on new, clean gloves before handling the parts. Do not set the cleaned parts on a dirty surface. Set them only on clean, lint-free cloths.

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**Yellow - Parts to be abrasively cleaned**

**Blue - Parts not be cleaned, sonicated or solvent rinsed**
**Chemical ionization ion source**

When cleaning the CI ion source, concentrate on the ion source volume. This area is defined by the CI repeller, ion source body and the drawout plate. Be sure to clean the 0.5 mm diameter holes in the ion source body and drawout plate. Because the CI ion source operates at much higher pressures than the EI ion source, it will probably require more frequent cleaning than the EI ion source. The source should be cleaned whenever there are performance anomalies that are associated with a dirty ion source. Let analytical performance be your guide.

**Note:** Visual appearance is not an accurate guide to cleanliness of the CI ion source. The CI ion source can show little or no discoloration yet still need cleaning.

Cleaning the CI ion source is very similar to cleaning the EI ion source. Use the same EI cleaning procedure with the following exceptions:

1. The CI ion source may not look dirty but deposits left by chemical ionization are very difficult to remove. Clean the CI ion source thoroughly.

2. Use a round wooden toothpick to gently clean out the electron entrance hole in the source body and the ion exit hole in the drawout plate.

Do not use halogenated solvents. Use hexane for the final rinse.