Material	Evaporation		Application	Comment	MP	P / 10^{-4}
	rod (2-6 mm EBE-1, 2-4 mm EBE-4) total thimble motion 50 mm EBE-1, 25 mm EBE-4	crucible (0.25cc EBE-1, 0.07cc EBE-4)		Deposition rates controllable down to <0.01A/s=0.2 monolayer/min	(°C)	Temperature (°C) for vapour pressure (Torr)
Aluminum (Al)	-	Tantalum, Molybdenum	Optical films, Oxide films, Electrical contacts	BN liners with lid are recommended due to the reactivity and the fact that Al creeps out. Cooling down of the cell with 1K per minute.	660	972
Antimony (Sb)	6mm rod	Cold Lip Effusion Cell, PBN	Doping, Electrical contacts		631	425
Arsenic (As)	-	Valved Cracker, Cracker, Valved or Low Temp Effusion Cell	III-V films, Caps	Careful: evaporation as molecules -> cracking toxic	817	210
Barium (Ba)	-	Tantalum, Molybdenum	Oxide growth	Wetting, Reactive with ceramics	727	462
Beryllium (Be)	4-6mm rod	Vitreous Carbon	Doping of III-V semiconductors	extremely hard toxic	1287	997
Bismuth (Bi)	-	Low Temp Effusion Cell, Al2O3, Quartz, PBN, VC	Doping	Toxic, melts before evaporation	271	517
Blei	4-6mm rod	Mo mit Crucible Al2O3			327	
Boron (B)	-	Vitreous Carbon	Doping, Carbide films	Reactivity with C extremely hard, Careful cooling	2076	1707
Cadmium (Cd)	-	Low Temp Effusion Cell, Al2O3, Quartz, PBN	Doping in CdTe	Toxic, high vapour pressures => system contaminations, low sticking	321	177
Calcium (Ca)	4-6mm rod	-	Oxide growth	High reactivity	842	459
Carbon (C)	2-4mm rod	-	Carbide growth, doping in MBE, electron microscopy sample preparation		3527	2050
Cerium (Ce)	-	Vitreous Carbon	Oxide growth	Extremely efficient getter material for N and O	795	1380
Cesium (Cs)	-	Near Ambient Effusion Cell, Quartz, PBN		high reactivity with O and water	28	30

Material	Evaporation		Application	Comment	MP	P / 10^{-4}
	rod (2-6 mm EBE-1, 2-4 mm EBE-4) total thimble motion 50 mm EBE-1, 25 mm EBE-4	crucible (0.25cc EBE-1, 0.07cc EBE-4)		Deposition rates controllable down to <0.01A/s=0.2 monolayer/min	(°C)	Temperature (°C) for vapour pressure (Torr)
Chlorine (Cl)	-	-	Solar cell activation	ECR-Plasma source with Alumina plasma chamber		
Chromium (Cr)	2-4mm rod	-	Metalising, contacting		1907	1157
Cobalt (Co)	2-4mm rod	-	Magnetic films, multilayer materials, functional oxide films	Alloys with refractory metals	1495	1257
Copper (Cu)	-	Molybdenum	Surface Science	Higher vapour pressure material, deposition rate: up to nm/second	1085	1027
Dysprosium (Dy)	2-4mm rod	Tantalum			1407	900
Erbium (Er)	2-4mm rod	Tantalum, Tungsten	Doping for fluorescence		1497	940
Europium (Eu)	4mm rod	Tantalum, Molybdenum	Doping for fluorescence		826	466
Gallium (Ga)	-	Dual Filament or Single Filament Effusion Cell, PBN, Al2O3, BeO, Quartz	III-V growth	Liquid near RT, alloys with refractory metals	30	907
Germanium (Ge)	-	Al2O3, Quartz	Semiconductor films, III-V doping		938	1137
Gold (Au)	-	Tungsten, Molybdenum (Al2O3 crucible)	Metallising, contacting		1064	1132
Hafnium(Hf)	2mm rod	270°-e-beam	Oxide films, low K		2230	3090
Hydrogen (H)	-	-		Thermal Gas Cracker TGC-H or ECR or RF Plasma Source		
Indium (In)	-	Molybdenum with BN liner with cap	Contacts (TCO), solar cells, oxide films	Liquid near RT, alloys with refractory metals	157	742
Iridium (Ir)	2mm rod	-		low rates	2466	2380
Iron (Fe)	4mm rod	-	Surface science, magnetic films, oxide films		1538	1180
Lanthanum (La)	-	High Temp Effusion Cell, Al2O3			920	1410

