

ETRI Process Costs in 2024



Equipment Name	Process Name	Code	B/Size	Process Unit Price (Unit: KRW)
			(wfs)	
Cleaning	Cleaning DIW	WT01/02	25	57,000
	Cleaning STD1	WT03/04	25	67,000
	Cleaning STD3	WT03/04	25	78,000
	Cleaning SC1	WT03	25	67,000
	Cleaning SC2	WT03	25	67,000
	Cleaning SC3	WT03	25	67,000
	Cleaning H2SO4	WT03	25	67,000
	Cleaning 100:1 HF	WT04	25	67,000
	Cleaning 50:1 HF	WT04/05	25	67,000
Wet Etch	Nitride Wet Etch(H3PO4)	WT05	25	170,000
	Wet Etch(Lal 1000, 7:1 BHF)	WT02	25	67,000
	Deglaze	WT02	25	67,000
	Al Etchant	WT05	25	170,000
	Ni, Ag Etchant	WT05	1	113,000
	TiW, TiN Wet Etch	WT05	25	113,000
Furnace	Oxidation($T \leq 1000A$)	FN**	25	284,000
	Oxidation($1000 < T \leq 5000A$)	FN**	25	397,000
	Oxidation($5000 < T \leq 10000A$)	FN**	25	567,000
	Drive-In($\leq 2hr$) & Oxidation($< 5000A$)	FN**	25	681,000
	Drive-In($> 2hr$) & Oxidation($< 5000A$)	FN**	25	795,000
	Drive-In($\leq 2hr$) & Oxidation($\geq 5000A$)	FN**	25	908,000
	Drive-In($> 2hr$) & Oxidation($\geq 5000A$)	FN**	25	1,022,000
	Anneal(Time $\leq 1hr$)	FN**	25	170,000
	Anneal($1hr < Time \leq 3hr$)	FN**	25	262,000
	Anneal($3hr < Time \leq 5hr$)	FN**	25	340,000
	Anneal($5hr < Time \leq 7hr$)	FN**	25	421,000
	Anneal($7hr < Time \leq 10hr$)	FN**	25	489,000
	POCl3 Doping	FN21	25	284,000
	Alloy/SOG Curing/Dehydrate	FN11	25	170,000
	RTA	RT01	1	67,000
	LP TEOS($T \leq 5000A$)	LP34	25	284,000
	LP TEOS($5000 < T \leq 10000A$)	LP34	25	340,000
	LP TEOS($10000 < T \leq 15000A$)	LP34	25	397,000
	LP Nitride($T \leq 1000A$)	LP33	25	284,000
	LP Nitride($1000 < T \leq 3000A$)	LP33	25	319,000
	LP Nitride($3000 < T \leq 5000A$)	LP33	25	397,000

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Equipment Name	Process Name	Code	B/Size	Process Unit Price (Unit: KRW)
			(wfs)	
LPCVD	LP Poly Si, a-Si($T \leq 5000A$)	LP32	25	340,000
	LP Poly Si, a-Si($5000 < T \leq 10000A$)	LP32	25	397,000
	LP Poly Si, a-Si($10000 < T \leq 15000A$)	LP32	25	454,000
	LP LTO($T \leq 5000A$)	LP31	25	340,000
	LP LTO($5000 < T \leq 10000A$)	LP31	25	397,000
	LP LTO($10000 < T \leq 15000A$)	LP31	25	454,000
	LP HTO, SiON($T \leq 1000A$)	LP24	25	340,000
	LP HTO, SiON($1000 < T \leq 3000A$)	LP24	25	397,000
	SOG($T \leq 5000A$)	SC01	1	227,000
PECVD	PE OX($T \leq 5000A$)	PE02/DR05	1	67,000
	PE OX($5000 < T \leq 10000A$)	PE02/DR05	1	92,000
	PE OX($10000 < T \leq 15000A$)	PE02/DR05	1	113,000
	PE Nitride($T \leq 5000A$)	PE02/DR05	1	67,000
	PE Nitride($5000 < T \leq 10000A$)	PE02/DR05	1	92,000
	PE Nitride($10000 < T \leq 15000A$)	PE02/DR05	1	113,000
	PE Ge-OX($T \leq 10000A$)	DR05	1	92,000
	PE Ge-OX($10000 < T \leq 15000A$)	DR05	1	113,000
	PE Ge-OX($15000 < T \leq 20000A$)	DR05	1	135,000
	SACVD BPSG($T \leq 5000A$)	PE02	1	92,000
	SACVD BPSG($5000 < T \leq 10000A$)	PE02	1	113,000
	SACVD BPSG($10000 < T \leq 15000A$)	PE02	1	135,000
	PE TEOS($T \leq 5000A$)	PE02	1	67,000
	PE TEOS($5000 < T \leq 10000A$)	PE02	1	92,000
	PE TEOS($10000 < T \leq 15000A$)	PE02	1	113,000
	PE Oxynitride($T \leq 5000A$)	PE02	1	67,000
	PE Oxynitride($5000 < T \leq 10000A$)	PE02	1	92,000
Implant	As, P, BF ₂ , B11 (Dose $\geq 1E15$)	IM02	17	681,000
	P, BF ₂ , B11 (Dose $\leq 1E14$)	IM01	1	67,000
	Nitride($T \leq 2000A$)	DR03	1	67,000
	Nitride($2000 < T \leq 3000A$)	DR03	1	103,000
	Nitride($3000 < T \leq 7000A$)	DR03	1	124,000
	Poly($T \leq 3000A$)	DR03	1	67,000
	Poly($3000 < T \leq 7000A$)	DR03	1	103,000
	Poly($7000 < T \leq 10000A$)	DR03	1	124,000

