

Acetic Acid (H₃COOH): GaAs; Pb; Ti

Hydrochloric Acid (HCl): Al; Cr; Cu; Fe₂O₃; Ga; GaAs; GaN; In; Fe; Pb; Ni; NiO, Ni₂O₃; Sn; SnO₂; Ti; Zn

Hydrofluoric Acid (HF): GaAs; Ni; SiO₂; Ti

Nitric Acid (HNO₃): C; Cu; GaAs; In; Fe; Pb; Ni; Ag; Pd; Pt; Sn; Ti; Zn; ZnO

Phosphoric Acid (H₃PO₄): Al; Cu; GaAs; GaN; Fe; Ni; SiN; ZnO

Potassium Hydroxide (KOH): Al; C; Cu; Ag; GaAs; Si; Ti

Sodium Hydroxide (NaOH): Al; Cu; Ag; Ti; GaAs; GaN

Sulfuric Acid (H₂SO₄): C; Cu; GaAs; Fe; Pb; Ni; Ti

Aqua Regia (3 HCl : 1 HNO₃) etches all metals

Etchant	? Rate	Also etches—	Doesn't etch—
Aluminum (Al)			
19 H ₃ PO ₄ : 1 HAc : 1 HNO ₃ : 2 H ₂ O	40 Å/s	SiN, M	SiO ₂ , Si, PR
10% K ₃ Fe(CN) ₆	100 Å/s		ZnO, SiO ₂ , SiN, Si, M, PR
Aluminum Oxide (Al₂O₃)			
1 NH ₄ OH : 1 H ₂ O ₂ : 3 H ₂ O @ 80 °C		Al, Poly	SiO ₂ , SiN, Si, M
Brass (alloy Cu : Zn)			
FeCl ₃		Cu, Ni	SiO ₂ , SiN, Si, M, PR
20% NH ₄ SO ₅		Al	SiO ₂ , SiN, Si, M, PR
Bronze (alloy Cu : Sn)			
1% CrO ₃			SiO ₂ , SiN, Si, PR
Carbon (C)			
H ₃ PO ₄ : CrO ₃ : NaCN		SiN	SiO ₂ , Si, PR
Chromium (Cr)			
2 KMnO ₄ : 3 NaOH : 12 H ₂ O		Al	SiO ₂ , SiN, Si, M, PR
Copper (Cu)			
30% FeCl ₃		Ni	SiO ₂ , SiN, Si, M, PR
20% KCN		Ag, Au	Al ₂ O ₃ , SiO ₂ , SiN, Si, M, PR
Gallium Arsenide (GaAs)			
5% Br ₂ in CH ₃ OH		Fe	SiO ₂ , SiN, Si, M
1 NH ₄ OH : 1 H ₂ O ₂		Al, Ag, Poly	SiO ₂ , SiN, Si, M
Gold (Au)			
1 I ₂ : 2 KI : 10 H ₂ O		Fe	SiO ₂ , SiN, Si, M, PR
KCN		Ag, Cu	Al ₂ O ₃ , SiO ₂ , SiN, Si, M, PR
Iron (Fe)			
1 I ₂ : 2 KI : 10 H ₂ O		Au	SiO ₂ , SiN, Si, M, PR
Nickel (Ni)			
30% FeCl ₃		Cu	SiO ₂ , SiN, Si, M, PR
Polymers (e.g.: photoresist, wax, epoxies)			
5 NH ₄ OH : 1 H ₂ O ₂ @ 120 °C		Al	SiO ₂ , SiN, Si, M
Silicon (Si)			
64 HNO ₃ : 3 NH ₄ F : 33 H ₂ O	100 Å/s	M	SiN, PR
61 EDA : 11 C ₆ H ₄ (OH) ₂ : 28 H ₂ O	78 Å/s	Poly	SiO ₂ , SiN, M
Silicon Oxide (SiO₂)			
1 HF : 5 NH ₄ HF : 5 H ₂ O (BOE)	20 Å/s	M, SiO ₂	SiN, Si
Silver (Ag)			
1 NH ₄ OH : 1 H ₂ O ₂		Al, Poly	SiO ₂ , SiN, Si, M
Stainless Steel (alloy Fe : C : Cr)			
1 HF : 1 HNO ₃		M	SiN, PR
Tin (Sn)			
2 HClO ₄ : 7 HAc			SiO ₂ , SiN, Si, PR

H ₂ O	: deionized (DI) water (<i>l</i>)	SiO ₂	: silicon oxide
HCl	: hydrochloric acid (38%, <i>aq</i>)	SiN	: silicon nitride (Si ₃ N ₄ , Si ₃ N ₁₂)
HF	: hydrofluoric acid (49%, <i>aq</i>)	Si	: mono- or polycrystalline silicon
HNO ₃	: nitric acid (70%, <i>aq</i>)	M	: metals
H ₂ SO ₄	: sulfuric acid (96%, <i>aq</i>)	PR	: photoresist (cured)
H ₃ PO ₄	: phosphoric acid (85%, <i>aq</i>)	Poly	: other polymers
HAc	: acetic acid (<i>l</i> , H ₃ COOH)		
HClO ₄	: perchloric acid (68%, <i>aq</i>)		
H ₂ O ₂	: hydrogen peroxide (30%, <i>aq</i>)		
NH ₄ OH	: ammonium hydroxide (30%, <i>aq</i>)		
NH ₄ F	: ammonium fluoride (40%, <i>aq</i>)		
CH ₃ OH	: methanol (<i>l</i>)		
EDA	: ethylenediamine (<i>l</i> , NH ₂ O(CH ₂) ₂ NH ₂)		
C ₆ H ₄ (OH) ₂	: pyrocatechol (<i>s</i>)		
NaOH	: sodium hydroxide (<i>s</i>)		
KOH	: potassium hydroxide (<i>s</i>)		
KCN	: potassium cyanide (<i>s</i>)		
NaCN	: sodium cyanide (<i>s</i>)		
KFe(CN) ₆	: potassium ferrocyanide (<i>s</i>)		
KMnO ₄	: potassium permanganate (<i>s</i>)		
FeCl ₃	: ferric chloride (<i>s</i>)		
NH ₄ SO ₅	: ammonium persulfate (<i>s</i>)		
KI	: potassium iodide (<i>s</i>)		
I ₂	: iodine (<i>s</i>)		
Br ₂	: bromine (<i>l</i>)		
CrO ₃	: chromic oxide (<i>s</i>)		