















# TRONEX Tweezer Material Selection Guide\*

									
		NON-MAGNETIC	HARDNESS	CORROSION RESIST.	CHEMICAL RESIST.	CLEANROOM	TEMPERATURE RESIST.	ESD SAFE	BIOCOMPATIBILITY
 SA		■	■	■	■	■	◆	◆	■
	 TA	◆	●	◆	■	◆	■	◆	◆
<b>COATING</b>									
		NON-MAGNETIC	HARDNESS	CORROSION RESIST.	CHEMICAL RESIST.	CLEANROOM	TEMPERATURE RESIST.	ESD SAFE	BIOCOMPATIBILITY
 SA+NE		■	■	■	■	◆	■	◆	◆
 SA+DR		■	●	■	■	◆	◆	◆	◆
<b>PLASTIC</b>									
		NON-MAGNETIC	HARDNESS	CORROSION RESIST.	CHEMICAL RESIST.	CLEANROOM	TEMPERATURE RESIST.	ESD SAFE	BIOCOMPATIBILITY
 CF		■	■	■	■	◆	◆	◆	◆
<b>CERAMIC</b>									
		NON-MAGNETIC	HARDNESS	CORROSION RESIST.	CHEMICAL RESIST.	CLEANROOM	TEMPERATURE RESIST.	ESD SAFE	BIOCOMPATIBILITY
 SA+ZJ		■	◆	■	◆	◆	◆	◆	◆

## DEFINITION







<b>NON-MAGNETIC</b>	Those materials which do not acquire magnetic properties, either transient or permanent, when placed in a magnetic field or subjected to a magnetization process
<b>HARDNESS</b>	The resistance of a material to penetration
<b>CORROSION RESISTANCE</b>	The capability of material to withstand the deterioration and chemical breakdown during surface exposure in a specific environment
<b>CHEMICAL RESISTANCE</b>	The strength of a material to protect against chemical attack or solvent reaction
<b>CLEANROOM</b>	A controlled environment typically used in manufacturing
<b>TEMPERATURE RESISTANCE</b>	The resistance of material properties to decrease as temperature increases
<b>ESD SAFE</b>	A material that reduces static electricity to protect electrostatic-sensitive devices
<b>BIOCOMPATIBILITY</b>	The capability of a material to exist in harmony with tissue without causing deleterious changes



\*Material selection chart is intended as a starting point to select material. Tronex recommends always testing our specific product with your application

# TRONEX Tweezer Materials



	COATING DESCRIPTION	MAIN FEATURES & APPLICATIONS
 <p><b>SA</b></p>	<p>Anti-Acid, Anti-Magnetic Stainless Steel (AISI 316L)</p>	<p>Non-magnetic - ■ toughness - ■ corrosion resistance to most chemicals, salts and acids</p> <p><b>TYPICAL APPLICATIONS</b> Tweezers for the electronic industry, watch-makers, jewelers and laboratory and medical applications in moderately aggressive chemical environments</p>
 <p><b>TA</b></p>	<p>Titanium (Nonferrous alloy, Grade 1)</p>	<p>Fully non-magnetic - ■ mechanical properties - ◆ ductility - ■ cold formability - ◆ corrosion resistance - ■ melting point (high temperature resistance)</p> <p><b>TYPICAL APPLICATIONS</b> 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</p>
 <p><b>SA + NE</b></p>	<p>Engineering ESD epoxy coating (polyester + epoxy resins + conductive additives)</p>	<p>ESD-safe material - ◆ general resistance - ◆ dispersion - ■ impact-resistant surface - ◆ elasticity - ■ functional permanent graffiti protection - ◆ cleanliness</p> <p><b>TYPICAL APPLICATIONS</b> ESD tweezer coating for an enhanced operator comfort</p>
 <p><b>SA + DR</b></p>	<p>Engineering ESD rubber grip (TPV Thermoplastic vulcanizate)</p>	<p>ESD-safe material - ◆ softness - ◆ flexibility - ◆ tear resistance - ◆ abrasion/wear resistance - ■ hydrolytic resistance (hot water) - ■ chemical resistance</p> <p><b>TYPICAL APPLICATIONS</b> ESD-safe handles, floor and work surface mats. ESD ergonomic tweezer cushion grips for an enhanced operator comfort. Ideal for repetitive handling tasks in specimen preparation, electronics, instrumentation, laboratories and forensics. Especially useful for handling ESD sensitive components or small static items</p>
 <p><b>SA + ZJ</b></p>	<p>ESD advanced black ceramic (Zirconia Toughened Alumina)</p>	<p>ESD-safe material - ◆ strength - ◆ hardness - no open porosity - ◆ hard surface - ◆ abrasion resistance - ◆ wear resistance - ◆ flexural strength - ◆ fracture toughness - ■ corrosion resistance - ◆ thermal properties - ◆ temperature stability</p> <p><b>TYPICAL APPLICATIONS</b> Handling of EOS/ESD sensitive components, handling of components during thermal, chemical and soldering processes. Generally used when very rigid tips are required</p>
 <p><b>CF</b></p>	<p>Engineering plastic - Carbon fiber (PA66/CF30 polyamide 66 reinforced with 30 wt% carbon fiber)</p>	<p>ESD safe material - ■ rigidity - ■ tensile strength - ■ flexural strength - ■ fatigue resistance - ■ creep resistance - ■ wear and abrasion resistance - ■ chemical resistance - ◆ heat capability</p> <p><b>TYPICAL APPLICATIONS</b> Handling of sensitive components and devices in electronics assembly and lab applications. Clean room compatible.</p>