



Material Compatibility with Common Chemistries

Over the many years of operations Imtec has gained the knowledge and know how to meet the material needs of many industries including the semiconductor industry. With this vast knowledge Imtec has compiled the table seen below. On this table is a list of processes common to the semiconductor industry and many other industries. Listed aside these process names are the chemistry makeups, applications, and most importantly the product or materials to be used with these processes.

For more information regarding process chemistry, applications, materials, or general know how please contact Imtec Acculine and ask for a product specialist. Please call +1-510-770-1800 or sales@imtecacculine.com

Process Name	Chemistry	Application	Process Tank
Si Iso Etch	HNO ₃ +H ₂ O+NH ₄ F	Etch Silicon	PFA Tank (near ambient)
Oxide Etch	10:1 HF (H ₂ O+49% HF)	Etch Silicon Dioxide	PFA Tank with heat exchange coils
Buffered Oxide Etch	5:1 (40% NH ₄ F+49% HF)	Silicon Dioxide	PFA Tank with heat exchange coils
Quickdump Rinse	H ₂ O	chemical removal	PVDF Quickdump
Post Hot Phos Rinse	H ₂ O	Acid Rinse	PVDF Quickdump Megasonic
Post Piranha Rinse	H ₂ O	Acid rinse, Sulfate removal	PVDF Quickdump Megasonic
SC-2, HPM, RCA2, Huang B	HCL+H ₂ O ₂ +H ₂ O	Metals removal, alkalis and metal hydroxide removal	Quartz recirculated Megasonic
SC-1, APM,RCA1, Huang A	NH ₄ OH+H ₂ O ₂ +H ₂ O	Particle removal, light organics removal, protective oxide regrowth	Quartz recirculated Megasonic
EDP	NH ₂ (CH ₂) ₂ NH ₂ +C ₆ H ₄ (OH)+H ₂ O	Anisotropic Silicon Etch	Quartz static or recirculated
TMAH	TMAH	Anisotropic Silicon Etch	Quartz static or recirculated
Cu FeCl ₃ 200	Copper etchant type CE-200 from Transene (30% FeCl ₃ + 3-4% HCl + H ₂ O)	Etch Copper	Quartz static or recirculated

Cu APS 100	Copper etchant APS 100 from Transene (15-20% (NH ₄) ₂ S ₂ O ₈ + H ₂ O)	Etch Copper	Quartz static or recirculated
NiCr TFN	Nichrome etchant TFN from Transene (10-20% (NH ₄) ₂ Ce(NO ₃) ₆) + 5-6% HNO ₃ + H ₂ O)	Etch NiCr	Quartz static or recirculated
Al Etch A	Al Etchant Type A from Transene (80% H ₃ PO ₄ + 5% HNO ₃ + 5% HAc + 10% H ₂ O)	Etch Aluminum	Quartz static or recirculated
CR-14	Chromium etchant CR-14 from Cyantek (22% (NH ₄) ₂ Ce(NO ₃) ₆) + 8% HAc + H ₂ O)	Etch Chromium	Quartz static or recirculated
CR-7	Chromium etchant CR-7 from Cyantek (9% (NH ₄) ₂ Ce(NO ₃) ₆) + 6% HClO ₄ + H ₂ O)	Etch Chromium	Quartz static or recirculated
Aqua regia	HCl+HNO ₃	Etch Gold	Quartz static or recirculated
AU-5	Gold etchant AU-5 from Cyantek (5% I ₂ + 10% KI + 85% H ₂ O)	Etch Gold	Quartz static or recirculated
Moly Etch	Molybdenum etchant (180 H ₃ PO ₄ : 11 HAc : 11 HNO ₃ : 150 H ₂ O)	Etch Molybdenum	Quartz static or recirculated
Aqua regia, Dilute	Dilute aqua regia (3 HCl : 1 HNO ₃ : 2 H ₂ O), ~30°C	Etch Noble metals	Quartz static or recirculated
Phos+Sulf	1 H ₂ SO ₄ : 1 H ₃ PO ₄	Etch Sapphire	Quartz static or recirculated
Pad Etch 4	Pad Etch 4 from Ashland (13% NH ₄ F + 32% HAc + 49% H ₂ O + 6% propylene glycol + surfactant)	Etch SiO ₂ , not Al	Quartz static or recirculated
Ti Etch	Titanium wet etchant (20 H ₂ O : 1 H ₂ O ₂ : 1 HF)	Etch Titanium	Quartz static or recirculated
H₂O₂ 50°C	Hydrogen peroxide (30wt% H ₂ O ₂ , 70wt% H ₂ O)	Etch Tungsten	Quartz static or recirculated
SA-80	(NH ₄) ₂ SO ₄ +H ₂ SO ₄	Organics removal	Quartz static or recirculated
SOM, Sulfuric/Ozone mix	H ₂ SO ₄ +O ₃	Organics removal	Quartz static or recirculated
DIO₃, Ozinated water	DIH ₂ O+O ₃	Organics removal, protective SiO ₂ regrowth	Quartz static or recirculated

Microstrip	Microstrip 2001 photoresist stripper, 85°C	Photoresist Strip	Quartz static or recirculated
Piranha, SPM	Piranha (~50 H2SO4 : 1 H2O2)	Resist strip, Post-ash residue removal, organic removal	Quartz static or recirculated
Phosphoric	Phosphoric Acid (85% by weight)	Etch Silicon nitride	Quartz static or recirculated Dedicated Nitride Etch System
Proprietary Solvent Resist Strippers	Various Solvents	Remove Photoresist	Quartz Static or recirculated Stainless Steel (static or recirculated)
IPA	Isopropanol	Cleaning	Stainless Steel static or recirculated
Methanol	Methanol	Cleaning	Stainless Steel static or recirculated
Acetone	Acetone	Photoresist Strip	Stainless Steel static or recirculated
Anisotropic Etch	KOH (30% by weight)	Anisotropic SiliconEtch	PFA Tank with In-Line Heater