





SWISS TECHNOLOGY AT YOUR FINGERTIPS



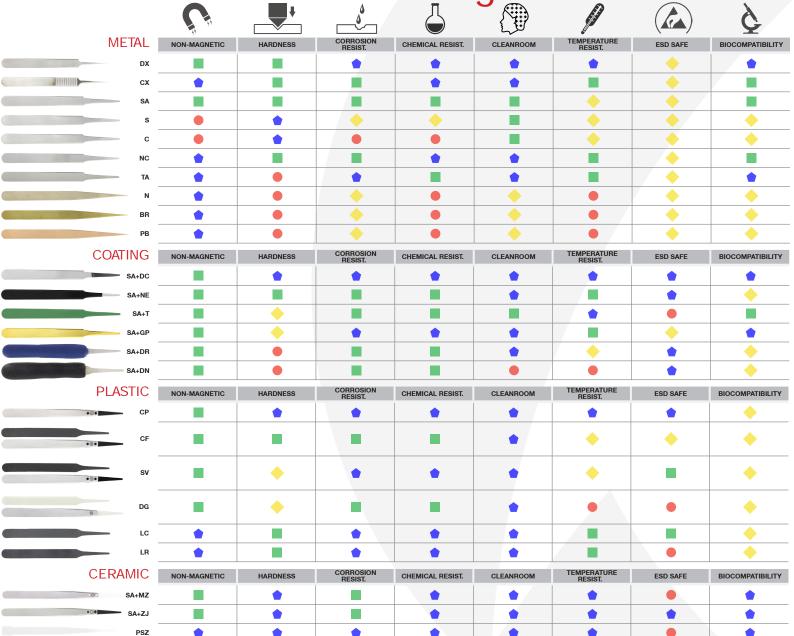
Training Program - 01. Tweezer materials





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Tweezer material selection guide*





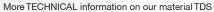
DEFINITION

NON-MAGNETIC	Those materials which do not acquire mag netic properties, either transient or perma nent, when placed in a magnetic field of subjected to a magnetization process
HARDNESS	The resistance of a material to penetration
CORROSION RESISTANCE	The capability of material to withstand the deterioration and chemical breakdown during surface exposure in a specific environment
CHEMICAL RESISTANCE	The strength of a material to protect agains chemical attack or solvent reaction
CLEANROOM	A controlled environment typically used in manufacturing
TEMPERATURE RESISTANCE	The resistance of material properties to de crease as temperature increases
ESD SAFE	A material that reduce static electricity to protect electrostatic-sensitive devices
BIOCOMPATIBILITY	The capability of a material to exist in har mony with tissue without causing deleter ous changes

^{*} Material selection chart is intended as a starting point to select material. Ideal-tek recommends always testing our specific product with your application

