

## ICP-CI Cleaning Instructions

Please contact Staff with any questions and clarify your cleaning plan before your first etch!

| If You Are Etching...                                                                                                                                                                                                                                                                                   | Clean Instructions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
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| <ul style="list-style-type: none"> <li>• LiNbO<sub>3</sub> with an Ar Mill</li> <li>• Any other compound with an Ar Mill that is unreactive with the gasses available</li> </ul>                                                                                                                        | <p><b>Category 1</b></p> <p>Run the <b>ASRC O<sub>2</sub> Clean</b> on the cleaning wafer. The cleaning step should be the length of time you had active plasma or 10 minutes, whichever is longer.</p>                                                                                                                                                                                                                                                                                                                                        |
| <ul style="list-style-type: none"> <li>• Si, SiO<sub>2</sub>, Si<sub>3</sub>N<sub>4</sub>, or SiC with a CF<sub>4</sub> etch</li> <li>• Nb, NbTiN, Ti, or TiO<sub>2</sub> (regardless of etch chemistry)</li> <li>• Si with a HBr etch</li> <li>• Ge (with no materials in other categories)</li> </ul> | <p><b>Category 2</b></p> <p>Run the <b>ASRC CF<sub>4</sub>/O<sub>2</sub> Clean</b> on the cleaning wafer. Each cleaning step (CF<sub>4</sub>, O<sub>2</sub>) should be the length of time you had active plasma or 10 minutes, whichever is longer.</p>                                                                                                                                                                                                                                                                                        |
| <ul style="list-style-type: none"> <li>• Cr</li> </ul>                                                                                                                                                                                                                                                  | <p><b>Category 3</b></p> <p>Run the <b>ASRC Cl<sub>2</sub>-O<sub>2</sub>/CF<sub>4</sub>/O<sub>2</sub> Clean</b> on the cleaning wafer. The Cl<sub>2</sub>-O<sub>2</sub> step should be run for as long as you had active plasma or 10 minutes, whichever is longer. The two following cleaning steps (CF<sub>4</sub>, O<sub>2</sub>) should be run for at least 10 minutes each.</p>                                                                                                                                                           |
| <ul style="list-style-type: none"> <li>• A III-V, Ga, Ta, or other CL<sub>2</sub>/BCl<sub>3</sub>-reactive compound in a structure <u>that does not contain As</u></li> </ul>                                                                                                                           | <p><b>Category 4</b></p> <p>Run the <b>ASRC BCl<sub>3</sub>-Cl<sub>2</sub>/CF<sub>4</sub>/O<sub>2</sub> Clean</b> on the cleaning wafer. The BCl<sub>3</sub>-Cl<sub>2</sub> step should be run for as long as you had active plasma or 10 minutes, whichever is longer. The two following cleaning steps (CF<sub>4</sub>, O<sub>2</sub>) should be run for at least 10 minutes each.</p>                                                                                                                                                       |
| <ul style="list-style-type: none"> <li>• GaAs</li> <li>• <u>Any structure containing As</u> (even if not directly etched)</li> </ul>                                                                                                                                                                    | <p><b>Category 5</b></p> <p>On a <b>Fresh Silicon Wafer</b>:</p> <ol style="list-style-type: none"> <li>1. Run the <b>BCl<sub>3</sub>/Cl<sub>2</sub> GaAs Etch</b> for the length of time you had active plasma or <b>20 minutes</b>, whichever is longer. Discard the wafer when done.</li> </ol> <p>On the Cleaning Wafer:</p> <ol style="list-style-type: none"> <li>2. Run the <b>ASRC CF<sub>4</sub>/O<sub>2</sub> Clean</b>. The two cleaning steps (CF<sub>4</sub>, O<sub>2</sub>) should be run for <b>20 minutes</b> each.</li> </ol> |

