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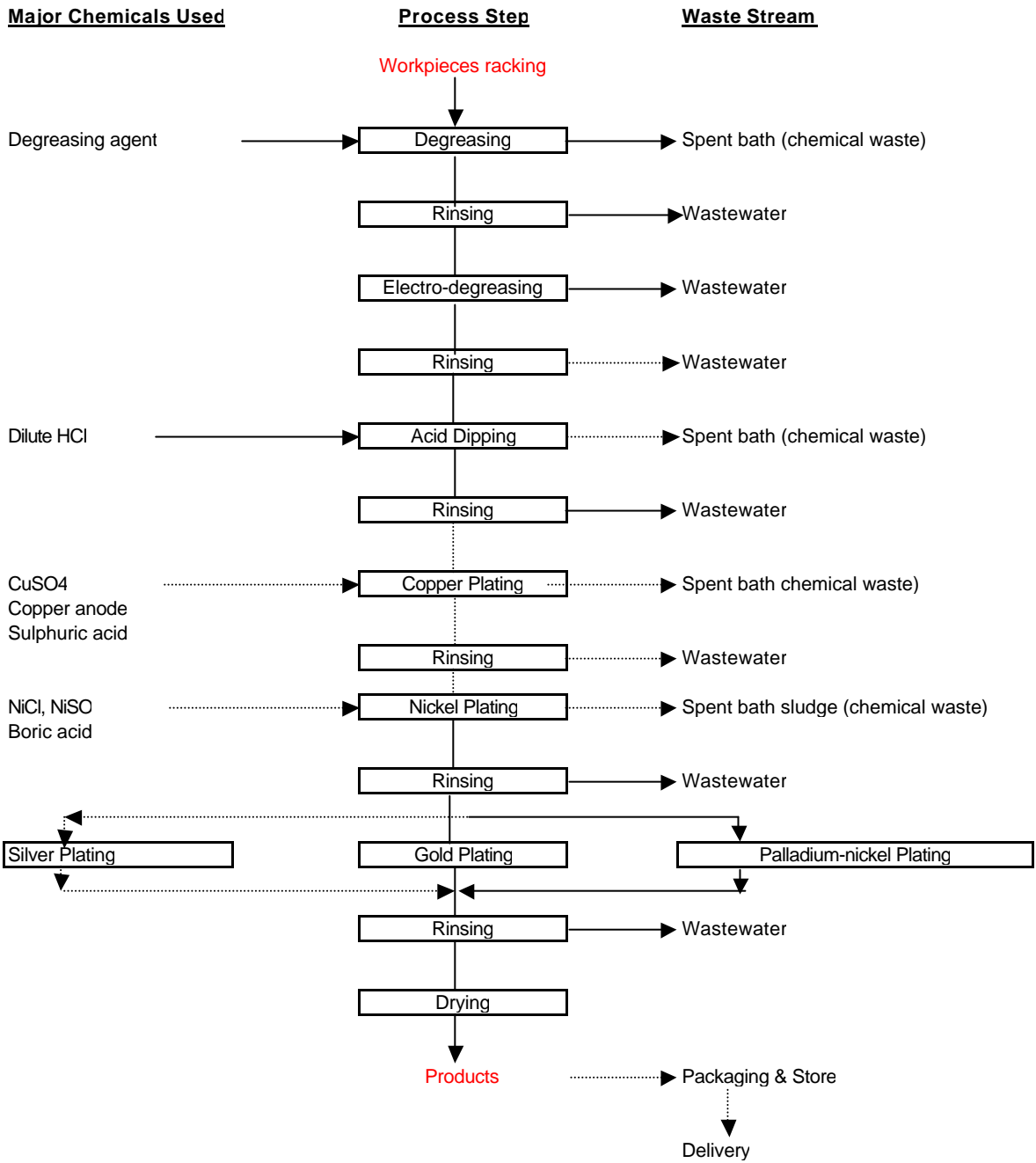
P10) Cumulative use of resources

Note:

The environmental aspect (EA) tables are presented in the order of office activities as the first item because:

- 1) this arrangement is a well-accepted and common practice for EMS professionals to prepare the EA register
- 2) the EAs for office activities are applicable to all staff, which is important for promoting staff awareness

However, the significant EAs (SEAs) for production processes would normally be the most important area to address relevant operational controls