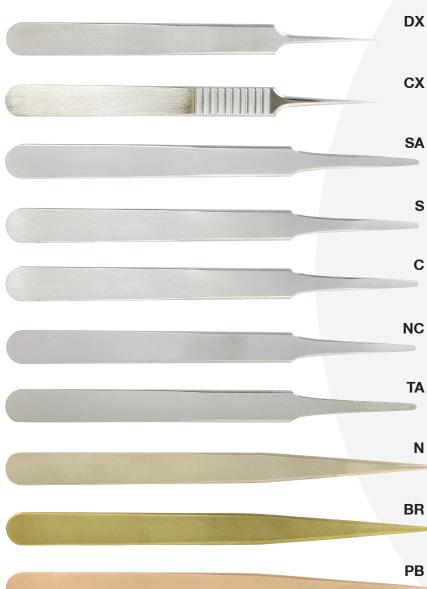


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Metal tweezer materials



Wide TECHNOAL IIIOMALON ON MALERIAN 103				
MATERIAL DESCRIPTION	MAIN FEATURES & APPLICATIONS			
High-alloy Anti-Acid, Anti-Magnetic Stainless Steel (AISI 904L)	Non-magnetic - ● toughness - ● formability and weldability - ● resistance to severe corrosive conditions - ● resistance to acidic environments - ● resistance to stress corrosion cracking - ● cleanliness - maximum service temperature 450°C TYPICAL APPLICATIONS Chemical and pharmaceutical industries, cryogenic laboratories, process industries, etc.			
Superalloy Anti-Acid, Anti-Magnetic (Superalloy Ni-Cr-Mo)	Fully non-magnetic - strength - hardness - resistance to fatigue - shape retention - corrosion resistance to most chemicals, salts and acids TYPICAL APPLICATIONS Non-magnetic tools for electronic and watch industry applications and for laboratory and medical applications in aggressive chemical environments			
Anti-Acid, Anti-Magnetic Stainless Steel (AISI 316L)	Non-magnetic - ■ toughness - ■ corrosion resistance to most chemicals, salts and acids TYPICAL APPLICATIONS Tweezers for the electronic industry, watch-makers, jewelers and laboratory and medical applications in moderately aggressive chemical environments			
Stainless Steel (AISI 420)	Magnetic - ● strenght - ● hardness - ◆ resistance to corrosion TYPICAL APPLICATIONS Tweezers and cutting tools for the electronic industry, watch-makers, jewelers and laboratory and medical applications in mild aggressive chemical environments			
Carbon Steel (AISI 1060)	Magnetic - ● strenght - ● hardness - ● resistance to corrosion TYPICAL APPLICATIONS Tweezers and cutting tools for the electronic industry, watch-makers, jewelers applications			
Superalloy Anti-Acid, Anti-Magnetic (Superalloy Ni-Cr-Mo)	Fully non-magnetic - strength - hardness - resistance to fatigue - shape retention - corrosion resistance to most chemicals, salts and acids **TYPICAL APPLICATIONS** Non-magnetic tools for electronic and watch industry applications and for laboratory and medical applications in aggressive chemical environments			
Titanium (Nonferrous alloy, Grade 1)	Fully non-magnetic - mechanical properties - ductility - cold formability - corrosion resistance - melting point (high temperature resistance) TYPICAL APPLICATIONS Handling of components in cleaning/chemical processes at high temperature, histology, biology, medicine, surgery. Used when high strength-to-weight ratio is required. Bio-compatible			
Nickel (Nonferrous alloy CuNi18Zn20)	Non-magnetic - soft and elastic - ■ cold workability (forming) - ◆ corrosion resistance by fresh water and steam - ● resistance to saltwater corrosion - ● resistance to alkalies and organic acids - ● resistance to inorganic acids - ▼ TYPICAL APPLICATIONS Handling of scratch-sensitive parts in electronic, micro-mechanical and jewellery applications			
Brass (Nonferrous alloy CuZn37)	Non-magnetic - ● cold workability (forming) - ● mechanical properties - ■ corrosion resistance - corrosion resistance by fresh water and steam TYPICAL APPLICATIONS Tweezers for handling scratch-sensitive mechanical parts, watch components, magnets			
Bronze (Nonferrous alloy CuSn8P)	Non-magnetic - ■ cold workability (forming) - ■ tensile properties - ■ corrosion resistance - ◆ corrosion resistance by fresh water and steam **TYPICAL APPLICATIONS** Tweezers for handling scratch-sensitive mechanical parts, watch components, magnets			