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Equipment Name	Process Name	Code	B/Size	Process Unit Price (Unit: KRW)
			(wfs)	
Dry Etch	Oxide($T \leq 3000A$)	DR03/05/06	1	67,000
	Oxide($3000 < T \leq 7000A$)	DR03/05/06	1	103,000
	Oxide($7000A < T \leq 15000A$)	DR03/05/06	1	124,000
	Silicon($T \leq 3000A$)	DR03	1	78,000
	Silicon($3000 < T \leq 7000A$)	DR03	1	103,000
	Silicon($7000 < T \leq 10000A$)	DR03	1	124,000
	Silicon($10000 < T \leq 25000A$)	DR03	1	149,000
	Silicon residue remove($T \leq 500A$)	DR03/DR06	1	67,000
	Metal(AlSi $T \leq 10000A$)	DR05/06	1	67,000
	Metal(AlSi $10000 < T \leq 20000A$)	DR05/06	1	103,000
	Metal(AlSi $T > 20000A$)	DR05/06	1	124,000
	Metal(TiW/AlSi/TiW)	DR05/06	1	113,000
	Metal(Ti/AlSi/TiN)	DR05/06	1	113,000
	TiW, Ti, TiN($T \leq 1000A$)	DR05/06	1	67,000
	Cr($T \leq 1000A$)	DR05/06	1	67,000
	Cr($1000 < T \leq 3000A$)	DR05/06	1	103,000
	ITO, NbN, AlN, Mo	DR05/06	1	135,000
	CMP Poly($T \leq 10000A$)	CM01	1	67,000
	CMP Poly($10000 < T \leq 20000A$)	CM01	1	103,000
	CMP Poly($20000 < T \leq 30000A$)	CM01	1	124,000
	CMP Oxide($T \leq 10000A$)	CM01	1	67,000
	CMP Oxide($10000 < T \leq 20000A$)	CM01	1	113,000
	CMP Oxide($20000 < T \leq 30000A$)	CM01	1	135,000
	HD, ICP oxide($T \leq 3000A$)	DR07/DR08	1	78,000
	HD, ICP oxide($3000 < T \leq 7000A$)	DR07/DR08	1	103,000
	HD, ICP oxide($7000 < T \leq 15000A$)	DR07/DR08	1	124,000
	HD, ICP Nitride($T \leq 2000A$)	DR07/DR08	1	67,000
	HD, ICP Nitride($2000 < T \leq 7000A$)	DR07/DR08	1	103,000
	HD Poly($T \leq 3000A$)	DR07	1	67,000
	HD Poly($3000 < T \leq 10000A$)	DR07	1	124,000
	HD, ICP Silicon($T \leq 3000A$)	DR07/DR08	1	67,000
	HD, ICP Silicon($3000 < T \leq 7000A$)	DR07/DR08	1	103,000
	HD, ICP Silicon($7000 < T \leq 10000A$)	DR07/DR08	1	135,000
	HD, ICP Silicon($10000 < T \leq 25000A$)	DR07/DR08	1	170,000