Ref	Environmental Aspects	Potential Environmental Impacts						Evaluation of Significance					SEA	Operational Control / O&T Reference
		Resource Use	Waste Management	Air Emission	Water Pollution	Noise / Vibration	Land Contamination	Flora / Fauna	Legal	Relevant Legislation	Env. Impact	Quantity		
Office Activities														
OF-01	Electricity consumption for lighting	x						0		0	1	-	Y	EI-01, EI-07, O&T-2006-05
OF-02	Electricity consumption for air conditioning	x						0		0	1	-	Y	EI-01, EI-07
OF-03	Electricity consumption for office equipment and other purposes	x						0		0	1	-	Y	EI-01, EI-07
OF-04	Water consumption (for drinking, cleaning, flushing)	x						0		0	0	0	N	
OF-05	Consumption of papers	x						0		0	1	-	Y	EI-01, O&T-2006-04
OF-06	Consumption of stationery and office equipment	x						0		0	0	0	N	
OF-07	Consumption of cartridges for printers, copies, fax machines	x						0		0	1	-	Y	EI-01
OF-08	Use/release of CFC substances (e.g. refrigerants for air conditioning units)			x				1	A4, A5, A9	-	-	-	Y	EI-04
OF-09	Domestic wastewater discharge (from pantry, flushing) to foul sewers				x			0		0	0	0	N	
OF-10	Release of ozone from photocopiers and laser printers			x				0		0	0	0	N	
OF-11	Indoor air ventilation			x				1	A8, A10	0	0	0	Y	
OF-12	Noise from office equipment					x		0		0	0	0	N	
OF-13	Disposal of waste (general refuse)		x					1	C1, F2, F3, F4	-	-	-	Y	EI-03
OF-14	Disposal of toner cartridges		x					1	C1	-	-	-	Y	EI-03
OF-15	Disposal of Fluorescent tubes		x					1	C1	-	-	-	Y	EI-03
OF-16	Disposal of batteries		x					1	C1	-	-	-	Y	EI-03
OF-17	Disposal of recyclable waste (paper, plastic, aluminum cans)		x					1	C1	-	-	-	Y	EI-03
OF-18	Potential fire		x	x	x	x	x	0		1	-	-	Y	EP-05
OF-19	Pest control - use of insecticide by subcontractor			x				1	E2	0	0	1	Y	EP-05
OF-20	Cleaning and waste collection services provided by subcontractors		x		x			0		0	0	1	Y	EP-05
Office Pantry														
OP-01	Use of detergent	x						0		0	0	0	N	
OP-02	Use of disposable cups / tablewares / towels	x						0		0	0	1	Y	EI-01
OP-03	Disposal of food waste		x					1	C1	-	-	-	Y	EI-03
OP-04	Disposal of recyclables (e.g. aluminum cans, plastic bottles)		x					1	C1	-	-	-	Y	EI-03

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		Resource Use	Waste Management	Air Emission	Water Pollution	Noise / Vibration	Land Contamination	Flora / Fauna	Legal	Relevant Legislation	Env. Impact	Quantity	Corporate Concern		
Evaluation of Suppliers and Contractors															
SC-01	On-site installation/maintenance contractors	x	x	x	x	x	x	x	0		0	0	1	Y	EI-02
SC-02	Chemical suppliers	x	x	x	x	x	x	x	0	F1*	0	0	1	Y	EI-02
SC-03	Office / facility cleaning contractors	x	x	x	x	x	x	x	0		0	0	1	Y	EI-02
SC-04	Waste collectors	x	x	x	x	x	x	x	0		0	0	1	Y	EI-02

* F1 is included as reference and HKGEC is responsible for the compliance status of their chemical suppliers.

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		Resource Use	Waste Management	Air Emission	Water Pollution	Noise / Vibration	Land Contamination	Flora / Fauna	Legal	Relevant Legislation	Env. Impact	Quantity	Corporate Concern		
Use of Vehicles															
V-01	Fuel consumption by vehicle	x							0		0	1	-	Y	EI-07, EI-09
V-02	Type of fuel consumed (legal)			x					1	A1, A2	-	-	-	Y	EI-09
V-03	Noise produced by vehicle					x			1	B2, B3	-	-	-	Y	EI-09
V-04	Exhaust air emissions			x					1	A6, A7	-	-	-	Y	EI-09
V-05	Discharge of vehicle wash water				x				1	D1, D2	-	-	-	Y	EI-09
V-06	Venting of refrigerants from air conditioning unit of vehicles			x					1	A4, A5, A9	-	-	-	Y	EI-09
V-07	Vehicle maintenance : waste generation (old parts, contaminated wastes, lubricant oil disposal)		x				x		1	C1 - C5	-	-	-	Y	EI-09
V-08	Traffic congestion			x					0		0	0	0	N	
V-09	Potential oil leakage		x	x	x		x		0		1	-	-	Y	EI-09
V-10	Selection of maintenance and repair services provider	x	x	x	x	x	x	x	0		0	0	1	Y	EI-09

