

## Use of Electrolytes

All data have been determined by experiment and are not applicable in general. A special hotline has been provided for our customers.

Material, alloys, branch	ItemNo	Electrolyte	Power unit setting/ voltage	Notes
Aluminium	22.038	AE38	light/24V	
Aluminium (most alloys)	22.038	AE38	light/24V	Allow a few seconds for colour to develop before cleaning
Aluminium with high magnesium or silica content	22.025	AE25	light/24V	Black not possible unless lacquer filled
	22.038	AE38	light/24V	Deep etch BEFORE anodizing (minimum 0.05mm)
Beryllium	22.001	AE1	dark/12V	for production runs, self-cleaning Electrolyte
Black oxide	22.026	AE26	dark/12V	Current setting: light & dark
	22.030	AE30	dark/12V	Current setting: light & dark
Black oxide steels	22.026	AE26	dark/12V	Current setting: light & dark
Brass	22.037	AE37	dark/12V	
	22.025	AE25	dark/12V	
Bronze	22.037	AE37	dark/12V	
	22.025	AE25	dark/12V	
Carbides	22.035	AE35	dark/12V	pH-neutral, low corrosion
Chrome plate	22.005	AE5	dark/12V	
	22.001	AE1	dark/12V	for production runs, self-cleaning Electrolyte
Chrome plate (decorative)	22.005	AE5	dark/12V	
	22.035	AE35	dark/12V	pH-neutral, low corrosion
Cobalt alloys	22.037	AE37	dark/12V	
Copper	22.037	AE37	dark/12V	
	22.025	AE25	dark/12V	
Copper alloys	22.037	AE37	dark/12V	
	22.025	AE25	dark/12V	
Copper nickel	22.030	AE30	dark/12V	
CuZn alloys	22.037	AE37	dark/12V	
	22.025	AE25	dark/12V	
Discaloy	22.001	AE1	dark/12V	for production runs, self-cleaning Electrolyte
	22.035	AE35	dark/12V	pH-neutral, low corrosion
Gold & gold plate	22.010	AE10	dark/12V	for production runs, self-cleaning Electrolyte
	22.035	AE35	dark/12V	pH-neutral, low corrosion
Hastelloy	22.037	AE37	dark/12V	
Haynes 25	22.001	AE1	dark/12V	for production runs, self-cleaning Electrolyte
Inconel	22.037	AE37	dark/12V	
Inconel 718 & 750	22.030	AE30	dark/12V	
Iron	22.035	AE35	dark/12V	pH-neutral, low corrosion
	22.010	AE10	dark/12V	for production runs, self-cleaning Electrolyte
	22.036	AE36	dark/12V	pH-neutral, very low corrosion
Lead & alloys	22.030	AE30	dark/12V	
Monel	22.038	AE38	dark/12V	
	22.035	AE35	dark/12V	pH-neutral, low corrosion
Nickel & alloys	22.001	AE1	dark/12V	for production runs, self-cleaning Electrolyte
	22.035	AE35	dark/12V	pH-neutral, low corrosion
	22.030	AE30	dark/12V	
Nickel plate (brass & copper)	22.035	AE35	dark/12V	pH-neutral, low corrosion
	22.001	AE1	dark/12V	for production runs, self-cleaning Electrolyte
Nickel, chemical	22.003	AE3	dark/12V	
	22.035	AE35	dark/12V	pH-neutral, low corrosion
Nickel plate (steel & alu)	22.001	AE1	dark/12V	for production runs, self-cleaning Electrolyte
	22.030	AE30	dark/12V	
Nickel silver	22.037	AE37	dark/12V	
	22.035	AE35	dark/12V	pH-neutral, low corrosion
	22.025	AE25	dark/12V	

Material, alloys, branch	ItemNo	Electrolyte	Power unit setting/ voltage	Notes
Nitraloy	22.035	AE35	dark/12V	pH-neutral, low corrosion
Steels, stainless	22.001	AE1	dark/12V	for production runs, self-cleaning Electrolyte
	22.035	AE35	dark/12V	pH-neutral, low corrosion
	22.036	AE36	dark/12V	pH-neutral, very low corrosion
	22.035	AE35	dark/12V	pH-neutral, low corrosion
Steels, chrome plated decorative (advertising material)	22.035	AE35	dark/12V	pH-neutral, low corrosion
Steels, construction steels, corrodible	22.036	AE36	dark/12V	pH-neutral, very low corrosion
	22.035	AE35	dark/12V	pH-neutral, low corrosion
Steels, food & nutrition industry, flexible surgical catheter (probes)	22.007	AE7	dark/12V	pH-neutral, low corrosion
Steels, surgical instruments	22.033	AE33	dark/12V	pH-neutral, low corrosion
	22.001	AE1	dark/12V	for production runs, self-cleaning Electrolyte
	22.034	AE34	dark/12V	
	22.035	AE35	dark/12V	pH-neutral, low corrosion, for manual marking
Steels, tool & high alloy	22.033	AE33	dark/12V	pH-neutral, low corrosion
Steels, hardened & unhardened	22.035	AE35	dark/12V	pH-neutral, low corrosion
	22.020	AE20	dark/12V	
Steels, corrodible	22.035	AE35	dark/12V	pH-neutral, low corrosion
	22.036	AE36	dark/12V	pH-neutral, very low corrosion
Steels, until 1.4021 / 1.4310	22.001	AE1	dark/12V	for production runs, self-cleaning Electrolyte
	22.033	AE33	dark/12V	pH-neutral, low corrosion
	22.035	AE35	dark/12V	pH-neutral, low corrosion
Steels, CrCo, steels from 1.4310	22.035	AE35	dark/12V	pH-neutral, low corrosion
	22.036	AE36	dark/12V	pH-neutral, very low corrosion
	22.010	AE10	dark/12V	for production runs, self-cleaning Electrolyte
	22.038	AE38	dark/12V	
Tin	22.010	AE10	dark/12V	for production runs, self-cleaning Electrolyte
Titanium	22.037	AE37	dark/12V	Use minimum Electrolyte and short marking times (1-1,5s)
	22.004	AE4	dark/12V	Use minimum Electrolyte and short marking times (1-1,5s)
	22.028	AE28	dark/12V	
Tool steel	22.033	AE33	dark/12V	pH-neutral, low corrosion
	22.010	AE10	dark/12V	for production runs, self-cleaning Electrolyte
Tool steel, high alloy & harden able	22.033	AE33	dark/12V	pH-neutral, low corrosion
	22.035	AE35	dark/12V	pH-neutral, low corrosion
	22.028	AE28	dark/12V	without neutralisation/cleaning
Tungsten (pure)	22.026	AE26	dark/12V	without neutralisation/cleaning
Tungsten carbide	22.026	AE26	dark/12V	without neutralisation/cleaning
	22.010	AE10	dark/12V	for production runs, self-cleaning Electrolyte
Zinc & zinc plate	22.037	AE37	dark/12V	
	22.035	AE35	dark/12V	pH-neutral, low corrosion
Zirconium	22.035	AE35	dark/12V	pH-neutral, low corrosion
	22.028	AE28	dark/12V	