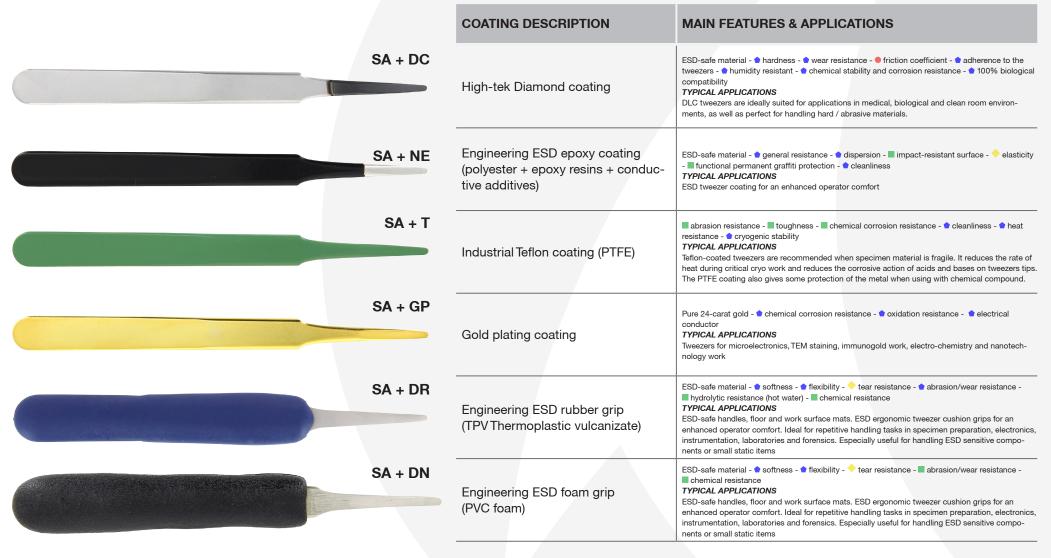




Coating tweezer materials



More TECHNICAL information on our material TDS	Excel-



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		More TECHNICAL information on our material TDS Excel- Very	
Plastic tweezer materials	MATERIAL DESCRIPTION	MAIN FEATURES & APPLICATIONS	
● ② ● CP	High-performance plastic - Carbon PEEK (polyetheretherketone reinforced with carbon nano)	ESD safe material - ● hardness - ■ rigidity - ● flexural strength - ● wear resistance - ◆ dimension stability - ● resistance to chemicals and aggressive agents - ● resistance to thermal ageing - ● heat capability TYPICAL APPLICATIONS Handling of components in cleaning/chemical/assembly processes at high temperature (soldering).	
CF.	Engineering plastic - Carbon fiber (PA66/CF30 polyamide 66 reinforced with 30 wt% carbon fibre)	ESD safe material - ■ rigidity - ■ tensile strenght - ■ flexural strength - ■ fatigue resistance - ■ creep resistance - ■ wear and abrasion resistance - ■ chemical resistance - → heat capability TYPICAL APPLICATIONS Handling of sensitive components and devices in electronics assembly and lab applications. Clean room compatible.	
SV.	High performance plastic - PVDF (polyvinylidene fluoride carbon fibre reinforced)	ESD safe material - ● mechanical strength - ● toughness - ■ abrasion resistant - ● high purity - ● chemical resistance - ■ resistant to UV and nuclear radiation (sterilisation) - ◆ heat capability TYPICAL APPLICATIONS Handling of very scratch - and contamination - sensitive components, cleaning and etching processes. Clean room and medical device approved material.	
DG	Engineering plastic - Delrin (POM/GF30 acetal resin reinforced with 30 wt% glass fibre)		
LC	Engineering plastic - Conductive Larton (PPS/GF30 polyphenylene sulphide reinforced with 30 wt% glass fibre)	ESD-safe material - ■ hardness - ■ rigidity - ● flexural strength - ● creep resistance - ◆ dimension stability - ● fume optical density and toxicity - ● chemical resistance - ● resistance to thermal ageing - ● heat capability - UL94V-0 self-extinguishing TYPICAL APPLICATIONS Soldering and cleaning/chemical processes at high temperature. Used in clean room environment.	
LR	Engineering plastic - Larton (PPS/GF30 polyphenylene sulphide reinforced with 30 wt% glass fibre)	■ hardness - ■ rigidity - ● flexural strength - ● creep resistance - ◆ dimension stability - ● fume optical density and toxicity - ● chemical resistance - ● resistance to thermal ageing - ● heat capability - U.94V-0 self-extinguishing - insulating TYPICAL APPLICATIONS Soldering processes, handling of components in cleaning/chemical processes.	





Ceramic tweezer materials