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WWT - Waste Water Treatment Plant

Ref	Environmental Aspects	Potential Environmental Impacts						Evaluation of Significance					Operational Control / O&T Reference	
		Resource Use	Waste Management	Air Emission	Water Pollution	Noise / Vibration	Land Contamination	Flora / Fauna	Legal	Relevant Legislation	Env. Impact	Quantity		Corporate Concern
1) Wastewater Treatment System:														
F1-01	Use of chemicals (e.g. caustic soda, sulphuric acid, polymer, hydrogen peroxide)	x						0		0	1	-	Y	EI-07
F1-02	Noise from filtering pump					x		1	B1, B4, B5	-	-	-	Y	EI-06
F1-03	Disposal of sludge		x					1	C2, C3, C4, C5	-	-	-	Y	EI-03
F1-04	Disposal of consumed resin		x					1	C2, C3, C4, C5	-	-	-	Y	EI-03
F1-05	Disposal of empty chemical containers		x					1	C2, C3, C4, C5	-	-	-	Y	EI-03
F1-06	Treated wastewater discharge				x			1	D1, D2	-	-	-	Y	EI-05, EI-10
F1-07	Spillage of chemicals (e.g. strong acid / alkaline)			x	x		x	0		1	-	-	Y	EP-05, EI-08
F1-08	Spillage of untreated wastewater				x		x	0		1	-	-	Y	EP-05, EI-05
F1-09	Malfunction of WWT		x	x	x	x	x	0		1	-	-	Y	EI-10
2) D.I. Water System:														
F2-01	Use of chemicals (e.g. caustic soda, hydrochloric acid, ion exchange resins)	x						0		0	1	-	Y	EI-07
F2-02	Disposal of empty chemical containers		x					1	C2, C3, C4, C5	-	-	-	Y	EI-03
F2-03	Wastewater discharge from regeneration				x			1	D1, D2	-	-	-	Y	EI-05
F2-04	Spillage of chemicals (e.g. strong acid / alkaline)			x	x		x	0		1	-	-	Y	EP-05, EI-08
3) General Maintenance														
F3-01	Use of chemicals (e.g. paint, acetylene, adhesives, lube oil, hydraulic oil, heat transfer oil and organic solvent, aerosols)	x						0		0	1	-	Y	EI-07
F3-02	Use of paint brushes	x						0		0	0	0	N	
F3-03	Use of cable	x						0		0	0	0	N	
F3-04	Use of spare parts	x						0		0	0	0	N	
F3-05	Use of gloves	x						0		0	0	0	N	
F3-06	Use of cleaning rags	x						0		0	0	0	N	

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		Resource Use	Waste Management	Air Emission	Water Pollution	Noise / Vibration	Land Contamination	Flora / Fauna	Legal	Relevant Legislation	Env. Impact	Quantity	Corporate Concern		SEA
F3-07	Noise from maintenance operation					x			1	B1, B4, B5	-	-	-	Y	EI-06
F3-08	Discharge of wastewater (facility / floor cleaning) to WWT				x				1	D1, D2	-	-	-	Y	EI-05
F3-09	Disposal of spent lube oil, hydraulic oil, heat transfer oil and solvent		x						1	C2, C3, C4, C5	-	-	-	Y	EI-03
F3-10	Disposal of spent rags and gloves		x						1	C2, C3, C4, C5	-	-	-	Y	EI-03