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Equipment Name	Process Name	Code	B/Size	Process Unit Price (Unit: KRW)
			(wfs)	
	ICP Polyimide($T \leq 5000A$)	DR08	1	103,000
	ICP Polyimide($5000 < T \leq 15000A$)	DR08	1	135,000
	ICP Polyimide($15000 < T \leq 25000A$)	DR08	1	170,000
	Silicon Carbide($T \leq 3000A$)	DR03	1	103,000
	Silicon Carbide($3000 < T \leq 7000A$)	DR03	1	135,000
	Silicon Carbide($7000 < T \leq 10000A$)	DR03	1	170,000
Photo	HMDS/Coat/EBR/Bake(PR PFi389 GA2)	TR01/02	1	21,000
	HMDS/Coat/EBR/Bake(AZ, DNR, others)	TR01/02	1	30,000
	HMDS, EBR, Bake(Hot Plate)	TR01/02	1	16,000
	Exposure(i-line Stepper)	ST02,3	1	30,000
	Exposure(Projection Aligner)	PA01	1	30,000
	Exposure(Contact Aligner)	CA01	1	30,000
	PEB/Develop(time ≤ 90 sec)	TR01/02	1	21,000
	PEB/Develop($90 < \text{time} \leq 180$ sec)	TR01/02	1	30,000
	PEB/Develop($180 < \text{time} \leq 270$ sec)	TR01/02	1	41,000
	Bake Hard	OV03	25	21,000
	Solvent Strip	WT01	25	113,000
Sputtering	TiW($T \leq 3000A$)	SP03	1	57,000
	TiW($3000 < T \leq 5000A$)	SP03	1	67,000
	NiV, Cr, Si, Co($T \leq 500A$)	SP01	1	46,000
	NiV, Cr, Si, Co($500 < T \leq 1000A$)	SP01	1	67,000
	NiV, Cr, Si, Co($1000 < T \leq 3000A$)	SP01	1	92,000
	Ti($T \leq 500A$)	SP02	1	46,000
	Ti($500 < T \leq 1000A$)	SP02	1	67,000
	Ti($1000 < T \leq 3000A$)	SP02	1	92,000
	TiN($T \leq 500A$)	SP02	1	46,000
	TiN($500 < T \leq 1000A$)	SP02	1	67,000
	TiN($1000 < T \leq 3000A$)	SP02	1	92,000
	Al($T \leq 5000A$)	SP01/02/03	1	46,000
	Al($5000 < T \leq 10000A$)	SP01/02/03	1	67,000
	Al($10000 < T \leq 20000A$)	SP01/02/03	1	92,000
	NbN, AlN	SP02	1	113,000
	Mo	SP01	1	78,000
	RF Etch	SP02	1	57,000

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Equipment Name	Process Name	Code	B/Size	Process Unit Price (Unit: KRW)
			(wfs)	
	Alloy	SP02	1	67,000
E-Beam Evaporation	Ti, Ni, Al(100<T≤1000A)	EB01	5	113,000
	Ti, Ni, Al(1000<T≤3000A)	EB01	5	135,000
	Ag(100<T≤5000A)	EB01	5	170,000
	Ag(5000<T≤10000A)	EB01	5	227,000
PR Strip	Dry Strip1	PS01/PS03	25	67,000
	Dry Strip3	DR05/06	1	11,000
	Acid	WT02	25	67,000
	Descum	DR03/PS02	1	11,000
	Micro-Wave Strip	PS02	1	11,000
Measure & ETC	CD Measure	CD	1	57,000
	Rs Measure	4-P	1	11,000
	Inspection	Scope	1	11,000
	Film Thickness	FM01	1	21,000
	Laser Marking	LM01	1	5,000
	Electrical Characteristics		1hr	170,000
	Mask Tooling		1hr	113,000
	Simulation(Process & Device)		1hr	113,000
	Film Thickness Profile (Long Scan Profiler)	LS01	1	21,000
	Test Wafer		1	38,000
	Prime Wafer		1	53,000
	Film Thickness_Spectrosopic Ellipsometer	FM03	1	30,000
	Wafer Carrier & Box (6inch용 25slots)		ea	100,000
	Technical Support Fee ⁽⁴⁾			Negotiated Separately
총계				

- (1) Process unit prices not listed in the rate table are determined by extrapolation method.
- (2) Basic fee of 100,000 KRW applies per project (excluding mass production contracts).
- (3) The unit price for using the CD Measure equipment is calculated for each additional CD beyond 30 minutes (based on a standard time of 30 minutes).
- (4) For processes requiring technical review and development by process, equipment, or PI engineers, the unit price is negotiated separately (within 300% of the process unit price).
- (5) Discounts apply for mass production contracts based on the contracted volume (discount rate applied to contracted volume):
 - From 50 Million KRW to less than 100 Million KRW: 80% of process unit price
 - From 100 Million KRW to less than 200 Million KRW: 70% of process unit price

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Equipment Name	Process Name	Code	B/Size	Process Unit Price (Unit: KRW)
			(wfs)	
- From 200 Million KRW to less than 300 Million KRW: 60% of process unit price				
- For 300 Million KRW or more, a discount rate is negotiated separately				
(6) When Hot Run is designated, 150% of the total process cost applies (Hot Run requires approval from the department head for justified reasons).				