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	rod (2-6 mm EBE-1, 2-4 mm EBE-4) total thimble motion 50 mm EBE-1, 25 mm EBE-4	crucible (0.25cc EBE-1, 0.07cc EBE-4)		Deposition rates controllable down to <0.01A/s=0.2 monolayer/min	(℃)	Temperature (℃) for vapour pressure (Torr)
Lead (Pb)	-	Mo with Al2O3 crucible insert			327	
Lithium (Li)	-	Dispenser Source, Al2O3, BeO, PBN	Intercalation doping, ion mobility films	Careful degassing, reactivity, LiOH, Li2O, Li2O3	181	404
Lutetium (Lu)	4mm rod	High Temp Effusion Cell, Al2O3			1652	1376
Magnesium (Mg)	4mm rod	Al2O3, Vitreous Carbon, PBN	Oxide films		650	327
Manganese (Mn)	2-4 mm rod	Single Filament Effusion Cell, Al2O3	Oxide films, magnetic films		1246	747
Mercury (Hg)	-	Near Ambient Effusion Cell, Al2O3, Quartz, PBN	Doping, optical active films HgCdTe	Toxic	-39	7?
Methane (CH4)	-	-	Semiconductor termination	ECR or RF Plasma Source		
Molybdenum (Mo)	2mm rod	-	Surface Science, contacts in solar cells, oxide films	MoO3 toxic	2623	2050?
Nickel (Ni)	4-6mm rod	Vitreous Carbon	Surface science, magnetic films, oxide films	Alloys with refractory metals	1455	1262
Niobium (Nb)	3-4mm rod	-			2477	2287
Nitrogen (N)	-	-	Nitridation, Nitride film growth	RF Plasma Source with BN plasma chamber		
Oxygen (O)	-	-	Oxide film growth, cleaning	ECR Plasma Source with Al2O3 plasma chamber		
Palladium (Pd)	2-4mm rod	-	Surface Science	Reacts with refractory metals	1555	1192
Phosphorus (P)	-	Valved Cracker or Valved Effusion Cell	Phosphide growth, doping	High reactivity	44	192?
Platinum (Pt)	2-4mm rod at low evaporation rates (1750℃ with 0.01nm per minute)	for higher growth rates, BeO	Surface Science, atomic surface preparation	melting point of Pt at 1768℃, vapour pressure at 10^-4mbar at 1747℃ relative small. Nearly all crucibles materials have higher vapour pressures	1768	1747

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Potassium (K)	-	Dispenser Source, Al2O3, Quartz, PBN	Doping, intercalation, ion mobility films	Baking issue, high reactivity	63	123
Rhenium (Re)	2mm rod	-			3186	2570
Rhodium (Rh)	2mm rod	-			1964	1707
Ruthenium (Ru)	2-4mm rod	Tungsten, Tantalum			2334	2260
Scandium	2-4mm rod	Dual Filament Effusion Cell, High Temp Effusion Cell, Al2O3, BeO			1541	1107
Selenium	-	Valved Cracker, Cracker, or Low Temp Effusion Cell, PBN	II-VI films	Toxic, baking issue, contaminates chamber, reacts with Co (gaskets!)	221	154
Silicon (Si)	wide rod (4-6mm)	Single Filament Cell, High Temperature Cell, Molybdenum	Doping, growth, surface science	Low rates, careful operation	1414	1337
Silver (Ag)	4-6mm rod but easier from crucible	Molybdenum	Surface Science, contacts	Higher vapour pressure material, deposition rate: up to nm/second	962	832
Sodium (Na)	-	Dispenser Source,Quartz, PBN	Intercalation, ion mobility films	Baking issue, high reactivity	98	193
Strontium (Sr)	4-6mm rod	Low Temperature Effusion Cell, EBE, Molybdenum, Vitreous Carbon	Oxide growth	High reactivity	777	404
Sulphur (S)	-	Valved Cracker, Cracker or Valved Effusion Cell, PBN	II-VI films, sulphurization	Baking issue contaminates vacuum system, reacts with Copper	115	55
Tantalum (Ta)	2mm rod	-	Oxide films	Refactory material, at 100mm measured deposition rate: ~2nm/min, alloys with Si	3017	2590

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	rod (2-6 mm EBE-1, 2-4 mm EBE-4) total thimble motion 50 mm EBE-1, 25 mm EBE-4	crucible (0.25cc EBE-1, 0.07cc EBE-4)		Deposition rates controllable down to <0.01A/s=0.2 monolayer/min	(°C)	Temperature (°C) for vapour pressure (Torr)
Tellurium (Te)	-	Valved Cracker Effusion Cell, PBN	II-VI semiconductor films, oxide films	Reacts with Au, wettning, toxic	450	277
Thallium (Tl)	-	Low Temp Effusion Cell, Al2O3, Quartz		Toxic, wetting	304	470
Thorium (Th)	-	Tungsten, Molybdenum, Tantalum		Toxic, radiactive	1842	1925
Tin (Sn)	-	Dual Filament or Single Filament Effusion Cell, PBN	Contacts, TCO films, doping	Liquid deposition, wetting	232	997
Titanium (Ti)	2-4mm rod	-	Carbide films, oxide films, contacts	Alloys with refractory metals, strong outgassing	1668	1453
Tungsten (W)	2mm rod	-	Oxide films, contacts, electrochemic films (WO3)	Refactory material, at 100mm measured deposition rate: ~2nm/min	3422	2757
Vanadium (V)	2-4mm rod	Tungsten, Molybenum	Contacts, oxide films		1910	1547
Ytterbium (Yb)	4mm rod	Tantalum			824	417
Yttrium (Y)	rod	High Temp Effusion Cell, Al2O3	Oxide films	Reacts with Ta	1526	1332
Zinc (Zn)	-	Low Temp Effusion Cell, Al2O3, Quartz, PBN	Oxide films		420	247
Zirconium (Zr)	with low evaporation rates 2mm rod possible	High Temperature Effusion Cell, EBE, Tungsten, Tantalum	Oxide films	Strong reactivity alloys with W	1855	1987?