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		Resource Use	Waste Management	Air Emission	Water Pollution	Noise / Vibration	Land Contamination Flora / Fauna	Legal	Relevant Legislation	Env. Impact	Quantity	Corporate Concern		
1) Workpieces racking														
P1-01	Use of rack for plating	x						0		0	1	-	Y	EI-07
P1-02	Use of tape	x						0		0	0	0	N	
P1-03	Fire (release of toxic fume and smoke)		x	x	x	x	x	0		1	-	-	Y	EP-05
P1-04	Spillage of strong acid / alkaline			x	x		x	0		1	-	-	Y	EP-05, EI-08
P1-05	Spillage of other chemicals			x	x		x	0		1	-	-	Y	EP-05, EI-08
2) Degreasing														
P2-01	Use of chemicals (e.g. degreasing agent NaOH)	x						0		0	1	-	Y	EI-07
P2-02	Use of water	x						0		0	1	-	Y	EI-07
P2-03	Discharge of bath solution				x			1	D1, D2	-	-	-	Y	EI-03
P2-04	Chemical fume emission from baths			x				0		1	-	-	Y	EI-04, O&T-2006-01
3) Rinsing (all rinsing activities)														
P3-01	Use of water	x						0		0	1	-	Y	EI-07
P3-02	Rinse water discharge				x			1	D1, D2	-	-	-	Y	EI-05
4) Electro-degreasing														
P4-01	Use of chemicals (e.g. degreasing agent)	x						0		0	1	-	Y	EI-07
P4-02	Use of electricity for ultrasonic cleaning	x						0		0	0	0	N	
P4-03	Discharge of bath solution				x			1	D1, D2	-	-	-	Y	EI-03
P4-04	High temperature rise from baths			x				0		0	0	0	N	
5) Acid dipping														
P5-01	Use of chemicals (e.g. dilute HCl)	x						0		0	1	-	Y	EI-07
P5-02	Use of water	x						0		0	1	-	Y	EI-07
P5-03	Discharge of bath solution				x			1	D1, D2	-	-	-	Y	EI-03
6) Copper, Nickel, Silver, Gold and Palladium-nickel Plating														
P6-01	Use of plating chemical (e.g. copper, nickel, silver, gold and palladium-nickel salts)	x						0		0	1	-	Y	EI-07, O&T-2006-02
P6-02	Use of water	x						0		0	1	-	Y	EI-07
P6-03	Use of metal anodes (copper, nickel, alloy, etc)	x						0		0	0	0	N	
P6-04	Use of filter cartridges for bath solution filtering	x						0		0	1	-	Y	EI-07
P6-05	Chemical fume emission from baths		x					0		1	-	-	Y	EI-04, O&T-2006-01

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P6-06	Disposal of spent plating solution, sludge		X					1	C2, C3, C4, C5	-	-	-	Y	EI-03
P6-07	Disposal of spent filter		X					1	C2, C3, C4, C5	-	-	-	Y	EI-03
P6-08	High temperature rise from baths			X				0		0	0	0	N	
7) Drying														
P7-01	Heat rising from the oven			X				0		0	0	0	N	
8) Packaging														
P8-01	Use of packaging materials (paper, plastic strips, carton box, etc.)	X						0		0	1	-	Y	EI-07
P8-02	Disposal of packaging materials		X					0		1	-	-	Y	EI-03
9) Storage of Materials / Chemicals / Waste														
P9-01	Use of wooden pallets	X						0		0	1	-	Y	EI-07
P9-02	Storage of chemicals / D.G.		X	X			X	1	E1, E3, E4	-	-	-	Y	EI-08
P9-03	Disposal of empty chemical containers		X					1	C2, C3, C4, C5	-	-	-	Y	EI-03
P9-04	Spillage of chemicals			X	X		X	0		1	-	-	Y	EP-05, EI-08
10) Cumulative Aspects														
P10-01	Use of electricity	X						0		0	1	-	Y	EI-07
P10-02	Use of water	X						0		0	1	-	Y	EI-07
P10-03	Disposal of general wastes (refuse)		X					1	C1, F2, F3, F4	-	-	-	Y	EI-03
P10-04	Disposal of metal wastes (recycling)		X					1	C1	-	-	-	Y	EI-03, O&T-2006-03
P10-05	Disposal of reject products during production processes		X					1	C1, F2, F3, F4	-	-	-	Y	EI-03
P10-06	Potential fire		X	X	X	X	X	0		1	-	-	Y	EP-05
P10-07	Spillage of chemicals			X	X		X	0		1	-	-	Y	EP-05, EI-08
P10-08	Accidental release of toxic gas due to mix of chemicals			X				0		1	-	-	Y	EP-05, EI-08

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